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BY

GEORGE H. SIMMONS, M.D.

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Original Articles

UNIOCULAR INFLAMMATIONS OF THE OPTIC NERVE AND RETINA.*

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Ophthalmologic text-books are nearly or quite silent in regard to uniocular inflammation of either the optic nerve or retina, and the cases reported in ophthalmologic literature are not numerous.

Galezowski[1] was, perhaps, the first to assert the unilateral occurrence of certain forms of retinitis, followed later by reports of cases by Henry Power,[2] Jonathan Hutchinson,[3] Leber,[4] and by others, occasionally, up to the present time. A. Yvert[5] and others have reported cases of uniocular retinitis due to albuminuria. Retinitis resembling that of albuminuria, but limited to one eye and without albuminuria, has been seen several times. Williamson,[6] Manchester, England, found five cases of uniocular retinal changes (hemorrhages and inflammation) in thirteen cases of cerebral vascular lesions. In all but one of these cases the retinal disease was on the side opposite to that of the brain lesion. In 1886 Dr. Hughlings Jackson[7] said that he had seen three cases of uniocular optic neuritis in hemiplegics, the neuritis being on the side opposite to the cerebral lesion. Several cases of uniocular optic neuritis have been seen in connection with orbital inflammation and tumor of the same side or with disease of a contiguous sinus (De La Personne,[8] Peuch,[9] Brailey,[10] and others). Königshofer[11] reported a case of uniocular optic neuritis which disappeared only after the removal of adenoid vegetations. Single cases of uniocular optic neuritis attributable to various remote causes have been reported by Henry Eales,[12] Henry Juler,[13] Charles Higgins,[14] L. Werner,[15] and by others. Dr. de Schweinitz,[16] in 1896, reported five cases of uniocular optic neuritis in patients with histories, respectively, of rheumatism, syphilis, chlorosis, albuminuria of pregnancy, and degenerative changes in the vessels of the optic nerve. C. G. Lee[17] has reported "four interesting cases of monocular optic neuritis" in which it was impossible to attribute the inflammation to any of the causes usually given. Nettleship[18] has collected, under the head of "unilateral retro-ocular optic neuritis," twenty-eight cases "characterized by failure of sight limited to one eye, often accompanied by neuralgic pain about the temple and orbit, and by pain in moving the eye." In these cases, he says, "acute inflammation seems to take place in some part of the course of the optic nerve." The same class of cases has been referred to by Leber,[19] by Hoch,[20] of Vienna, and by others.

While this list of references is not complete, it suffices to show that the recorded cases of this kind are by no means numerous. My own clinical observations on this subject, therefore, may be of some interest. They extend over the past fifteen years and include eighteen cases. These cases are here described in more or less detail, varying according to the facts noted when the consultations were made. Unfortunately, these are, in some cases, rather meager, for at the time I had no intention of publishing them. I trust, however, that my experience will at least serve the purpose of directing professional attention more earnestly to this subject.

I shall arrange my cases into three classes; first, those of uniocular optic neuritis; second, those of uniocular neuro-retinitis, and third, those of uniocular retinitis.

UNIOCULAR OPTIC NEURITIS.

Case 1. Optic neuritis in left eye; mild, duration short, mild recurrence, recovery.

Patient.—Miss M. S., Batavia, N. Y., aged 16, is a well developed, healthy girl from a well-to-do family. She menstruates regularly and without pain, and has no abnormal condition of the urine. She consulted me on March 9, 1893, complaining of not seeing as well as usual with her left eye, and of seeing "black spots before her eyes." This condition had existed about two weeks.

Examination.—This gave vision of the right eye 5/5 Snellen, left eye 5/15. There were several scotomata in the visual field of the left eye. With the ophthalmoscope the right fundus was seen to be perfectly normal, while the left showed a distinct picture of mild optic neuritis. The optic disc was slightly obscured and a little swelled. The retina near the optic disc was edematous. There were no retinal hemorrhages or exudates.

Treatment.—She was given iodid of potash internally, and on April 8 the vision of the left eye, like that of the right was 5/5, and the optic disc appeared clear and normal.

Recurrence.—May 5, 1894. Miss S. had a recurrence of the old trouble in her left eye, which she felt during the past week. The optic disc was again slightly inflamed, with the same appearances as those of nearly a year before. Vision was reduced to 5/25. The urine was normal, and the patient seemed to be healthy. She was again given potassium iodid and rapidly recovered. The eye has remained well since that time.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

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4. Graefe-Saemisch Handbuch, first edition, 1877, vol. v.
5. Recueil d'Ophth., March, 1883.
6. Brit. Med. Jour., June 11, 1898.
7. Ophth. Rev., vol. v, 1886, p. 24.
8. Arch. d' Ophth., vol. xix, p. 513.
9. Jour. de Med. de Bordeaux, April 5, 1891.
10. Ophth. Rev., vol. vi, 1887, p. 24.
11. Ophth. Klinik., January, 1901.
12. Trans. Ophth. Soc. of the United Kingdom, vol. v, 1885, p. 126.
13. Trans. Ophth. Soc. of the United Kingdom, vol. xiv, 1894, p. 121.
14. Lancet, April 22, 1899, p. 1083.
15. Trans. Ophth. Soc. of the United Kingdom, vol. xxv, 1905, p. 93.
16. Phil. Polyclinic, Dec. 12, 1896.
17. Brit. Med. Jour., vol. i, 1902.
18. Trans. Ophth. Soc. of the United Kingdom, vol. iv, 1884, p. 186.
19. Graefe-Saemisch Handbuch, first edition, vol. v, p. 829.
20. Hirschberg's Centbl., April, 1884.

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Case 2.—Optic neuritis in right eye, rather severe, duration eight months; recovery with vision equal to 5/6.

Patient.—On April 27, 1902, Mrs. F. M., Olean, N. Y., aged 28, was referred to me by Dr. C. S. Bull, of New York, with a letter in which he said: "Mrs. M. has an optic neuritis of the right eye, with engorged veins, but not much infiltration, and no signs of 'choked disc.' The vision was 20/40 in this eye, and normal in the left eye. She has a hypermetropic astigmatism of slight degree in both eyes. There were no retinal hemorrhages. There was no limitation of the visual field, and no scotoma present, either for form or color." He prescribed "mixed treatment."

History.—Mrs. M. is a well-nourished, healthy-looking young woman of medium height and weight, and with a history of no continuous headaches, or recent sickness of any kind. She has one healthy child. She has had no urinary or kidney affection.

About four weeks before her first visit to me, she noticed a confusion of vision in reading, and found that the vision of the right eye was not as good as that of the left. She at once consulted an ophthalmologist in Buffalo, but afterward went to New York and consulted Dr. Bull, who reported to me the condition quoted above, together with an analysis of the blood and urine, which were normal.

Examination.—On April 27, 1902, the date of the first visit to me, the right pupil was dilated with atropin sulphate solution. The vision without a lens was 5/30; and with + 1.D. sph., 5/20, and not further improved by any cylindrical combination. Ophthalmoscopic examination showed nearly the same appearance as described by Dr. Bull: optic disc slightly "woolly" and swelled, its outlines obscured, and the vessels dilated and abnormally tortuous. There were a few minute hemorrhages near the disc, but no exudates of the retina.

The fundus of the left eye was absolutely normal, and the vision of this eye was 5/4, nearly.

Treatment.—Dr. Bull's treatment was continued, except that the instillations of the atropin sulphate solution were omitted. The patient was advised not to use the eyes, and to protect them from the light by colored glasses.

May 8: The effects of the atropin solution in the right eye were nearly gone. Vision was 5/20, also with + 1.D. sph., that of the left eye was 5/4, minus. The same internal treatment was continued.

May 24: The appearances of the right optic disc and surroundings were improved. Vision was the same as before, 5/20.

July 2: Inflammation of the right optic disc was much less. Hemorrhages of retina had become absorbed, leaving no visible lesions. Vision was 5/15.

There was a steady improvement of the neuritis of the right optic nerve until Dec. 12, 1902, when it was nearly clear in its outlines, and of good color. At this date the vision was 5/6.

Feb. 9, 1903. The record says: "Fundus of right eye is perfectly normal. Vision is 5/6, plus." Treatment was suspended.

Aug. 11, 1903, also Feb. 27, 1906. There was, perhaps, a slight "roughness" of the outlines of the right optic disc, but it was apparently normal in color, certainly not pale, and the vision was 5/5, nearly. There were no lesions at the macula lutea. The left fundus remained normal, and vision of this eye was 5/4. There was slight astigmatism in each eye. The urine has never been abnormal, and the patient seems in perfect health. There is no history of syphilis. The only complaint is an occasional headache.

Case 3.—Optic neuritis in right eye, considerably severe, duration six months; recovery with slight pallor of the disc, and vision 5/6.

Patient.—A. B. P., Buffalo, N. Y., a man of medium size and weight, aged 43, married, had always enjoyed good health, and has had neither syphilis nor albuminuria. He was brought to me by Dr. John Mesmer on Jan. 27, 1905. About fifteen days before, while reading, his right eye began to give him pain and the vision of that eye also became quite dim. He consulted Dr. Dennett of New York, who examined him carefully and referred him to me with a chart of the visual field of the right eye taken January 18, showing that it was very much narrowed, except directly outward, and with a note stating his diagnosis of optic neuritis of this eye.

Examination.—My own examination with the ophthalmoscope showed a typical picture of optic neuritis of the right eye, disc swelled and outlines obscured, and the vessels considerably engorged. There was no special involvement of the retina, and there were no retinal hemorrhages. I found the visual field much contracted, except directly outward. Vision was 5/15. As stated above, the patient's general health was good, except that he was "very nervous." There were no symptoms of brain or spinal cord disease. The pupil of the right eye was of the same size as that of the left, and responded normally to light.

The left eye was normal in every respect, and the vision was 5/5.

Treatment.—Dr. Dennett had prescribed strychnia, gr. 1/60, three times a day. I advised the substitution of moderate doses of potassium iodid.

Result.—I did not see the patient again until June 21, 1905, when, in consultation with Dr. H. C. Buswell, I examined him again. At this time the optic disc had entirely cleared up and the color was apparently normal, possibly a trifle more pale than the left optic disc. The vision was 5/6. The visual field had not materially changed since the last visit. The left eye continued normal both in structure and vision.

Remarks.—Dr. Buswell, Dr. Mesmer and I were unable to find a sufficient cause for the uniocular optic neuritis in this case. Dr. Dennett believed the cause to be arteriosclerosis, but Dr. Buswell decided that there was no arteriosclerosis, and in this he says he was supported by Drs. Edward Janeway and Herman Knapp of New York, after a thorough examination.

Case 4.—Retro-ocular optic neuritis in left eye, very severe, blindness for nine days, duration six months; recovery, disc pale, color sense impaired, light sense diminished, vision 5/7.

The following case has been reported[21] under the title of "Hysterical or Functional Blindness." I am convinced, however, that it belongs to the class of uniocular retrobulbar optic neuritis described by Nettleship and referred to above. I, therefore, take the liberty of reproducing it here.

Patient.—Miss J. H., Angelica, N. Y., aged 18, consulted me on March 16, 1897.

History.—She stated that on March 9 she was seized with pain in the left eye, which extended over the left side of the head and into the left ear. This was so severe as to require anodynes for its relief. In three days it had nearly disappeared. Soon after the onset of the pain, the vision became affected and on the next day, March 10, it was very "foggy." On awakening on the morning of the third day, March 11, she found that the vision of this eye was lost, she not being able to distinguish even light with certainty. An ophthalmologist in a neighboring town was consulted and after examining her gave a diagnosis of "retinal thrombosis." He prescribed treatment which was followed for a few days without improvement. Her father, who was a physician, became anxious, and desiring further advice, brought her to me.

Examination.—External examination of the eyes showed them to be alike in appearance, and their movements were normal. The pupils were normal and equal in size, but the reaction to light was a little slower and less complete in the left eye than in the right, there being a slight dilatation when exposed alone. There was manifest hypermetropia of 0.5 D. sph. in the right eye, with vision 5/4. The vision of the left eye seemed entirely lost. Careful ophthalmoscopic examination of the left fundus (the pupil being dilated with homatropin solution) showed no pathologic change whatever. There were no obstruction in the retinal circulation or change in the vessels, no edema, discoloration or hemorrhage of the retina, and no changes of the optic disc. Tension was normal. The patient complained of some headache, a "weakness" of the eye, and general weakness. I ventured the opinion that the case was one of so-called functional blindness, but suggested that another opinion be obtained; accordingly, on the next day, March 17, my friend, the late Dr. F. W. Abbott, examined the patient most carefully with the same result that

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[21] Trans. Amer. Ophth. Soc., 1897.

I had found, except that he thought there was a slight engorgement of the retinal veins.

Treatment.—Dr. Abbott suggested that a leech be applied to the left temple, and that the patient be kept quiet in a darkened room for a few days. This was done, and five grains of potassium iodid were given three times a day. Later strychnin, 1/60 gr., was given three times a day.

Course of Disease.—March 19. There was a distinct perception of light, and she could see the movements of my hand.

March 20. She counted fingers held in the peripheral part of the visual field with difficulty.

March 28. She read 1/60 eccentrically.

April 3. Vision equaled 5/60, eccentrically. Ophthalmoscopic examination showed fundus normal as before. Patient returned home with directions to continue essentially the same treatment as before.

April 15. Examination showed that the vision had increased to 5/9, and Jaeger No. 6 slowly at 10 inches.

Her vision gradually improved and in June she was able to read No. 1 Jaeger with some difficulty. The optic disc was abnormally pale, the color sense was somewhat impaired, and light sense was diminished.

In February, 1906, I again saw this patient and found the vision of her left eye to be 5/7. The disc appeared a trifle pale, and the color sense and light sense were still somewhat impaired.

About two years previous to this attack she had had malarial fever, but fully recovered from it and has since enjoyed good health. She had no uterine disorders or trouble of any kind.

UNIOCULAR NEURORETINITIS.

CASE 5.—Neuroretinitis in left eye, severe, duration over a year, loss of vision, neuroretinal atrophy. General health fair, evidence of general arteriosclerosis.

Patient.—Mrs. E. E., a farmer's wife, aged 61, presented herself to me through the advice of the late Dr. H. D. Ingraham, on October 13, 1892.

History.—The sight of the left eye had been failing for about a year. There had been no pain in the eye or head, but in addition to the failing vision, there had been a great deal of photopsia in this eye—"flashes of light and shooting stars." Centrally the vision was destroyed, but beyond about 10 degrees, throughout the visual field, she could count fingers.

Examination.—Examination with the ophthalmoscope showed swelling of the optic disc, with indistinctness of outlines, diffused haziness of the retina, engorged retinal veins, and tortuosity of both the retinal veins and arteries, and numerous retinal hemorrhages near the optic disc, and several smaller ones farther away. At the macula lutea, and also inside and below the optic disc, there were several whitish spots of considerable size.

The vision of the right eye was not as acute as formerly, and equaled 5/18. There was no inflammatory process in the fundus of this eye. The vessels, however, were diminished in size.

Treatment.—This woman's health was not good and there was some evidence of arteriosclerosis. The kidney secretion was normal, and there was no albumin in the urine. She was put on moderate doses of potassium iodid.

Course of the Disease.—On November 12 the optic nerve and retina of left eye were still much inflamed. There was no fundus inflammation of right eye. The same treatment was continued.

March 17, 1893. The left optic disc and retina were still much inflamed and there were whitish spots below and to the inside of the optic disc.

Aug. 9, 1902. The retinal hemorrhages and exudates had disappeared, and the optic disc had become atrophic. The vitreous humor was somewhat hazy. Vision was a little more than perception of light. The vision of the right eye was still poor, but there were no fundus lesions to be seen.

CASE 6.—Neuroretinitis in left eye, considerably severe, duration six months, restoration of vision, no visible lesions remaining, segmental scotoma. Purulent inflammation of right kidney, with some albumin, followed by recovery.

Patient.—R. W., Friendship, N. Y., aged 24, a patient of Dr. H. C. Buswell, applied to me for advice on Dec. 7, 1897, regarding impairment of vision in his left eye, which he had noticed for about three weeks.

History.—I had examined his eyes two or three times before for hypermetropia, and aside from this error they had been normal, vision being 5/5 in each eye, both without glasses, and with +1.75 D. sph.

The patient was somewhat debilitated from a purulent inflammation of his right kidney from calculi, with occasional discharge of small quantities of pus and blood with the urine, in which there was some albumin and casts. There was an entire absence of symptoms of brain or spinal cord disease. He had occasional headaches, as he had done all of his life, and lately there had been some pain in the left eye.

Examination.—At this visit the vision of the right eye was 5/5, with +1.75 D. sph., that of the left was 5/24, also with +1.75 D. sph. Ophthalmoscopic examination showed quite severe neuroretinitis in the left eye. The right fundus was normal.

Treatment.—The patient was put on potassium iodid in moderate doses, and the intraocular inflammation steadily improved until, on March 29, 1898, when the record states that the whitish inflammatory exudates had entirely disappeared, and the vision was 5/5. There was a faint scotoma in the outer part of the visual field. The right eye had remained healthy.

Course of Disease.—Feb. 20, 1905. He has had no further eye trouble. The vision of each eye is 5/5, with a slight scotoma in the outer part, near the center of the visual field of the left eye. No fundus lesions could be seen with the ophthalmoscope in either eye, and the left optic disc is of normal color.

The patient's kidney affection has apparently been cured, and his general health is good.

CASE 7.—Neuroretinitis in right eye, very severe, duration eight months, loss of vision, except at periphery of visual field, neuroretinal atrophy.

Patient.—Mrs. S. D. Buffalo, N. Y., consulted me on Dec. 18, 1903, complaining that she had not been seeing as well "lately" with her right eye as with her left.

Examination.—She is a strong, healthy, hard-working woman, and is the mother of several healthy children, still living. With the right eye she could count fingers at two or three feet, no better with glasses. Vision of the left eye with +2.25 D. sph. was 5/5. The ophthalmoscope showed the right optic disc obscured. The retinal vessels were very tortuous and much engorged, and scattered throughout the retina were many large and small hemorrhages. The fundus of the left eye was entirely normal, and there was no evidence of retinal arteriosclerosis.

The patient had, apparently, a normal heart. The arteries did not seem to be atheromatous.

Course of Disease.—The retinal hemorrhages were gradually absorbed in the course of six or eight months, and pronounced optic-nerve and retinal atrophy supervened, leaving a large dense scotoma in the central and inner part of the field of vision, while at its periphery the patient could count fingers, better at the upper and outer parts.

The left eye remains normal, with supernormal vision.

CASE 8.—Neuroretinitis in right eye, severe, duration eight months, resulting in loss of vision centrally, but not entirely peripherally; neuroretinal atrophy. Chronic albuminuria, arteriosclerosis.

Patient.—W. H., Buffalo, N. Y., aged 65, merchant, had been a patient of mine since March 6, 1899, when he consulted me for change of glasses for presbyopia. He had worn glasses for near work, but thought he needed stronger ones. He had occasional headaches.

Examination at this time showed the vision of each eye to be 5/4, also with +0.25 D. sph. The muscle test with a Maddox rod gave orthophoria. I ordered glasses for near work, R. and L. each, +2.75 D. sph. The ophthalmoscope showed both fundi normal.

Later Condition.—Sept. 17, 1901. He continues to have headaches, though he has the general appearance of being in good health. He works hard in his business, mostly at the desk. He denies having any illness, although his professional friends tell me he has Bright's disease. I found the vision and the fundi of his eyes as before—normal. Changed glasses for near work to R. and L. +2.25 D. sph.

Course of Disease.—April 16, 1904. He complained that the vision of the right eye had been failing for about two weeks. He had not been well for a long time, and was being treated for "kidney trouble" by Dr. Woehnert of Buffalo. He had had a great deal of headache, sometimes very severe, and there were some albumin and casts in the urine. At this visit the vision of the right eye was 5/60—a little better eccentrically, while that of the left eye was 5/4, nearly all the letters. The ophthalmoscopic examination showed pronounced neuroretinitis in the right eye, the optic disc being abnormally reddened and somewhat obscured, the retina hazy, the retinal vessels tortuous, and to the temporal side and above the optic disc there was a small flame-like retinal hemorrhage; near the macula lutea there were two or three small, whitish exudates. The visual field was concentrically contracted, and there was also a central scotoma.

The fundus of the left eye was perfectly normal in every respect.

Consultation.—The patient consulted Dr. William Osler of Baltimore and Drs. Edward Janeway and Herman Knapp of New York, who agreed with Dr. Woehnert as to the diagnosis of albuminuria with general arteriosclerosis.

The neuroretinal inflammation gradually subsided in the course of three or four months and atrophy followed. The vision never improved, but with the atrophy of the optic nerve, became reduced to the counting of fingers at two or three feet, eccentrically. With the subsidence of the inflammation also, all traces of retinal hemorrhages and exudates disappeared. There was not the appearance of albuminuric retinitis at any stage of the neuroretinal disease; neither did the retinal vessels show ophthalmoscopic evidences of arteriosclerosis.

The left eye remained normal, both in vision and in structure, till May 20, 1905. At this time the patient was attacked by an excruciating headache, which lasted three or four days. During this time there was much congestion of the ocular circulation, involving both the choroidal and retinal vessels of the left eye. A small hemorrhage in the left vitreous humor took place, and the left optic disc became reddened and hazy. No other fundus changes could be detected. Vision was reduced to 5/9 on May 27. Under general treatment and rest in a darkened room the fundus cleared up in the course of from three to four weeks, vision was restored to 5/6, and the optic disc and retina regained their normal appearance.

Termination of Case.—The patient died on Dec. 8, 1905, from uremia. Immediately before death the right eye was nearly blind from atrophy of the optic nerve, following the neuroretinitis, and the left eye was normal.

Remarks.—While the left eye was temporarily involved in an exaggerated hyperemia at one time, I believe the case should be regarded as one of uniocular neuroretinitis, following the typical course and stages of inflammation, with swelling, edema, hemorrhages, exudates and subsequent atrophy.

UNIOCULAR RETINITIS.

Case 9.—Retinitis, right eye, severe, duration and result unknown. Evidences of arteriosclerosis.

Patient.—Mrs. M. M., Wright's Corners, N. Y., aged 65, consulted me on March 19, 1891.

History.—She had been under the treatment of Dr. Kittenger of Lockport, N. Y., for trouble with her eyes. The vision of the right eye had been getting dim for two months and was growing worse. Her health was good and there was no urinary or brain disease. There was, however, evident arteriosclerosis.

Examination.—Vision of the right eye was 5/60, and with +1 D. sph. it was 5/36. The ophthalmoscope showed numerous retinal hemorrhages above and to the outside of the macula lutea. The retinal vessels were also congested and abnormally tortuous, and the retina was edematous. No exudates were seen, and the optic disc was normal.

The vision of the left eye was 5/9, and with +1 D. sph. it was 5/5. The fundus of this eye was normal.

Remarks.—This woman was referred back to Dr. Kittenger for treatment, and I have not seen her since.

Case 10.—Retinitis in left eye, mild, duration a year and a half; recovery with scotoma upward and inward, vision 5/6. No kidney or other disease, except "very nervous."

Patient.—Mrs. B. Van T., Union, N. Y., aged 49, has been "very nervous and poorly" for a long time.

History.—She has been an eye patient of Dr. Michael of Binghamton, N. Y., and was referred to me by Dr. Simmons of Susquehanna, Pa.

Her first visit to me was on Sept. 15, 1897. Her eyes had been "weak" for a long time, but on July 7, 1897, she found that the vision of the left eye had become much worse, being most dimmed upward and inward in the visual field. She consulted Dr. Michael, who told her that there were hemorrhages and other changes in the retina of that eye, and asked her to have her family physician, Dr. Simmons, examine her urine. This was done without finding anything abnormal.

Examination.—On her first visit to me she said that there had been pain over the left eye, and that she was "weak and nervous." The vision of the right eye was 5/5, also with +0.25 D. sph. That of the left was 5/60, better eccentrically, by turning the eye upward and inward; not improved by glasses.

Under homatropin, vision was the same as above in each eye, and the right fundus was normal. The left optic disc was quite normal in appearance, but the retina was a little edematous, with several whitish exudates below the macula, and a little toward the nasal side, and still farther downward there was quite a large retinal hemorrhage, which seemed to be fading.

Treatment.—I referred her to her family physician for treatment, with the suggestion that she be given potassium iodid.

Course of Disease.—Oct. 10, 1898. The retinal lesions were less pronounced, and the vision was improved.

May 16, 1899. All exudates and hemorrhages have disappeared in the left eye, and vision eccentrically was 5/6. Right vision and fundus were normal.

March 5, 1906. There had been no recurrence of the retinal disease of the left eye, and both fundi appeared normal. There was no paleness of the left optic disc. Vision in the left eye continued to be 5/6. The scotoma in the left visual field upward and inward remained, although less pronounced.

Her general health was somewhat improved, but she still "had no endurance and tired easily." There was no heart disease, nor was there apparent arteriosclerosis. Urine was normal.

Case 11.—Retinitis in right eye, mild, duration over one year; recovery, vision 5/7, with small scotoma above, but near the center of the visual field.

Patient.—H. B. S., Buffalo, N. Y., aged 26, unmarried, is doing clerical work and examining records in the county clerk's office. He is a young man of good health and habits, and has no evidence of urinary or heart disease.

Examination.—He consulted me on Jan. 21, 1899, stating that he had not been seeing as well as usual for the past two or three weeks with his right eye. Vision of this eye was 5/60, not improved by spherical or cylindrical lenses, and objects seemed distorted. The visual field was blurred near the center. Vision of the left eye was 5/6. After dilating the pupils with homatropin the opthalmoscope showed the retina of the right eye edematous, with a whitish exudate of considerable size at the macular region, and very small ones lower down. The optic disc was clear, but considerably reddened. The fundus of the left eye was normal.

Treatment.—The patient was given moderate doses of potassium iodid.

Course of Disease.—On January 23, vision of right eye was 5/24; on February 11, it was 5/15; on March 27, it was 5/12. On the latter date an ophthalmoscopic examination of this eye was again made under the influence of a mydriatic, when it was found that the exudate at the macula was smaller and had become somewhat pigmented. There were also a few small pigmented dots around it. No faded choroidal areas.

Aug. 2, 1900: Vision of right eye was 5/9, and the retinal exudates were scarcely observable. Objects still appeared more or less distorted. The left eye continued normal.

On March 20, 1903, vision of right eye was worse—5/15;

left was 5/5 +. The right eye under mydriatic showed the lesion around the macula to be diminished, but there was another whitish exudate of smaller size below and to the nasal side of the macula. The patient was again ordered to take five-grain doses of potassium iodid three times a day.

April 24, 1903: The eye was better. From this time the vision of this eye continued to be about 5/12, but the retinal exudates were gradually dispersed till on March 2, 1906, none could be found. On the latter date the patient was re-examined under homatropin for glasses, when the right eye took — 0.50 D. sph. ⌣ + 1.75 D. cyl. ax. 90, giving vision 5/7; left eye — 0.25 D. sph. ⌣ + 1.50 D. cyl. ax. 90, vision 5/5 +. There was still slight distortion of objects as seen with the right eye, and small scotomata above, but near the center of the field of vision.

CASE 12.—Retinitis in right eye, pronounced, duration over six months; result unknown.

Patient.—F. R. P., aged 53, attorney, married, came to me on April 8, 1904, complaining that the vision of his right eye had been more or less impaired for two years.

Examination.—At this time vision was 5/15, not improved by glasses, and objects looked distorted. The vision of the left eye after correcting refractive error with — 0.75 D. cyl. ax. 165, was 5/4. After dilating the pupils the ophthalmoscopic examination showed, in the right eye, several yellowish-white exudates around the macula, and a fading retinal hemorrhage above it and inward. The retinal veins above the macular region were unusually tortuous. The optic disc was normal. The record notes say: "The whole appearance is suggestive of albuminuric retinitis." The fundus of the left eye was perfectly normal. The urine was afterward examined several times by an expert, and never showed any evidence of kidney disease. The patient had no arteriosclerosis, and seemed in good health every way. He was ordered to take potassium iodid.

Course of Disease.—The patient was seen again on Nov. 23, 1904, but his eye was no better. Vision was 5/30. I have not seen him since.

CASE 13.—Retinitis in right eye, mild, duration six months or more; recovery, vision 5/7, slowly. Occasional albuminuria, but chronic nephritis not conclusive.

Patient.—H. A. W., Buffalo, N. Y., a patient of Dr. Earl P. Lothrop, consulted me on Sept. 28, 1904, for a dimness of vision of his right eye, which had been troubling him for several days. He was a man 56 years old, tall and stout and had been "poorly" for several months. He said that he had had "kidney trouble" for a long time, and that at times there had been a little albumin in his urine.

Examination.—He was wearing glasses, — R. + 1.25 D. sph. and L. + 0.75 D. sph., with + 2.50 D. sph. added in bifocals. With these distance glasses, vision was R. 5/30, L. 5/6. Right vision was not improved by other lenses, but the left with + 0.50 D. sph. ⌣ + 0.75 D. cyl. ax. 150, vision = 5/5. Both pupils were of the same size, and responded equally to light. There was a marked central scotomata in the visual field of the right eye. Ophthalmoscopically, the right optic disc was slightly hazy, and there were several retinal hemorrhages and three yellowish-white exudates discernible at the macular region.

The fundus of the left eye was normal in every respect. I may add here that both eyes were under the influence of a mydriatic (homatropin) while making the ophthalmoscopic examination.

Course of Disease.—Oct. 1, 1904. Vision of right eye was 5/9, with + 1.25 D. sph. lens.

Jan. 16, 1905: Vision of the right eye was 5/7, with + 1.50 D. sph. The retinal hemorrhages had disappeared, but there remained a single, small whitish exudate near the macula lutea. The left eye continued normal.

The patient was last seen on Dec. 20, 1905, when the vision was found to be 5/7, with + 1.50 D. sph., right eye, and 5/5 (half), with + 0.50 D. sph. ⌣ + 1.50 D. cyl. ax. 160, left eye. The pupils being dilated with homatropin, the right eye, as well as the left, showed no retinal or optic nerve abnormalities.

CASE 14.—Retinitis in right eye, severe. Seen but once.

Remarks.—This case is one that I take the liberty of recording, although my information in regard to it is quite scant. It was that of a man about 50 years of age, who was presented, in 1904, to the Buffalo Ophthalmological Club by one of its members. The patient had been losing sight of his right eye for several weeks without pain. The vision of the left eye, he said, was good. The ophthalmoscope showed a typical retinitis with numerous hemorrhages scattered throughout the retina and tortuous vessels in the right eye. The fundus of the left eye was normal.

Patient.—The patient was a laborer and was a strong, healthy-looking man. He had no organic disease of the heart or any apparent symptoms of arteriosclerosis or of brain or spinal cord disease.

CASE 15.—Retinitis in left eye, severe, duration over six months, passing into atrophy; vision perception of light. Poor health, mostly "digestive troubles," arteriosclerosis.

Patient.—Mrs. J. M., Orchard Park, N. Y., aged 63, was referred to me by Dr. Hunt on Sept. 30, 1905.

History.—She had been in poor health for the past two or three years, mostly with "digestive troubles" and general weakness. She had no organic disease of the heart, but radial arteries were "hard."

Examination.—The vision of the left eye had been failing for the past two or three months, and was now a little more than perception of light. The right eye had vision of 5/6, with — 1 D. sph. ⌣ + 1.75 D. cyl. ax. 90. The ophthalmoscope showed severe inflammation of the retina of the left eye, with distended, tortuous retinal vessels, and many "flame-like" hemorrhages of various sizes scattered throughout the retina. The fundus of the right eye was normal. Atrophy of the optic nerve was taking place later.

CASE 16.—Retinitis in left eye, mild; still in progress, and under observation.

Patient.—G. P., Buffalo, N. Y., photographer, aged 68.

History.—He has been in fairly good health for years. He has no organic disease of the heart, kidneys or brain. There was some arteriosclerosis. He has never had syphilis.

Examination.—Feb. 10, 1906. Glasses for near work do not seem comfortable. Examination with the ophthalmoscope showed both fundi normal. V. R. 5/6, and with — 0.37 D. cyl. ax. 100, it was 5/5. V. L. 5/9, and with — 0.50 D. sph. ⌣ + 0.75 D. cyl. ax. 15, it was 5/5, half. Adding + 2.75 D. sph. to these gave distinct vision in each eye for Jaeger 1 at 13 inches. These I ordered for near work.

Course of Disease.—On February 20 he returned to me, saying that for the past three days the vision of the left eye had been quite dim, and horizontal lines seemed to be "broken and tipped down to the right." He had no trouble with the right eye. On examination the vision of the left eye was reduced to 5/30, and the ophthalmoscope showed several minute retinal hemorrhages at the macula, and slight retinal edema. The optic disc was normal. The right fundus was normal.

Treatment.—Potassium iodid was prescribed in moderate doses, to be taken three times a day.

Course of Disease.—March 6: Vision of the left eye was better, and there was less distortion of lines and letters.

April 4: Vision of left eye was worse, being less than 5/60. Objects seemed more distorted, and there was a central scotoma of considerable size. The ophthalmoscope showed an enlarged retinal hemorrhage at the macular region. He had an idiosyncrasy against potassium iodid, but I urged him to take all he could.

Patient is still under treatment.

CASE 17.—Retinitis in right eye, quite severe; still under observation; valvular disease of heart, has had symptoms of cerebral hemorrhage, no kidney disease.

Patient.—V. M. H., Buffalo, N. Y., salesman, aged 58, married; on the advice of Dr. DeWitt C. Green, consulted me on March 20, 1906.

History.—He complained that for the past few days he had not been seeing well with his right eye, which had always been his "good eye," the other having had poor vision from childhood, being astigmatic in considerable degree. The patient had not been in best of health, and since the spring of 1904, when he seemed to lose control of the muscles of his lower extremities. On Sept. 20, 1904, he was accidentally tripped by a dog and fell to the ground, striking on his right elbow, but not on his head. The fall, however, caused much muscular incoordination and "confusion of mind," which lasted for several months. After this fall he was also troubled for four months with "half vision," but he does not remember on which side. There has been some valvular disease of the heart for at least two years, but no kidney disease. At present the patient has occasional dizzy spells and pain in his head, not definitely located.

Examination.—He is now wearing glasses which seem to correct his refractive error properly, R. + 1.25 D. sph. and L. + 2.75 D. cyl. ax. 125 for distance, with + 2.25 D. sph. added for near. With these the distance vision of the right eye, which had heretofore been 5/5, was 5/15; that of the left eye 5/20, which was as good as it has ever been. On dilating the pupils the ophthalmoscope showed a pronounced retinitis of the right eye, localized above and to the temporal side of the optic disc. There were four or five retinal exudates of considerable size near each other, and a few smaller ones adjoining. There was one large retinal hemorrhage between the exudates and the optic disc, and numerous smaller ones surrounding the exudates. The optic disc appeared perfectly normal. The visual field was not contracted, but there was a scotoma near the center of the field, downward and outward, and objects looked distorted. The fundus of the left eye was perfectly normal. The vision of this eye was congenitally amblyopic.

The patient is still under treatment with potassium iodid.

Case 18.—Retinitis (macular) in right eye, single exudate at macula, duration three months to date, central scotoma, vision 5/60; still under treatment.

History.—On April 7, 1906 (just as I am concluding this paper), Mrs. M. A. S., aged 60, consulted me for impairment of vision of right eye, which had troubled her for the past three months, but which for the past two weeks had been worse. She was wearing glasses, R. and L. + 1 D. sph., with which she says her vision had been perfect in each eye. With the right eye she had, during the period named, seen a "black spot" in the central part of the visual field, round in shape, and at fifteen feet about "eighteen inches in diameter." The patient's general health was good in every respect, and there has been no history of albuminuria.

Examination.—Vision was 5/60, a little better eccentrically in any direction. Vision of the left eye was "clear" and with + 1 D. sph. was 5/6, but with + 1.50 D. sph. it was 5/5. There was no pupillary disturbance in either eye, and in both eyes tension and all external appearances were normal. After dilating the pupil there was seen with the ophthalmoscope a small, whitish, retinal exudate at the macula lutea of the right eye, but in every other respect this fundus was entirely normal. There was no pigmentary change, no retinal hemorrhage, and the retinal vesels and optic disc appeared normal. Nothing abnormal could be found in the left eye.

Remarks.—I am disposed to regard this case as one of "macular" retinitis, if I may be allowed to use the term, the minute exudate being the result of an inflammatory process as real as though it were more extended and attended by hemorrhages, other exudates and vascular changes. These changes may take place later in the progress of the case, which I shall watch with interest.

At present the condition is uniocular, and I assume it will remain so after the three months which have now elapsed.

These observations, although purely clinical, and also more or less imperfect, serve my purpose of showing that, at least so far as my own experience goes, uniocular retinal and optic-nerve inflammations are not as rare as ophthalmologic literature would lead us to believe. If my case-records were minutely searched I am sure that several other cases would be found. If I were to suggest the number of these cases proportionate to the number of eye patients of all kinds seen it would be about 1 to 1.000.

A summary of these cases shows that the optic nerve was inflamed in four of them, in three of which it was intraocular, and in one retroocular. Of the four cases three were females and one male, with ages varying from sixteen to forty-three years, and all were apparently in good health. The right optic nerve was affected in two cases and the left in two. Recovery followed in each, with normal, or nearly normal, optic disc, and normal, or nearly normal, vision.

In four cases the inflammation involved both the optic nerve and retina, two being females and two males, of ages varying from twenty-four to sixty-seven years, only one being under sixty-one. In two the inflammation was in the right eye and in two in the left. One patient's general health was good, one had calculi and inflammation of the right kidney, one had questionable general arteriosclerosis together with chronic albuminuria. The vision of the affected eye was practically lost by atrophy in three cases. It was regained and became nearly normal in one.

In ten cases the inflammation was apparently limited to the retina. It varied greatly in intensity. Four of these patients were males and six were females. The right eye was affected in seven, the left eye in three. Three cases, which were mild, terminated in recovery without leaving perceptible lesions and with vision nearly normal. In one the vision of the affected eye was lost, while in the other six the result is either unknown or the disease is still in progress. As regards the general condition, it was noted to be healthy in six. In three there was some arteriosclerosis, one of these patients having also occasional albuminuria. In one case there had been symptoms of slight cerebral hemorrhage together with valvular heart disease.

Thus, it will be seen that it is difficult to place any etiologic relation between these inflammations and any other specific disease. One-sided nephritis was present in one case; more or less arteriosclerosis existed in five patients, two of whom also had albuminuria; in one of these it was occasional and in one chronic; valvular disease of the heart together with a previous cerebral hemorrhage was found in one, while the rest of the eighteen were classed as healthy and without cerebral, vascular or kidney disease.

I desire to add in conclusion that in quite a large experience of a quarter of a century in ophthalmology I have never seen a case of optic neuritis that was not uniocular, except when there was syphilis or brain tumor. I have never seen a case of neuroretinitis or of retinitis that was not uniocular, except when there was double orbital cellulitis, Bright's disease, diabetes mellitus or syphilis, and then it was typical of these diseases, and even in two albuminuric cases and one of nephritic inflammation, the inflammation was uniocular. I do not insist that this must have been the experience of others.

My treatment has almost invariably been the administration of potassium iodid. I believe that it has proved beneficial in some of the cases. In others it seemed to be of no benefit.

212 Franklin Street.

DISCUSSION.

Dr. Eugene Smith, Detroit, remarked that he long since became convinced that the apparent silence on the part of text-books and journals concerning the matter was only relative. He fully agreed with Dr. Hubbell that these cases are decidedly more common than we have been led to suppose, judging from our books, although the books of many years ago spoke of the condition. Last week he had four cases under observation of uniocular neuroretinitis. One, a man of 32 years, with rheumatism. There was choked disc, central scotoma and inflammation of the retina. Another case was specific in character. Another was a woman with a two months' old baby. He had seen the same condition from brain tumor and from Bright's disease. He thought the silence on the part of the journals and text-books with regard to the condition was relative. Experience has thoroughly demonstrated that causes which produce the binocular will also produce the uniocular inflammations.

Dr. J. T. Herron, Jackson, Tenn., stated that he found on his records four cases which have been under his observation since March 1. He had been inclined to attribute the frequency of these cases to malarial toxemia which has prevailed in his section the past year, the winter being too mild to kill the malarial parasite. Case 1, optic neuritis in right eye of four months' duration. J. F. P., young man aged 20, consulted me March 1, complaining of dimness of vision in right eye, which had existed for two months. He had a rather sallow complexion, tongue coated, and bowels constipated. Urine normal. Previous history good. Vision O. D. 20/40, O. S. 20/20. Ophthalmoscope revealed optic neuritis. The treatment consisted of an active cathartic, followed by saline, fluid extract jaborandi 15 drops three times a day, Henry's three chlorids 2 drams, with potassium iodid 15 drops, after meals. By March 31 patient's vision had improved to 20/30. Is still under treatment. Case 2, Mrs. O. H. P., aged 28, married, two children, consulted him March 28. Always been healthy until recently. Complained of haziness and dimness of vision in right eye. Lives in malarial section; has bilious attacks, complexion bad, tongue coated and bowels constipated; urine normal. O. D. 20/40, O. S. 20/20. Ophthalmoscope showed hemorrhage above disc and exudation extending from disc some distance above. Treatment was same as in Case 1, except that he had her take a pill three times daily consisting of calomel and podophyllum, with rhubarb and bicarbonate of sodium, to thoroughly arouse the secretions. The patient improved by April 6, when vision was 20/30, and by May 22 she was much better and vision was nearly 20/20. Case 3, Mrs. S. B. J., aged 23, married two years, previous health good, bilious temperament, consulted him March 6, stating that she had noticed about six weeks before dimness of vision in right eye, which was just before her baby was born. Had never before had any trouble with the eyes. The attack came on suddenly. O. D. sees card of letters on contact. Found large retinal hemorrhage covering almost the entire temporal field. There was no disease of the kidneys or any organic lesion whatever. The secretions were not active and the treatment was the same as in Case 1, with the addition of sodium phosphate, one or two drams, in a glass of hot water before breakfast. May 27, vision equaled 20/200.

Dr. J. A. Patterson, Colorado Springs, remarked that we must not forget the possibility of intranasal complications as a cause of these conditions, and we must bear in mind that just an ordinary glance at the nose is not sufficient to exclude trouble there as a causative factor. It takes time, patience and skill in that line of work before this possibility may be excluded.

Dr. Wendell Reber, Philadelphia, said that when he read Dr. Hubbell's paper he ran over his records and found in the last year three cases of undoubted uniocular optic neuritis. He did not think it a very rare phenomenon. He thought it more often a focal disease than a manifestation of general dyscrasia, and oftener a symptom of latent sinus disease than we have been led to believe, although latent sinus disease could not be found in any one of the three cases he had. It is true, too, that often the so-called sound nerve is not really a sound nerve. It is difficult to get opthalmologists to agree as to when there is a low grade inflammation of the optic nerve. Of the three cases referred to one was in a boy; the inflammation uniocular. The nasal passages were examined very thoroughly without any discovery. The patient recovered under mercurial treatment. The second was a dentist, 23 years of age, who had previously had a badly infected ulcer of the cornea. He presented an unmistakable picture of neuritis with small hemorrhages. The patient was seen in consultation with Dr. Sweet. Several urinalyses were made with negative results. The third was a young woman; there were no nasal complications; no rheumatic taint; no kidney trouble. He called attion to the valuable action of chloral in producing cerebral

Dr. A. R. Baker, Cleveland, said that he had read the report of Dr. Hubbell's cases with a great deal of interest. He thought that many of these cases were unilateral. Some years ago he reported to the society a case of retinitis circinata in one eye, with the other eye perfectly clear. One lesson that we should learn is to examine both eyes carefully. He recalled a case not so long ago where he examined the right eye and found it normal, and for some reason or other did not examine the left. He called in a neurologist on the case and the first thing he did was to call attention to a typical optic neuritis in the other eye that he had overlooked. The attention that has been called to the fact that these cases may be unilateral should be a lesson in this respect.

Dr. C. J. Kipp, Newark, N. J., called attention to a class of cases which seem to be primary optic neuritis and which are not. There is a circumscribed retinitis so close to the disc that you cannot separate it. There is an appearance of choked disc, sometimes swollen 3 diopters and more, and you can not distinguish it from primary optic neuritis until the disease has run its course. Then you find at one side an atrophic patch fringed with pigment. The only way to distinguish this condition is to look for deposits on Descemet's membrane. There is almost always a fine deposit in the first stage. He had recently had such a case occurring in a physician of 40 years who came in with apparent choked disc. He thought he might have some brain trouble and his mind was not easy until the disease ran its course and he discovered the patch adjoining the disc. Of course, he did not mean to infer that these cases of Dr. Hubbell's were of that kind at all.

Dr. E. E. Holt, Portland, Me., said he remembered in a discussion of this subject at the seventh international congress it was brought out that neurologists often discover neuritis of one or both eyes without any reference being made to loss of sight. He had in a number of instances since 1881 seen quite marked optic neuritis in one eye without any appreciable diminution in vision. He thought the condition common.

Dr. S. D. Risley, Philadelphia, said he was glad to hear Dr. Kipp call attention to the danger of mistaking cases of retino choroiditis for optic neuritis; we may sometimes make this mistake. It is to his mind very important from the standpoint of prognosis with reference to optic neuritis. He is inclined to believe that uniocular neuritis is of much less grave import than binocular; it is certainly so in his experience, and, for the reason that they are often due to what may be called a local origin, and not to intracranial disease or disease of the general nervous system. For instance in two of the cases he had seen they were associated with disease of the contiguous sinuses. There was contracted field associated with considerable congestion and inflammation of the choroid, as nearly all these sinus cases in his experience had been. He regretted that in the report of these cases there had not been some attention paid to acuity of vision, as the presence or absence of central blind spots and the field of vision for form and color. One of the early cases he saw was unqestionably due to malarial infection, as blood examination proved. It resulted in partial optic nerve atrophy and distinct cutting out of one quadrant of the field of vision. It seemed to him that in these cases of uniocular neuritis we should expect to find as a final outcome an impairment of the field of vision. One curious thing about the cases he had seen is that with few exceptions he had been unable to determine any cause for the existing condition of affairs. The first case he remembered was that of a man in whom the disease came on in one side after he had been shoveling snow, and why it involved one eye and not both is incomprehensible. Another case was that of a woman who had a distinct choked disc on one side which came on with sudden impairment of vision while she was ironing. In the absence of some general exposure he had been unable to determine any general etiology for the occurrence of uniocular neuritis. In the binocular form we find some disease of the nervous system, involvement of the kidneys, or intracranial trouble.

Dr. William H. Wilder, Chicago, remarked that there seemed to be a disposition of those taking part in the discussion to regard this condition as a disease entity. Why should we apply to a condition of uniocular retinitis or neuritis any particular attributes that we would not apply to binocular disease of the same kind. In the cases he has seen, he has thought that we had an explanation in the anatomic asymmetry so frequently found in the body. We may have asymmetry of the optic nerve. We do not often have perfect symmetry. All have probably observed that in the vessels of the retina we find a certain condition of thickening of the arterioles of one eye and not a corresponding condition in the other. We know that we may have atheromatous conditions, or arteriosclerosis, affecting some parts of the body and not others. Why should it not be so in the eye? The condition may exist in one radial vessel and not the other. The same explanation may apply in these cases, particularly in some of the cases of uniocular neuro-retinitis. Whether it has any bearing on the ultimate prognosis he did not know.

Dr. George E. de Schweinitz, Philadelphia, referred to unilateral optic neuritis with a swelling of at least two diopters. These cases, which have been referred to so extensively in the literature, are not at all uncommon. They are conveniently classified into four groups: 1. Unilateral optic neuritis due to brain tumor and other intracranial causes. 2. Unilateral optic neuritis, due to certain well-known infections—the so-called unilateral forms of infectious optic neuritis of Uhthoff's classification. 3. Unilateral optic neuritis due to local causes, for example, diseases in the neighborhood of the optic foramen or the contiguous sinuses. 4. Unilateral optic neuritis due to conditions associated with the vascular supply, for example, arteriosclerosis and endophlebitis. There are certain types of unilateral retrobulbar neuritis which may precede or follow facial palsy, and there is a similarity of anatomic surroundings of the optic foramen and the Fallopian canal as referred to in Green's paper on this subject. Dr. de Schweinitz agreed with Dr. Wilder's explanation which determines for anatomic reasons a unilateral instead of a bilateral neuritis and agreed that it is not a disease entity, but a local manifestation.

Dr. Melville Black, Denver, called attention to the value of the estimation of blood pressure in these cases. It has been found that where the tension is high its reduction by proper medication will do much toward bringing about recovery from the condition. It seemed that the universal use of iodid of potassium might have been due largely to its effect on the blood tension.

Dr. A. A. Hubbell, Buffalo, agreed with Dr. Wilder and Dr. de Schweinitz. He thought Dr. Herron had applied cases that are not in this category. He had taken into consideration the diseases of the contiguous sinuses and the results of arteriosclerosis, and thought that arteriosclerosis is perhaps one of the best explanations we have for most of these cases. As to Dr. Kipp's suggestion, it might apply in some cases, but he had not felt that a choroiditis had any relation to this condition.

THE RELATION OF NERVE IMPULSE TO CUTANEOUS INFLAMMATION.*

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Of the many unsolved problems in the pathogenesis of skin diseases there is one which, by reason of the broad applicability of the points involved, is of pre-eminent importance, namely, the relation of the nervous system to cutaneous inflammation. To illustrate the diversity of opinion and general confusion which obtains on this subject a few instances may be cited. There is a condition called by the French *nèvrodermite*; it is regarded by them as a distinct disease entity of nervous origin, but by American dermatologists the pathogenesis given is not accepted and, therefore, the condition is scarcely recognized. The adherents of the Vienna school speak of *neurotische* or *reflectorische Entzündung* or *Dermatitis*, thereby conceding that an inflammatory lesion may have a nervous cause. Turning to authorities in our own language, a striking example of obscurity with respect to nerve relations in pathology is to be found in the text-book of a prominent author.[1] He devotes one short paragraph to the pathology of herpes progenitalis as follows:

"The presumption is in favor of the disease being due to a reflex irritation of the neighboring sympathetic ganglia through irritation of the sensory nerves of the part."

Far from being a clear-cut and complete elucidation of the pathology of the disease in question, this meager statement really throws no light on the subject, and coming, as it does, from an eminent authority its very deficiency in this respect makes it a confession of general lack of understanding of nervous relations in cutaneous inflammations.

These three citations: the *nèvrodermite* of the French, the *reflectorische Dermatitis* of the Vienna school, and the instance of vaguely expressed pathology of herpes, as understood by a great dermatologist, suggest the propriety of an inquiry along certain lines of pathogenesis in which the nervous system is a prominent factor. This inquiry may be introduced with a consideration of the Vienna idea. It is observed that the skin of an individual suffering with an acute localized dermatitis is often subject to a sudden outburst of a similar type elsewhere without an apparent external cause. These secondary appearances are regarded as reflex in origin, the explanation being that, in the absence of other causative factors, the nervous system acts as the effective intermediary agent in the spread of the disease from the primary area.

Analyzing this conception, the use of the term reflex is first to be considered. If its application be in a general sense only, without reference to any pathogenic relationship, its use, however convenient, is not to be commended, since the word reflex has a definite significance in medical parlance; if not used in conformity with this significance, it becomes at once misleading. On the other hand, if the term is intended to express a distinct etiologic fact, to show in a concise word a definite pathogenic relation, then its use postulates a certain proposition, the proof of which may properly be demanded, though perhaps not easily given.

By the expression dermatitis we understand, in a broad sense, an affection of the skin characterized by the clinical manifestations of inflammation. The term reflex as understood in medicine defines a physiologic complex, of which certain nerve structures and nerve impulses constitute the necessary elements. This complex in detail is as follows: An impulse passes along an afferent (sensory) nerve to a center whence it is reflected along an efferent (motor) nerve to a peripheral part, causing eventually some organ to perform its function. In the light of these definitions a reflex dermatitis may be said to be an inflammation of the skin the result of reflex nerve action; or, more strictly, of efferent nerve impulse, since that portion of the reflex act comprising the afferent or sensory impulse ends with the receiving center, and, irrespective of the nature of the stimulus producing it, is incapable of changing the fixed character of the efferent or motor impulse. From these considerations we are able to formulate the broader proposition, namely, that the pathogenic process called inflammation can be initiated through the medium of motor-nerve impulse alone.

This is a postulate which underlies the *nèvrodermite* of Brocq and Jacquet.[2] Its presence may be traced in a very appreciable portion of dermatologic thought today, because it lends itself so readily to the support of an obscure pathogenesis, a fact well illustrated in the quoted paragraph on herpes. It is a postulate which calls for proof. Its use and abuse will not diminish so long as its validity as a premise is accepted. But that validity is not so easily established as casual thought would expect; it is, therefore, in the interest of scientific accuracy in dermatology that the question be made a subject of discussion.

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* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

[1] Crocker: Diseases of the Skin, third edition.

The problem, then, is this: Can the process of inflammation be produced by nerve impulse alone? Has a motor impulse, having its source in the conversion at a receiving center of a sensory impulse from the periphery, the power of creating the inflammation complex? If these questions be answered in the negative, another arises: What additional elements are necessary to bridge the gap between the factor nerve impulse, sensory and motor, and the result inflammation?

Clinically, inflammation is recognized by the so-called classical symptoms—*rubor, calor, tumor* and *dolor*. These constitute the surface manifestations of a complex series of changes taking place within the tissues, in which the blood and its constituents, the blood vessels, and the fixed tissue elements all participate. The various steps in the process, approximately in the order of their development, may be described as follows: There is first a dilatation of the blood vessels; this is succeeded by a slowing of the blood current, with margination of the leucocytes; next occurs a passing outward of the white blood corpuscles and the fluid elements of the blood, with a varying number of erythrocytes, through the vessel walls into the surrounding tissue, thus forming an exudate; lastly, proliferative changes occur in the fixed tissue of the part.

A question here suggests itself: What is the essential element in inflammation? Or expressed in another form: Which one of the steps above enumerated must necessarily be present in order that the condition may be termed correctly inflammation? The answer must take into consideration the purpose of the process. Though regarded as a manifestation of disease, it is in itself unquestionably a conservative measure, having for its purpose, first, the removal from the organism of irritants which threaten the safety of the whole or its component cells, and, second, the repair of any damage that may have resulted. Such removal may necessitate actual destruction of the irritant by phagocytosis, its dilution or neutralization by exudate, or its encapsulation by connective tissue; repair is accomplished by proliferative changes in the tissue which has suffered injury. The process of inflammation fulfills these requirements. The comparative value of the changes may be studied in avascular structures.[3] If the epithelium of the center of the cornea be damaged to a very slight degree, degenerative changes occur in the corneal tissue in the immediate neighborhood, but repair takes place without accumulation of leucocytes. If the injury be greater, repair is preceded by a massing about the lesion of leucocytes drawn, not from the circumcorneal blood vessels, which remain unaffected, but from the free wandering cells of the tissue. If, however, the injury done be severe, the vessels nearest the lesion dilate, diapedesis of leucocytes takes place, and fluid accumulates in the tissue. These findings would seem to indicate that in the work of repair and defense the impulse to proliferation ranks first and the migration of leucocytes second; vascular changes are subservient to the latter. It must be admitted, however, that authorities differ in their conception of inflammation. Metchnikoff[4] holds that it is the response of the organism to external irritation; thus, he would regard the process which followed the first and second instances of corneal injury cited above as true inflammation. Heinz,[5] on the other hand, considers that vascular changes are necessary and would reject these instances as not inflammatory. While Metchnikoff's conception has more in it to commend itself, it is immaterial which of the two is correct, inasmuch as we are concerned with vascular tissues. It is significant that the migration of leucocytes and fixed tissue proliferation are common to both conceptions.

To determine the exact part taken by nervous impulse in inflammation, a further analysis of the stages given must be made.

I. DILATATION OF THE BLOOD VESSELS.

The calibration of those vessels which are supplied with muscular coats is known to be under the control of the vasomotor nerves. These are of two kinds: vasoconstrictors and vasodilator. Stimulation of the former results in vessel constriction; paralysis of the former or stimulation of the latter leads to vessel dilatation. The principal vasomotor center has been located by method of spinal-cord section in the floor of the fourth ventricle; subsidiary centers are present in the cord, in the sympathetic ganglia and on the vessel walls. The constrictor nerves pass through the lateral sympathetic ganglia to their terminations in the vessel walls; the dilators have their relay stations in the great ganglionic plexus of the thoracic, abdominal and pelvic cavities, whence they are distributed to the vessels. The innervation of those blood channels not provided with muscular coats, i. e., the capillaries, is not so clear. It was formerly believed that they were not under nervous control, but more recently it has been demonstrated[6] that contractile cells are present in their walls, and that their lumen can be changed by stimulation applied directly or through the medium of the nerves. We are justified, therefore, in assuming that all vessels are under vasomotor influence. Such being the case, reflex action becomes a very important agent in the production of vessel dilatation in inflammation. Two other factors are to be mentioned as contributing to hyperemia: the loss of vessel tone due to direct paralysis of the muscular elements, and the diminution of extravascular tension before the development of large exudate. Both of these actions result from the local presence of toxins.

II. SLOWING OF THE BLOOD STREAM AND MARGINATION OF THE LEUCOCYTES.

Cohnheim,[7] the discoverer of diapedesis and one of the earliest investigators of the phenomena of inflammation, observed that at first an acceleration of blood flow occurred, followed later by retardation. The arterial pressure and the vascular endothelium remaining unaltered, increase in the cross section of the vessel should result in acceleration of current; this, however, is soon neutralized by the action of other factors. Retardation has been explained in various ways: by increase of fibrin in the blood and by actual deposition of fibrin in the capillaries, by an attraction exercised on the blood by the surrounding tissue, which under the stimulus to hypertrophy requires more nutritive material, and by change in the endothelium of the vessel walls in the direction of greater viscosity. These theories are not easy of demonstration; that some sort of alteration occurs in the endothelium may be inferred from the subsequent act of diapedesis and secretion of fluid (since it is probable that the endothelium possesses a secretory function[8]). A change resulting from local toxic action must also be admitted. It can not be asserted positively that any alteration from these possible causes necessarily increases cell viscosity.

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[2] La Practique Dermatologique,, vol 11.

[3] Adami: Allbutt's System of Medicine, vol. 1.

[4] Metchnikoff: Comparative Pathology of Inflammation.

[5] Heinz: Handb. d. exp. Path. u. Pharm., vol. 1, part 1.

[6] Steinach and Kahn: Arch. f. d. ges. Physiol., Bonn, xcvii, 105-133.

[7] Cohnheim: Vorlesungen über allgemeine Pathologe, 2 Aufl., vol. 1.

The margination of leucocytes is explicable, in part at least, by the law of hydrodynamics that the lighter bodies carried in a current seek the slower portions of the latter. The white corpuscles, of less specific gravity than the red, would drift to the periphery of the blood stream where the greatest retardation would occur. A second factor is to be found in chemotaxis, the physiologic property by virtue of which leucocytes are attracted or repelled by other substances. This action is exerted through the vessel wall and is due to the presence of an extravascular toxic agent. Leucocytic migration is independent of direct nerve influence.

III. DIAPEDESIS.

The leucocytes pass outward through the vessel walls as the result of several factors, the most vital of which are: first, the inherent property of certain white corpuscles of ameboid movements, and, second, the reaction of the leucocytes to the chemotactic influence of an extravascular irritant. To these may be added: the *vis a tergo* of the blood stream and the change in the cells of the vessel walls; both of these factors are necessary for the passing outward of the red corpuscles. The alterations in the vessel tissue comprise a thinning of the intercellular cement substance and a widening of the stomata marking the points of contact of several cells. Through these stomata, serum, leucocytes and red corpuscles may be forced by pressure alone; the attenuation of the intercellular substance and the altered consistency of the endothelium probably facilitate the migratory act of the leucocytes. The fluid portion of the blood reaches the exterior of the vessels through the stomata, as already mentioned, by the physical act of osmosis and probably by secretory action of the endothelium. Local toxic influences may favor osmosis by producing alteration in the cells of the vessel walls and by disturbing the isotonic relation between vessel content and perivascular fluids. Any secretory power possessed by the endothelia must be under direct motor nerve control.

IV. PROLIFERATION OF FIXED TISSUE ELEMENTS.

The replacement of destroyed tissue is accomplished by proliferation of the fixed cells of the part. The stimulus to this activity is to be found in the increased nutrition of the portion involved, and in that innate property of cells which causes them to multiply when there is a demand for cellular increase.

V. SUMMARY OF NERVE INFLUENCES.

In summing up the influence which the nerves are thus shown to have in the evolutionary stages of inflammation it must be borne clearly in mind that we are now concerned with those impulses which occupy the distal portion of the reflex arc only; that is, those which are motor in nature. From what has been said we are warranted in affirming:

1. The dilatation of the blood vessels is very largely the result of direct nerve action.
2. The slowing of the blood stream and margination of the leucocytes is related to direct nerve action only so far as a secretory impulse to the vessel endothelium changes their physical properties; that is, increases their adhesiveness.
3. Diapedesis of leucocytes is in no way dependent on direct nerve action; it is favored by conditions to the development of which nerve action has contributed. The pouring out of fluid from the vessels is probably due, in part at least, to direct nerve action.
4. Proliferation of fixed tissue elements is not the result of direct nerve action.

From this summary we may conclude that motor nerve impulse *per se* does not suffice to produce all the phenomena of inflammation.

VI. INFLUENCE OF SENSORY NERVES.

The question arises: What part in the production of inflammation is contributed by the sensory nerves, the proximal arm of the reflex arc? The function of a sensory nerve in this connection can be nothing other than to transmit to a center an impulse received at its peripheral termination. That impulse can be influenced by the nature of the irritant which produces it only as regards intensity, and it can impart to the motor impulse at the reflex center no other quality than that of intensity. The sensory impulse, therefore, while a necessary part of the reflex arc, influences the process of inflammation only as it prompts a mild or an energetic motor action beyond the receiving center. Combining this conclusion with the one previously made, we have the answer to our first question: The phenomena of inflammation can not be produced by reflex action alone.

VII. FACTOR SUPPLEMENTING NERVE INFLUENCE.

From what has been said it is patent that some factor must operate to supplement nerve influence in the pathogenesis of inflammation. This factor must furnish an effective cause for the development of those steps in the complex which are not the result of combined sensory and motor nerve stimulation. Of these steps the most important is the migration of leucocytes, and, as this migration is dependent on chemotaxis plus the ameboid properties of the cells themselves, the factor necessary must embody the further requirement of chemotaxis; that is, the power of attracting leucocytes. This embodiment is to be found in the presence locally of an irritant.

If we seek to define more specifically the nature of the irritation thus required, we will find that all types may be classified, according to source, under four headings, namely, chemical, mechanical, thermal, and actinic. If now we consider the exact manner in which the various forms of irritation accomplish their work as provocators of inflammation, we must admit that the first, chemical irritation, includes them all. It is a mooted question whether a substance acting in a purely mechanical way induces inflammation because of the difficulty of eliminating a coincident bacterial infection. It must be accepted, however, that the products developed from the degeneration and destruction of protoplasm are capable of acting as chemical irritants, and that in mechanical injury, even of slight degree, by a perfectly sterile agent, these products appear *in situ* with power to incite inflammation. The same statement holds with respect to

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8. Sihler: Jour. Experim. Med., vol. 5, p. 493.

the action of thermal and actinic agencies: the cellular degeneration and destruction which ensue result in the formation locally of substances, derivatives of protoplasm, which are inimical to the welfare of the unaffected tissue; hence inflammation occurs.

Given an area of skin within which a chemical irritant acts and we have all the necessary elements for the development of a dermatitis; there is a stimulation of sensory nerves, reflex response in vessel dilatation and cellular secretion, migration of leucocytes to the site of irritation, development of an exudate, and, lastly, repair of tissue destroyed. We find in chemical irritation, therefore, the answer to the second question: It is the factor needed to induce and to supplement nerve action in the production of inflammation.

With respect to the pathogenesis of the various types of herpetic disease it may be said that the theory of the development of toxins at the site of lesion as the result of cellular disintegration has not been given the attention it merits. Granting that degenerative changes have been found in the spinal ganglia and in nerve trunks at considerable distance from the herpetic eruption: these can not directly produce the latter by conducting, as it were the pathologic condition inflammation from one part of a nerve to its terminations, leaving the intervening section of the nerve trunk intact. The more rational explanation is that these changes in nerve ganglia and trunk modify in some manner the normal trophic impulses, thereby leading to necrotic or necrobiotic alteration in the part innervated where, as suggested by Blaschko,[9] the products of disintegrating protoplasm alone suffice, without the help of secondary infection, to exert a local toxic action and to develop an inflammatory lesion.

SUMMARY.

To recapitulate:

1. The idea that nerve impulse alone can initiate inflammation is widespread in dermatology and forms the basis of the explanation of the pathogenesis in several conditions.

2. Reflex action is the form of nerve influence most frequently set forth as the originator of inflammation.

3. A reflex requires for its production two kinds of nerve fiber, sensory and motor, a receiving center, and a stimulus applied at a sensory termination. The sensory impulse thus created is converted at the center into a motor impulse which, passing to the terminations of the motor fibers, causes the organ innervated to perform its function. Any nerve impulse to be directly effective in producing inflammation through reflex action must be motor in nature.

4. Inflammation is a complex which when complete presents the following stages in its development: Dilatation of the blood vessels, slowing of blood stream and margination of leucocytes, diapedesis of cellular and fluid constituents of the blood with formation of an exudate, and proliferation of fixed tissue elements.

5. Authorities differ in their conception of inflammation. In the broadest view taken, tissue proliferation is always present, migration of leucocytes usually is found, and vascular changes may occur. In the most restricted view, vascular phenomena must be present; in other words, all the stages enumerated must be found. Tissue proliferation and leucocytic migration, therefore, are common to all conceptions of the process.

6. Of the stages mentioned, direct motor impulse can produce: dilatation of the blood vessels and secretion of fluid by the endothelium. It is possible that it may influence indirectly the slowing of the blood stream, the margination of the leucocytes, and the readiness of passage of the latter through the vessel walls. Motor impulse has no direct relation to the migration of leucocytes and proliferative tissue changes, and hence is not sufficient to produce inflammation unaided and alone.

7. The factor necessary to supplement nerve action must embody the requirements of chemotaxis, the power of attracting leucocytes. This embodiment is found in external irritation.

8. The four sources of irritation, chemical, mechanical, thermal, and actinic, by analysis, may be narrowed to one, namely, chemical. In chemical irritation reside all the essentials for the production of the full inflammation complex; it can initiate the requisite nerve action and can supply those factors which are necessary in addition thereto for the complete development of the process.

9. The products arising from the degeneration or destruction of protoplasm, whether from trauma, perversion of trophic nerve influence, or disturbance of cellular nutrition, may be toxic to living cells, and so furnish the chemical irritation requisite for the initiation of inflammation. This is probably the *modus operandi* in the various forms of herpes.

10. Finally, a purely reflex dermatitis is an impossibility, for the reason that every inflammatory skin lesion, because of the nature of the pathologic process involved, must have in its etiology the factor, local toxic irritation.

100 State Street.

PERSONAL EXPERIENCE IN PREVENTING SPREAD OF YELLOW FEVER.

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The control of epidemics of yellow fever has resolved itself into a very simple method, that of adopting measures based on the doctrine of the transmission of yellow fever by means of the stegomyia mosquito alone.

During the past summer a number of instances occurred in which an epidemic was controlled long before cold weather set in, but was not entirely eradicated. To entirely eradicate the disease from a commuity requires a prolonged campaign on the same lines and often waits for the aid of winter weather so inimical to the life of the mosquito.

It was my province to advise authorities in fever-stricken communities as to the best methods to be adopted in order to prevent an epidemic. In this it was always advisable to enlist the co-operation of the public, and for this purpose lectures were given explaining the method of spread of this disease by means of the stegomyia and the measures necessary to prevent its spread.

Probably the most serious task was to convince the people that the stegomyia mosquito was the only means by which yellow fever is spread. It was recognized that in order to be successful in carrying out the measures to be adopted an educational campaign must be instituted. The convincing experiments of Surgeon Walter Reed and his colleagues were explained and personal observations regarding the spread added much interest to the subject and gave added confidence.

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[9] Blaschko: Mracek's Handb. d. Hautkrankh., vol. 1, art.: Herpes.

I have had an audience where 90 per cent. were non-believers in the theory of the transmission of yellow fever by the mosquito alone, and when I had finished but few "doubting Thomases" remained, and the new disciples became willing and enthusiastic workers along the lines indicated.

The measures for prevention of spread were then presented and given in the following line of argument:

An epidemic is dependent on three elements for its spread or continuance, viz.: 1, a case of yellow fever; 2, stegomyia mosquitoes; 3, non-immunes.

Without any one of the three elements the disease would cease. Measures for preventing the spread or propagation of yellow fever are, therefore, based on or dependent on the control of any or all of the elements.

> For the first element:—Report every case and screen all cases of fever.
>
> For the second element:—Destroy the mosquitoes by destroying the breeding places and by killing all mosquitoes which are at large.
>
> For the third element:—Screen the non-immune or limit his movements as much as possible in order to reduce the chances of his becoming bitten by infected mosquitoes.
>
> Effectually carrying out the first two provisions will give added security to the non-immune.

Could we be sure of knowing every case of yellow fever it would be an easy matter to eradicate the disease.

Here is where we wish to have the public with us. Report every case of illness and treat by screening all such cases of sickness from the bite of the stegomyia mosquito. It is during the first three days of illness that a mosquito can become contaminated, so that the sooner the individual is screened the less time is given for the infection of mosquitoes.

Of course, failure to report or to take such precautions causes the possible continuance or increase of infection.

The second measure which is directed against the mosquito is for the purpose of reducing the number of mosquitoes to a minimum, thereby reducing the chances of any one being bitten by a mosquito.

These measures take into account two conditions: (a) The mosquitoes which are breeding; (b) the adult mosquito at large.

Class A. For the breeding places, oil is used. By covering the surface of water with a film of oil, mosquito larvæ which may be in such places are killed. The larger number of mosquitoes are killed by this process. This oiling reduces the number of mosquitoes to be added and afterward to be considered with Class B.

Whenever practical the breeding place should be screened to eliminate this place from again becoming a breeding place. This screening simply prevents the mosquito from reaching the water for the laying of its eggs, where they will develop into larvæ, pupæ and mosquitoes.

Class B. There are stegomyiæ which are infected, some infective and some which are apt to become infected by biting a known or unknown case of yellow fever, hence measures for the destruction of all such are adopted.

For this purpose fumigation is done with some insecticide. This measure is used at once where a known case of yellow fever has occurred in order to destroy a possible new focus, that is, kill the mosquitoes which may have become infected by biting this known case. As the mosquito does not fly great distances, the immediate neighborhood is also fumigated to kill any mosquitoes which may have left the known infected residence.

Could the stegomyia mosquito be absolutely stamped out, this element, No. 2, so necessary for the propagation of yellow fever, would give the ideal result, and no more fever or epidemic need be feared. This is, however, much more difficult to accomplish than one would think.

It is evident from this that when sporadic cases occur every stegomyia, i. e., infected stegomyia, has not been eliminated and that measures must be continued.

The reduction of mosquitoes to a minimum is the best that can be accomplished for immediate results, namely, the control of an epidemic.

So much accomplished, assurance may be given the people that there is no more fear from an epidemic and that but few cases will occur.

Practical demonstrations of this were numerous during the past year.

At Tallulah, La., where an epidemic was raging, a campaign conducted by me will show the results which can be accomplished by following the lines indicated in the foregoing. The following account is from an official report I submitted to the surgeon general, Public Health and Marine-Hospital Service:

From Tallulah, La., appeals for help were made to the State Board of Health and I was directed by Surgeon White to proceed at once to that place. I arrived at Tallulah on the afternoon of Sept. 12, 1905, and there I met Dr. Charles Chassaignac, representing the State Board of Health.

After a conference with him and the local board of health it was decided that Dr. Chassaignac have supervision of the hospitals, physicians and nurses for the treatment of the sick, and that I assume charge of all sanitary matters.

After an inspection of the town and a study of the situation I found that thirty-six blocks out of forty were infected with primary and secondary cases in many houses.

A public meeting was held on the same afternoon at the courthouse, where Dr. Chassaignac and I made some remarks on the transmission of yellow fever by means of the mosquito and on the measures to be adopted for its eradication.

I formulated a plan of campaign which consisted of the fumigation and refumigation of every house in the town, the oiling of every cistern, barrel and other breeding place for mosquitoes every five days, and such other sanitation as might be required.

An office with records and supplies was established, fumigating and oiling crews organized and the work started at once under my personal supervision Sept. 13, 1905.

The doctors constituted the inspectors and later a special sanitary inspector was appointed. Two hospitals, one for whites and one for colored, were screened and fumigated and made ready at once for the reception of the sick. For this purpose two hotels were converted into hospitals.

The town was divided into ten districts and the fumigation and oiling forces assigned their work by district each day. Five fumigating gangs of five men and one gang boss in each were employed.

The outfit for each crew consisted of the following:

Cart or wagon.
Bucket of paste.
Whitewash brush.
Ladder.
Paper.
Flowers of sulphur.
Measure to hold 2 lbs. sulphur.
Alcohol in small oil can.
Knife.
Matches.
Pots and pans.
Plank.

Each crew was carefully instructed in every detail regarding the work of fumigation. They were told to first close every window and door on entering a house to be fumigated, and were shown how to make houses airtight by pasting paper over all openings. In order that the work would be clean and that paste might not be smeared over the woodwork, and to avoid spilling of paste on the floors, the men were required to spread the paste over a smooth plank, thoroughly wettting it, then place the strips of paper on this and, when required, the strip of paper was removed and applied. The "boss" of each crew was directed not to do any work himself except to give his entire attention to the details of the work. He had been instructed as to how to light sulphur and the quantity to be used, and what articles should be removed to avoid damage by fumigation.

Personal attention and inspection of the work was made by me during the day.

Sulphur, two pounds per 1,000 cubic feet for two hours, was used in every instance except in some large stores, where two pounds of pyrethrum per 1,000 cubic feet was used for four-hour exposure.

In work of this character my plan was to avoid or reduce every source of error possible in killing out the stegomyia mosquito, so prevalent in this community, and for this reason sulphur was generally employed in the fumigation.

Sources of error in this work are usually two:

1. In pasting up some places may be overlooked through which a mosquito may escape. This error must be accepted, as the best man may overlook something.

2. The agent to be used in fumigation should insure the death of the mosquito. With sulphur in the proper quantity and time of exposure this is certainly sure and simply requires removal of the sulphur pots.

In the use of pyrethrum the mosquito is stunned, and the laborer who does not appreciate the importance of this work in every detail is depended on to kill the mosquito after careful sweeping. This requires also additional time, and the employé usually does such work hastily to accomplish a record for number of houses fumigated.

Two oiling crews of two men in each were instructed to oil all cisterns, barrels, wells, tanks and any other breeding place for mosquitoes.

For this purpose refined oil was used at the first oiling. This oil spreads quickly and forms a good film over the surface of water to be covered. The object was to insure destruction of larvæ as early as possible. Crude oil has a tendency to form large globules and thus leave spaces for the larvæ to reach the surface, where they can obtain air to breathe. At the first oiling a quart of refined oil was used for each cistern, a pint for each barrel and well, a smaller quantity for smaller receptacles. This work was accomplished on the first day by three crews; afterward two crews were operating. On the third day I had a survey taken of known breeding places of mosquitoes which had been oiled, and the following data obtained:

Tanks or cisterns above ground	102
Barrels oiled 1st day and emptied on 3d day	145
Wells	48
Cisterns under ground	11
Buckets oiled 1st day, emptied 3d day	37

The oiling, as previously stated, was repeated every five days. One crew using refined oil and one crew crude oil for standing water or any possible breeding places covered the town during the intervals. As outhouses might become places for standing water where mosquitoes might deposit their eggs, a crew was formed to do liming of every such closet in the town, and continued to do this until about the end of the campaign.

Mosquito bars were depended on for isolating sick at their houses. Whenever one could be persuaded to go to the hospital this was done. Under the circumstances it was impracticable to employ any other means of screening.

At the end of nine days considerable work had been accomplished and mosquitoes were noticeably reduced in numbers. The effect on the reduction of the fever cases followed the marked reduction in the number of mosquitoes. There remained several houses infected which could not be fumigated on account of serious illness in the house, so that it was fourteen days after the work began before every house had been at least once fumigated.

An incident was noted toward the end of the epidemic. A young man, Mr. S., had taken every precaution against the bite of a mosquito by remaining behind screened doors and windows until one day he was required to go to the postoffice for a money order. This house was badly infected with stegomyia, but could not be fumigated on account of a severe case of yellow fever in the house. While the young man was waiting he suddenly felt a mosquito biting his hand, which he killed when nearly full of blood. He recorded the time, and four days and five hours after the bite went down with a sharp attack of yellow fever. The house was fumigated a few days later.

While the number of cases were being reduced in the town of Tallulah cases were increasing in the surrounding plantations from one to four miles distant until work on the same lines given above was adopted.

Wherever yellow fever was found to be spreading there invariably the *Stegomyia fasciata* was also found. In a number of scattered houses 300 to 400 yards apart I often found barrels full of larvæ, and the stegomyia the only prevailing mosquito.

The following information was obtained from a house-to-house inspection in the town of Tallulah proper, on Sept. 23, 1905:

Whites who have had yellow fever	66	
Colored who have had yellow fever	234	
		300
Whites who have not had yellow fever	48	
Colored who have not had yellow fever	144	
		192
Total		492

It will be understood that the list of those who have had yellow fever means all persons who had been sick any time since August, when the epidemic started. This census does not include refugees nor persons living on the adjoining plantations.

A report of new cases for this period will show the marked decline in number as sanitation progressed. Beginning with September 19 new cases in Tallulah and adjoining plantations were reported and included in this report (given on the next page).

A total of 163 cases were reported between September 13 and 27, which includes the plantations.

It may be stated that approximately 140 of these cases occurred in Tallulah in fifteen days, of which number ninety occurred during the first four days and were probably in the incubating period of the disease when the work started, and fifty thereafter. This would give 160 cases scattered over thirty-six blocks as having occurred previous to my arrival, Sept. 12, 1905.

TABLE OF NEW CASES, SHOWING DECLINE IN NUMBER UNDER SANITATION.

No. of day.	Date.	No. new cases.		Deaths.
1	September 13	29		1
2	September 14	26		0
3	September 15	19		0
4	September 16	16		1
5	September 17	9		0
6	September 18	10		0
7	September 19	6		1
8	September 20	12	Includes cases on plantations.	0
9	September 21	6		0
10	September 22	6		0
11	September 23	5		0
12	September 24	4		0
13	September 25	1 & 7 on plantations.		
14	September 26	2 & 3 on plantations.		
15	September 27	1 & 1 on plantations.		1
	Total	163		4

The sanitary measures adopted, namely, the extermination of the stegomyia mosquitoes, was the only plan followed for controlling the epidemic. That this was effectual may be seen from the data submitted: that on the fifteenth day only one new case was reported in Tallulah, and this case was the one cited with an incubation of four days and five hours.

Before my departure, September 27, written instructions were left for the continuance of the work in and outside of Tallulah, as follows:

MEMORANDUM.

TALLULAH, Sept. 27, 1905.

Oil every cistern, barrel of water and other breeding places with refined oil every Saturday.

Oil every cistern, barrel, etc., on surrounding plantations every Thursday.

Fumigate as soon as possible all houses with sick, and the two houses on either side, if on same square, and one house immediately across street and the two houses on either side of it if in the same square.

Lime all closets, particularly if there is water.

Oil with crude oil any collections of standing water under houses.

Remove new patients to hospital, if possible, and fumigate residence.

Screen all new cases.

There remained 190 persons out of the 492 in the town of Tallulah who had not been sick any time during the epidemic, and with the disease practically eradicated few would probably suffer an attack of the disease.

A large number of persons living on the surrounding plantations were also saved from an attack of this disease; how many is unknown.

I was informed by mail under date of Oct. 10, 1905, by Parish Health Officer G. W. Gaines that "only a case shows up averaging town and plantations about one per day." It must here be stated that a new plantation was found to be infected subsequent to my departure, but measures as adopted in others were enforced, which soon controlled its spread.

In conclusion I must say that the successful and favorable termination of the epidemic is rightly due to the hearty co-operation of the physicians and the people in carrying out and submitting to all the measures employed.

The "Queen of Old Age".—Under the heading "La Reina de la Vejez", the *Siglo Medico* publishes the portrait of Maria Santos, who is living in good health as a protégée in a Madrid hospital, and celebrated her one hundred and twenty-fourth birthday eight months ago. Her baptismal record is duly attested on the parish register, dating from 1781. She supported herself and her children by peddling vegetables until she lost her eyesight by an accident a few years ago.

GASTRIC ULCER.

SOME SPECIAL FEATURES; BASED ON THE STUDY OF ONE HUNDRED SPECIMENS.

MALCOLM G. MAC NEVIN, M.D.
BUTTE, MONT.
AND
FREDERICK C. HERRICK, M.D.
CLEVELAND, O.

With the causes of perforation, duration, morphology, and location of gastric ulceration in mind, we studied one hundred pathologic specimens with the hope of adding to what is already known in these lines. We have also included some observations with reference to the occurrence of hemorrhage and peritonitis at different ages in the two sexes.

The following are the results of this work. In 97 ulcers, in which the location could be definitely made out, it was as follows:

	Cases.	Per cent.
Lesser curvature	47	48
Posterior wall	30	31
Anterior wall	17	17
Greater curvature	3	3

The lesser curvature has heretofore been spoken of by writers without a definite understanding as to its limits. It must certainly be considered as more than a line along the upper edge of the organ. We wish to describe it as the space between the orifices and extending 2 cm. both anteriorly and posteriorly. Of the 47 ulcers on the lesser curvature, 25 exceeded these limits on both surfaces and were considered as saddle or horseshoe ulcers.

As to location with reference to orifices, we have followed Mayo's[1] division of the stomach into two parts, a pyloric or grinding portion lying to the right of a line drawn vertically from the right of the cardiac orifice, and a cardiac part to the left of this line. In the pyloric part were 94.3 per cent. of the ulcers, while 5.7 per cent. were in the cardiac part.

Of all the ulcers 73.3 per cent. were on the lesser curvature and posterior surface, which is recognized as the area of chronic ulceration. In seeking an explanation for this part of the stomach being especially liable to ulceration, we were led to consider the influence of the change of position of the organ when filled to that when empty. "The stomach varies greatly in size, position, direction and relations under normal physiologic conditions. . . . As the stomach is distended its fundus fills the left cupola of the diaphragm, pushing the left lobe of the liver toward the right side and tilting up the apex of the heart, while the lower part of the greater curvature lies so as to come in contact with the anterior abdominal wall below the left costal wall and the liver. . . . This movement of the pylorus to the right side is accompanied by one of rotation so that the orifice which, in the empty stomach, is directed toward the right side, looks backward."[2]

It will be seen that the two orifices are the most fixed points of the stomach, the pylorus rotating on distension and pointing backward. As a result of this rotation the greater curvature comes in contact with the anterior abdominal wall, the lesser curvature and orifices are fixed, the posterior wall near the pylorus becomes lower than when empty. It seems reasonable that these fixed points are less able to withstand the dragging from the currents and pressure of food than the more mobile ones. The lesser curvature and posterior pyloric wall would bear more of the wear and tear of the gastric peristalsis. These reasons may be advanced as partial explanations of this being the most frequent seat of chronic ulceration. Add to this the fact that there are many more tissues and structures to which these points may become adherent, thus causing a greater fixation and still more dragging during peristalsis, and we have a fairly reasonable hypothesis.

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[1] Mayo, W. J.: St. Paul Medical Journal, February, 1904.

[2] Quain: Dictionary of Medicine.

The occurrence of gastric ulcers in corresponding locations of the anterior and posterior surfaces has been noted by Mayo,[1] Fenwick[3] and others, but we think sufficient stress has not been laid on this point. In recurrent ulceration after medical cures the tendency has been to consider this recurrence as of the same ulcer, which has, therefore, been made an argument for surgical intervention. We think this so-called recurrence has frequently been the development of a symmetrically placed ulcer rather than the breaking down of the scar of a medically cured one. We have found symmetrical ulcers or scars in 37 per cent. Thus medical treatment is seen to be more efficient than often considered.

As regards multiple ulcers and scars without reference to relative location (symmetry) statistics vary between 19+ per cent. (Fenwick) and 28.5 per cent. (London Hospital). We have no doubt but that more careful postmortem inspection would increase these percentages. Thus in the pathologic institute at Kiel 10 per cent. of multiple ulcers and scars were ordinarily found, while under careful observation scars were found sufficient to raise this figure to 20 per cent. Certain ulcers tend to become chronic. The chief factors in this class are anemia, hyperacidity, location and adhesions of the stomach wall over the ulcer to surrounding tissues or structures.

Of the 100 specimens 82 were chronic, 13 were acute and 5 could not be determined. As regards the thickness of the edges; it was increased in 74.3 per cent. in the chronic ulcers; while in the acute in 13.3 per cent. Besides the thickening of the edges another characteristic was early noticed. In 45+ per cent. of all acute and chronic ulcers the edge nearer the cardia was sloping while that nearer the pylorus was undermined. Only a single ulcer located in the cardiac part was sloped and undermined in this way. Considering the pyloric part as a grinding organ with a peristaltic action and current directed toward the pyloric opening the above noted fact is significant. Further, of these ulcers the greatest tissue destruction resulting in perforation was in the base nearer the pylorus in 28.9 per cent. In the remaining 55 per cent. of all the ulcers the edges were irregularly abrupt, undermined or sloped.

Considering ulceration as to the amount of tissue destroyed, we have made the following classifications. The stomach wall was perforated in 34.6 per cent. The wall was destroyed and the liver, pancreas, or both together, formed a wall for the opening in part or completely in 27.8 per cent. In a few cases, 4.9 per cent., an inflammatory mass of fibrin, fat and lymph glands had prevented free perforation.

The question of fibrin on the peritoneal surface is an interesting one from a diagnostic standpoint at operation. Mr. Mayo Robson considers the presence of fine flakes or shreds of fibrin on the peritoneal surface of the stomach without discoverable cause in neighboring organs as strongly suggestive of gastric ulceration. We, therefore, observed this point closely, and found of all simple ulcers without perforation or adherent surrounding organs, fibrin flakes or shreds on the peritoneal surface in 74.3 per cent.

Of the 100 cases the causes of death were noted in 55; 25 died of hemorrhage, 30 of peritonitis. Dividing these as to age and sex the following points were observed. Of the 25 who died of hemorrhage, 19 were males and 6 females. Of the 30 dying of peritonitis 8 were males and 22 females. Apparently males die more frequently of hemorrhage and females of perforation and peritonitis. Analysing these further as to age, we found of the 25 of both sexes dying of hemorrhage, all except one female, were thirty years of age or over. As regards the age at death in peritonitis, one male and fourteen females died before thirty years of age, after thirty years of age the contrast is less striking, six males and nine females dying of peritonitis. From these observations it appears that males are more likely to die of hemorrhage after thirty and females of peritonitis before thirty years of age.

In conclusion:

1. Seventy-three and three-tenths per cent. occurred on the lesser curvature or posterior surface.
2. The stomach rotation during digestion, and the adhesions are partial explanations of this fact.
3. Ulcers or scars were symmetrically placed on the anterior and posterior walls in 37 per cent.
4. Fibrin shreds were found in 74 per cent. on the peritoneal surface of simple ulcers.
5. Males with gastric ulceration die most commonly after thirty years of age from hemorrhage; females before thirty of perforation and peritonitis.

LESIONS PREDISPOSING TO CANCER.*

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ATLANTA, GA.

It is difficult to avoid bringing into a paper of this kind the cause of origin of cancerous growths, since cause and prior lesion are so intimately related. Without some sort of stimulus or disturbance of cell relation many of the lesions would never become malignant. Whether a group of cells has been left out of place in fetal life and ready for aberrant growth, or gets misplaced later, can make no great difference for the purposes of this paper, but the latter occurrence seems best to harmonize with the facts. That mechanical, thermic, actinic, chemical, and perhaps local toxic influences often seem the positive exciting cause of malignant development can not be doubted. What the element is in cell relations that holds the balance in so many cases and loses its control in a few, we do not know.

Of all skin lesions tending to cancerous development there are none that rank so high as the rough, horny, scale-crusted, irregular points and patches, varying from pinhead to all sizes and shapes seen on the face, neck and hands. These occur so frequently on the thin, red, florid skin of people who are either red-haired, or have the "red-haired" type of skin, as to become a definite feature. The crusts are usually composed of small, horny cell masses; the skin beneath may show a bit tender, or it may be slightly thickened and irregular. Later, one or more points take on typical epitheliomatous changes, cell growth, infiltration, erosion, crusting, fissuring, ulceration. Often there are numerous epitheliomata on the one subject; but a majority of people go through life with their "scaly spots" better or worse, without reaching the malignant stage; hence radical treatment for these must await such development.

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[3] Fenwick: Ulcer of the Stomach.

* Read before the Medical Association of Georgia, at Augusta, April 20, 1906.

Closely related to the above, or occurring with it, is the oily, seborrheic skin with points, discs or patches developing in a greasy surface, and showing greasy scales and, sooner or later, erosions, new growth, finally the epithelioma in full development. These two kinds of skins and lesions more frequently show multiple epitheliomata. Warty, flat, roughened patches, as of the "senile skin," often form the starting point of cancer. A persistent fissure of the lip may be the origin of epithelioma. Scars, as from burns, caustics, *x*-rays, incisions, boils, carbuncles and various injuries present a condition of cell displacement favorable to malignant growth.

A lesion from the pinch of a cracked and foul pipe stem has caused death from cancer of the lip. Phimosis and balanitis at times result in epithelioma. An innocent-looking epulis may prove not a fibroma, but a sarcoma.

Lupus erythematosus has been known to degenerate into cancer. Lupus vulgaris scars often so change. An apparently innocent wart may become malign, as may keratoses from long continued use of arsenic. Keene[1] in his paper before the American Medical Association two years ago insisted on the latent dangers in, and the removal of all moles, but was convinced of the impossibility of getting consent of the patient to such radical prophylaxis. My own observation is that few moles undergo cancerous change; but when they do, especially those of the pigmented type, their malignance and metastases may be horribly complete; their termination fatal.

The pigmentary type of malignant disease is the product of many lesions. A mole accidentally burned, and so being transformed into malignancy, is recorded by Crocker.[2] Johnston[3] reports cancer developing in a mole on the thigh; another on the back; another on the shoulder, and one on the abdomen. Following injury near the nail, a swelling, dark fluid discharge, pigmentary deposit in the growth—"melanotic whitlow"—may develop.

"Malignant freckle" spot on foot or leg may end in pigmentary cancer. Melanotic rodent ulcer or melanoepithelioma is another form. Melanoma of the eye has its usual beginning in a choroidal pigmentary spot.

It is often impossible to diagnose the type of these growths accurately without the aid of the microscope. Metastases of pigmentary cells are often extensive, the lethal end certain. Early and free surgical removal offers the only cure.

Wilfred Fox[4] considers most cases of melanoma as nevocarcinoma. Johnston found both types, nevocarcinoma and nevosarcoma; Fox, at variance with Johnston, convicts the pigment of the chief activity in cancerous change.

Cases under *x*-ray treatment for epithelioma often show partial, possibly complete destruction of the original disease with extension, or new development of disease in the scar or its borders. Skiagraphic *x*-ray burns and the burns of *x*-ray workers have time and again gone on to epithelioma and death. McLeod's case of a lupus-*x*-ray scar with cancer forming in its middle is striking.

Suppurative, broken down sebaceous cysts, or even the unbroken cysts, may be transformed into cancer.

A small injury of the tongue from a jagged tooth, and continued irritation, have sufficed to bring on cancer of that organ. A similar development may follow a syphilitis gumma. So with leucoplasia, the white spots and bands called "smoker's patches." Constant irritation of a tonsillary, pharyngeal, or esophageal lesion may terminate in the same way. Many cases of cancer of the stomach follow an ulcer; many of the gall bladder succeed erosions from biliary calculi. Ovarian cysts may so degenerate. Uterine myoma is not always benign. Cervical scars from old lacerations frequently form the starting point of cancer. Leucoplasia of the vulva often undergoes malignant change.

No adenoma of the breast is safe left in its place. The cicatrix from abscess of the breast has been sufficient to furnish the origin of cancer. Paget's disease of the nipple, which may possibly be confused with eczema, is usually cancerous in nature and progression.

Sufficient examples have been given and time and space are already too far exhausted to permit of an extension of the list.[5] In unnatural lesions and growths, in scars and irritated erosions, in parts subjected to continued injury, we have a loss of cell balance, an absence of normal restraint, and the scene laid for the entrance of the unknown element that determines the onset of carcinoma, sarcoma or endothelioma, all malignant.

To urge on people the dangers in lesions and growths not yet malignant will often be of no avail. In many cases the malignant change may never take place, but every effort should be made to cure irritated lesions and to remove irritant agents in the simple cases; and no growth certainly progressing towards cancerous evolution should be left untreated. On the slightest occurrence of symptoms tending to these changes, instant and thorough treatment must be instituted. Often the simplest erosion, smallest scirrhus or most minute irritated mole or other growth may liberate cells that wander away to form metastases of the most formidable character. It is proper to watch some cases without interference, and criminally negligent or ignorant to advise the patient to "let alone" any lesion or growth already showing signs of malignancy.

I have used the term cancer in its broad sense, to cover all types of growth whose tendency is to progression, insidious diffusion, recurrence after treatment, certain death without treatment, often death in spite of treatment.

REPORT OF CASES.

A few illustrative cases are here reported:

Case 1.—Mr. Q., aged 59, cut with a razor a large, flesh-colored mole on his left cheek eight months before consulting me. The microscope showed epithelioma. It was excised. Permanent recovery.

Case 2.—Mr. C., had a fungating and eroded pigmentary lesion on the top of left shoulder. There had been a dark mole there for years. It was irritated by suspenders. The man recovered after prolonged caustic treatment and protection.

Case 3.—Mr. M., aged 66. A diagnosis of melanosarcoma of dorsum right foot was made. Forty years previously a black dot of pin-head size appeared just to the right of the great toe's extensor tendon. There was slow peripheral growth for twenty-five or thirty years; then it increased more rapidly, especially in the last three or four years. When seen, the lesion was two by two inches in size, with various shades and degrees of pigmentation from brown to black or bluish. There was some thickening, and in parts it was finely papular. There were burning sensations when warm in bed. The man declined excision and received no treatment. About a year later part of the patch was elevated and exuding serum, but still there was no metastasis. The man died within a year or two of general diffusion of the disease.

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[1] The Journal A. M. A., July 9, 1904.
[2] Crocker: "Diseases of Skin," 1905.
[3] Johnston: Jour. Cut. Dis., Feb., 1905.
[4] Fox: Brit. Journ. Derm., March, 1906.
[5] See, in this connection, Hyde and Montgomery: "Diseases of Skin," 1905.

Case 4.—Mr. A., aged 77, had had more or less epithelomatous trouble for fifteen years. Skin of face, neck and hands showed many scaly points and spots and scars of excisions, etc. When seen he had a fungating epithelioma of the left zygomatic malar arch and bone, growing to bones beneath. On the right maxillary ramus there was another large one. On the left lower eyelid there was a small hard epithelioma with erosion and crusting. Treatment was purely palliative. The case was incurable. Cases like the above and the one to follow are the more numerous in records.

Case 5.—Dr. —, aged 53. Usual florid type. There was in a crusted lesion on the left cheek, a typical cutaneous horn, beneath—an epithelioma, surrounded by greasy scales. On the end of the nose there were waxy sebaceous accumulations, with flat epitheliomatous development in a small colorless mole which had been present for years. Caustic potash treatment was given.

Case 6.—Mr. —, aged 62. The prepuce was long and had never been retracted. There was a fungous epithelioma, cauliflower like, of the glans. Urine was passed through a crevice in the side of the mass. The inguinal glands were small, hard and hyperplastic. The patient refused to permit their removal. The penis was amputated; a one-inch stump was left. The man was well and at work at last report.

Case 7.—Mrs. W., aged 40; had a discoid epithelioma on right side of tongue from tooth erosion, constantly kept up. It was thoroughly destroyed with Paquelin cautery. She was well at last report, three or four years later.

Case 8.—Mr. S., aged 42. The jolt of a car caused him to bite the right side of an already tender tongue. In three months there was extensive involvement of side of tongue and glands of neck. The tongue lesion was not benefited by *x*-rays. The neck disease was benefited, but the patient died three months later of exhaustion and a hemorrhage from neck.

Case 9.—Mr. G., aged 52, several months before consultation pinched his lip with pipe stem. A pin-head lesion followed which the patient often picked off. Each time it returned larger, finally ulcerating and became a typical epithelioma of the right half of the lower lip on the carmine border. There was early involvement of submaxillary glands. The case was aggravated by the patient's use of some caustic paste. When first seen over half of the lower lip down to the gum was destroyed; there was involvement of the right oral angle and massive metastasis to lymph glands. From the first he refused all operative treatment. He died in about twelve months from beginning of disease.

Case 10.—A married woman, under 40, three months pregnant. There was a papillomatous cyst of right breast, becoming cancerous. The breast was amputated. Recovery.

Case 11.—An old woman was seen in consultation. She had incurable carcinoma of the left zygo-malar-maxillary region which had developed in a sebaceous cyst of many years' standing.

Case 12.—Mr. C., aged 69, had sarcoma of right shoulder girdle, which had developed three months previously in a dark mole over the right scapular spine. It grew rapidly in three or four weeks to the size of a small orange. It was excised by his attending physician, but recurred, and gradually involved the whole shoulder and the axilla. The patient died within six months.

1007 Century Building.

Criminal Abortion; Feticide; Prevention of Conception.—In a paper published in the *Texas Courier-Record of Medicine*, January and February, 1906, Dr. H. C. Ghent, Belton, Texas, discusses these questions and presents the opinions obtained from a number of prominent physicians from all parts of the country. The paper discusses this very vexed question thoroughly, but does not offer a solution of the problem. No phase of the subject is left untouched. The moral, physical, medical, mental and legal questions usually propounded in a discussion of abortion, the status of the fetus in utero, the reasons often assigned as justifying abortion, and the duty of the medical profession in checking the evil are discussed fully.

THE INJURIES OF INDEPENDENCE DAY.

AND WHAT HAS BEEN ACCOMPLISHED IN BALTIMORE TOWARD LESSENING THEM. A FURTHER CONTRIBUTION TO THE SUBJECT.*

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BALTIMORE.

At the last Atlantic City session of this Association I presented a paper on the subject of the eye injuries of Independence Day, a paper which, I believe, was the pioneer communication on this subject before a body of medical men. Thanks to the admirable work of The Journal of the Association, I was able to gather much valuable information bearing on this subject. The very fact that three years ago on July 4 nearly five hundred persons were killed, twenty-five individuals were made totally blind, and ninety-five others lost an eye apiece indicates that there is something radically wrong and strongly suggestive of lawlessness in our American civilization. The subject has especially interested me, for every year I have had brought to my notice cases which illustrate forcibly the great folly of the popular way of celebrating our Independence Day.

For example, on July 4, 5 and 6, 1888, there were sixteen cases of eye injury treated at the Presbyterian Eye and Ear Hospital, and on the same days of 1897 there were fourteen cases treated, and in the intervening years there was an average of six cases for every Independence Day. Now and again there has been an outbreak of what might almost be called an epidemic of this class of injuries. For instance, on July 4, 1898, we had a record of fourteen cases at the Johns Hopkins Hospital. In 1899 there were sixteen cases treated at the Presbyterian Hospital, and in 1901 thirteen cases. It should be remembered, too, that a certain number of cases are treated in other hospitals in the city, and then, again, a certain number are treated by other physicians in their private offices. This number would, no doubt, be multiplied many times if the record of every case could be reached. On July 4, 5 and 6 eighty-four cases of this character were observed at the New York Eye and Ear Hospital, a year later forty-two were treated, and in 1905 twenty-two were treated. In 1904 there were sixty-nine cases treated in the leading eye hospitals of New York City. I have collected nearly 500 cases of eye injury, more or less serious in character, caused by the explosion of fireworks, and all these occurred within the last few years. Two hundred and fifty were seen in Baltimore. This may seem a large proportion for Baltimore, but my records go back further in the case of Baltimore than they do in the case of either New York or Philadelphia.

Of these cases, 357 were children and 100 were 21 years and over. There were 3 cases where the child was 3 years old, five cases where the age was 4, seven cases where the age was 5, one case where the child was 2½ years old, and an infant of 3 months. I have gathered enough information to show that some variety of firecracker was usually responsible for the injury, particularly for the very serious ones. Sky rockets and Roman candles, however, were not found to be blameless. The chief injury was one in which at the same time the lids, conjunctiva and cornea were peppered with grains of powder which was usually found imbedded in these parts, and this injury we all know entails considerable suffering and frequently leaves permanent scars. Of these there were 269. In forty cases the injury was so serious as to make it necessary to take out the eye in seven instances for fear of sympathetic disturbance, while in the remaining thirty-three cases the vision was permanently impaired either by traumatic cataract or by inflammatory changes in the deeper structures.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

I am sure there is an ordinance in nearly all of our large cities which prohibits the harmful and pernicious practice of setting off fireworks in the streets. Apart from the danger to person, the danger from conflagration is very evident. In Baltimore there are usually from twenty to thirty fires on July 4, and I believe all of our cities pass through this sort of experience on Independence Day. Last year, on July 4, there were in New York City, 7 deaths, 151 injuries of various kinds and $12,500 damage to property, all due to the explosion of fireworks. In Boston there were 75 injuries, 1 death, and $7,000 damage to property. In Philadelphia there were 3 deaths and several hundred injuries. In St. Louis there were 2 deaths and nearly 200 injuries. In Chicago there were 132 injuries and 1 death. According to the *Chicago Tribune*, for the whole country there were 59 deaths, 3,169 injuries, and $311,217 worth of property lost. What has been done to bring about a change of affairs in Baltimore? Briefly, it may be said, first, that it is very difficult to accomplish anything in a movement of this kind without the aid of public sentiment. Generally speaking, the press has been in favor of stamping out the nuisance, but, with the exception of the *Sun*, no paper has expressed itself vigorously on the side of law and order. There is a fine of $2.00 for selling fireworks and of $5.00 for setting them off in the streets. I laid all of the statistics before some of the *Sun* people, and especially the statistics of those injuries which occurred here in Baltimore and which I had collected from the various hospitals. These things were all embodied in several articles in this paper, which, as is generally known, is one of the strongest newspapers in the country. In this way public sentiment was molded. It was shown that our objections rested on the most solid sort of foundation. Letters to this paper appeared from various sources, but the spirit of reform predominated throughout, with the exception of some discordant notes. Along with these statistics the records of fires on the Fourth were also published. It was shown that the average number of alarms for the year was about four a day, while on the Fourth the alarms ran up to twenty-five and thirty. This means that the fire department was strung up to the highest tension throughout Independence Day.

Next, I laid the whole matter before Mr. George R. Willis, President of the Board of Police Commissioners, who called together the captains of all the districts in the city and gave them the most stringent orders to enforce the law. A certain number of men in citizen's clothes were specially detailed to watch out for those who either sold or set off fireworks. The police have generally looked on this law in rather a frivolous way, but with the knowledge that the public was in favor of suppressing the nuisance and with definite orders from their superiors they exhibited not a little zeal in arresting violators of the law. And it may be well to state here that the position which the police department intended to take in this matter was mentioned in the *Sun* several weeks before the Fourth, not only to emphasize the fact that our way of celebrating the Fourth of July is contrary to law and order, but also to give sufficient warning to the smaller shopkeepers not to lay in supplies of fireworks which they were forbidden by law to sell.

An expression of opinion from the state's attorney to the effect that he intends to prosecute such cases will be at least one way of informing the magistrates that the law is to be regarded seriously. Magistrates have been known to dismiss youthful offenders with a slight reprimand. I think it well, too, that the names of the offenders and the fines imposed be published in the newspapers. For obvious reason this will have a wholesome effect.

The Fourth of July, 1904, showed thirty-five accidents, two of these being eye injuries. At the Presbyterian Eye and Ear Hospital there was not an injury of this character, for the first time in twenty years. The other thirty-three injuries were burns in various parts of the body, and of this latter class there had been, the year before, between one and two hundred. Last year the matter was revived in the same way, and the result was, that in Baltimore, a city of 560,000 inhabitants, there were only six injuries, three of these being eye injuries.

What, then, can a medical man do to cleanse his community of this nuisance?

1. Arouse public sentiment in your favor, and this you can surely do by telling your fellow citizens what the records of their own hospitals and of their own fire department show, to say nothing of records from numberless private sources. This should be done through the columns of an influential paper which is thoroughly in sympathy with the movement. You can do this just as effectively as though you were urging your fellow citizens to take steps to rid the city of a scourge of yellow fever or of cholera.

2. Lay your statistics before the president of the board of police commissioners. After all he is the vitalizing force, the mainspring of the police department. Orders from a man like George R. Willis would be very stimulating to the conscientiousness of a policeman.

3. Lay the matter also before the state's attorney and have him publish his views in the paper to show that those arrested will be treated according to the law and not be dismissed with a feeble reprimand from magistrates.

In this quiet way I believe much can be accomplished by ophthalmologists in every city. I do not believe that the time is yet ripe for national legislation. We will have to educate public sentiment still further on this question and get them used to quiet and sensible Independence Days, and in due season laws may be passed which will prevent the sale of fireworks, even in the so-called "original package."

DISCUSSION.

Dr. G. C. Savage, Nashville, Tenn., said that what applies to the Fourth of July in Baltimore applies to the Christmas holiday in his part of the country. There was a time when he had no holiday on Christmas. Before he left home he asked some of his confères as to their experience in this matter in the past six or seven years. Before that time they said they commenced preparing instruments a day before, knowing they would be kept busy on that day with accident cases. Now they have rest. He used to be called on frequently between midnight and morning to attend these Christmas cases of injury. A law that applies to one holiday should apply to every holiday. Law in Nashville on this subject has resulted in his being able to have his holiday. No fireworks are allowed on the streets on any holiday. There was a time when men and boys would line up, one side against the other, and shoot roman candles in war-like fashion, but that condition of affairs does not exist now. The best way to keep a snake from biting is to cut its head off: to prevent injuries there should be no importation of fireworks into this country.

Dr. Lucien Howe, Buffalo, N. Y., said that to propose to stop all kinds of fireworks will cause a great deal of opposition. He thought that if a firecracker of a certain length, say three inches or less, is allowed, there will be much more probability of accomplishing something.

DR. ROBERT L. RANDOLPH, Baltimore, declared that he is not in favor of making any concessions. Anything in the shape of fireworks, in his opinion, should be prohibited, except by special permit from the mayor. In such case they should be set off by trained hands and not allowed in the city limits. Any concession as regards the length of the fireworks permitted, as suggested by Dr. Howe, would be a mistake, in his opinion, for under such a clause it is easy to see how all kinds of irregularities would creep in and the spirit of the law would be violated.

DISLOCATION OF THE OUTER END OF THE CLAVICLE.*

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In order to emphasize the anatomic lesion in this dislocation and its bearing on treatment, I make this brief report.

A dislocation of the acromioclavicular joint usually means that the outer end of the clavicle is displaced upward and slightly outward. This dislocation is not very uncommon. It occasions varying degrees of deformity and certain disabling symptoms may be produced by it. Ordinarily it is a dislocation which is readily treated by pads and simple retentive apparatus. At times, however, it is impossible either to reduce the dislocation completely or to hold it reduced. Occasionally the deformity is so great as to be very noticeable.

It seems probable from the observation and experience of Krecke, Poirier, Rieffel and Sheldon,[1] 1, that the acromioclavicular ligaments are torn in all cases; 2, that the conoid ligament is sometimes torn in incomplete dislocations; 3, that the conoid ligament is always torn in complete cases; 4, that the conoid and trapezoid ligaments are usually torn in the complete cases.

I record the two following cases and the results of a few experiments on the cadaver:

CASE 1.—A male, aged 24, after having had a fall from a ladder in the gymnasium, presented a dislocation of the left acromioclavicular joint. The dislocation persisted despite the usual treatment with pads, adhesive plaster and bandages. The dislocation was only partially reducible. The deformity was marked. There was about three-fourths of an inch separation between the clavicle and the acromion; that is, between the articular surfaces. There was no especial loss of function.

Operation was sought because of the deformity. About six weeks after the accident a suture of the acromioclavicular joint was made. The material used was linen and catgut. The patient was kept in bed on his back for ten days following the operation. The result was perfect. There remained no deformity and the movement and usefulness of the joint was restored.

CASE 2.—A schoolboy, some 18 years old, was thrown while playing football and dislocated the right acromioclavicular joint. The dislocation could be partially reduced by pressure. An attempt was made to hold the reduction by pads, adhesive plaster and bandages. This attempt was of no avail. The dislocation persisted and was very marked. There was about one inch separation between the articular surfaces of the acromion and the clavicle. There was moderate disability; namely, pain on abducting the arm.

Operation was sought because of the very great deformity and because of the pain. The two bones were sutured by means of aluminum bronze wire. The boy was kept on his back some days following the operation. Subsequently the wire was removed. The arm was used earlier than was wise and the result of the operation was not perfect. The deformity was diminished, but the general result could be classed as poor.

Through the kindness of Dr. Warren, demonstrator of anatomy, I have been able to make three experiments on the shoulders of the cadaver. In each instance the clavicle was fixed in a vise and the blow was directed from above and behind.

In one subject there resulted a fracture of the coracoid and spinous processes of the scapula, together with a slight dislocation of the acromioclavicular joint. There was in this instance no rupture of the coracoclavicular ligaments. In each of the other two experiments only a slight dislocation could be effected by a blow from above after division of the superior and inferior acromioclavicular ligaments, but when the conoid and trapezoid ligaments were divided the dislocation became at once very evident and complete.

CONCLUDING REMARKS.

From these observations and from the evidence afforded by some 15 operations on the living recorded in literature and the experimental work which has been previously done, it seems to me that the conclusion of Poirier and Sheldon are amply justified.

The indications for operative interference are, therefore, comparatively simple, namely, irreducibility and a failure to maintain reduction. The dislocation is irreducible because of the interposition of the torn capsule or of the ruptured trapezius muscle. *The maintenance of reduction is impossible, because of the rupture of the coracoclavicular ligaments.* At operation, therefore, the indications are to remove any interposed parts and so to suture the torn ligaments as to restore the relation of the parts to their normal condition.

I would formulate the treatment of a specific case somewhat as follows: If the dislocation is one of moderate degree, it should be treated by simple retentive apparatus. If the dislocation is extreme, in which case it is probable that the coracoclavicular ligaments are torn, a suture of the parts is indicated. If the retentive apparatus does not hold cases of the first class, then suture should be employed.

Various methods of suture have been used; by wire, by silk and by absorbable material. Different forms of pin have been employed. The placing of the suture seems to me to be of some importance in view of my own experience with one of the cases recorded.

An efficient method of suture may be employed to supplement the usual joint suture.

In order to secure a firmer hold on the outer end of the clavicle a suture should be placed so as to make traction on the clavicle from below in the direction of the coracoacromial ligament. The suture should be passed through the clavicle and the coracoacromial ligament.

The treatment of this dislocation with the patient on the back will, of course, remove the weight of the upper extremity and so assist very materially in the proper healing of the parts.

DISCUSSION.

DR. W. L. COUSINS, Portland, Me., said that in his practice during the past twelve years he has seen about twelve of these fractures, but in no case has it been necessary to resort to the operation described by Dr. Scudder. It has been possible to keep the fractured bone in place either by strapping the arm or by using counter pressure with sand bags. Dr. Cousins appreciates the fact that his method will not always prove successful, and in certain cases it may be necessary to use the suture. He reported a case of total dislocation of the clavicle in which the man was caught between two cars going in opposite directions. His right clavicle was totally dislocated and the left was fractured. The treatment consisted in trying to hold the bones in apposition by strapping and by applying a bandage. The treatment failed, and the dislocation recurred as fast as it could be reduced. It then occurred to the physicians to discard all the bandages, put the man in a prone position, and then to use sandbags, applied, one below the elbow to keep it from sliding down, and another above, over the shoulder, at the acromion end to exert sufficient pressure to keep the clavicle in place. The head of the bed was also elevated. The dislocation at the inner end of the clavicle was held in place by a small sandbag, two or three inches in diameter and about a foot long, lying transversely. The man was discharged one month after the accident, completely recovered. According to Stimson there have been ten cases of total dislocation of the clavicle, and Dr. Cousins believes that this is the eleventh, and he would like it to go on record as such.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Sheldon, J. G.: "A Careful Review of the Literature of Dislocation of the Outer End of the Clavicle," Annals of Surgery, September, 1903.

SURGICAL TREATMENT OF CONGENITAL HYDROCEPHALUS.

REPORT OF A CASE OF MENINGOCELE AND HYDROCEPHALUS.*

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In order to approach the treatment of congenital hydrocephalus more intelligently, it may be well to review, briefly, some of the views of its pathology. Congenital hydrocephalus is a term applied to that affection occurring in infants characterized by an abnormal accumulation of serous fluid within the ventricles of the brain. This tends to increase and usually gives rise to pressure symptoms on the brain, except in those rare cases occasionally seen in which the disease is arrested and the patient recovers without cerebral symptoms. The synonyms are chronic hydrocephalus, internal hydrocephalus, and hydrops ventriculorum cerebri. The so-called external hydrocephalus is quite different both in symptoms and pathology. It denotes an abnormal accumulation of serous fluid in the subarachnoid space[1] and is very rare. It is usually secondary to cerebral hemorrhage or pachymeningitis, or else it is found with some congenital defect of the brain. Such an effusion is passive in character and does not give rise to pressure symptoms.

PATHOLOGY AND ETIOLOGY.

More than forty years ago Hilton[2] strongly contended that the disease was due to the blocking of the communications between the lateral ventricles of the brain and the subarachnoid space. It was he who first insisted on the presence of the foramina that connect the fourth ventricle with the subarachnoid cavity and cited a necropsy of a case of hydrocephalus in which these foramina were closed.

The normal existence of such apertures was at that time doubted by many prominent anatomists. The chief one was described by Magendie, with whose name it has since been associated. The two small openings, one at the right, the other at the left extremity of the lateral recesses of the fourth ventricle, called the foramen of Key and Retzius, also connect this ventricle with the subarachnoid space. Of recent years many investigators seemed inclined to accept the correctness of Hilton's view. Some have likened the accumulation of this fluid to that of ascites, and a similar process has been suggested as to its origin; that is, either obstruction of the venous return or a chronic inflammation, though the former is unlikely. In many cases, the fluid which distends the ventricles of the brain is straw colored, often it is identical with normal cerebrospinal fluid, and again it may contain albumen and resemble the transudation found in other serous cavities. The lining membrane of the ventricles is frequently thickened, and this fact gives color to the theory of a chronic inflammatory condition.

Barlow and Lees[3] elaborate the conclusion of Halliburton[4] and others that the cerebrospinal fluid is a distinct secretion and differs materially from transudative fluids found in other serous cavities. They regard the choroid plexuses as having for their peculiar function the secretion of cerebrospinal fluid. They point out that each ventricle is provided with its own vascular plexus and that those of the lateral ventricles have a double arterial supply, showing their unusual importance. The epithelium of the ventricles where it covers these plexuses changes from a columnar character to a structure resembling that of secreting epithelium. They allege that over these plexuses there is continuous secretion of cerebrospinal fluid, and, consequently, means must be provided for the removal of the surplus. Absorption is impossible because of the anatomic conditions, as the veins are some distance in the interior of the velum interpositum and, of course, absorption can not take place through the arteries. Drainage, then, is the only other method, and this is provided for by the communication between the lateral ventricle and the third ventricle, by the aqueduct from the third to the fourth ventricle, and by the foramina which permit the fluid to escape into the general subarachnoid space. Here it may be absorbed by the veins and lymphatics and while following to some extent the lymphatics and sheaths of the nerves. The small size of the passages of exit from the ventricles provides against a too rapid outflow. The careful experiments of the Stockholm anatomists, Axel Key and Gustaf Retzius, seem to show that these apertures afford the only outlet for the cerebrospinal fluid that may be formed in the ventricles.

In a considerable proportion, if not a majority, of cases of hydrocephalus, the views stated by Hilton and elaborated by others appear at first sight to explain the etiology. There are, however, a number of cases reported by competent men in which such an explanation can not hold, for the communications between the ventricles and the subarachnoid space have been found normal or even dilated. A congenital abnormality in the tissue which secretes the fluid or else a chronic inflammatory condition must account for this class of cases. That all are not due to obstruction of the outflow of the fluid from the ventricles of the brain is well proved by many reported cases of lumbar puncture and by a case reported below in which aspiration of the meningocele was followed at once by disappearance of the hydrocephalus and collapse of the skull.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] On account of the not infrequent confusion of the terms subarachnoid space and subdural space in some of the literature on hydrocephalus, it may be well to call attention to the following anatomic facts: Normally, there is no subdural space (Gerrish's Anatomy, p. 560), it does not contain cerebrospinal fluid and has no communication with the subarachnoid space where cerebrospinal fluid is normally found.

[2] "Rest and Pain."

[3] Allbutt's System of Medicine, vol. vii.

[4] Journ. Phys., vol. x, p. 232.

There are many reasons why the doctrine of Hilton that hydrocephalus is due to obstruction of the outflow from the ventricles may be considered erroneous. The association of the closure of the outlets with the excessive accumulation of fluid in the ventricles does not necessarily mean that the closure was the original cause of such an accumulation. It is probably true that an obstruction of this nature increases the amount of fluid by damming it back, and cases may be imagined—and possibly have occurred—in which a closure of these openings by a tumor is solely responsible for hydrocephalus. They must be exceedingly rare, however, for such tumors are more frequent in adults, while internal hydrocephalus is almost always a disease of infancy and early childhood. The closure of these openings that has been reported in necropsies of hydrocephalic children has, in nearly all cases, been due to inflammation. Knowing that cases of hydrocephalus occur when these openings are patent, or even dilated, is it not much more reasonable to suppose that the same inflammatory condition which provoked excessive secretion of fluid also closed these minute apertures? Or, to put it otherwise, the meningitis which the supporters of Hilton's theory say closes the apertures, so causing hydrocephalus, might also act by increasing the secretion from the ventricles by inflammation of the choroid plexus. This view is the more probable because those cases of hydrocephalus whose origin is undoubtedly due to meningitis may often be relieved by lumbar puncture, thus proving the patency of the apertures of exit.[5] In the case reported below a free communication existed between the ventricles and the subarachnoid space, for the hydrocephalus rapidly disappeared when the meningocele was first aspirated. Later, when the meningocele sac was emptied, the fluid in the ventricles was not affected, the irritation from the previous aspiration having, in all probability, been sufficient to close those minute openings. The large amount of fluid often drawn off in repeated tappings and the failure of most operations establishing a communication between the ventricles and the subarachnoid space would also seem to indicate that *hydrocephalus is due primarily to an excessive secretion from the ventricles of the brain rather than to an obstruction to the outflow of fluid from them.*

SURGICAL TREATMENT.

In the matter of surgical treatment the successes have been so few and failures so many that no definite conclusion can be drawn. The fact that occasionally these cases remain aquiescent and cease to increase temporarily, or sometimes even permanently, shows that there are factors by which the normal equilibrium of this fluid is managed and that these factors are capable of modification either by an increase of absorption or by diminution of secretion. As many cases of hydrocephalus have an obstruction to the outflow from the ventricles, and as it is not possible for absorption to take place within the ventricles, it is quite likely that such occurrences are due to the diminution of secretion rather than to the increase of absorption. Such being the case, it should not be an impossible task to promote a decrease of the activity of the secretion by applying measures somewhat similar to those used in overcoming excessive secretion from serous surfaces in other regions. It has not been satisfactorily proved that continuous drainage will act in the same manner here as on other serous cavities and cause diminution of the secretion. It would seem from analogy, however, that such a course is probable. Hydrocele, for instance, is occasionally cured by mere aspiration, frequently by constant drainage. The relief from pressure caused by evacuation of the fluid induces hyperemia in the lining membrane of the sac, and if the tension is permanently relieved by constant drainage the hyperemia becomes chronic, with the consequent formation of fibrous tissue and partial or complete atrophy of the secreting cells. It seems likely that constant drainage might institute a similar process in the secreting tissue of the lateral ventricles.

Without attempting to review all of the various methods that have been adopted for the surgical treatment of hydrocephalus, those will be taken up which apparently offer a hope of success. Treatment by external compression is of some value, though the brain may be injured by pressure when its covering is rendered inelastic by compression.

Aspiration of the fluid has given occasionally excellent results. Cases have been reported of actual cures following a number of aspirations. The probable cause of such cures is the hyperemia following relief of pressure, and this hyperemia may become chronic if drainage is constant, inducing changes already alluded to. Lumbar puncture, first advocated by Quincke in 1902, has been employed, but has not resulted very satisfactorily. Obviously, internal hydrocephalus which may be accompanied by obstruction of the outflow from the ventricles can not be benefited by this method. The injection of the ventricle with irritating fluid after aspiration is dangerous and unsuccessful. Granting that obliteration of the ventricles could be obtained after injecting them, it would be either fatal or productive of grave disturbances from adhesions, displacement of structures at the base of the brain, and destruction of the adjacent portion of the brain substance that would necessarily follow an irritation of the ventricles sufficient to produce their closure.

PERMANENT DRAINAGE.

The method that appears to offer the best prospect of success in these cases is some form of permanent drainage. Of the various methods that have been adopted no one can be said to be absolutely successful in any great number of cases, though many of them have given an occasional success and promise of greater things in the future.

Henle[6] describes a plan introduced by Mikulicz, the purpose of which is to secure continuous drainage. Mikulicz inserted a gold tube into one of the lateral ventricles and drained away a good portion of the purulent cerebrospinal fluid it contained. The end of the gold tube was provided with a plate to prevent it from slipping into the brain. This was anchored on the skull and the scalp closed over it. The tube was discharged twenty-five days later, and twelve days after this time it was again introduced into the opposite lateral ventricle. The child died six days later. The necropsy showed two large abscesses in the brain. Henle also calls attention to Troje's report at the German Surgical Congress of 1893 in which the glass-wool drainage of Mikulicz had been introduced into a lateral ventricle. Two years after this operation the drainage was in place and the child had improved, though some hydrocephalus still existed. McArthur, of Chicago, has used a tube similar to the one employed by Mikulicz with considerable success.

Sutherland and Cheyne[7] attempted drainage by catgut from the ventricle to the subarachnoid space; a number of strands of catgut being tied together, one end was passed into the ventricle and the other end left in the subarachnoid space. The dura was sutured without drainage. In one case there was some diminution for a while in the size of the skull, but no improvement in the symptoms, and the child died three months later from meningitis. The other cases were not satisfactory. Keen also mentions a patient operated on by similar methods, but without good result. Dr. A. S. Taylor[9] has employed a similar method in five cases, three terminating fatally. Of the remaining two, one patient was living twenty months after operation, another eleven months, with the mental condition better in both cases, though there was but slight improvement physically. He says that in both of these cases drainage became most active in from two and a half to three months after operation. It is probable that at this time decrease of the secretion occurred, for it is unlikely that either the patency of the opening or the power of absorption had increased with time.

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[5] von Bokay, Jahr. f. Kinderheilkunde, vol. lvii, 1903.

[6] Centralb. f. Chir., Sept. 5, 1906.

[7] Brit. Med. Jour., Oct. 15, 1898.

Keen used horse hair for drainage, but the case was unsuccessful. He punctured above the external auditory canal, and before withdrawing the hollow needle inserted several strands of horse hair through the needle. Four days later the needle was introduced on the other side and a rubber tube inserted. The fluid was evacuated too rapidly and the patient went into convulsions and died.

Feiss suggested subcutaneous drainage which was used by Turck from 1885 to 1890 without success. Nicholas Senn[10] tried subcutaneous drainage in a case of internal hydrocephalus, but the patient died somewhat unaccountably after several days, though examination showed that improvement seemed to follow operation. He remarks: "The case indicated that subcutaneous is preferable to open drainage and proves conclusively that the cerebrospinal fluid is quickly absorbed by connective tissue elements as soon as it escapes from the ventricles." The practical objection to this method which was employed in two of the operations performed in the case reported below is that the pressure required to force the fluid through a tortuous tract in transferring it from the ventricles to the lymphatics of the neck is too great. There is no question about its being readily absorbed when it reaches the tissues in the neck under some tension, but to force it through a sinus requires a degree of compression that was so great in the case in which I used this method that symptoms of brain pressure would be produced before any considerable amount of fluid could be evacuated. Not only is pressure needed to force the fluid along this tract, but to cause it to infiltrate among the tissues of the neck, for it must be remembered that this alone requires considerable pressure. Furthermore, after continuous infiltration with this fluid in the same area for some time, the tissues will take on inflammatory changes and develop excessive fibrous tissue, which will make absorption even more difficult. For these reasons it would seem that subcutaneous drainage can hardly be successful.

The method that appears to offer most hope is that of continuous direct drainage through some slightly antiseptic material, such as a malleable silver tube, followed, after the secretion of fluid has markedly decreased, by a permanent fistula between the ventricles and the subarachnoid space. A silver tube will produce but little irritation of the brain, and by providing a constant lumen will maintain steady drainage and a fixed size of the skull. Assuming that practically all cases of internal hydrocephalus are due primarily to excessive secretion of fluid in the ventricles—which appears to me most logical—the indications should be first to reduce this secretion to a small amount by prolonged external drainage through a silver tube, and then to provide for the absorption of this amount by the subarachnoid space. In these cases, when the apertures are still open, it might appear that nothing more than prolonged drainage would be necessary, but judging from the case reported below it is quite likely that these apertures may be closed by any slight attack of inflammation or hyperemia, especially as they are in tissues that had already incurred such attacks when the excessive secretion from the ventricles first began. Such being the case, it would be advisable in all instances, after drainage had been carried out as long as necessary, to open the skull over the point of drainage and by breaking up the adhesions of the arachnoid around the fistula establish direct communication between the ventricle and the subarachnoid space. The prolonged presence of the silver tube would have created a permanent fistula so that strands of catgut would hardly be necessary, though they might be inserted out of an abundance of precaution. The dura and scalp should be closed without drainage. By following such a plan the excessive secretion of cerebrospinal fluid could be brought to about normal and communication with the normal area for its absorption—the subarachnoid space—be re-established or increased.

REPORT OF CASE.

The case reported below, while not proving anything conclusively, tends to point to the possibility of a cure by the method just recommended if persisted in long enough, and if instituted before material changes occur in the brain and before the skull has become completely ossified.

Patient.—A girl, four months of age, was admitted to Memorial Hospital June 20, 1905.

History.—Both parents were living and healthy, with no history of syphilis or of any constitutional disease in either parent. They were white people of intelligence. She was the second child, there being a girl who died when eighteen months of age from enterocolitis. Both labors were normal. At birth the infant showed a slight enlargement at the base of the skull. This was very small, but increased constantly in size until a few weeks before admission when aspiration of the contents of the meningocele was necessary. This was repeated in a few days, as the sac rapidly refilled. Hydrocephalus developed to a slight extent shortly after birth. At the time of both aspirations, which were performed by the attending physician a few weeks before admission to the hospital, the hydrocephalus was relieved by emptying the meningocele sac. The mother said that the bones of the head collapsed to such an extent as to frighten her. After aspiration, the fluid rapidly reappeared in the sac, the hydrocephalus also recurring simultaneously. Since birth the child had never nursed well and seemed poorly nourished and backward in development. She had frequent attacks of diarrhea and gastrointestinal disturbances. She seemed more stupid than a baby of her age should be, and this condition became more marked with the increase in size of the tumor and hydrocephalus, though immediately after the aspiration she appeared much better.

Examination.—On admission to the hospital the child seemed to be poorly nourished and suffering from gastroenteritis, as evidenced by vomiting and diarrhea. The circumference of the meningocele was ten inches. It was oval in shape, one diameter being longer than the other, as shown in the accompanying illustration. Most of the sac was quite thin and translucent and merged into healthy skin near its base. The head was considerably enlarged, and the fontanelles bulged. The sutures had separated. Dr. C. A. Blanton, professor of diseases of children in the Medical College of Virginia, took charge of the medical aspect of the case and after modifying the diet and giving appropriate remedies, the diarrhea was controlled and the temperature, which, during the first week of admission ran from 100 to 104, gradually subsided. (Fig. 1.)

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[9] Amer. Jour. Med. Sci., August, 1904.

[10] Alienist and Neurologist, August, 1903.

Operation.—June 27 she was operated on under chloroform and the meningocele excised. An attempt was made to dissect out the sac, but too much bleeding resulted, so the sac, with its covering of skin, was excised in one mass, great care being taken to avoid loss of blood. A purse-string suture of chromic catgut was then placed along the margin of the bony defect, which was about one-half inch in diameter, and situated at the posterior part of the foramen magnum. When this was tied the tissues at the defect were closely approximated. That portion of the lining membrane of the sac external to the purse-string suture was wiped off with carbolic acid, followed by alcohol and the flaps were united by a running catgut suture. The catgut was drawn rather tight to control bleeding. The flaps were abundant as no attempt was made to trim them too close, it being thought that the superfluous portion would be removed later if necessary. The patient stood the operation well and immediately afterward had pulse of 140, temperature 99, the pulse being 124 and the temperature 100 two hours before the operation.

Postoperative History.—An ice cap was applied to the head and for the next two days the baby convalesced satisfactorily, with the exception of a temperature of 103.5 on the afternoon of June 29, which dropped to 101.2 the following morning. On June 30 the respiration became irregular and it was noticed that the hydrocephalus, which was not affected in any way by emptying the sac of the meningocele, had become more prominent. July 1, four days after the operation, the patient seemed rapidly sinking and respirations were exceedingly irregular, from 60 to 90, pulse about 150. The child was suffering from aggravated brain pressure and was in a profound stupor and apparently on the verge of dying. I then aspirated the right lateral ventricle at the right margin of the anterior fontanelle, merely leaving in the needle and letting the fluid trickle out in order to avoid reducing pressure too rapidly. The fluid was clear and colorless. The patient improved markedly. The next day gentle aspiration was used and still more fluid was evacuated. On July 4 the wound of the meningocele operation was tense and showed presence of fluid. The catgut was cut, which released the fluid that had accumulated in the flaps. The tension of the catgut suture had been too great. Gauze drainage was put in to prevent reaccumulation within the flaps. The wound healed without infection. The hydrocephalus, however, increased.

July 6, measurement showed greatest circumference of the head to be sixteen inches, which was about the size at the time of the operation for meningocele. July 7, it measured sixteen and a half inches. July 8 respiration again became very irregular, and the baby, again sinking into a stupor, evidenced symptoms of brain pressure. The ventricles were again tapped, five ounces of clear fluid being removed. The fluid was clear, but slightly straw-colored at this time, though at the first two aspirations there was no color whatever, the fluid resembling pure water. Measurement taken after this aspiration showed a circumference of fifteen and three-fourths inches. One of the first symptoms of brain pressure manifested was irregularity of respiration, which would appear even before the marked stupor.

July 11 the head increased again in size and was aspirated, six ounces of fluid being taken out, the circumference of the head afterward being fifteen inches. July 16 aspiration was again done, six ounces of fluid being removed.

Second Operation.—July 18 the head measured sixteen and three-fourths inches. On account of the rapid increase in size and the constant reaccumulation of the fluid I concluded to operate with a view to making permanent drainage into the tissues of the neck. This was done July 19, in the following manner: A small curved flap was raised over the right margin of the anterior fontanelle, with its base toward the base of the skull. It consisted merely of the scalp. A small trocar and canula was then introduced in the right margin of the anterior fontanelle and several ounces of fluid allowed to escape. Three pieces of chromic catgut, No. 0, were then introduced through the canula and shoved in so that several inches of each strand remained coiled up in the ventricle. The canula was then slowly withdrawn, leaving the catgut well within the ventricle. The catgut was seized with forceps flush with the scalp to prevent the ends from being pulled out of the ventricle, while the rest of the catgut was drawn through the canula. A long probe was then inserted underneath the base of the flap and slowly pushed down between the scalp and the skull to a point behind the ear and into the tissues of the neck. Here the probe was cut down on and a silk ligature tied over its end and the probe withdrawn, bringing the silk with it. The distal ends of the catgut were tied into the silk ligature, and by pulling on the ligature they were brought out through the incision in the neck which had been made on the probe. With slight blunt dissection a pocket was formed around this incision and the ends of the catgut, after cutting off the superfluous portion, were tucked into this pocket and the incision closed. The curved flap was then sutured in place, no provision being made for drainage. The operation was done under light chloroform anesthesia and was completed in about twenty minutes.

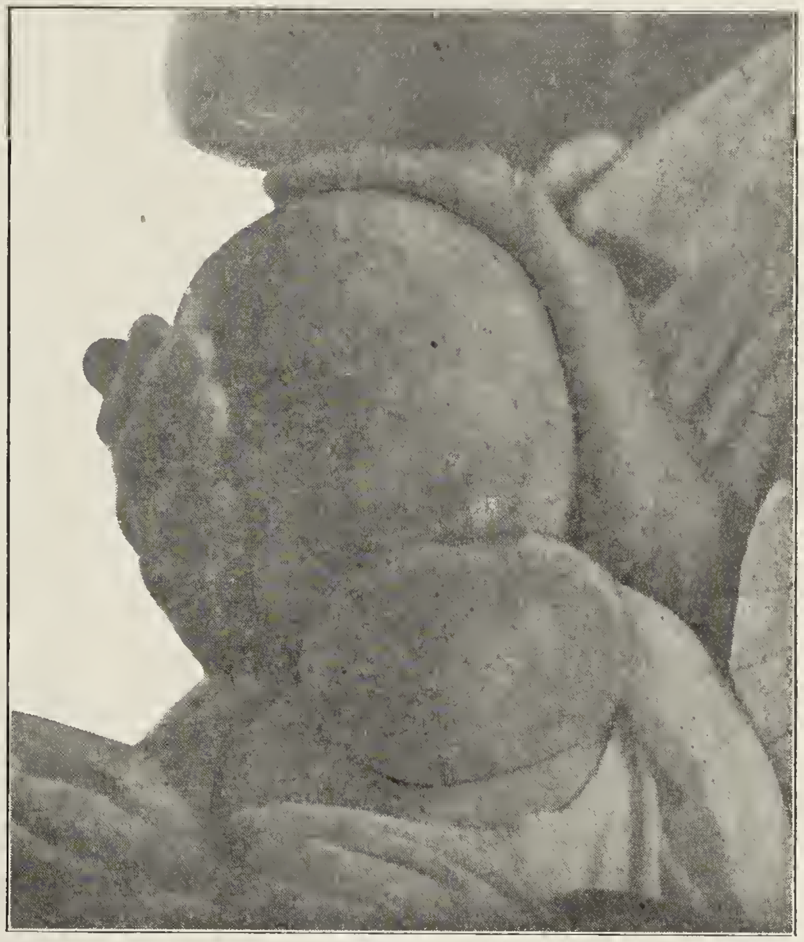

Fig. 1.—Photograph taken two days before operation for excision of meningocele.

Result.—The patient's temperature before the operation was 99.6, pulse 132. Four hours after operation temperature was 104.8 and pulse 140. The day after the operation, July 20, the temperature varied between 99.6 and 102. The head, July 20, measured sixteen and one-half inches in spite of the fact that a good deal of the fluid had been evacuated during the operation on the previous day. July 22 the head measured seventeen inches and was aspirated, eight ounces of fluid being withdrawn. A red line marked the course of the chromic catgut underneath the scalp. This was thought to be due to the irritating effect of the chromic acid in the catgut, as no serious symptoms of infection arose. On July 23 the head measured sixteen and one-fourth inches, temperature was 99, pulse 140, and respiration 45 at noon. On July 25 the head measured sixteen and three-fourths inches.

Third Operation.—It being apparent that the fluid from the ventricle was not draining into the neck, and thinking that it might be due to the fact that the catgut had become swollen and blocked the passage, I determined to try silk, hoping that its capillarity would be serviceable. With this idea a similar operation to that which has just been described as being done on the right side on July 19 was now done on the left, substituting a large silk thread for two of the catgut strands. It was necessary to use one strand of catgut also, as it was impossible to introduce the soft silk through the canula and to hold it satisfactorily while the canula was being withdrawn without the stiffness of the catgut to support it, so the silk ligature was tied to one strand of No. 0 chromic catgut. With this exception the operation was a duplicate of the one done on the right side.

Result.—The patient stood the operation satisfactorily, but two days later, on July 27, respiration became very irregular and rapid, going up to 75. It was thought that some fluid had drained from the silk introduced at the last operation, though there could not have been a very great amount. Slight suppuration took place from the incision in the neck on the right side about a week after the operation, and it was necessary to open this incision for drainage. The pus was evidently not of a virulent nature, or it may have been aseptic and produced by the irritation of the chromic catgut, for no constitutional symptoms arose. It was necessary to remove the catgut to relieve the irritation. The left side then had the only drainage, consisting of one piece of silk and one of catgut. Infiltration along the line of the silk and in the neck around its end was occasionally marked, though not very great. Unquestionably some fluid drained off in this direction, but it could not have been a very large quantity, for the tension on the head continued and its circumference did not materially diminish.

Final Operation.—August 3 respiration and pulse became very irregular, showing signs of pressure, and a small short trocar and canula were introduced into the ventricle on the right side. The trocar was withdrawn and the canula, which had a shoulder to prevent slipping into the brain, was left in place. The fluid drained away and the head collapsed. The patient showed decided improvement and there were no convulsions or other cerebral symptoms at this or at any other time due to the withdrawal of the fluid. After leaving this canula for two days, a small malleable silver tube, such as rhinologists use to irrigate the sinuses of the nose, was obtained, and its base cut off. A shoulder was made by bending the last quarter of an inch at right angles and partly filing through the tube at the bend until the lumen was reached, so as to prevent possible occlusion of the lumen of the tube at this point. The canula which had been in position for two days was then withdrawn. Its track remained open, and along it the silver tube was inserted. On account of the small lumen of the silver tube it was easily stopped up and it was necessary to open it frequently with one of the fine wires used in hypodermic needles. Care was taken to treat the wound aseptically and to change the dressings as often as they became saturated. This occurred frequently at first.

Result.—A few days after the insertion of the canula the drainage decreased. The head remained about normal size for a child of her age. Her intelligence improved markedly and she would take notice of things, and presented a very different appearance from that when there was almost constantly some pressure from the fluid in the ventricles. She remained in the condition of intelligence that is normal for a baby of her age—a condition she had formerly assumed only for a few hours after aspiration of the fluid and until it would again accumulate.

August 5, her morning temperature was 99.8 and pulse 136, respirations rapid and irregular. At 4 o'clock in the afternoon her temperature was 98.7 and pulse 120. The bowel trouble, which had not disappeared entirely, though by the constant attention of Dr. Blanton it had been kept very well under control, began to grow worse again on August 7. This continued, though the temperature never rose to any marked extent, and rarely exceeded 100. August 9 the bowel trouble became uncontrollable, vomiting set in, and large liquid stools were frequent. The patient up to this time had been doing exceedingly well, but her condition now grew worse. Pulse and respirations were rapid and irregular and could not be accurately taken. Her temperature at 8 o'clock on the evening of August 9 as 101.6. That night the baby sank into a state of collapse, after frequent periods of vomiting and evacuation of large stools, and at 3 o'clock of the morning of August 10 she died. No necropsy was permitted.

There was no trace of inflammation about the silver tube. The head was about of normal size for a baby of her age. The secretion of cerebrospinal fluid had decreased considerably since the tube had been introduced. Death was evidently due to enterocolitis which was aggravated by very hot weather.

DISCUSSION.

Dr. J. R. Eastman, Indianapolis, declared that the best evidence that drainage is effective in at least a certain percentage of cases of hydrocephalus is that repeatedly the spontaneous evacuation of the fluid through the nasal cavities has been followed by a complete cure. As has been shown repeatedly at necropsy, hydrocephalus may be due to any inflammatory or obstructive lesion. There is nearly always inflammation of the ependyma or of the meninges, or both, associated with obstructive lesions of the aqueduct of Sylvius, or of the foramina of Magendie or Munro. It has also been shown recently that at least occasionally there is an actual obstruction of the veins of Galen. Schultz found an annular constriction by inflammatory bands of these veins which remove the blood from the choroid plexus, an actual passive edema being produced in this way, with overdistension into the lateral ventricle. Somewhat recently, also, these various observers found an actual inflammatory obstruction in the roof of the fourth ventricle, obstructing the foramen of Magendie. But practically always there is inflammation of the ependyma, of the meninges, or of both, the first producing internal and the second external hydrocephalus.

From the standpoint of the surgeon the question is, how can the fluid be withdrawn through an artificially produced fistula, and a communication be established between the ventricle and the subarachnoid space to produce a cure with obstruction between the brain ventricles and the spinal cord. The experiences of Watson Cheyne and of Taylor, Dr. Eastman said, seemed to prove that such a cure, such a complete and permanent withdrawal of the fluid, may be brought about by passing strands of catgut or a small rubber tube from the ventricle to the subarachnoid space in order that the large veins of the meninges may aid the veins of Galen in carrying off the fluid. Dr. Eastman mentioned one case in which he secured a reduction in the circumference of the head of three and a half centimeters after eleven months. Of course, that is only a very slight relief, yet it is a distinct one.

Drainage into the subcutaneous tissues, he said, is not effective because intracranial pressure is lost because of the hole in the skull, a very important factor, one that accounts for the failure of Senn, Horsley and others, who have attempted to withdraw the fluid in this way.

Mr. Charles Ballance, London, England, stated that he has made a large number of postmortem examinations and has performed a number of operations for hydrocephalus. In the first place it ought to be clearly understood how this condition occurs, what are the physiologic functions, and how the fluid is produced in the ventricular cavities and the subarachnoidean space. Modern physiologists agree, he said, that the cerebrospinal fluid is a secretion from the choroid plexus; that with each systole of the heart the fluid is caused to flow out of the ventricles into the great systems at the base of the brain, and that it is then carried up from the cortex to be excreted through the Pacchionian bodies down through the spinal canal. In the first years of life cases of congenital hydrocephalus and posterior basal meningitis occur. In the former there is always an inflammation in the posterior fossa which has caused obstruction of the foramina of Magendie or of Luschka; or else there are adhesions of the cerebellum to the medulla oblongata, which is practically the same thing. That explains how in many cases of hydrocephalus in infants lumbar puncture is of no avail.

There are two ways, Mr. Ballance said, in which we can deal with congenital hydrocephalus. We can try to prevent the secretion of the fluid, or we can try to draw off the fluid from the ventricles. The first method is one that can be carried out by ligation of both common carotids. He has done this in several instances, once in an infant five months old. It cured the hydrocephalus. The head ceased to grow. The second method is not to drain subcutaneously or externally—which Mr. Ballance believes to be a highly dangerous procedure, and one which almost always ends by sepsis—but to follow the method of Watson-Cheyne and do subdural drainage. In doing this catgut is introduced through the thin cortex so as to carry fluid from the ventricular cavities into the subdural space, where it will be absorbed by the Pacchionian bodies into the superior longitudinal sinus. Mr. Ballance found that this method was not successful and that these strands seldom performed continuous drainage. He therefore used a small fine tube of pure platinum or of fine gold and iridium, these metals not being acted on by the living fluids. The tube is passed in the same manner as are the strands of catgut, through the cortex into the subdural space, the fluid being absorbed by the Pacchionian bodies. That happens in the majority of cases and the patient will get well. In a few cases the head, after about a month's time, will continue to increase in size. He thought in those cases that the tube had become plugged, and that it would be necessary to do another operation. He operated on the other side of the head, intending to put in another tube, but when he opened the dura he found that the first tube was still patent and that there had been produced an external hydrocephalus instead of an internal hydrocephalus. In that condition he did not know what to do.

Dr. A. McGlannan, Baltimore, Md., narrated a rather remarkable case of hydrocephalus he saw operated on two years ago. The hydrocephalus occurred in a negro child less than a year of age. The special senses seemed to be perfect, and the motor functions were about normal. The head was opened with the intention of making drainage from the ventricle into the subarachnoidean space, but on entering the skull and incising the dura about 500 c.c. of fluid was found and the skull seemed to be empty, except for the meninges. On careful inspection, however, a very rudimentary brain was found, the basal ganglia, optic tract, a small cerebellar portion and the motor area were present. Dr. McGlannan supposed the condition was an external hydrocephalus. The child died. After removing the head and examining it more carefully it was found that what had been taken to be thickened meninges was in reality meninges with a small inseparable thinly spread out portion of cortical substance on the meninges. The head is now in the possession of Dr. Sabin of the Johns Hopkins Hospital, who is making some elaborate dissections on which she will report later.

Dr. Shelton Horsley said that one of the main points in his paper was the report of the case, and several things will be more clear when this case is reviewed more carefully. He operated on the patient several times by various methods and came to two conclusions: First, that the pathology was primarily due to excessive secretion of the fluid into the lateral ventricles and not so much to a blocking or obstruction of those apertures. By establishing a communication between the ventricles and the subarachnoid space one is bound to have an external hydrocephalus if the secretion is very great, because that space can only absorb a certain amount of fluid, and when that fluid has been absorbed, the internal has been converted into an external hydrocephalus, as Mr. Ballance mentioned. Dr. Horsley attempted to institute drainage by inserting a silver tube until the secretion had decreased, that is, until it is practically normal, and then do the operation of Watson-Cheyne by establishing a communication between the lateral ventricles and the subarachnoidean space when the subarachnoid space will take care of the fluid.

"Telecardiography."—A letter from Amsterdam in the *Wiener klin. Rundschau*, April 29, describes a contrivance devised by Professor Einthoven of Leyden with which the contractions of the heart can be registered with extreme precision. It has been found, the writer states, that the contractions of the heart generate electricity and that these can be registered by a very sensitive galvanometer. A cord is stretched between the poles of an electromagnet connected with the two hands of the patient, who can be in an adjoining room. The movements of the cord are recorded on a revolving sensitized film. The telecardiogram thus obtained has five "peaks", and they vary typically in pathologic conditions.

THE REFLEXES OF DENTITION.*

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Dentition has assumed a position of varying importance in connection with the diseases of infancy. There is a period in medical history, perhaps about one hundred years ago, when dentition was considered the most important cause of infantile disease. Almost every disease to which infants are liable was attributed to the cutting of the teeth, and at times, the mortality from dentition alone has been placed at as high a figure as 50 per cent. This view still plays an important part in the ideas of the laity. One hears constantly of heat rashes, of the dangers of the second summer, and one constantly meets with the inquiry on the part of the perplexed and anxious parent, "Is it the teeth?"

There has also been a period of reaction against this extreme view of the significance of dentition. All significance in producing morbid processes has been denied to the process of teething. Dentition was asserted to be a normal physiologic process, like the growing of hair, and the supporters of this view denied that such a normal physiologic process could possibly be the cause of any symptoms. It is probable that neither view is correct. Certainly there is no warrant for attributing all, or even a large majority, of the ills of infancy to teething. As our knowledge of the true etiology of various diseases and symptoms has progressed, it has become evident that in many of those formerly attributed to the process of cutting the teeth, dentition could not possibly be regarded as playing an important part. On the other hand, the view that a normal physiologic process can not possibly be a cause of morbid symptoms, is not in accordance with analogy to other normal physiologic processes, in which it is certain that numerous morbid symptoms can and do occur. Examples of such processes are puberty, pregnancy and the menopause.

It is an undoubted fact that the process of dentition can occur without any disturbance of the health whatsoever. Every one meets with such cases, and perhaps they form the majority in our practice. It is, on the other hand, equally true, that a great many cases are seen, in which diseases or morbid symptoms arise coincidently with the cutting of teeth. The occurrence of symptoms at such a time must be regarded either as mere coincidence, or as evidence of a causal connection between teething and the disease.

A great variety of symptoms and disease processes has been associated in time, and hence in causality, with the process of dentition. Restlessness, fretfulness, crying and disturbed sleep are fairly common. Moderate or high fever is seen at times. Gastrointestinal disturbances of all kinds are frequently attributed to teething, especially vomiting, diarrhea or colic. Signs of pharyngitis, laryngitis, tracheitis and bronchitis are not uncommon in the teething period. Even pneumonia has been diagnosed as due to the cutting of a tooth. Many nervous manifestations have been recorded at this time, such as laryngismus, spasmodic cough, squint, muscular twitching, tetany and convulsions. Skin diseases of various kinds, dermatitis, prickly heat, eczema and many other rashes have been observed associated with dentition. And there can be found in medical literature instances where such conditions as meningitis, encephalitis, various forms of paralysis, eye affections, ear affections, etc. have been attributed solely to this normal physiologic process.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The etiology of many of these conditions is now so thoroughly understood that we know that they can not be due to dentition, and that, therefore, their occurrence during the teething period must be due to mere coincidence. This being the case, many of those conditions of which the etiology is not so thoroughly understood may also be due to coincidence. The occurrence of such coincidences would not be very remarkable, as every one of these conditions occur also frequently at a time when the process of teething is not going on, and it would rather be strange if they did not occur at a time when it is going on. The cases which do occur at this time naturally make more impression, and perhaps the difficulty of discovering a satisfactory cause, contributes toward pushing the observer into the fallacy, *"Post hoc, ergo propter hoc."*

Nevertheless, the sum of clinical experience does not convince us that all the cases of association of symptoms with dentition is coincidence. Cases frequently occur in which the evidence is strongly the other way, and the repetition of such cases, with an absence of any satisfactory demonstrable cause, has led to the view held by most authorities on the subject, that there are a certain number of conditions which are due in fact to dentition.

This being the case, there has been further discussion as to how a normal physiologic process like the cutting of a tooth actually causes these symptoms. The most simple, complete and attractive theory is the reflex theory. This is based on the numerous anatomic connections of the trigeminal nerve. The teeth are supplied by the branches of this nerve. The superior maxillary division, through its three superior dental branches, supplies the teeth and gums of the upper jaw, while the inferior dental, a branch of the inferior maxillary, supplies the teeth and gums of the lower jaw.

The trigeminal nerve, with its ganglia containing sympathetic and motor roots, is brought into close connection with the facial, the glossopharyngeal and the vagus nerves, and with the nerves controlling the movements of the eyeball and iris, and those controlling the salivary secretion. Also its nucleus in the medulla is in close proximity to other important centers. Through these connections it is an easy matter theoretically to attribute the greatest variety of symptoms to irritation of the trigeminal nerve.

Simple and attractive as is this theory, there are great difficulties in the way of proving it. It is a matter which is practically incapable of experimental proof. The theory must rest entirely on clinical proof. This form of proof is always of doubtful validity. It requires the evidence of many and repeated clinical observations to create even a presumption of causal connection between the clinical conditions observed, and the existing condition of dentition. A large mass of statistics showing the frequency of certain symptoms during teething as compared with that observed at other times, might be of some weight; but there are no satisfactory statistics of this kind. We are obliged to rely mainly on single or isolated clinical experiences, or on general impressions.

Most of the symptoms mentioned as occurring in dentition do not arise with sufficient frequency, and there is no strong evidence in favor of their being in any way connected with dentition. The respiratory disturbances, the skin exanthems and eye affections belong in this class. No one at the present day would regard the association of such definite diseases as pneumonia, meningitis, encephalitis or paralysis with teething as being in any way causally connected with dentition. Their etiology is too well known. There are, however, certain other symptoms which are associated with dentition with great frequency, and which, from their nature, give more plausibility to the reflex theory of their origin.

First, it frequently happens when a tooth is piercing the gum, that a child becomes very restless, fretful, with disturbed sleep; crying out, and sometimes beating its head against the side of the crib. The baby frequently thrusts its hands into its mouth and gives other indications of suffering a great deal of irritation in its gums. There is increased salivary secretion and loss of appetite. These symptoms often occur with such great persistency with each tooth cut, and are so immediately relieved by lancing the tense gum over the crown of the tooth, that there can be little doubt that they are due to dentition. They are not, however, strictly reflexes. The restlessness, disturbed sleep and crying are probably due to the pain which the child is suffering. The increased salivary secretion is probably reflex.

Similar symptoms occur at times, though perhaps less frequently, when no cause for irritation can be found in the mouth. In this case the cause of the irritation probably lies at the root of the tooth; in practice in this class of case gum lancing is not indicated, but rather the administration of small doses of the bromids.

Fever is another symptom frequently seen during the teething period. There may be a moderate rise of temperature, or the temperature may rise suddenly as high as to 105 F. Sometimes this rise of temperature is attended by the symptoms just mentioned, sometimes by no other symptoms. Careful examination fails to determine any other cause for the fever. This symptom frequently occurs at a time when there is not even any visible sign of irritation in the mouth, but seems to be due to irritation at the root of the tooth. The absence of any other cause for the rise of temperature in these cases, and the fact that it recurs when a new tooth becomes active, and subsides when it appears, are the evidences of its being a reflex phenomenon connected with dentition.

I have recently seen a case of this kind. The baby has now cut six teeth. With each one the story was the same. The mother found the baby suddenly feeling very hot, and immediately took its temperature, finding it as high as 104 F. or 105 F. In other respects the child seemed as well as ever, and there was even no loss of appetite. After persisting 24 to 48 hours, the temperature again fell to the normal, and in a short time the tooth appeared, the actual piercing of the gum being unattended with any symptoms.

One of the most important reflexes of dentition is the ear reflex. There occur symptoms of disturbance in the ear arising during dentition, consisting in pain, and sometimes going on to actual inflammation. The frequent occurrence of ear disturbance, and even of otitis media during the teething period is so notable that the fact has probably been observed by every one practicing among infants. There is further evidence. We know that in these conditions of disturbance of the ear, there is actual congestion of the membrana tympani. There is a close nerve connection between the inferior dental nerve and the nerves governing the blood supply of the drum membrane. According to Woakes this blood supply is derived from an artery which leaves the internal carotid in the carotid canal. The nerve fibers forming the carotid plexus at this point are directly connected with the otic ganglion which also receives fibers from the inferior maxillary division of the trigeminal nerve. Thus there is a direct channel of nerve communication between the tooth and the blood supply of the membrana tympani, and it is easy to see how, as pointed out by Rotch, an irritation about a tooth could cause reflex disturbance of this blood supply.

As to the digestive disturbances, vomiting, colic and diarrhea, the evidence is less clear. These conditions are undoubtedly frequently associated with teething. On the other hand they occur so frequently in infancy that their simultaneous occurrence with dentition through coincidence would not be very remarkable. It is well known that the digestion is easily disturbed by nervous influences, as is evidenced by the conditions of nervous vomiting and nervous diarrhea, from other causes, as heat, cold, fright and various sources of irritation. Even a distinct lowering of the digestive power can be caused by nervous influences, as is seen by the great frequency of digestive disturbances in very hot weather. Cases occur in which a child has been taking and thriving on a certain food under conditions which insure practical constancy in composition of that food. Suddenly, coincidently with the cutting of a tooth, comes a disturbance of digestion, and the infant can no longer take this same food without vomiting, colic, or more often diarrhea. When the tooth appears the digestive powers once more become normal. It seems justifiable to attribute this phenomenon to a reflex of dentition.

Less convincing is the evidence that certain nervous disturbances are due to teething. Muscular twitching, tetany and even convulsions occur during the cutting of a tooth. They are, however, conditions to which it is specially difficult to exclude other causes. While we can not deny the possibility that these symptoms are due to teething, there is little positive clinical evidence in support of their connection with this physiologic process.

To sum up: The commonest symptoms seen in dentition are not reflex, but due to pain. They may arise from the tooth cutting the gum, or from irritation at the root of the tooth. The majority of symptoms attributed to a reflex irritation from the tooth are probably mere coincidence. There is a strong probability, based on clinical experience, that dentition may cause fever, disturbances of the ear and disturbances of digestion. It may possibly cause certain nervous disturbances.

DISCUSSION.

Dr. Thomas M. Rotch said that there is strong opinion on both sides of this question. A large number of physicians say that they have never seen a case in which a gum should be lanced, and, therefore, that there are no reflex symptoms from this source. Many may live long and yet not see certain phases and manifestations, whether of nervous origin or organic. If a certain number of men assert they have seen such cases we should be influenced by those who have seen as well as by those who have not. There is no question but that the habit in the past of lancing all gums was a mistake and that a gum when lanced will not always relieve symptoms, Again, there are certain cases which call for lancing, and in which the symptoms are relieved thereby. Dr. Dunn has classified these cases very well into those in which the irritation is at the crown and those in which it is at the root. If the irritation is at the crown, lancing relieves; the other class of cases is not relieved. The first class is rare. When one sees a hard, brawny, hot, swollen gum, there is no question but that lancing is proper. Dr. Rotch said that we must believe it has done some good, when we have had a temperature of 104 to 105 and the patient vomiting and refusing food, this going on for days, and in a short time after lancing all these symptoms are relieved and the trouble is over until another tooth comes. The irritation of the next tooth may not be of the same kind and it may not need lancing. In certain individuals he has seen practically every tooth need lancing. He has had parents request that he lance their child's gum, and he has said he did not think it necessary, but they have insisted, saying: "We have walked all night with the baby and do not wish to do it again. We will not wait." In these special cases the gum was brawny and needed lancing. If these things occur once or twice in a physician's practice they must be accepted.

He thinks there are reflex symptoms during the teething period. This can not be proved anatomically, as in the first class of cases, but from analogy and general investigation he feels just as sure in diagnosis as in any of the nervous manifestations in infants which we can not explain. In the unbalanced and undeveloped nervous system of a baby the least little pain or feeling of discomfort will produce symptoms, and this may not only make it cry, but give any kind of nervous symptom, while in the adult it would have no effect. In some individuals a slight toothache will cause severe disturbance, and yet there may be nothing actually organic. So in infancy there may be a symptom-complex when the nervous equilibrium is easily disturbed. Some physicians say, "Oh, it is because you have overlooked some cause elsewhere." Dr. Rotch insists that there are cases in which there is nothing else to show. If there are pulmonary symptoms, rapid respirations, alæ nasi dilated, and signs of pneumonia, and they are entirely relieved on blowing out the Eustachian tube, these are analogous cases, and yet it could not be said that there must be some pulmonary involvement. As the nervous system is so easily thrown out of gear, there may be vomiting, diarrhea, pulmonary symptoms, congestion of the ear, pain, otitis media. All may be proved to be of infectious origin. The fact remains that there is congestion at the time of the development of the tooth. Also, when there is congestion of the middle ear in a baby, with the open petrous suture, and the intimate relation between the meningeal and ear vessels, there may be convulsions, twitching and various nervous symptoms, nothing serious and all passing away with a dose of bromid of potash, reducing the congestion. He believes in lancing when it is shown to be necessary, but not nearly to the extent formerly employed.

Dr. A. C. Cotton, Chicago, said that the argument is old. It was not strange when all the disorders of infancy coincident to the period of teething were attributed to teething, greatly to the detriment of the infant, and no doubt increasing the infant mortality, that in the rebound the profession should go to the opposite extreme, until the late Dr. Christopher was in the habit of telling mothers that teething was never known to produce anything but teeth. It is well known that other physiologic processes produce reflex symptoms, parturition, gestation, menstruation. He believed that there has been no disorder attributed to teething that may not have been due to that cause. Pneumonia might be due to teething.

One can not convince a mother that the serious discomfort so manifest in a baby preceding the eruption of each tooth is due to any other cause. Again, if not due to teething, what is it? Indigestion, reflexes from other parts? Remedies have been addressed to digestive disturbance in vain, until finally the eruption of a tooth was soon followed by convalescence. He would say that the trend of opinion is backward toward reflex disturbance of dentition. There are reflex disturbances without anatomic explanation.

Dr. Vida Latham, Chicago, said that dentition is not in all cases a physiologic condition. If hyperemia is a physiologic condition, then certainly dentition is. If a section of a child's head during the period of dentition be examined microscopically, evidence of very active hyperemia will be found. The irritant is present by pressure on the nervous system; hyperemia is present, and if continued long enough may result in a diseased condition, even ulceration or necrosis, or the happy termination of resolution. Near the apex, about one-fourth of an inch to one side, may be found an area of round-celled infiltration; after a while these cells become absorbed, and they leave an area of weakness. In other words, the apex of the tooth has a line of weakened resistance; it rotates on its axis and points to the cavity. This can be demonstrated. If neuritis is present there is nothing so destructive to the nervous system of the patient, nothing so likely to to be a cause for producing inflammation, the lowering of vitality and a profuse salivation by stimulation of the glands, and there results dilated stomach, pressure on the solar plexus and decomposition, either by drowning of the gastric bacteria, so that we have no immunity, or if the patient should have an attack of emesis concentration takes place, possibly an increase in the bacteria, and this can very readily produce a growth of the pneumococcus, meningococcus, streptococcus, which is a common thing, and the breaking up of the mucous membrane gives a mode of entrance. In many cases the lymphatic glands are infected, the nasal mucous membrane may be infected, and sometimes otitis media results. In some cases bathing, stimulation and causing the tooth to erupt relieve the symptoms better than any medicine, except, of course, antiseptics.

It seems, therefore, that we are wrong to say that there is no cause for pathologic reflexes. Again, every child is a law unto itself. In some there is a thickened fibrous tissue, and it is difficult to erupt through; when the bone is heavy and the child well developed, thick-jawed, the difficulties of dentition are great. We must measure every cause by itself. She indorsed Dr. Cotton's idea. From a teething point of view Prof. Christopher was wrong; he was an extremist. A patient who is developing a wisdom tooth will say that it is anything but a physiologic process.

Dr. H. M. Fletcher, Cincinnati, said he could take either side of this question. In other words, being a man and having wisdom teeth, he knew they gave some disturbance. On the other hand, as the physiologists would say, it is a natural physiologic process and should cause no disturbance. Admitting these various symptoms, there must be a cause. How account for a cause? His explanation is in the mechanics of the condition. Take, for instance, an erupting tooth and note how very sharp the lower edge is. When a tooth is erupting and these symptoms are present, he did not think there could be a case on record that would not be found to have bone already absorbed above it. When the child bites its fingers it presses this sharp edge down on the most tender of tissues. Suppose a child in whom the natural processes of life do not go on readily and in whom absorption of the tooth is not what it should be, and there is a hard, dense tissue which does not prevent hydraulic pressure from below, the tooth must expand in some direction. If it can not come up it will go down into the tissues below, which are most delicate. This mechanical explanation might be cited as the real cause of the troubles that come in dentition. They may produce all the systemic symptoms spoken of. This seems to me so reasonable that it is surprising it has not been advocated before. On relief of the tissues above this sharp-edged tooth there is relief of pressure and consequent relief of symptoms. This seems to Dr. Latham the most rational explanation of the symptoms.

Dr. M. L. Rhein, New York, said that the consensus of medical opinion has again turned toward the unquestioned state of affairs. The possibility of dentition being a predisposing cause to almost every pathologic condition is, to some extent, a splendid testimonial to the effect of stomatologic instruction to medical men, because it was very difficult a few years ago to get such a unanimity of opinion on this one point. He believes that the general practitioner could still get some very valuable information on this point. The great point of classification at the outset should be to separate the different sets of teeth, deciduous from permanent, because there is a great difference in the manner in which the deciduous and the permanent sets are erupted. He differed somewhat with the essayist's classification and considered the special dental classification as to crown and root preferable. The root, more especially in permanent teeth, is very little formed at the time of eruption, and the possibility of that being the exciting cause of irritation is very remote; on the other hand, he favored the mechanical explanation in such a case as outlined by Dr. Latham. The pressure of dentition as described by Dr. Fletcher can readily throw the force of irritation back into the jaw, and thus bring about the deceptive idea that the point of irritation is at the root of the tooth, when there is no real end to the root.

Concerning lancing, he said, the profession of medicine went to the other extreme against lancing years ago. That is because lancing the gum, although it may be a point of great irritation, is generally recognized as a great mistake, because it takes but a few hours for that wound to heal and you get harder tissue for the tooth to penetrate than it had before. After a study of the clinical history of what has been done on this subject, he did not believe there is much doubt but that this is the real reason. Hundreds of cases can be cited to prove these statements. Given a certain case in which there is no question that there is an irritative force which is doing great harm, the removal of that cause is undoubtedly called for, but the simple lancing of the gum tissue when there is a considerable distance between crown and tissue is useless. Part of that tissue must be removed in order to produce proper results. When that is resorted to no such failure in result is ever apparent. In regard to Dr. Latham's point as to whether this is always physiologic, Dr. Rhein thought that there is no need for argument that this is necessarily a physiologic condition, but that does not say that every individual is not so constituted that he can go through the physiologic process of dentition without some pathologic phase intervening. That does not necessarily mean that this is not a true physiologic action.

Dr. George V. I. Brown, Milwaukee, emphasized the point Dr. Latham made. He recalled a case in which he was obliged to remove a large sequestrum from the superior maxilla. The patient had also lost a large portion of the tongue, evidently due to ulcerative stomatitis. This case was diagnosed by various physicians as typhoid fever and various other fevers. Finally one came to the conclusion that the patient had been salivated by mercury given by some other physician. There was nothing the matter with the child except that at some period during the eruption of this tooth there had been a reduced resistance to these bacteria, whereby the bacteria were able to do such disastrous work. The fact that this was a general infection was made clear, because these sequestra included partly developed permanent teeth and deciduous teeth, showing that it was not a progressive condition, as under ordinary circumstances, but one which was taken directly and at once. The clinical summary is borne out by the fact that the first symptoms were chill and fever, the regular symptom of infection. He has had a number of others with much the same result and much the same history. As these deform the face of the individual through complete loss of both sets of teeth in the regions affected, it seems important to diagnose early. This patient showed a blood count of almost normal, hemaglobin over 80 per cent. showing only a transitory condition. She left the hospital the next day, apparently well. So far as this subject is concerned, it seems a wonder there is so much discussion about the results of reflex irritation from dentition, because it is equally ridiculous to assume that the various disorders of childhood, from the simpler ones to spasmodic affections, chorea, epilepsy, etc., are the result of dentition. Individuals are born with these tendencies, and in some individuals slight peripheral irritation brings serious results. The subject balances itself so nicely that it is not necessary to take a radical position.

Dr. M. I. Schamberg, Philadelphia, believed that Dr. Dunn was justified in presenting a phase all physicians should consider. They should not jump at conclusions. Inasmuch as dentition may become a pathologic process, it must be kept in mind that many of the phenomena spoken of may result in consequence of dentition. Dr. Latham's point was well taken. Dentition may frequently become pathologic. We may liken the birth of a tooth to pregnancy. It is considered physiologic and at the same time is accompanied by many symptoms, such as nausea, vomiting, etc., and at the time of the birth of a tooth there is a similar condition of affairs to that taking place in labor, an aggravated condition, and frequently it may go on to a disturbance of considerable magnitude. More careful observation by physicians for the cause of the disturbance in childhood is needed, and as soon as there is any question the case should be transferred to the stomatologist for his advice. The specialist in these instances is better able to judge whether the gums need lancing or not. The gums are often lanced by the physician unnecessarily, and when they are lanced they are often not lanced properly. He believed with Dr. Latham that there is a pathologic process which can be found by microscopic observation, hence pathologic symptoms.

THE RELATION OF THE MEDICAL PROFESSION TO THE SOCIAL EVIL.*

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The social evil as an immoral abstraction does not concern the physician except in his capacity as an individual and citizen. The social evil as conducive to disease forms a territory peculiarly his own as a privileged guardian of the public welfare!

At the present moment, however, there is little need of the sign "no trespassing" to guard from approach the pathway across a field deserted alike by the lay and medical traveler as soon as it is determined how near the dread territory of personal embarrassment and distaste it leads. For formality's sake, though no answer is necessary, I ask the question, Why is it that physicians and laymen alike avoid this topic, one of such vital interest from the standpoint both of preventive and curative medicine? Why is it that, when its direct outcome is the dissolution of the home, almost certain disease for the individual, and by no means infrequent death, the social evil is refused the publicity that will insure the protection of the people; and is accorded only that infamous notoriety that will cause the newspaper to sell?

I have said more than once in public that just so long as the American public shows itself willing to tolerate the consequences of the social evil, just so long will it reap the full harvest, and by so doing scatter the seed for a still more afflicted, though far less numerous posterity.

It marks a condition of affairs as old as Biblical history. Adultery was punished with death by the law of Moses; also by that of Lycurgus, the Greek. The early Saxons burned the adulteress and hung her companion on a gibbet erected over her ashes. Under Canute the ears and nose were cut from both offenders. Even New England in earlier days made the social evil a capital offense for both parties. The present enlightened age periodically imprisons the female public prostitute and releases the active male dupe, when apprehended, on payment of a fine, unless he be known to the magistrate as an influential factor in the politics of his district, or mayhap an officer whose oath has been registered to enforce the law, and, therefore, does not come under the necessity of always subserving it. In higher life, male and female, with impunity, assume and discard vows which pledge them to marital purity and loyalty on each and every one of the two to four occasions on which the marriage rite is celebrated.

Well might the modern cynic exclaim:

MARRIAGE IN DUPLICATE!

And these are man and wife!
Each one a remnant of a former "One."
Cemented fast by purest, holiest love.
Lip burns on lip with ardor's warmth
That kindles in the bosom every fire;
And sanctifies the future into bliss,
That only Satan's hand can turn amiss!

Love thus preëmpts her prize!
The matrimonial state is solemnized
By holiest rite and formal sanctity!
"For better and for worse" the troth is given;
And lip meets lip; bow then the knees 'fore Heaven!
The union God is called upon to bless!
A union for eternity!—unless
God's part fade out of sight;
And mind and memory, now no longer bright,
Respond alone to angry passion's call!
Where happy two were "One," now "One" is two,
And lost is all of wedlock's rosy hue!
Each separate half mates yet another love,
And renovates its pledge to God above!

Were God like dark Azrael
  To laugh at human woe,
No human mind could measure
  The humor God must know;
Forsooth His pigmy people
  Marry by solemn rite;
Then set aside the ordinance,
  Remarry over night!

Only to-day have we before us the sorry plight of hundreds of yesterday's respectable couples the country over rendered awkwardly uncertain by a decree of the Supreme Court of the United States as to whether they are married to their former husbands and wives or to those whom they have since annexed, having first dissolved (God save the mark!) their holy state of matrimony.

Why is it, I now ask, that when smallpox and measles are guarded against by the isolation of the patient and even by placarding the door—not until convalescence has set in, but until recovery is complete—why is it that venereal disease, the most widespread and a thousand times the most costly from the standpoint of social economics, is, with its breeding ground the social evil, not only ignored, but wilfully and studiously passed by as though its victim were the unfortunate among thieves, and you and I the priest and Levite shuffling to the other side? The sole difference rests in the raised hands and averted face and the false modesty of the prude. For no other name can characterize layman or physician who refuses to heed a single instance of innocent infection of a clean woman or child by a moral leper, a member of either sex, who has contracted disease by that means which we so delicately and considerately term the social evil. We may even excuse the layman for shrugging the shoulder and saying, "Why do you always exaggerate this matter?" He has a passion which he is gratifying, ignorant of danger to himself and posterity. This stock phrase hardly satisfies the conscience of the medical man, with his knowledge that 800,000 young men reach maturity every year in this land of ours, of whom a large percentage—not less than 50 per cent.—are or will be infected with some form of venereal disease prior to their thirtieth year.

Last year Philadelphia and New York City each distributed many thousands of tracts warning the public against the dangers of tuberculosis. Why? For fear others might contract the disease who need not, and in the hope and certainty that tuberculosis might thus in time become a memory instead of a condition. What, then, of those diseases in comparison with which the tuberculous number as one to five, and in gravity do not compare, either in their results on us or on our children? If taken in time, tuberculosis can be cured and leave no heritage. Only in those who are, at a given time, physically degenerate or syphilitic is tuberculosis likely. At the worst it only kills, and requires little delay in the killing. Moreover it is not dishonorable to write "tuberculosis" on the death certificate as the cause of fatality.

Venereal disease may also be cured, but often, perhaps in the majority of instances, it is not, owing either to the patient's neglect or to the physician's shortcoming. You and I well know how little qualified are the general practitioner and the general surgeon, who see the vast majority of venereal infections and all their constitutional sequelæ, to treat to the best advantage and with the best hope of cure the average sufferer with acute venereal disease. Neither their experience nor the facilities of their office enable them to do him justice. Even those who devote their time to the study of venereal infection freely admit that many cases are beyond their control. Were they not so candid, the internist need merely point to the all too frequent results of former excesses displayed on the case book. We forget, moreover, that venereal infection may also kill—usually after many years—by a slow death. And the cause? Ah, the physician is expected to call the contributing cause the active influence, while the active force is hidden in the cuff of one's conscience until after the funeral, for the sake of the family, or for the name's sake of the corpse! It seldom appears on the certificate or reaches the board of health! If the truth leaks out it is known by the few, is soon forgotten—and we rightfully spare the dead! Venereal disease of the blood vessels in its denouement is termed apoplexy; that of the spinal cord is called locomotor ataxia; that of the kidneys is termed acute or chronic Bright's disease, as the case may be; that of the brain is mollified into softening; that of the epididymis is called female sterility; and who, may I ask, can deny that these terms are accurate or true? Yet what a row of white sepulchres are these same dignified, gaunt, funereal, caballistic hieroglyphs! They cover what they dare not disclose; they injure by their very silence in the neighborhood of curable misfortune or guilt.

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* Address before the Northwestern Medical Society of Philadelphia, May 7, 1906.

May I raise the corner of the curtain? I see first—and as a student of internal medicine I read from case histories that are supposedly not pregnant with venereal conditions—one young man of 38 years under treatment for pulmonary tuberculosis. A few days later he has an apoplexy, which, with his pulmonary lesion, recovers promptly under generous treatment for a former venereal infection. Only a few days before this case I recall a still younger man of 30, requesting treatment for a more popular and less dreaded, but no less serious, infection. In spite of careful instruction and informing literature placed in his hands, that young man infects his eyes, of which the sight is preserved after a strenuous and exciting race between treatment and permanent blindness. The oculist to whom I refer him tells me casually of another young man, at that time in his care, of equally good family and of supposedly equally good moral standing—whatever that may mean to-day—whose infection had spread from the eyes back to the sphenoid cells, there probably to remain until death, the only effective cure, separates the disease and its victim. A lad of 24 has now hardly left my care with the knowledge that, as the result of a venereal infection of several years ago, he has only one chance of children by his affianced wife. If an operation fails to restore the now prized function, he faces the necessity of a frank avowal of his state, or the old story—the sacrifice of the woman to the passion of the man.

These are the experiences of one fortnight in the practice of a student of medicine whose duties would supposedly divert from him the opportunity of contact with venereal disease. In very fact, such patients confide only in their physician, and at times can not be led to the specialist, because the object of their visit is known to all as soon as they enter his door. The genitourinary specialist can never control venereal disease in all its ramifications, because he comes in contact with only those patients who are intelligent enough to place prompt cure before all other considerations, or such as are forced to apply in the sorrow of despair, while not a day passes in the doctor's office without abundant evidence of the results, and oftentimes the living reality of the almost invariable attendants on the social evil.

DOES THE SOCIAL EVIL AFFECT THE HOME?

Ask yourselves this question as medical men and as fathers. I read from the national census that during twenty years (1867-1886) we have recorded 328,716 broken homes. How many of these were ruptured because of the husband's infection of the wife, no one will ever know! Perhaps it is as well that no one ever should. Every physician knows of more than one such instance, and one is enough to set manhood aflame. To-day approximately 10.5 per cent. of all marriages end in divorce. The physician needs no figures from the census to tell him that many a separation should be granted that is refused, because the true state of the sexual life remains unknown to judge and jury; or to convince him that many a divorce comes as a godsend to an already infected wife who can no longer cherish the transmitter of an eternal woe.

DO THE CHILDREN GO FREE?

Not a few! The hundreds and thousands who die before they see the day, to which they have an immortal birthright—these reach a happier home by a short cut which they have the opportunity neither to court nor to refuse. Not, however, the illegitimate 70 out of every 1,000 children born in this America. These can hardly be said to escape the penalty of the social evil, even though their bodies, perchance, remain healthy and clean; their fatherless and motherless future is a curse beside which venereal infection would rank a blessing, if it included a kind home. Even the blindness, which stocks our asylums with from 10 to 20 per cent. of all their inmates as the result of venereal disease, would be less harrowing were it only innocent in origin. Shall I read the health bulletins of this Quaker city for the edification of those who think we are drawing a dangerously long bow? Does it cause surprise to learn that the records of the past twenty weeks included 27 certificates of death from one congenital venereal disease, only four weeks out of the twenty yielding no reported cases? This recital is of itself a sufficient commentary on the prevalence of venereal disease and, primarily, of the social evil. Each instance implies the same disease in father and mother. And shall I ask you to compare with this meager total the actual number that must have been reported as dying from marasmus and other misnomers, but which should rightfully be attributed to the social evil? In France these figures are kept and given to the people, as they will be here, and the infant death rate in France from venereal disease numbers over 25,000 in a year. The knowledge of these figures would, one might think, deter at least the physician from engaging in the social evil.

DO THE MOTHERS PAY FOR THE SOCIAL EVIL?

I think if the decision were left to the women the men must needs depend on Nature to satisfy her own demands. She is amply able, and never intended that her task should be delegated to any other than the wife and the mother. No physician exists to-day who dares to gainsay this assertion in the face of the consensus of the International Conference of the Students of Venereal Disease (Brussels). Had this congress come to any other conclusion, a physician's own experience and heart would give it the lie. And yet the teaching on this point has been either non-existent or unqualifiedly bad until recent years. As a consequence, there have been two standards of morals, one of enforced chastity for the woman and one of indulgence for the male, who has avoided the titles of adulterer and prostitute only because the physician has allowed him to pretend he was satisfying, at the woman's expense, an imperative demand of Nature. There are those who still, whether through ignorance or even more culpable carelessness, hold this ground. Only a few weeks ago a boy of the type from which real men are made received such advice from a physician in the town in which he was at boarding school. He came to me to learn if it was necessary to his health to do what his senses told him was a crime.

I submit the price paid by the mother of the home in the terms of those who care for her in her darkest moments. Six of your most prominent obstetricians and gynecologists replied to my question, What approximate percentage of all your operative cases would cover the conditions caused by venereal disease?[1]

Dr. John G. Clark wrote: "It is very difficult for me in an offhand way to give you an approximate percentage of the cases operated on by me which are directly due to gonococcal infection. Of the pelvic inflammatory cases, however, I believe I would be safe in saying that 50 per cent. originated from this source."

Dr. Edward P. Davis wrote: "In hospital patients I should say that from 5 to 10 per cent. show evidences of venereal affections, usually gonorrheal; in private patients, the percentage is much smaller. I recall, however, distinctly, two cases which illustrate the possibility of such an infection among private patients. In one, gonorrheal infection of the vagina infected the eyes of the child, causing a dangerous ophthalmia; in the other case a woman married a man who had syphilis, and who was assured by his physician that he was cured and could safely marry. The result has been the destruction of the fetus in three successive pregnancies and the infection of the wife; the wife's infection was not very severe and has been controlled by treatment, so that destructive lesions have not occurred."

Dr. Joseph Price wrote: "I do not hesitate to say that 90 per cent. of all pelvic suppurations are due to gonococcal infection. In addition to these many other abdominal conditions are due to venereal diseases."

Dr. Charles P. Noble wrote: "Less than 10 per cent." (referring to all operative work).

Dr. Richard C. Norris wrote: "I have come to divide my patients into two general classes—the well-to-do private patients and the dispensary class. Among the latter I would approximately estimate a large majority, probably 80 per cent., as due to gonorrhea. Of the former the proportion is, I believe, considerably smaller, due, not so much to the greater freedom from gonorrhea of the husband as to the fact that a larger proportion of such husbands receive better and more persistent treatment of their disease, and their intelligence being greater, the sum total of infections produced by this class is less frequent and less virulent."

Dr. Barton Cooke Hirst wrote: "It is impossible for me to compute the proportion of cases in my practice due to venereal infection. In a general way, I should say that this proportion is much lower among the upper classes than among the poor. I find among my private patients a very small proportion indeed of venereal infections. I should say that less than 8 per cent. of my inflammatory cases in the better class of private practice are due to this cause. In my dispensary and ward patients the percentage rises enormously. The majority of inflammatory cases I believe to be due to gonorrheal infection. I should be disposed to put the proportion at something like 75 per cent."

My friends, if these figures carry on their face the proof of immoral male tyranny, let us make the most of them!

DOES THE BODY POLITIC SUFFER FROM THE SOCIAL EVIL?

Does the tree suffer when the worm is busy at the root? Does America most need her 14,000,000 young men in a healthy, active state for business and defense, or can she use them to equal advantage when crippled, sterile, or infectious to others, or suffering from this trio born of the devil's malice toward man?

Does it mean anything to a nation's prosperity that at some time before adult life at least half her young men are laid aside for a time owing to venereal disease, and become the means of incapacitating others; that some receive permanent disabilities; and that not a few are rendered industrially useless? Does she suffer from one year's (1900) census mortality of 1,591 (934 males, 657 females), a mere fraction of the unreported total? Does she pay a heavy tax when a large percentage of those infected, men and women, become sterile, permanently and perpetually disabled from propagating their kind? Does it count that these diseases are responsible for many of the insane and the blind? Does she find cause for regret that the immoral element takes bodily hold of politics and rules the town? This state of affairs pertained in Philadelphia only a few months since. And does the community learn with surprise of a needless annual outlay of public funds in that in 1904 there were treated at the Philadelphia Hospital of males alone 791 unnecessary cases of venereal disease as such, and in 1905, 663 males and 175 females; while in the medical and surgical wards were as many, if not more, in a chronic state?

WHAT CAN BE ACCOMPLISHED IN THE CONTROL OF THE SOCIAL EVIL AND VENEREAL DISEASE?

Everything, if every physician will but lend a hand; a great deal, with the few who are already openly able and willing to help. The effort is repaid if one boy or girl is thereby saved from venereal and moral infection. Would that there were no one in the medical profession who felt it necessary to see this movement become popular before offering his active approval! There are, indeed, practical methods, and following are a few that have been tried and have stood the test.

First and Foremost.—The physician is responsible for a sane understanding of the normal sexual functions among his own clientele. He can impart this knowledge to the individual, male and female, either in his office by word of mouth or through literature; but if necessary he has the lecture room at his elbow. One or the other method should be employed. The fantastic notions and the ignorance of otherwise intelligent adults regarding the normal sexual phenomena and the proper care and respect for their genital apparatus is not a high tribute to our supposedly unremitting thought for their welfare.

Second.—Almost equally important is the instruction of fathers and mothers regarding the prevalence of the abuse of these functions, the reasons therefor and the consequences, including the statistics of the insane and blind asylums and of venereal disease, and the communicability of the latter. These data furnish the only argument needed to do away with the double standard of morals for the man and woman. The woman suffers more and should, if either, have the greater moral license. The prevailing cry is, "Spare our children the need of learning these facts." You have been sparing them, my friends, for many a year, and your children are now grown. In spite of your consideration, or because of it, all they have learned is a smattering of the truth, usually in an inaccurate, unhealthy, unclean way, in jest or in song, from the stableman or the nurserymaid. The guttersnipe is far more apt in gaining the ear of your boy than his pastor; his lesson sinks deeper and is more lasting! The consequences, you must admit, deserve attention. Have you another remedy to suggest, or will you test the one offered? Will you tell him clearly that which he has a right to know about himself, or shall he hear the distorted story, as he surely will, from the hostler or the schoolboy degenerate? Shall the mother advise her girls of their high privilege in life, or shall they learn first of these things in gossip, or, as sometimes occurs, from an infected and infectious husband? I heard a noted gynecologist exclaim only a few nights ago, after operating on a beautiful girl, "My God! I'd rather my daughters should never marry than see them on the table like that! And yet how can I prevent it?" he added. When I heard this cry I said again to myself, "The women, at least, must be given the opportunity of knowledge, and the right to intelligently choose between the diseased and the clean."

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[1] It will be observed that two of the six reported on general gynecologic operative work, while the other four limited their estimate to pelvic conditions.

Third.—The criminal false modesty and prudery that has led and almost forced the medical profession to conceal the prevalence of venereal disease should be exposed, and must yield to measures calculated actively to protect the public. If disease is in our midst, and if innocent infection is possible owing to ignorance of the possibility, and largely preventable when the facts are known, then all but true modesty must step aside, or the physician shoulder the blame.

Fourth.—Societies are being formed the country over of which the privileges of membership are extended to the laity of both sexes, who are invited and urged to aid in the work. A new field opens for women, both lay and medical, which men can not cover. These societies should be local organizations, with the needs of the individual city or town as the immediate object in view. They can, if they desire, send delegates to a national organization.

The names of these societies should plainly indicate their purpose, and display none of the false sentiment for the dissipation of which they sprang into existence. Such organizations already exist at home and abroad for the "Study and Prevention of Venereal (or Social) Disease." Their work should be essentially educational. If legislation ever becomes possible it will only be through an enlightened public whose knowledge at present amounts to the densest ignorance. My city is for the first time considering instruction in the principles of normal sexual hygiene in the colleges and schools, one of the brightest signs that the ground has been broken for the sowing.

Sixth.—In all public and private expositions of the subject there must be strict emphasis laid on the dignity and nobility of the pure sexual life as a God-given privilege.

Charges of exaggeration and fanaticism are the inevitable attendants on every movement that inconveniences a portion of mankind. Substantial ground should never be afforded on which such claims can stand. The statistics of the social evil and venereal disease are of such magnitude that they require no amplification.

CONCLUSION.

We can not cleanse the world of venereal disease in a day or in a lifetime. It can be accomplished as surely as any other right problem, and as certainly as that of tuberculosis, which, we must recall, was also impossible only ten years ago. A small beginning may have no end. Conviction and sane enthusiasm will win over many who are now opponents to the cause. There will be enough work for each father and mother in the individual home, no matter how clean; that work should rest on the family Bible handed from father to son.

There will be more than any one physician can accomplish in the safeguarding of his patients from harm. He should never give them the opportunity to curse him for their ignorance of facts to which they have a clear title.

Enough has been said to convince the most reluctant that earnest men have engaged in a struggle to the finish, and that your duty and mine is to be up and doing, unless we would learn of America, as is true of France, that the death rate exceeds the birth record, and from the same causes—alcohol and venereal disease. Medical men are walking with eyes wide open along the edge of a slough of despond so treacherous and so pitiless that the wonder can only be that they have failed to warn the world away. Not a signboard! Not a caution spoken above a whisper! All mystery and seclusion! Gatherings strictly medical, the stenographer excused for the occasion, a brief notice in the medical journal, and, as a result of this studied propriety, a world more full of venereal infection than of any other pestilence, and no other existing so regrettable and so unlikely, under the present régime, of ultimate escape.

It becomes plainly your duty and mine to educate, first, the physicians who are ignorant of or carelessly deny the facts; and, secondly, through them, to arm the fathers and mothers so that they may guard our girls and boys. One generation of preliminary, elementary education—that education which Devine characterizes as the "one unquenchable hope of those who care profoundly for their fellow-men"—and we will have at our sides or in our places a body of public-spirited citizens who will not only make the attempt, but will storm the citadel of this social evil. I am not one of those, as you already know, who doubt the ability and ultimate purpose of man's Maker with regard to this moral and physical disease. We have only too recently had evidence that we do not begin to estimate His power. It is certain that there will be small need for its exercise if mankind will for the first time decide to aid the Almighty with their best effort.

Already the women of this country are receptive and are being prepared. They suffer most as the result of the abomination, and, if their men will not cure it, theirs is surely the right of self-preservation. Who dare deny it to them? Certainly not the men who have been feeding the flame! With each new day I believe more heartily that the control of the social evil and of its consequences will be attained through and by the women, and by the elementary sexual education of both sexes in the home and over the family Bible. When the time arrives for the American woman to realize her full power, even to the point of forcing her sons and husbands to be clean, and to live true to the ideals of American manhood and womanhood; in that day will have been accomplished the restoration and preservation of the American home altar.

> "Happy he with such a mother
> Faith in womankind beats with his blood;
> And trust in all things high comes easy to him;
> And tho' he trip and fall, he shall not blind his soul with clay."

THE STUDY OF "ROCKY MOUNTAIN SPOTTED FEVER" (TICK FEVER?) BY MEANS OF ANIMAL INOCULATIONS.*

A PRELIMINARY COMMUNICATION.

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CHICAGO.

I arrived in Missoula, Montana, April 21, 1906, equipped for the bacteriologic and hematologic study of the so-called Rocky Mountain spotted fever and for the study of the infectious agent by means of animal inoculations.

Although the period during which the disease occurs is very limited and the cases very few, it was possible to carry the investigations to a point which affords encouragement for the ultimate solution of some of the problems involved. At this time I wish to give a brief and preliminary presentation of the most important results obtained this year, reserving for a future date a more detailed interpretation of the experiments, when the bacteriologic and histologic studies will have been completed.

It will be remembered that the confidence which was at first manifested in the report of Wilson and Chowning concerning the presence of a piroplasma in the blood and erythrocytes of infected patients was greatly shaken by the observations of Stiles, who, after prolonged study, was utterly unable to confirm the piroplasmatic nature of the disease.

From these conflicting reports, it seemed very probable that the specific organism, if present in the blood, must be one which is difficult of determination, and for the demonstration of which special experimental methods must be used.

The first essential point to be studied concerned the situation of the specific agent in the body. Considering the subject from an unprejudiced point of view, it was necessary to recognize the possibility of the microbe having a local situation, the general disturbance being caused by toxins which are absorbed from the point of primary infection. This possibility was considered somewhat improbable, however, the characteristic and generalized eruption speaking for a systemic rather than a local infection. On this account, my attention was directed chiefly to the blood from the start.

After a fairly exhaustive search of the blood in stained and unstained preparations in two cases, I was unable to identify a parasite positively either within or without the erythrocytes. Similarly, aërobic and anaërobic cultures of the blood, made in bouillon and on agar plates of differing reactions, gave negative results with one exception. In the one exception mentioned, a staphylococcus grew in a flask of bouillon which had been inoculated with from 3 to 5 c.c. of blood drawn from the patient, Landon.

In view of these negative results, it was decided to proceed at once with animal inoculations, although the microscopic examination of the blood and culture experiments were continued as new cases developed.

EXPERIMENTS ON RABBITS.

On April 27, two intravenous inoculations were made into rabbits. In one instance, 1 c.c. of defibrinated blood from the patient, Stevenson, was used, and in the other 4 c.c. of defibrinated blood from the patient, Landon. The Stevenson blood was 17 hours old and the Landon blood 24 hours old at the time of injection, the blood having been kept in the ice chest except for the first few hours occupied in transporting it to the laboratory. The animals appeared not to be disturbed by the injections in so far as weight, temperature and demeanor indicated, and nothing of a positive nature was learned from the experiments.

On May 6, 5 c.c. of defibrinated blood, 22 hours old, from the patient, Cortsen, were injected intravenously into a rabbit weighing about two kilos. No disturbance was noted for four or five days, when the temperature rose to 104.8, but remained above normal for no more than two or three days. The experiment was not considered satisfactory.

EXPERIMENTS WITH GUINEA-PIGS.

Turning to the guinea-pig, a supply of which had been received in time for inoculations with the Cortsen blood, astonishing and strikingly positive results were obtained. On May 5, when the Cortsen blood was six and one-half hours old, one guinea-pig was given 3 c.c. and another 5 c.c. intraperitoneally. One of the animals died in 7 days and the other in 11 days. It was necessary for me to be absent from Missoula for two or three days following the inoculations, but on returning I found in both a temperature which ranged between 104 and 106 F. After the fifth day both animals became emaciated rapidly, and for from 36 to 48 hours before death the temperature was subnormal. In guinea-pig 1, the scrotum and testicles became enormously swollen, and on the sixth day the skin of the scrotum was occupied by large dark-colored hemorrhages of irregular outline. Subsequent experience showed that this swelling of the testicles and scrotum and the hemorrhage into the skin of the scrotum is the most characteristic sign of the disease as produced in the male guinea-pig. Cultures of the Cortsen blood, and also of the heart's blood of the guinea-pigs after their death, remained free from discoverable growth.

A second generation of three guinea-pigs was inoculated with the heart blood and splenic emulsion from the two animals which had died. Of the second generation one died, having the characteristic scrotal hemorrhage and swelling, and the other two recovered after a course of high fever and emaciation. From the fatal case inoculations were made into a third generation, the members of which did not become noticeably sick. In all fatal cases cultures of the blood on plates gave no visible growth.

Although these experiments can leave no reasonable doubt as to the actual transference of the infection, further work seemed to be threatened by the inability to keep the infection going indefinitely in the guinea-pig.

On May 20, blood from the patient, Porter, was inoculated into two male guinea-pigs, one of which died in seven and the other in eight days, both cases running typical febrile courses, and showing the changes in the scrotum already mentioned. Cultures of the Porter blood and of the heart's blood of the fatal inoculations remained sterile.

A second generation of male guinea-pigs was injected from each of the fatal inoculations of the first generation. The two members of the second generation became very sick, running typical courses of fever which reached 105.7 and 105.8, but recovery appeared to be complete on the tenth day in each case, at which time the temperature had returned to the normal. Here, too, attempts to perpetuate the infection by direct transference failed.

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* This work has been done in part under a grant made by the American Medical Association through the Committee on Scientific Research.

On June 11, blood from the patient, Bradley, whom I discovered accidently near Stevensville, was utilized partly in repetition of previous experiments, but chiefly to determine the filterability of the virus and its distribution among the constituents of the blood. For this purposed a sufficient quantity of the blood was centrifugated for 45 minutes at an estimated speed of 1,500 revolutions. The serum was drawn off and 6 c.c. were injected intraperitoneally into a guinea-pig. An additional amount of 6 c.c. was passed through a small Berkefeld filter under low pressure, the total amount after the filter was washed out with salt solution being between 10 and 12 c.c. This amount was considered too large for a single injection, hence it was given to another guinea-pig in two injections separated by an interval of two hours. The erythrocytes, and, of course, leucocytes, which remained after centrifugation, were now washed three times with sterile salt solution, raised to the original volume by means of the same solution, and 6 or 7 c.c. injected intraperitoneally into another guinea-pig. To complete this experiment, the unaltered defibrinated blood was injected intraperitoneally into another guinea-pig. Without giving details as to the course of the disease in these animals, the results were, briefly, as follows: Fresh defibrinated blood, washed corpuscles and unfiltered serum produced typical and fatal infections in the guinea-pigs inoculated with them, whereas the filtered serum had no discoverable effect, the animal at no time showing a temperature, even up to the present time.

RESULTS IN EXPERIMENTS.

The results of these experiments were somewhat surprising since the failure to recognize the organism microscopically had suggested the probability that it was of exceedingly minute size and might be readily filterable. I would not assume that filtration is impossible, but simply state that it did not pass through the filter under the condition of experiment. These experiments prove, then, that the condition produced in the guinea-pig is an infection and not an intoxication, for otherwise the filtered serum undoubtedly would be as toxic as the unfiltered. In view of the infectiousness of the serum they also prove that the infecting agent is far from being an exclusive corpuscular parasite; and they suggest very strongly that the organism is of such size that its ultimate and positive recognition with the microscope may be hoped for reasonably. It is recognized that these results do not agree positively or decisively against the piroplasma theory, since piroplasmata may well be in the serum as in the erythrocytes. But they do seem to throw some doubt on this theory, since the serum was almost as virulent as the erythrocytes. On the other hand, it can not be argued that because the washed corpuscles were highly infectious that the erythrocytes actually are infected. One could as readily assume that the organisms were in the leucocytes, or that they were entirely extracellular, a certain proportion of them having been thrown down in the centrifuge together with the corpuscles.

Another important point brought out by these inoculations with the Bradley blood is the fact that the guinea-pig, at least in some instances, suffers from a more or less extensive macular and confluent eruption which is in addition to the scrotal hemorrhage. This had been missed in the earlier experiments, partly because of its unsuspected distribution. After observing that such an eruption occurred chiefly on the dorsal aspect of a monkey inoculated by Dr. King, being entirely absent from the abdomen and chest, I shaved the entire skin of a guinea-pig which had died of the disease, and found the dorsal and lateral aspects of the body, face and extremities marked by many reddish mascules, whereas over the face and buttocks there were confluent hemorrhages. Subsequent observation on other guinea-pigs shows that this eruption is of frequent, though perhaps not constant, occurrence.

EXPERIMENTS ON MONKEYS.

I ordered monkeys as soon as I had decided to begin animal inoculations. The season of the disease being short and the situation more or less critical, it was thought best not to jeopardize progress by neglecting the use of an animal so closely related to man. After unfortunate delays and misunderstandings these animals reached me in time for inoculation with the blood of the patient, Porter.

On May 20, a healthy and fairly large Rhesus, weighing about three kilos, received intravenously 10 c.c. of defibrinated blood from the patient, Porter. The blood at this time was about 28 hours old, this period representing the time required to transport it from Hamilton, 50 miles away. During this time the blood had been kept at outdoor temperature, about 15 C. On the evening of the second day the temperature of the animal rose to 104.6 by rectum, and from this time until the tenth day it ranged from 103.1 to 105.3. On the tenth day it fell rather suddenly to 101.1, and the animal gradually regained his former healthy condition. From the fourth to the eighth day he appeared very sick, was extremely weak, ate very little, the face was cyanotic and the conjunctivæ were infected. The cyanosis and injected conjunctivæ are recognized as characteristic symptoms of spotted fever as the disease occurs in man. The duration of the sickness also approximated that seen in man. The incubation period was shorter, however, as in the guinea-pig.

When the disease is fatal in man, death usually occurs on from the seventh to the ninth day; and, although patients occasionally die after having weathered 14 or 15 days, one who survives the tenth is given a guarded favorable prognosis. The most characteristic sign of the disease as it is seen in man, i. e., the generalized reddish macular eruption, was not observed in this animal. During his sickness the eruption was sought for principally on the chest, abdomen, arms and legs, where there was the least hair, and the skin in some places was of a transparent pink color. The absence of the eruption does not, under the circumstances, render the diagnosis of spotted fever untenable. Those who have had the greatest experience with the disease in man recognize a mild type in which the characteristic eruption is absent. In such cases, the diagnosis rests chiefly on the sluggish circulation, general cyanosis, reddened conjunctivæ, drowsiness and lack of complaint on the part of the patient in spite of retained intelligence, the course and duration of the fever, slow convalescence, and the season of the year in which the disease occurs. Furthermore, those who are familiar with experimental inoculations in animals have long since recognized the fact that in many diseases, desirable as the result is, one may not be able to obtain in an animal a complete duplication of all the symptoms seen in man, in spite of exquisite susceptibility on the part of the animal. The receptor theory of Ehrlich has rendered such variations altogether intelligible.

My second inoculation of the monkey was made on

June 11 with the defibrinated blood of the patient, Bradley. This patient was discovered by the merest accident, on June 9, near Stevensville, where I had gone for the purpose of exploring an infected district with Dr. Fessler. On the following day from 60 to 70 c.c. of blood were drawn from a vein of the arm by means of sterile apparatus kindly loaned by Dr. Brice, the attending physician. The patient was in the tenth day of the disease. After defibrination the blood was placed on ice until the following day, when it was possible to return to Missoula.

The animal inoculated was a small female Rhesus, weighing less than two kilos and apparently perfectly healthy. Eight cubic centimeters of the blood were injected intraperitoneally. The animal ran a course of fever similar to that of the first monkey, but died on the ninth day, after a short period of subnormal temperature. In addition to the cyanosis of the face and ears noted in the first monkey, the hairless skin of the perineum became brilliantly red, although at no time were hemorrhages detectable. The skin of the abdomen, chest arms and legs remained free from spots or hemorrhages. No cause of death, other than spotted fever, was found at the autopsy, no peritonitis had followed the injection and a plate culture of the heart's blood showed no visible growth after five days of incubation.

A second monkey and three guinea-pigs were inoculated with the spleen and blood of the dead animal as soon as possible after death. One guinea-pig died of peritonitis following perforation of the bowel with the needle. The other two are at present running temperatures which correspond to that seen in previous inoculations of the guinea-pig, and in one the scrotum shows the characteristic enlargement. The monkey of the second generation has a temperature which has gone as high as 106.7, the perineum shows the redness seen in the monkey of the first generation, and the hemorrhagic eruption has appeared on the scrotum, buttocks, legs, back, etc. The appearance of these phenomena in the second generation of animals leaves no doubt as to the success of the inoculation with the blood of the patient, Bradley.

I may refer here to a most gratifying result obtained by Passed Assistant-Surgeon W. W. King, of the Public Health and Marine-Hospital Service. Up to the time of the inoculations with the Bradley blood, Dr. King had confined himself to the microscopic study of the blood. He had been no more successful, however, in this search than I, and, having obtained a monkey and some guinea-pigs, I readily assented to his proposal that he repeat some of my experiments with the hope of confirming them. For this purpose I shared with him the blood of the patient, Bradley. We drew lots for the route of inoculation, the subcutaneous falling to Dr. King and the intraperitoneal to me, as stated above. The monkey inoculated by Dr. King died two days later than mine and showed a marked hemorrhagic condition of the skin of the scrotum and penis and the flaming erythema of the perineum seen in my monkeys, together with a mixed macular and confluent eruption, hemorrhagic in character, which was distributed chiefly over the external aspects of the arms, legs, buttocks and back. The face and ears were extremely cyanotic. No exanthem could be discovered on the chest and abdomen. A guinea-pig also inoculated by Dr. King with the Bradley blood ran a typical course, presenting the enlarged and hemorrhagic scrotum, the exanthem already observed by me, and in other respects confirming the results of my inoculations.

White rats and mice arrived so late that they could be used in but one case; the disease was not reproduced in them.

SUMMARY.

The essential anatomic findings in the guinea-pig at autopsy consist of the cutaneous phenomena described, the enlarged and hemorrhagic scrotum in the males and some swelling of the testicles with pronounced congestion of the epididymis, retention of urine, distension of the seminal vesicles, congestion of the kidneys and suprarenals, swelling and congestion of the spleen and liver, and a right heart and venous system which are enormously engorged with blood. No meningitis nor localized inflammations have been observed, except in two instances in which the skin of the swollen scrotum had become gangrenous, with a consequent staphylococcus infection of the underlying cellular tissue.

In the one monkey which has gone to autopsy so far, nothing was found macroscopically, in addition to the cutaneous phenomena, except a congestion of the parenchymatous organs.

That spotted fever has been transmitted to the guinea-pig in my experiments is shown by the following data: The fever, duration and cutaneous phenomena resemble very closely these conditions as seen in man. It can be transmitted into the third generation by direct inoculation from one animal to another, but has not been carried beyond this point up to the present. The condition produced has been an actual infection rather than a transferred intoxication, because it can be passed through the second generation of animals, and because the filtered serum which would certainly contain any soluble toxins which might be present causes no disturbance. In further confirmation of the statements just made are the facts that no other cause of death has been found, and that it has not been possible to cultivate any micro-organism from the heart's blood in fatal cases.

For similar reasons it is believed that the transmission to the monkey can not be disputed.

I realize that the material on which these conclusions are based is rather scant, but the experiments have been rigorously controlled, and I feel that they are safe.

The hope is still entertained that it may be possible to keep the infection alive in experiment animals by suitable manipulations in order that many other problems bearing on the disease may be taken up properly. I am at present trying to do this by alternating the infection between the monkey and the guinea-pig, with the hope that the character of the virus may be so altered that the infection may be passed directly from one guinea-pig to the other indefinitely. With this result in hand attempts toward the production of a vaccine may reasonably be made.

The discussion of other features of the disease will be reserved for the present. I shall only refer to the theory of transmission by means of the wood-tick, by expressing my disagreement with the conclusion of Stiles that the tick theory falls with the piroplasma theory. The tropical "tick fever" goes to show that ticks may harbor and transmit pathogenic parasites other than piroplasmata.

For the privileges of the laboratory of the Northern Pacific Hospital and of the hospital itself, I am under the greatest obligation to Dr. W. E. Spottswood, surgeon-in-chief, without whose active interest much of the work of this season could not have been undertaken. I also express my thanks to Dr. Chowning, since I profited greatly by his previous experience in the field, and to Dr. King, who, after the departure of Dr. Chowning, gave me the most generous assistance in the inoculation of the animals.

The contributions of the Montana State Board of Health and of Missoula and Ravalli counties, through their commissioners, are gratefully acknowledged.

ROCKY MOUNTAIN OR SPOTTED FEVER.*

HARRY N. MAYO, M.D.
SALT LAKE CITY, UTAH.

DEFINITION.

An acute infectious disease characterized by a somewhat sudden onset, with purpura hemorrhagica, terminating by lysis in from two to seven weeks.

ETIOLOGY.

The disease is also known as tick fever and occurs, as far as known, in Montana, Idaho and Wyoming. It seems to be more common along the course of the Snake River than elsewhere. Some attribute the disease to the bite of a tick which is one of a class of Acariden arachnids which attaches itself to the skin of man and other animals in which it buries its head and sucks the blood.

Spotted fever is prevalent among bridge builders, carpenters, civil engineers and men of like occupation who are employed in building railroads, bridges, canals, etc. The theory is that these individuals sleep on the ground and are exposed to the bite of the tick. Whether the bite of the tick has anything to do with the disease or not is yet to be proved. It is a fact, however, that many of these patients have ticks on their person or give a history of having been bitten by the insect.

MORBID ANATOMY.

The anatomic changes are those incident to a purpura hemorrhagica. The spots begin to appear about the ankles and thighs. At first they resemble very much the petechia of typhoid fever. They are intensely red and there is no elevation of the area of discoloration. The spots gradually increase in size and extend over the entire body. They merge from a deep red into that of a purplish hue, and before they disappear assume a greenish-yellow aspect. In severe cases the spots coalesce and the skin assumes a peculiar mottled condition not seen in any other disease.

SYMPTOMS.

The period of incubation is not known. If the tick has anything to do with the disease it may manifest itself very soon after the infection, inasmuch as many of the cases have ticks with their heads imbedded in the skin when they come under observation. The patient at first complains of a general lassitude and shows an elevation of temperature, about 100 to 101. As the spots begin to appear, usually in a day or two after the first symptoms of malaise, the temperature begins to rise, the spots increase in size, and in four or five days extend over the entire body. There is headache, backache, legache, loss of appetite, constipation and coryza. There are no nervous symptoms except those attending ordinary febrile diseases. After the patient has been sick for several weeks and when the temperature runs to 104 or 105 there may be delirium. The pulse is full and increases in rapidity with the elevation of temperature. The tongue is furred and sordes is present.

PROGNOSIS.

The severity of the disease seems to be commensurate with the skin manifestations. In severe cases the integument of the scrotum and thighs becomes very much discolored. Areas of gangrene appear on the scrotum or in its vicinity, and in such cases death usually follows.

DIAGNOSIS.

The disease is characteristic and after several cases have been seen could hardly be mistaken for anything else. Typhus fever, also called spotted fever, has a history of emaciation and occurs in prisons, poorhouses, etc., or among the poorly clad, illy fed of the tenement districts of large cities. Epidemic spinal meningitis has a known bacteriology, the *Diplococcus intracellularis* being recognized as its cause and is spoken of as spotted fever because of the malignant purpuric type that sometimes prevails. The cerebral symptoms present in this disease do not exist in the spotted fever which this paper means to describe.

Purpura hemorrhagica is a symptom of rheumatism and scurvy, neither of which could be mistaken for this disease.

The disease is most common among males, probably because in their occupations they are exposed to the infection. Females would doubtless be as susceptible to it were they infected.

TREATMENT.

The general management of this disease should be in accordance with symptoms presented. The constipation should be combated, elimination by the skin, kidneys and bowels should be promoted. Hydrotherapy should be employed in the same way as in typhoid fever, nutrition should be kept up. The alimentary canal does not seem to be crippled in this disease as in typhoid or the spotted fever of the cerebrospinal meningitis type. Therefore, the patient's nutrition is easily kept up.

NOTES.

Doctors McCalla and Maxey, of Boise, have seen many cases of this disease. They made blood smears which Dr. Maxey took to Professor Welsh for examination. This was done because of the report that the disease was due to a microbe that was found in the blood. Dr. Welsh gave it as his opinion, so Dr. McCalla tells me, that he could see no changes in the blood save the evidence of disintegrating red corpuscles which is found in other febrile diseases. In studying the disease, ticks have been taken from patients of this class, placed on healthy patients, allowed to "take hold" and remain for several days, being protected and permitted to do so by the individual. In such cases spotted fever has not resulted.

Spotted fever begins in April and continues through the summer. It is during the early days of April that the tick begins to manifest himself. I am told that the tick that does the harm lives in the abode of the gopher and other little animals that burrow in the earth's surface.

The Function of the Hypophysis.—G. Garbini (*Rivista di patologia nervosa e mentale*), from a study of the condition of the pituitary body in idiots, imbeciles and paresis, forms in which we meet with marked alterations of bodily nutrition and in the nerve elements, finds that the gland functionates normally in these conditions. We may, therefore, conclude that its secretion, which is prevailingly of the granular type, does not influence trophism. His findings, therefore, support the conclusions of Guerrini, who held that the pituitary secretion had not a trophic but a general antitoxic function.

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* Read before the Salt Lake County Medical Society, May 28, 1906.

Clinical Notes, New Instruments, Etc.

INSTILLATION OF PURE CARBOLIC ACID INTO THE EYE.

J. C. CARTER, M.D.

DENISON, TEXAS.

Patient.—Miss L. W. called at my office April 11, in the forenoon, stating to me that she had got something in her right eye the evening before and that it was causing her much pain.

Examination.—I found a very small cinder located on the superior quadrant of the cornea on the temporal side.

Treatment.—After using a few drops of a 2 per cent. solution of cocain I removed the cinder very gently with a dull spud, and then flushed the eye with warm boric solution.

Further History.—About 6 p. m. of the same day I met her on the street and she told me that her eye was paining her considerably, and on inspection I found it very red and inflamed. I prescribed:

℞.	Cocainæ mur........................	gr. v	3
	Acidi borici........................	gr. x	6
	Aquæ dest.	℥ss	15

M. Sig.: Instil four or five drops into the eye every three hours. She used the medicine that evening and next morning.

At about 2 p. m. the next day she went into the bath room to instill the medicine into the eye and by mistake filled the dropper about half full from a small bottle containing pure carbolic acid and put at least four or five drops into the eye. In an instant she screamed so that her mother and aunt ran to her as quickly as possible and discovered her mistake.

I reached her in less than five minutes. I found the lids so edematous that I could hardly open the eye, but on doing so found the lower half of the cornea perfectly white, and the eyeball burned considerably. I used alcohol, followed by a 2 per cent. solution of cocain, and then applied atropin solution, three grains to the ounce, to avoid iritis. I kept both eyes bandaged, but removed the dressing twice daily and flushed the eye with hot boric acid solution and then used a few drops of 1 to 1000 solution of alphozone. The inferior portion of ball and lower lid were burned so badly that I had to use the film of an egg between the ball and lid to avoid adhesions, using also a very small amount of an antiseptic ointment, after the third day, at each dressing. A narcotic was necessary to relieve the pain. After the fifth day I allowed the left eye to remain open, but kept the right bandaged until the eleventh day, when I removed the dressing entirely and left the eye open. She has now, 20/20 vision in the eye, and no adhesion between lid and ball, and the eye looks as perfect as it ever did.

REPORT OF A BRAIN WEIGHING 2,069 GRAMS (73 OUNCES).

CHARLES NELSON SPRATT, B.S., M.D.

MINNEAPOLIS.

Patient.—Mr. C. B., aged 42, died of meningitis, secondary to a chronic purulent otitis media. He was six feet two inches tall, weighed about 180 pounds, and was a lawyer by profession.

Autopsy.—The autopsy, performed five hours after death, by Dr. Corbett, showed a thick fibrinous exudate at the base of the brain which extended upward over the convex surface to and along the longitudinal fissure, the infection having entered the cranial cavity along the facial nerve.

The cord was cut at the foramen magnum. Without the dura the brain weighed 73 ounces (2,069 gms.). It was hardened in a 4 per cent. solution of formalin, and at the end of ten months weighed exactly 2,000 gms. (70.5 ounces). The cerebrum measured 19 cm. in its anteroposterior diameter, 12 cm. vertically, and 14.5 cm. in the horizontal diameter.

The average weight of the human brain, according to Quain, is 1,400 grams in the male and 1,274 grams in the female. In examining 559 male brains, Bischoff found 59 that weighed more than 1,501 grams and 18 that weighed more than 1,601 grams, and one that weighed 1,925 grams.

According to Wilder the heaviest non-hydrocephalic brain was reported by Thompson. This was the brain of a negro and weighed 1,983.8 grams (70 ounces). The brain of Cuvier is reported to have weighed 1,861 grams. Donaldson states that Cromwell's brain is said to have weighed 2,231 grams, and Lord Byron's 2,238 grams, but adds that there is a complete absence of collateral proof by which these records might be corroborated and much evidence positively opposed to the correctness of the recorded weights. The same writer states that the brain of Turgenieff weighed 2,012 grams. As a point in comparative anatomy it might be noted that the brains of whales weigh from 2,265 to 3,171 grams (5 to 7 pounds) and of elephants, 4,530 grams (10 pounds).

INSTRUMENT FOR INVAGINATING TIP OF APPENDIX.

S. D. VAN METER.

DENVER, COLO.

While it is impossible in all cases to adhere to an ideal technic in appendicectomy, it is generally admitted that where it is practicable invagination of the stump is desirable. In many instances, however, especially when the purse-string suture is placed too far from the junction of the cecum and appendix, the stump is not invaginated, but simply covered up with the peritoneum in the grasp of a suture applied in such a manner.

As performed, the invagination is usually accomplished with an ordinary pair of tissue or hemostatic forceps, which serve satisfactorily so far as invagination is concerned, but on drawing the purse-string suture taut, release of the forceps often becomes awkward, and sometimes difficult. Frequently the invagination is undone when the forceps are being withdrawn, owing to the increased pressure exerted on the appendiceal tissue within their grasp by the tension of the purse-string suture on the forcep blades.

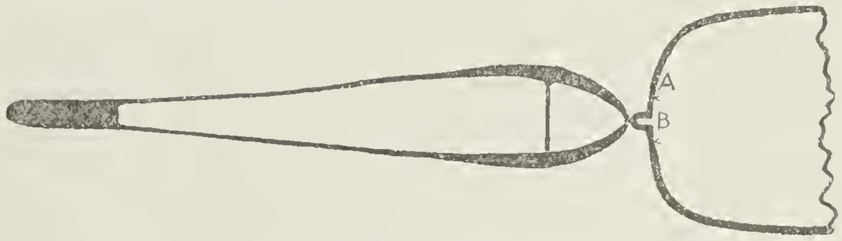

Fig. 1.—Crushed tip of appendix held by light pressure ready for invagination. A and B, purse-string sutures.

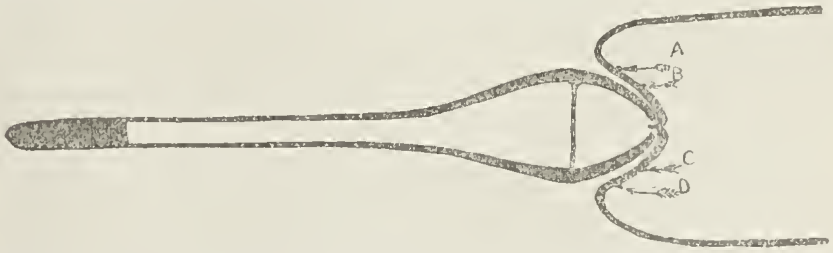

Fig. 2.—Stump invaginated. Purse-string suture ready to tie. Forceps released from grasp by firm pressure on blades. A and D, purse-string sutures; B and C, junction of appendix and cecum.

To avoid this I have devised a simple, but most satisfactory, instrument, the nature and application of which will be readily seen in the accompanying illustrations.

In the technic used I would lay special stress on two points in the application of the purse-string suture:

First.—It should be completely buried, i. e., placed entirely subperitoneal, care being taken to catch up the muscular coat of the cecum at several places, but especially at the mesoappendix and white line points.

Second.—To go only such distance from the junction of the appendix and cecum as will give sufficient room for invagination. This distance is seldom more than one-fourth of an inch.

With this technic, primary ligature of the stump is not only unnecessary, but undesirable. The lumen is closed by a crushing clamp, which satisfactorily controls leakage during the invagination process, and leaves no bulky strangulated stump buried in the wall of the cecum.

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SATURDAY, JULY 7, 1906.

ADVANCE REPRINTS OF SECTION PAPERS.

The new departure made by the Section on Ophthalmology at the Boston session of the American Medical Association is worthy of consideration. The Section required that all papers accepted for the session should be in the hands of the officers of the Section by April 10. The papers were then put in type and 600 reprints made of each. These reprints were bound in a paper-covered book and, about a week before the session, a copy of the book was sent to each member of the Section. This allowed those who took part in the work of the Section to read carefully the papers in which they were especially interested, and thus to prepare for intelligent discussion. At the Section meetings the author was given five minutes in which to call attention to the most important points in his paper and five minutes in which to close the discussion on it. This arrangement left the remainder of the time of the Section free for discussions, for which the participants were especially prepared.

The general judgment of the Section on the value of this plan may be inferred from the fact that the officers for the coming year were instructed to arrange, if possible, to have the papers presented in a similar manner at the Atlantic City session. By requiring the papers to be sent in at a slightly earlier date, it is believed that the preliminary copies can be placed in the hands of the members of the Section two weeks before the time of the sessions, and in this way still more careful consideration of them, before they come up for discussion, may be secured.

The discussions on papers thus presented showed certain striking features of considerable interest and importance. Many of those who took part in the discussions had previously written out what they wished to say, read their remarks, and then handed their manuscript to the stenographer. It was noticeable that remarks thus prepared were accurately worded, brief and directly to the point. Others who had not written out what they had to say spoke from extended notes in which they gave exact statistics, or definite references, or accurate quotations. Even where the discussion was not read or based on notes, it had a character noticeably different from the discussions generally heard in medical societies. Instead of merely complimenting the reader of the paper recapitulating the points in which the speaker agreed with him, and then rambling off in the direction that the paper had been expected to take, the discussion usually took up some point or points in the paper on which the speaker disagreed with the author, set forth the grounds on which disagreement was based, and brought arguments in opposition to those advanced in the paper. It seemed that those joining in the discussions felt more sure of the real meaning of the paper and more confident of the correctness of their own views on the controverted points than is possible where those who discuss a paper have only their first general impression on which to base their remarks.

It must not be supposed, however, that the whole of the discussion before this Section showed such evidence of previous preparation as to be open to criticism of being a "cut and dried" discussion. Each separate discussion was to a considerable extent spontaneous, although better confined to the subject of the paper than is common in spontaneous discussions. The remarks of previous speakers were new to those who spoke later in the discussion, so that spontaneity was by no means excluded. On the whole, the change of plan seemed to be a distinct improvement. More time was obtained for discussion. The discussions were of a higher order and of greater value, and the papers, prepared to be thus critically read and intelligently discussed, were at least as good as would be obtained under the old plan.

Like any other good thing, the carrying out of such a plan costs something. Without the extensive plant now owned by the Association, the preliminary printing of the papers to be presented at even one Section would be quite impossible. This plan also requires energetic, efficient and prompt action on the part of the Section officers, as well as the co-operation of those who prepare papers. Its success in the present instance depended largely on the efficient secretary, serving the Section for the third time in that capacity. The Section on Ophthalmology was favorably situated for such an attempt by reason of the fact that for the last three years twice as many papers have been offered for its sessions as could be presented before them, and on this account the Section officers could enforce their requirements as to the time that papers should be presented. Again, the expense of such an undertaking is considerable. For fifteen years this Section has had its transactions published in a separate volume, and a large number of the members of the Section are accustomed to paying money into a Section fund, in addition to their dues to the general Association. As it was, the author of each paper was required to pay a share of the cost of the 600 copies sent to members of the Section. It was a cheap way for him to get reprints into the hands of those who would be most interested in them. But in Sections like those on Practice of Medicine, or on Surgery and Anatomy, whose membership would run into the thousands, such a distribution of reprints might be very expensive.

The experiment seems to indicate that the change would give more valuable discussions. But to make such a change general with all the Sections would raise practical difficulties which might be hard to overcome. The subject is one worthy of consideration.

PRESERVED ANIMAL FOODS AND SCURVY.

In 1904 a Swedish physician, Erik Ekelöf,[1] published the results of certain personal observations as well as literary investigations concerning the occurrence of scurvy among arctic explorers. He reaches the conclusion that scurvy in general is caused by poisonous substances developing as the outcome of certain autolytic and spontaneous, non-bacterial processes in preserved animal products (meat and fish) which in most cases have constituted a large part of the food of arctic and antarctic expeditions.

We can not attempt to follow Ekelöf's reasoning in detail. Suffice it to say that he reaches his final conclusion by a process of exclusion. From a careful study of the health and the dietary of practically all authentically recorded polar expeditions he finds that the one common factor in all the cases in which scurvy made its appearance was the use of preserved meat and fish for a long period and to the more or less complete exclusion of normal, fresh animal food.

This indication that scurvy in some way depends on preserved food is materially strengthened by the further fact, which, according to Ekelöf, also is true of polar explorations in general, namely, that the disease receded as the diet of preserved animal food was replaced by one of fresh animal food.

Ekelöf is inclined to place beriberi in a group with scurvy and to regard it as having the same general etiology, i. e., to be caused by poisons developing in preserved animal food, in this case fish, modified in their actions, however, as the result of the use at the same time of large quantities of starchy food (rice).

It must be said that Ekelöf appears to make out a rather strong case against preserved animal foods, but much remains to be done before his interesting theory may be considered either as definitely proven or refuted. Thus we lack as yet definite knowledge of the chemical changes that with time may occur in animal food preserved in various ways (salting, smoking, drying, cold storage, sterilization by steam and hermetically sealing, and possibly also by means of chemical preservatives). Schmidt-Nielsen[2] was the first to show that salted fish may be the seat of progressive chemical changes of a self-digestive nature which in time give rise to considerable quantities of xanthin bases, amido acids, etc., even when the fish is kept on ice, the optimum temperature, of course, being from 35 to 45 C. It is generally accepted that autolytic ferments are destroyed when heated to 70 or 80 C., and consequently there is reason to believe that there would be no active ferments in meat and other substances sterilized by heat. These ferments act essentially as catalysers, that is, they hasten chemically processes already going on, and Ekelöf points out that the possibility of spontaneous changes leading in time to the same final result as those aided by fermentative action can not be excluded without further study. The same possibility also holds true of products in which ferments have become inactivated or held in check by preservation in other ways, e. g., by salting, smoking, drying or cold storage.

This would seem to be an inviting field for the food chemist, whose services are destined to grow more and more important now that so many people are becoming, in larger and larger degree, dependent on preserved foods, animal as well as vegetable.

MENTAL HEALTH OF SCHOOL CHILDREN.

As the end of the school year approached, the newspapers brought the usual crop of sad stories with regard to children on whose developing mental faculties the pressure of school labor had worked serious havoc. At the end of May there began to be occasional reports of children disappearing from their homes, running away from school and otherwise making themselves subjects for newspaper comment more than at other seasons of the year. During June the stories of children, especially girls, who were noted as acting queerly as the result of overwork at school, became more frequent. Toward the end of the month there were a few reported suicides. In most of the cases a direct connection between worry over school work, competition for prizes and preparation for examinations could be traced. Of course, we realize that there is likely to be considerable sensational exaggeration in such stories. They make toothsome morsels for the sensational newspaper, but there is no doubt that there is a large germ of truth in most of the stories and that, unfortunately, there is every year during June an increased number of reported developments of mental disturbance in children because of the burden of school work placed on them at this time.

Almost needless to say the children who develop such mental peculiarities and degenerate traits are not the robust either of mind or of body. Especially is it true that in most cases a distinct neurotic family history can be traced. This of itself, however, should have proved a warning of the necessity for guarding such children against the stress and strain of competitive school work. Unfortunately, little attention is likely to be paid to this. Family physicians, however, usually are aware of the dangers in this matter and should warn parents of the possibility of morbid results. At this season of the year the medical inspectors of the schools should take special precautions in order to see that any pupil developing even slight mental peculiarities should at once be reported to them. There is serious danger of neglect and delay in this matter. Even with the exercise of all due care it seems not unlikely that in the modern over-strenuosity of education developing brains will still suffer occasional lamentable harm. If even a few children, however, each year can be saved from the more serious manifestations of mental disturbance, enough will have been accomplished to reward amply every effort that has been taken.

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[1] Hygiea, 1904, vol. iv, pp. 577 and 1215. Abstracts in THE JOURNAL, vol. xliv, pp. 511 and 916.

[2] Biol. Centralbl., 1902, vol. xxii, No. 13.

It is now while the subject is fresh that the resolutions with regard to prophylactic measures for another year should be taken. There seems no doubt that it will eventually be necessary to instruct the teachers as to the initial symptoms that are displayed in the commoner mental disturbances of children in order that the strain of study may be then at once interrupted. This is a work that in its far-reaching benevolence will appeal to all who are interested in making child life more happy and less amenable to the stresses of modern civilization. No effort can seem too great, no warning exaggerated that concerns school children under such circumstances, since it is evident their future careers and life usefulness are at stake.

THE DEATH RATE IN THE CITY AND COUNTRY.

This is the season of the year when most of the dwellers in large cities consider it advisable for reasons of health to spend at least some time in the country. Of course, the main reason for the flitting is vacation and rest rather than the desire for the country, but there is no doubt that most people consider that living in the country is much more healthful than city dwelling. There is a very curious commentary on this general impression in the special report on the statistics of mortality for the five years, 1900 to 1904, which has recently been issued by the census bureau of the United States Department of Commerce and Labor. The average yearly death rate during this period in cities of 8,000 or more population was 17.8 per thousand, while in the country it was 14.3 per thousand. This would seem a distinctly marked difference, but there are considerations that reduce the contrast very notably. It is well known that some of the higher mortality in cities is due to the fact that residents of rural districts when critically ill resort to the hospitals, dispensaries, clinics and other medical institutions in the large cities for treatment, and that the deaths occurring in such cases get into the city statistics, adding to no small extent to the reported mortality of the cities.

In certain states of the Union, even with this disturbing factor, the comparative mortality of city and country differ very little. In Rhode Island the death rate in the country was actually as high as that in the city. This would seem to be due to the fact that Rhode Island cities, better than any other in the Union, recognize their duties as hosts to a large visiting population and keep themselves in the best possible sanitary condition. The fact that so many wealthy people continue to go into the state for certain portions of the year would seem to indicate that such municipal care has a very material reward in addition to the added good health and length of life of the permanent inhabitants. In three other New England states, where municipal consciousness of the duties of the authorities toward citizens has been aroused, namely, in Massachusetts, Connecticut and New Hampshire, the urban death rate exceeded the rural by less than one per thousand. When the hospital-dispensary factor mentioned above is taken into account it would seem to be sufficient to make the real city death rate not higher than that of the country in these states.

The urban death rates are mainly high because of the frequent occurrence of respiratory diseases in crowded centers of population. Great improvements, however, have been made in this matter in recent years. The mortality from tuberculosis, for instance, has been very strikingly reduced. In 1890 the tuberculosis death rate was about 245 per 100,000 of the population. The average annual mortality from tuberculosis of the lungs during the five years, 1900 to 1904, inclusive, was only about 172 per 100,000. It is very clear, then, that the crusade against this disease is having excellent results. All reductions in this death rate make much more difference in the mortality statistics of the city than of the country. Unfortunately, pneumonia, the second among the principal causes of death, apparently is increasing about as rapidly as tuberculosis is decreasing. The average annual death rate per 100,000 of population from this disease is now about 135. The mortality from pneumonia in the cities is about 50 per cent. higher than in the rural districts, and as a rule is proportionately higher the larger and more concentrated the population.

Pneumonia is not a summer disease, and so the consideration of its high death rate in cities still further reduces the difference between urban and city mortality in favor of city life during the warm weather. The disease occurs especially where large masses of population are brought in intimate contact with one another, as in the crowded quarters of the poor and the crowded street cars, railway stations and places of public entertainment. It is the absence of these factors in the country that keeps the pneumonia fatality on a lower plane.

As a contrast to the higher mortality from respiratory diseases is the fact that among adults enteric and dysenteric diseases are likely to be more common in the country than in the city. This is due mainly to defective water supplies, though the consumption of unripe fruit and of food materials which, owing to scarcity of ice, have not been properly preserved, are also prominent factors. It must not be forgotten that mortality statistics all over the world show that typhoid fever is a rural rather than an urban disease and that with the awakening of municipal consciences and the consequent provision of wholesome water this fact is becoming still more marked.

These considerations serve to show that the comparative healthfulness of city and country is not something essential to the location, but depends on the sanitary precautions that are exercised in a given place. The country is not more, but less. healthful if sanitary regulations are not enforced, and especially if the water supply is not carefully protected. Many a city dweller goes out into the country, confiding in its traditional healthfulness, only to find himself before long the victim of some disease that the city department of health has been guarding him against while he stayed in town. Isolated farmhouses may seem to be ideally situated as regards health, since there can be no possible crowding of population, yet they may present serious dangers because of the lack of sanitary accommodations and failure to prevent the contamination of the water supply. These ideas must be remembered in the choice of summer residences for patients and in the matter of giving advice, especially as to where convalescents should go. The fact that the dwellers on the farm themselves are in good health is sometimes no proof of the existence of proper regulations, since apparently at times they have acquired a certain immunity to the disease conditions around them, though these will readily affect persons of less robust vitality or less vigorous resistive powers.

THE TREATMENT OF INTERNAL HEMORRHAGE.

The one certain means of controlling hemorrhage consists in the local application of mechanical measures to the bleeding point, but this is ordinarily not possible in internal hemorrhage. A few drugs applied locally appear also to possess hemostatic properties. Fortunately, the bleeding not rarely ceases spontaneously as a result of processes taking place naturally in the blood, and sometimes the cessation is attributed to the medicinal agents that may have been employed. A number of drugs have been variously proposed for the control of inaccessible hemorrhage, but it is altogether doubtful whether most of them possess any actual efficacy in this connection. The question has recently been discussed by Dr. W. E. Dixon[1] on the basis of studies made in the pharmacologic laboratory at Cambridge University. As he points out, tannic acid and ferric chlorid, applied directly to a bleeding point, control hemorrhage through coagulation of proteid, while adrenalin, cocain and digitalis, similarly applied, act by causing vascular constriction. Administered internally, tannic acid is absorbed in but slight degree, while adrenalin is decomposed in the stomach, and neither under these conditions has any noteworthy influence on the blood vessels. Adrenalin introduced into a vein, as well as ergot, digitalis, strophanthus, barium and lead, administered internally or injected subcutaneously, causes rise of blood pressure, but especially in the splanchnic area, and least in the lungs, brain and coronary arteries. They are, therefore, useless if not injurious in the treatment of hemoptysis and cerebral hemorrhage. In order to prevent stimulation of the heart and vasoconstriction through reflex and emotional influences, morphin should be administered, while calcium chlorid should be given, subcutaneously or by the mouth, to increase the coagulability of the blood.

THE RELATION OF SMOKE TO SICKNESS.

In connection with certain statements recently made in these columns concerning the relation of wind to sickness[1] it may be well to call attention to the rôle that smoke plays in producing sickness, especially, of course, of the respiratory tract. As is largely the case with dust in general, the particles of carbon and other matter contained in the smoke with which the atmosphere of our large cities is polluted so extensively, do not produce disease directly, but rather prepare the lungs for tuberculous and other infections. That the inhalation of smoke (and dust in general) is unhealthy can not well be questioned. Statistics show an increase in the mortality from acute pulmonary diseases in manufacturing districts where much smoke is generated and also in mining districts. Tuberculosis is said to run a more rapid course in smoky than in smoke-free districts. While the factors that must be considered in order to explain the increased morbidity in these localities are numerous and complex, we can not neglect the evil influence of smoke and of carbon particles in the dust. In the first place, examination of the anthracotic lung of the miner and of the dweller of smoky cities shows changes often so marked as by themselves to cause symptoms of chronic respiratory disease. The blocking of the lymphatics and of the lymph nodes by masses of coal dust can not but interfere with the physiologic functions of these structures. In the second place, Ascher found that of animals experimentally infected with tuberculosis those that were made to inhale smoke died more rapidly than the controls. Further, he found that animals that inhaled small quantities of smoke for some time beforehand acquired pulmonary inflammation on inhaling aspergillus spores, whereas the control animals did not. The results of clinical and experimental observations consequently speak in favor of the harmfulness of smoke. In view of the prevalence and fatality of lobar pneumonia in our large cities it would be appropriate to seek to place some of the responsibility therefor on their smoke- and dust-laden atmosphere. Fighting "the smoke nuisance" should be made part of the general plan of the campaign now in progress against tuberculosis and pneumonia.

THE PURE FOOD LAW.

After many years of ups and downs—principally downs—in the Congress of the United States, the Pure Food Bill has become a law. Until the last year or two public sentiment had not been sufficiently aroused to influence our national legislators to give the matter more than scant attention, but during the past year that sentiment had become so strong that even the most indifferent were compelled to recognize it. The measure passed because the public demanded it, and because this demand was so strong, so insistent and came from so many quarters—from all over the country, in fact—that it could be no longer resisted. And yet when one realizes the tremendous opposition from those directly interested financially one can hardly believe that that opposition has been overcome. It seems too good to be true.

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[1] Lancet, March 24, 1906, p. 826.

[1] THE JOURNAL, June 23, 1906.

Physicians are possibly a little more interested in that part of the law which relates to proprietary medicines, and, while it may not be as strong as some might desire, it is certainly more so than any one of us dared hope for. The law provides that medicines shall be considered misbranded "if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphin, opium, cocain, heroin, alpha eucain or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein." Certainly the powerful Proprietary Association of America has not been proved to be so powerful after all. But the drug phase of the law is by no means the most important. The manufacturers of fraudulent and not seldom dangerous food preparations of various kinds will hereafter find it difficult to humbug the public, and the honest manufacturers will be protected against the swindler. The thanks of the American people are due to all who have aided in passing this beneficial measure.

ROCKY MOUNTAIN SPOTTED FEVER.

Dr. Ricketts' report in this issue of The Journal of his recent work on the pernicious disease in the Bitter Root Valley of Montana, known as "Rocky Mountain Fever," shows that a definite step in advance has been made by the demonstration that the disease is communicable to guinea-pigs and monkeys on inoculation of the blood of patients. The cause of this disease, whatever that may be, consequently occurs in the blood. The failure to confirm the observation reported by Wilson and Chowning of the occurrence of a piroplasma in the blood either of patients or of animals with the inoculated disease is also noteworthy. Now, that the disease has been shown to be transmissible to animals, it is a matter for hope that a way may be found to perpetuate the inoculated disease in order to obtain better opportunity to search for the causative agent than is afforded at present under natural conditions. As emphasized by Dr. Ricketts, there is every reason to regard the disease as infectious, and continued search for the infectious agent is fully warranted. The demonstration of the inoculability of the Rocky Mountain fever is also of further significance in that a possible method is now available for test by experiment of the hypotheses offered as to the mode of natural infection. At present probably the most prominent hypothesis in regard to the mode of infection is that advanced by Wilson and Chowning, who hold that the disease is communicated by the bite of certain ticks. It would seem possible to subject this interesting hypothesis to experimental test. At all events this phase of the problem of the causation of Rocky Mountain fever should not be dropped out of sight, inasmuch as the most thorough prevention in the end must depend on accurate knowledge of the mode of transmission, and it may well be that this may be discovered before the actual cause of the disease is brought to light. Yellow fever is a most significant illustration of this possibility. On reading Ricketts' report one can not but be impressed with the vigor and keenness with which he has attacked the problem before him, and the success so far attained merits hearty commendation. The control of this fever means so much to the Bitter Root Valley, and it is only by the continued support of scientific investigation that the hope of gaining adequate control can be realized.

Medical News

ALABAMA.

Physicians Arrested.—Warrants were issued June 12 against twelve physicians of Birmingham, who were charged with failure to make obstetrical reports for the month of May.

Quarantine Lifted.—The city physician of Florence has declared that that city is no longer infected with smallpox, and has lifted the quarantine. During the three months of the prevalence of the disease there were 75 cases, with 6 deaths.

Personal.—Drs. S. J. Vann, Battelle, and Eugene R. Smith, Henegar, are about to establish a private sanitarium in Anniston.——Dr. Leslie M. Hand, Demopolis, is making a satisfactory recovery after an operation for appendicitis.——Dr. William M. Price, Florence, was stricken with cerebral hemorrhage June 21.

Quarantine.—At a meeting of the executive committee of the quarantine board of Mobile Bay the following resolution was adopted:

> Steamers plying between Havana and Mobile carrying fruit may be permitted entry after disinfection at the lower bay quarantine station, provided all members of the crew, with the exception of the master and two engineers be held at quarantine station. Holds of vessels to be disinfected after discharge of cargo at Mobile. This privilege to expire with the current pineapple season.

ARKANSAS.

Registered Physicians.—Drs. E. T. Cook, Samuel C. Van Leer and Oscar S. Burroughs, Hot Springs, have been added to the registered list.

Personal.—Dr. Arthur C. Jordan, Pine Bluff, recently suffered an attack from heat prostration while performing an operation.——Dr. G. Marion Duckworth, Pine Bluff, has returned after six months spent in Europe.——Dr. Zaphney Orto has been appointed president of the Pine Bluff Board of Health.——Drs. John B. Bolton, Eureka Springs; E. Meek, Argenta; Clifford H. Trotter, Helena; John A. Lightfoot, Texarkana; and Thomas E. Holland, Hot Springs, have been appointed a committee by the State Medical Society to take part in the organization of a southwestern medical association, to include the states of Arkansas, Missouri, Texas, Kansas and Oklahoma.

COLORADO.

May Vital Statistics.—During May, 770 deaths and 34 stillbirths were reported in Colorado, equivalent to an annual death rate of 13.64 per 1,000. During the month 40 cases of diphtheria, 118 of scarlet fever, 20 of smallpox, and 39 of typhoid fever were reported. This shows a decrease of 7 cases of diphtheria and 20 cases of typhoid fever, and an increase of 17 cases of scarlet fever and 10 cases of smallpox.

Personal.—Dr. Charles E. Elliott, Victor, has succeeded Dr. C. H. Spicer as surgeon of the Cresson mine.——Dr. Horace O. Dodge, Boulder, is dangerously ill at his home.——Dr. Peter Oliver Hanford, health commissioner of Colorado Springs, has been appointed representative of the Colorado State Board of Medical Examiners for El Paso County.——Dr. Harry P. Packard, Denver, has been appointed a medical missionary by the Presbyterian Board at Oroomiah, Persia, and will sail for his new post of duty in August.

CONNECTICUT.

Graduating Exercises.—The ninety-third annual graduating exercises of Yale University medical department, New Haven, were held June 27, when a class of 25 was graduated.

Fire in State Hospital.—The amusement hall of the Connecticut Hospital for the Insane, Middletown, was destroyed by fire June 20, with a loss of $20,000, fully covered by insurance.

May Mortality.—During May, 1,396 deaths were reported in the state, 149 of which were due to nervous diseases, 147 to consumption, 142 to heart disease, 132 to pneumonia, and 88 to violence. The death rate for the state was 17 per 1,000, and the deaths from infectious diseases were 20.4 per cent. of the total mortality.

Infectious Diseases.—During May 12 cases of smallpox were reported in Putnam; 772 cases of measles in 70 towns, 188 cases of scarlet fever in 38 towns, 12 cases of cerebrospinal meningitis in 8 towns, 101 cases of diphtheria in 27 towns, 134 cases of whooping-cough in 19 towns, 44 cases of typhoid fever in 19 towns, and 78 cases of consumption in 23 towns.

Personal.—Dr. Samuel M. Garlick, Bridgeport, was seriously injured in a runaway accident May 24.——Dr. George Bloomer, formerly director of the Bender University at Albany, and professor of pathology at Albany Medical College, and later a member of the faculty of the medical department of the University of California, has been appointed professor of theory and practice of medicine in Yale University medical department, New Haven, to succeed the late Dr. John S. Ely.

DISTRICT OF COLUMBIA.

Medical Examiners' Election.—Dr. George C. Ober has been elected president of the Board of Medical Examiners of the District of Columbia and Dr. Joseph S. Wall secretary.

Tribute to Deceased Member.—The Medical Society of the District of Columbia held a memorial meeting June 13, when the life and work of the late Dr. Louis Mackall were eulogized by his colleagues.

Alumni Election.—The Washington branch of the Maryland University Alumni Association held its twelfth annual banquet and election of officers June 2. The following officers were elected: Dr. Otho M. Muncaster, president; Drs. William L. Robins and William N. Souter, vice-presidents; Dr. W. M. Simkins, secretary and treasurer; and Dr. Wilson P. Malone, corresponding secretary.

Commencement.—The annual commencement exercises of Howard University were held June 1.——The fifty-seventh annual commencement of the Georgetown University School of Medicine was held June 12, when Rev. David H. Buell, S. J., president of the university, conferred degrees on a class of 20. Dr. Samuel S. Adams delivered the address to the graduating class, and Dr. Joseph Tabor Johnson made the announcement of hospital appointments.

Personal.—Dr. Percy G. Smith, physician in charge of the District of Columbia Board of Charities, has been named as superintendent of the new home for the aged and infirm to be opened at Blue Plains in August next.——Dr. Charles S. White has been made superintendent of the Emergency Hospital, Washington, and Drs. G. T. Jones, Dallas Sutton, and A. J. Sheep, have been added to the staff of the institution.

Mortality of the Week.—During the week ended June 23, 133 deaths were reported in Washington as compared with 100 in the corresponding week of last year. Of the decedents 75 were white and 56 colored, making a mortality of 16.7 per 1,000 for the white race, and 31.2 per 1,000 for the colored race. Among the principal death causes of the week were diarrheal diseases, 26; consumption, 8; apoplexy and convulsions each, 4; and typhoid fever, 3.

Investigation of Typhoid Fever.—In reponse to a request of the Commissioners of the District of Columbia the United States Public Health and Marine-Hospital Service, in co-operation with the health department of the District, is making an investigation of the origin and prevalence of typhoid fever in the City of Washington. This investigation is of special importance as the disease has increased during the past six months, more cases having been reported during this period than were reported during the corresponding six months last year, notwithstanding the fact that a new filtration plant has been in operation, with apparently good results.

ILLINOIS.

Physicians Freed.—The jury which for two weeks past has been hearing the evidence in the case of Drs. George T. Carson, Chatsworth, and Nicholas H. Kern, Thawville, charged with being responsible for the death of Miss Nellie Clark, by an illegal operation, returned a verdict of not guilty, July 1.

Surprise Party to Podstata.—On the evening before Dr. Vaclav H. Podstata left the Cook County Institutions, Dunning, for his new position as superintendent of the Illinois Northern Hospital for the Insane, Elgin, 100 insane patients joined in a surprise party in his honor. One of the patients in a speech said that the patients were sorry to have Dr. Podstata leave; that they had no money to buy him presents, and no flowers to give him, but wanted to let him know how badly they felt that they should not see him any more.

Personal.—Dr. James A. Egan, secretary of the State Board of Health, Springfield, has been appointed a member of the American Committee of the Fourteenth International Congress of Hygiene and Demography.——There is a report in the daily press that Dr. Frank P. Norbury, Jacksonville, has been tendered the position of superintendent of the Illinois Eastern Hospital for the Insane, Hospital, to succeed Dr. J. C. Corbus, but has declined.——Dr. John A. Vanderhoof, Byron, is taking postgraduate work at Johns Hopkins University, Baltimore.——Dr. and Mrs. George W. Fagers, Nauvoo, were injured in an automobile accident June 18.——Dr. Joseph Marshall, Normal, celebrated the seventy-fourth anniversary of his birth June 24.

Alleged Consumption Cure Denounced.—Dr. James A. Egan, secretary of the State Board of Health, brands as false the press dispatches which recently stated that Harry Maclay of Clinton, who had been in an advanced stage of consumption, had been entirely cured by the use of a prescription given to his father by an old man in Chadwick, Ill., and that Maclay's sputum had been examined by Dr. Egan, who had stated that the patient was suffering from tuberculosis in an advanced stage. In this regard Dr. Egan states that he has been informed by Maclay's physician that if Maclay was tuberculous, the disease was in its incipient stage, and that Maclay was not, in his opinion, a very sick man. Dr. Egan makes this statement in the interest of the people of Illinois., and other states who may be misled and imposed on in this matter. The facts have been so exaggerated in part that Dr. Egan says that it is fair to assume that the whole matter is a mere scheme to get in touch with consumptives, presumably to sell them some nostrum.

Chicago.

New Hospital.—Plans have been prepared for a hospital in South Chicago, to be two stories in height, 64 by 40 feet, and to cost $10,000.

Sunstroke.—The Department of Health has issued a leaflet of suggestions for the relief of those suffering from sunstroke and from heat exhaustion.

Summer Hospital Opened.—The sumer hospital and convalescent home, conducted by the Chicago *Tribune*, opened in West Chicago, June 20, under the direction of Dr. William A. Evans, who will select an attending and consulting staff.

Ravenel in Chicago.—Dr. Mazyck P. Ravenel, assistant medical director of the Henry Phipps Institute, Philadelphia, one of the committee selected by the Illinois Manufacturers' Association and the Chicago Commericial Association to investigate conditions at the stock yards, arrived in Chicago June 20.

Deaths of the First Half Year.—During the first six months of 1906, 14,524 deaths were reported, equivalent to an annual mortality of 14.29. This is considerably lower than the average annual death rate for the first six months of each year from 1895 to 1905, inclusive, which was 15.25 per thousand of population.

Deaths of the Week.—The total deaths from all causes for the week ended June 30 was 476, 53 more than for the preceding week, and 37 more than for the corresponding week of 1905. Pneumonia leads the death causes with 50, followed by Bright's disease with 49, consumption with 46, heart disease with 30, acute intestinal diseases with 29, cancer with 21, and scarlet fever with 19.

IOWA.

New Hospital.—Work has been commenced on the new hospital in Burlington, which will cost $30,000.

Old Bill Paid.—Dr. Vernon L. Treynor, Council Bluffs, has been paid a bill of $589.10 as balance due him for attending smallpox patients in 1900 and 1901.

Smallpox.—Dr. Fred W. Powers, Waterloo, member of the State Board of Health, says that smallpox is prevalent in Belle Plaine. The disease is said by a local physician to be an innocent eruptive disease

Commencement Exercises.—The State University of Iowa College of Medicine, Iowa City, graduated a class of 50 June 9. ——A class of 14 was graduated from the Sioux City Medical College June 6. The address to the class was delivered by Rev. F. H. Pittinger, Sloan.

Central District Medical Association.—The Central District Medical Society assembled for its thirty-second annual meeting in Nevada June 19. Dr. Edward M. Myers, Boone, was elected president, Dr. George W. Kester, Grand Junction, vice-president, and Dr. George H. Stanger, Boone, secretary and treasurer (re-elected).

Perpetual Injunction Issued.—The district court in the case of Dr. H. W. Smith, Rockwell City, against the state, has decided that the State Board of Health cannot revoke a physician's certificate without due notice and a hearing. Judge McVey also issued a perpetual injunction against the board restraining it from revoking Dr. Smith's certificate.

Personal.—Dr. Ole C. Willhite, superintendent of the State Home for Inebriates, Knoxville, has been appointed superintendent of the Cook County Institutions, Dunning, Ill., and will assume charge of the institutions July 15.——Dr. L. D. Wiggins, Wayland, recently fell and fractured his hip.——Dr. Joseph R. Ryan, Des Moines, has returned from a visit to the state of Washington.——Dr. John G. Mueller, Iowa City, has been appointed state medical director for the Roman Catholic Mutual Protective Society of Iowa, vice Dr. N. J. Alexis Mueller, Dyersville, deceased.——Dr. Oliver W. Boatman, Burlington, has been elected physician of Des Moines county.——Dr. R. C. Smith, Troy Mills, who has been seriously ill, is convalescent.——Dr. Grant J. Ross has been confirmed as health officer of Sioux City, by writ of mandamus.——Dr. S. M. Gunn, Boston, Mass., has been elected professor of hygiene in the State University of Iowa College of Medicine, and will also succeed Dr. Paul Shekwana, resigned, as a member of the staff of the state bacteriological laboratory.

MARYLAND.

Baltimore.

Commencement.—The Baltimore University School of Medicine graduated a class of four on June 14.

Death Report.—During the week ended June 30, only 178 deaths were reported, equivalent to an annual mortality for the white race of 13.61 per 1,000.

Treatment of Incorrigibles.—The Department of Health is trying the experiment of treating cases of incorrigibility in school children by giving attention to physical ailments, such as troubles of the eye, ear and throat, anemia, etc.

Personal.—Dr. Louis M. Allen has been commissioned assistant surgeon of the Maryland Naval Brigade, with the rank of ensign, vice Assistant Surgeon J. Frederick Adams.——Dr. Robert Hoffman sailed for Europe July 4.——The late Dr. Sidney O. Heiskell died intestate, leaving an estate of $30,000.

Sent to Prison.—"Dr." Thomas H. White, who has conducted a "College of Science" in Baltimore, in which he claimed to teach spiritualism, magnetism, mental healing, etc., was convicted of fraudulent use of the mails, and on June 23 was sentenced to three years' imprisonment in the state penitentiary.

Typhoid Fever.—It is said that about 300 cases of typhoid fever have occurred in the northern section of Baltimore, and that the disease is still on the increase. The solicitor has given an official opinion that the health commissioner has the right to condemn and close contaminated pumps during such an epidemic.

NEW YORK.

Dr. Bayley Resigns.—Dr. Bayley, who has been the superintendent of Vassar Brothers' Hospital at Poughkeepsie, has resigned after twenty years of service.

Smallpox Epidemic.—Dr. Darlington received a message from the secretary of the State Department of Health, notifying him that there were from 40 to 50 mild cases of smallpox at Catskill-on-the-Hudson, and of this number several cases were still ill. Dr. Darlington wished the public to be notified of this so that any who intended to go there might be vaccinated.

New York City.

Swedish Hospital Dedicated.—This hospital, the remodeled Malupen mansion, is the first Swedish hospital in Greater New York. It cost $65,000 to fit up the building and will accommodate 75 patients.

Non-Immunes Detained.—Of the 128 passengers from Havana who were not immune from yellow fever, 126 were sent to Hoffman's Island. They arrived on the *Esperanza* from Vera Cruz, Progreso and Havana.

Personal.—Dr. Joseph E. Lumbard has been appointed anesthetist to Harlem Hospital.——Dr. and Mrs. George L. Brodhead sailed on the *Teutonic* last week.——Dr. William T. McMannis sailed on the *La Provence* for Havre on June 28.

Milk Commission.—This commission announces that while it has supervision of only that portion of the dealer's milk which carries its certification, it does not intend to allow a dealer known to have adulterated milk to sell certified milk.

Illicit Healers Convicted.—The County Medical Society has succeeded in having three persons convicted for violating the medical laws of this state. They were Joseph Hanna, who poses as an osteopath, John Frack, who practised illegally, and Mary E. Frack, who posed as a teacher of psychology and claimed to cure by hypnotism.

New Seaside Hospital.—The Association for Improving the Condition of the Poor announces that if $35,000 is not forthcoming, and at once, the $215,000 already conditionally subscribed, will be lost. The value of such an institution to cure children with tubercular diseases has been made apparent by the success of the Sea Breeze Hospital at Coney Island.

Hospital for the Insane.—The proper authority has ordered that certain lands should now be bought at a cost of $146,000. The plat is 200 by 250 feet and overlooks the East River. It will be leased to the state and the State Commission in Lunacy will erect the necessary buildings at a cost of $300,000. This building will be built on the most modern and scientific plans.

New Hospital in Bronxville.—A real estate man of Bronxville has given to this village sufficient ground on which to erect three buildings, two of which will be for hospital purposes. The whole gift is valued at $100,000. It is intended to have two wings to be used for hospital purposes; the main building being occupied by stores, the income from which will support the hospitals.

Fewer Nurses in the Tenement Work.—Because of lack of funds the 52 nurses, the number usually employed by the health board to visit the public schools and work among the poor, will be forced to take a three months' vacation. The probabilities are that, as a result of this, the infant mortality will be higher this summer. Dr. Darlington was forced to take this measure because the board of estimate and apportionment had cut down the appropriation asked for.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended June 23, 611 cases of measles, with 20 deaths; 396 cases of tuberculosis, with 177 deaths; 288 cases of diphtheria, with 16 deaths; 160 cases of scarlet fever, with 4 deaths; 35 cases of whooping cough, with 4 deaths; 33 cases of typhoid fever, with 2 deaths; 8 cases of cerebrospinal meningitis, with 9 deaths; 110 cases of varicella, and 4 cases of smallpox, making a total of 1,645 cases and 232 deaths.

Change in City Ordinance.—An ordinance in relation to the admission and removal of patients in hospitals in this city is as follows:

> Section 1—No superintendent of a hospital in the city of New York, or other person in authority, shall refuse admission to an applicant unless such applicant has a contagious disease or infectious complaint, or unless the case required by such applicant does not come within the range of treatment specifically provided for in such hospital: nor shall any superintendent or other person in authority, order or suffer the removal of any patient while in a dangerously sick or precarious condition to another hospital, unless such patient shall, after admission, have developed a contagious or infectious complaint or requires care not specifically within the range of treatment of such hospital.
>
> Sec. 2.—Every superintendent, or other person in authority, of a hospital in the city of New York who shall violate any of the provisions of this ordinance shall be subject to a penalty not exceeding $100 for each and every offense.

Panic in New York Public Schools.—Fearing that their children were to be murdered, and that the horrors in Russia were to be renewed here, excited Russians and Poles rushed to the schools June 27, demanding their children, demolishing doors and windows, desisting only when the teachers dismissed the children and the police in large numbers arrived. On the following day the Italian neighborhood became similarly affected and their wrath was appeased only when they found their children well. The exciting cause of these riotous attacks seems to have been occasioned by persons who went from house to house telling the parents not to permit operations on their children by physicians of the Board of Health, which, they asserted, was about to be done. It appears that the school authorities reported that there were in one school, known as the "defective school," about 150 children, most of whom were suffering from the effects of enlarged tonsils and adenoid growths. Of these 75 had been operated on at dispensaries, and on investigation it was demonstrated that the results in school percentages had increased remarkably after operation. That these and the remainder should be taken care of by the fresh air fund an effort was made to induce those not operated on to be attended to before school closed. From a house to house canvass it was ascertained that the parents were all anxious to have the operations done, but that they were too poor to spend car fare to go to the hospital for treatment. On these representations three throat specialists volunteered to go the school and operate on those whose parents gave consent in writing. On June 22, 83 children were operated by these gentlemen, assisted by sanitary inspectors and trained nurses. The operations were not followed by any disturbances whatever, and all of the children were at school next day.

PENNSYLVANIA.

Philadelphia.

Personal.—Dr. William E. Hughes, who was operated on for appendicitis, is improving.——Dr. John B. Chapin received the honorary degree of LL.D. from Williams College June 27.——Dr. William W. Keen was the recipient of a similar honor from Yale University on the same day.

Decision Adverse to Vaccine Foes.—Judge Gillan at the regular session of court in Chambersburg June 19 handed down an opinion in the case of the commonwealth of Pennsylvania against the school directors of Waynesboro, and the school superintendent and teachers of a school in that place. A writ of alternative mandamus had been granted at the instance of the attorney general to the school authorities. Its purpose was to bring the school authorities into court to show cause why they should not exclude a pupil from school because she did not have a certificate of vaccination. The anti-vaccinationists moved to quash the writ, but the court refused to grant the prayer and discharged the rule. The defendants are required to file an answer to the alternative writ in 20 days.

Health Report.—The total number of deaths reported for the week was 503, 74 more than the number reported last week, and 62 more than those reported in the corresponding week of last year. Infants and the aged and debilitated succumbed in large numbers. In the latter category is included 63 deaths from tuberculosis. Of the 91 who died from summer complaint 83 were under the age of 2 years. The principal causes of death were: Typhoid fever, 11; measles, 2; pertussis, 11; consumption, 63; cancer, 21; apoplexy, 23; heart disease, 34; acute respiratory disease, 39; enteritis, 91; appendicitis, 6; Bright's disease, 24; old age, 5; suicides, 5; accidents, 22; and marasmus, 7. There were 175 cases of contagious diseases reported, with 14 deaths, as compared with 219 cases and 27 deaths reported in the previous week. Only 99 new cases of typhoid fever were reported during the week. This is the smallest number known in the last two years, and was a decrease of 27 below the number reported last week.

GENERAL NEWS.

Roentgen Ray Society.—The seventh annual meeting of the American Roentgen Ray Society will be held Aug. 29-31, 1906, at the Cataract and International hotels, Niagara Falls, N. Y. The officers announce a good program. An interesting feature will be the exhibit of prints and negatives. The railroads have granted a rate of a fare and a third on the certificate plan. Full information may be obtained by addressing the secretary, Dr. George C. Johnston, 611 Fulton building, Pittsburg, Pa.

Cholera in the Philippines.—Chief Quarantine Officer Heiser reports that cholera again made its appearance in Manila May 9, after a period of absence lasting from March 21. One case occurred on May 9, 2 on May 10, and 3 on May 11. Every possible effort was made to trace the source of infection, but so far all attempts have been unsuccessful. The first case occurred in the person of a male beggar, who was known to have been in the city for at least several weeks. So far as could be learned, he ate only such food as is common to the poorer classes. While it has not been possible to trace any connection between the cases, yet they have all occurred in the district of Tondo, and all of them in houses that border or the same estero. The situation in the provinces, Dr. Heiser states in *Public Health Reports*, continues to be favorable, only a few cases being reported. The annual fiesta at Antipolo, which is situated within 15 miles of Manila, and usually lasts more than a month, and at which often from 40,000 to 50,000 persons are present, is now taking place. Every effort is being made to dispose of the excreta of these pilgrims in a sanitary manner, but in a town in which the normal population of 3,000 is suddenly augmented to more than 40,000 or 50,000, the difficulties that are encountered in that work will be appreciated.

FOREIGN.

Physicians in the Russian Douma.—Later advices state that there are 17 physicians in the Russian douma besides several members who have studied medicine but have not been officially registered.

Rise in Prices of Surgical Instruments.—The combination of European firms dealing in surgical and medical appliances, the *Gesellschaft für Chirurgie-Mechanik*, announces an increase in the prices of surgical instruments, hospital appliances, orthopedic apparatus, etc. A general increase of 10 per cent. in the prices will go into effect August 1, according to a notice in the last *Deutsche med. Wochft.*

The Mikulicz Memorial.—A letter from Breslau in the *Med. Klinik* states that 20,000 marks (about $5,000) have already been received for the Mikulicz memorial fund. The writer adds that about a third of the amount has been received from American physicians.

International Congress for Care of the Insane.—Our foreign exchanges state that the preparations are well under way for this congress, which will open at Milan September 26. A number of eminent psychiatrists from various countries have announced their intention to be present, so that the success of the congress is assured, although it can scarcely be as epoch-making as the congress at Antwerp.

Preventive Lectures at Berlin.—The local branch of the German Society for the Repression of Venereal Diseases has organized a series of public evening lectures. The first lecture is to be held in the Langenbeckhaus in June and is addressed exclusively to university students on the theme of venereal disease. Dr. O. Rosenthal, Sanitätsrath, will deliver the lecture. The next one will be given in July, addressed to clerks and others connected with mercantile establishments.

Professor Schatz Retires.—Professor C. F. Schatz, the eminent German obstetrician and professor of gynecology at Rostock, was accused of misappropriating several thousand dollars of hospital funds. He insisted on a thorough investigation and the trouble was found to be the result of a clerical error in auditing the accounts of the hospital. He has resigned his connection with the university and will henceforth devote himself to private practice. He is now 65 years old.

Ninth Congress of the German Dermatological Society.—This congress is to be held this year at Berne, September 12 to 14. No official themes have been appointed, as there are to be so many demonstrations and discussions. Neisser will present the present status of experimental research on syphilis, and Hoffman will tell of the latest research in regard to the etiology of the disease. Professor Jadassohn of Berne will supply further particulars to those interested.

Physicians in Public Life.—It is announced from Germany that the authorities of Baden are considering the organization of a council comprising physicians, dentists, veterinarians and druggists. The organization will deal with matters affecting the profession and the public health in general. Membership in the medical chambers in Germany is compulsory on the physicians in a district where one exists. The new organization is planned along the same lines, only it will embrace the allied branches.

International Conference for Cancer Research.—As already announced, the opening of the Institute for Cancer Research at Heidelberg, September 24, will be celebrated by an international conference on cancer research. The appeal to members of the profession to participate in this international conference is signed by Czerny of Heidelberg, Ehrlich of Frankfurt a./M., and von Leyden of Berlin. Each of these will present the results of their latest researches on cancer and demonstrate cases, specimens, etc. Professor G. Meyer of Berlin is the secretary general of the conference.

Death of Manuel Garcia.—It is only a little more than a year since March 17, 1905, when the musical and medical world paid homage to Manuel Garcia on the fiftieth anniversary of his invention of the laryngoscope, which happened to be at the same time his hundredth birthday. The Garcia centenary was described at the time in THE JOURNAL, pages 970 and 1129 of volume xliv. The cable now brings word of his death, July 1. He was a noted opera tenor before he became professor of vocal music at London, where he has since resided. He came to this country as a member of the first Italian opera troupe that visited America.

Professor Chiari Goes from Prague to Strasburg.—H. Chiari has been professor of pathologic anatomy at Prague since 1882, and is now 55 years of age, having been born in Vienna in 1851. He has accepted a call to Strasburg to take the chair left vacant by the retirement of von Recklinghausen, who is now in his seventy-fourth year. Chiari has been editor of the *Zeitschrift f. Heilkunde* since 1884. Ribbert of Bonn was first invited to the chair at Strasburg, but declined. Bier of Bonn has also recently declined the chair at Heidelberg left vacant by Czerny's retirement to assume charge of the new Cancer Institute. A banquet was given recently to Bier and Ribbert by their friends in Bonn in appreciation of their decision to remain there.

Sanitary Reform in Roumania.—A letter in the *Med. Klinik* states that the parliament has voted an appropriation of $500,000 for the immediate construction of thirty-two hospitals in the rural districts. The writer comments joyfully on this fact, remarking that the hospitals will serve not only for the care of the sick, but as centers of education of the populace in matters of hygiene, etc. The letter adds: "Steps are now being taken to found a great lottery under state guarantee, the net profits of which are to be devoted strictly to projects of sanitation. This will not only supply means for systematic suppression of epidemic and endemic diseases, but it will also keep in the country the many millions hitherto spent in foreign lotteries by those fond of this form of speculation." The laws in the United States condemn lotteries.

Osteomalacia Cured by Roentgen Exposures of Ovaries.—Ascarelli of Rome recently reported to the local medical society the case of a woman of 38 with puerperal osteomalacia cured by Roentgen treatment. The osteomalacia had grown much worse during her last pregnancy, and no benefit had been derived from any measures until Roentgen treatment was commenced. Prolonged exposure of the ovaries to the *x*-rays caused all pains to subside and the menses did not recur. He is convinced that the ovaries have become atrophied under the influence of the Roentgen rays, although there are no means of determining the exact anatomic condition. Pestalozza comments on the case in *Ginecologia*, remarking that he has encountered a case of typical osteomalacia in which the ovaries were found reduced to less than half the normal size. On the other hand, Truzzi and others have witnessed the persistence of metrorrhagia in osteomalacia after removal of both ovaries. They insist that the uterus should be removed with the ovaries to insure the full effect of the castration on the morbid process.

Resolutions on Communicable Diseases.—Among the resolutions voted by the French *Académie de Médecine* is one to the effect that statistics in regard to the causes of deaths offer no guarantee as to exactness unless they are made out by the attending physician. The declaration should not be made compulsory unless measures can be taken to insure professional secrecy. Vital statistics should be based on the causes of diseases. When the next international conference convenes, in 1910, the nomenclature of the causes of deaths should be revised, and revision should be postponed until then. The declaration of communicable diseases, compulsory for the physician, should be imposed likewise on the head of the family and the heads of establishments. In regard to the prophylaxis of tuberculosis, the present regulations in respect to disinfection of the apartments occupied by the tuberculous are inadequate, as the conditions of development of this disease differ so essentially from those of other communicable diseases. Consequently, tuberculosis requires special regulations. The special regulations should apply not only to the communicability, but also to other etiologic factors, especially the unhealthfulness of the residence and alcoholism. The addition of whooping cough to the list of diseases whose declaration is compulsory was also voted. These resolutions were the result of long study on the part of a special committee, and were adopted by the academy without a dissenting voice, June 5.

LONDON LETTER.

Army Medical Reform.

In a letter to the *Times* Sir Frederick Treves criticises the medical arrangements of the British army, which he compares unfavorably with those of the Japanese. He complains that there is no co-ordination of sanitary effort and no organization to cope with the great hygienic problems encountered in field service. There is no evidence as to who is to be held responsible for failure in sanitation. The principal medical officer has no authority in the matter and no power or organization at command to carry out what he knows to be needed. The combatant officer receives no systematic instruction in the hygiene of troops on a campaign. The private soldier is taught how to seek cover, but not how to save himself from infection. The medical energy of the British army in the field is at the wrong end of the column. It is in the rear to deal with the sick who fall out of the ranks; it should be in the van to protect the column from the onset of disease. He suggests the following reforms: 1. The head of the army medical department should be a physician. At present he is the adjutant general. 2. The director of the department should be responsible for its efficiency and administration. 3. The army surgeons should be provided with authority and power to carry out in the field the sanitary arrangements essential to secure the minimum loss of life. 4. The combatant officer should have some knowledge of hygiene as applied to campaigning and barrack life; some still more elementary knowledge should be possessed by the private soldier.

Opening of the King's Sanatorium.

The king has opened the magnificent edifice built among the Sussex pine woods by his command for the treatment of consumption. Having seen one of the German sanatoria for consumption he determined to devote a large sum, presented to him by a donor who wished to remain anonymous, to the erection of such an institution in Great Britain. Believing that provision was being made in other ways for the poorest classes, he intended this establishment for persons of superior social status but of slender means and unable to afford the cost of prolonged residence in a private sanatorium. The sanatorium is one of the largest and best equipped institutions in the world. It is situated at an altitude of 496 feet above the sea level and stands in grounds of 150 acres. The building is of three stories and there is a cluster of five lofty gables in the center. On the front are broad balconies on to which the bedrooms open. The dining hall and chapel are warmed by pipes underneath the flooring after the old Roman fashion. The most remarkable building in the institution is the chapel which was built with the idea of being open air. It is composed of two naves inclined to one another at an angle like the letter V and entirely open on their inner sides, which consist of colonnades. The chancel is at the apex of the V. The congregation will practically sit in the open air with the warmed floor beneath their feet. There is a further provision for them to sit in summer under the sky, for the space between the two naves is an open courtyard. At the opening ceremony the members of the advisory committee present included Sir William Broadbent, Sir R. Powell, Sir Felix Semon, Sir Hermann Weber and Dr. C. Theodore Williams. The king congratulated the advisory committee on the whole-hearted manner in which they had carried out the trust, and said that he hoped that the research laboratories, equipped with every resource of modern science, would advance the knowledge of pulmonary disease.

Infant Mortality in England and Wales.

The official statistics of infant mortality in England and Wales in the last half-century are of interest. The deaths under one year of age to 1,000 births averaged 154 in each of the two decennia 1851-60 and 1861-70. In the two following periods the rate declined to 149 and 142; but in the last completed decennium the rate again rose to 154, thus justifying the statement that during the first 60 years of civil registration of births and deaths there has been no permanent decrease in infant mortality, notwithstanding the great decline in the general death rate. However, during the five years 1901-05 the rate again declined to 138, and during the last year, 1905, it fell to 128—the lowest on record since the commencement of civil registration in 1837. This result appears to be due to greater care in the treatment and feeding of infants. There is a considerable difference between the mortality in the towns and that in the rural districts. Thus while in 1905 the rate for the whole country was 128, it was 140 in the 76 large towns and 132 in 141 smaller towns; in the remaining and mainly rural population it was only 113. For 1904 the registrar-general has published some valuable information on the distribution of mortality in the first year of life. Forty-nine per cent. of this mortality occurs before the age of 3 months, 20 per cent. between 3 and 6 months, and 31 per cent in the last six months. In recent years there has been a marked and steady increase in the deaths referred to premature births. In the five years 1886-70 these deaths were 11 per 1,000 births; in 1896-1900 the proportion increased to 19, and in 1904 to 21. There is no marked difference in the mortality due to the cause between urban and rural districts, and the figures do not suggest any connection with the industrial occupation of women. This is one of the subjects to be discussed at the approaching national conference on infantile mortality which has been previously announced in The Journal.

The Inspection of Food.

The sensation caused by the Chicago packing-house scandals has not yet showed any signs of subsidence and has had many consequences. Mr. Burns, president of the local government board, will probably introduce into parliament a bill dealing with the inspection of food. For some time the health committee of the London County Council has urged the necessity for the employment of special inspectors of food. This necessity has been emphasized of late by the seizure of pigs or parts of pigs found to be tuberculous. The tuberculous glands are removed from the head before it arrives on the local vendor's premises, a process equivalent to the stripping of the tuberculous

lous pleura from the carcasses of cattle. It is argued that if the London County Council appointed and controlled the inspectors of food there would then be, in conjunction with the system carried out at the port of London by the corporation, complete examination and inspection of the food supply of the metropolis. At present certain of the councils of the boroughs into which London is divided appoint specially qualified food inspectors, with the result that purveyors of diseased meat get rid of their goods in other districts where inspection is imperfect. In consequence of the Chicago disclosures the British military authorities have begun a thorough overhauling of the stocks of preserved meat on hand at the various garrisons. At the meeting of the health committee of the Liverpool corporation Dr. Hope, health officer, asserted that the great bulk of tinned meat came into Liverpool in an excellent condition, but he advised people to refrain from taking anything that came from Chicago so long as the present conditions existed. In the House of Commons, Mr. H. Lea said that he trusted that the war office, in view of the recent revelations, would decline to allow any canned goods from the United States to be supplied for the food of soldiers. The condition of the packing-houses is simply revolting. He moved the reduction of the vote for the army estimates by $500,000, which he would press if he did not receive from the government a pledge that canned goods from America would be accepted for army purposes only under the strictest government supervision. Mr. Haldane, secretary for war, regretted that the United States is not the only country which supplies bad tinned meat. The whole question would be looked into. In the meantime there is a large contract with an American firm by which the war department is bound to abide by if all is right, but the war office has promptly sent over a special officer to inspect on the other side the goods which would be supplied. At several workhouses the use of tinned meat has been discontinued and in one (Fulham) the inmates have risen against a tinned-meat diet.

Neurologic Investigations at the London Hospital.

At the London Hospital Dr. Head and Mr. Sherren have for some time been engaged with the assistance of other workers in neurologic researches which have culminated in a discovery of the first importance, which must rank with the discovery of Bell that the posterior root of a spinal nerve is sensory and the anterior motor. They have found that the body is endowed with three forms of sensibility, which they suggest are conducted by three series of fibers in the afferent nerves. After section of the median nerve, if no tendons have been divided, a touch with a pencil or with anything which deforms the skin of the affected area may be not only readily appreciated but well localized. When pricked with a pin the patient knows that he has been touched, but fails to perceive the sharpness of the stimulus. This Dr. Head and Mr. Sherren term "deep sensibility" or "deep touch." But if tendons have been divided or if the section involves the nerve above the point at which its muscular branches are given off, deep touch may be absent. After section of a nerve the point of a pin and all temperatures are unappreciated within an area which varies somewhat in each case. This they term loss of "sensibility to prick." Surrounding this area and corresponding closely to the anatomic distribution of the nerve is a territory within which the patient is unable to appreciate light touches with cotton, wool and temperatures between 22 and 40 C. ("minor degrees of temperature") and fails to discriminate the points of a pair of compasses when separated to many times the normal distance. Within this area (termed the "intermediate zone") the patient can appreciate the sharpness of a pin prick and can differentiate temperatures below 18 C. from those above 45 C. (temperatures of the more extreme degrees"). In the recovery of a nerve after suture sensibility to prick returns to the whole area before sensibility to light touch. Dr. Head and Mr. Sherren have, therefore, advanced the theory that the afferent fibers in the peripheral nerves can be divided into three systems: 1, Those which subserve deep sensibility; 2, those which respond to painful impressions and to extremes of heat and cold; 3, those responding to light touch and which enable the minor degrees of temperature to be appreciated and two points to be discriminated. They believe that the fibers of deep sensibility run to a great extent with the motor nerves to the muscles and then pass along the fibrous structures connected with them. To the second system they give the name "protopathic." It subserves the form of sensibility which exists in the intermediate zone between the boundary of loss of all forms of cutaneous sensibility and that of loss of sensibility to light touch and to the minor degrees of heat and cold. In an area endowed only with this form of sensibility the sharpness of a pin prick is recognized and water at 50 C. and ice can be discriminated from one another. All sensations are badly localized, radiate widely and are accompanied by tingling. This system regenerates more quickly than the third. To the third system of sensibility they give the name "epicritic." Light touch and the minor degrees of heat and cold are recognized by these fibers. The protopathic fibers of nerves supplying adjacent areas have a much greater overlap than the epicritic; the amount of overlap of the latter is negligible.

VIENNA LETTER.

Institution of a Nothnagel Lecture.

VIENNA, June 6, 1906.

In honor of Dr. Nothnagel, the late professor of clinical medicine, a novel institution of the kind well known in England and America, has been planned by his numerous friends, pupils and grateful patients. Funds are being collected for the purpose of establishing a series of Nothnagel lectures to be delivered in his former clinic on the anniversary of his death. The subject of the lecture has been chosen from the pathology of the intestinal canal or the brain, which was the favorite research ground of the deceased physician. The successor of Professor Nothnagel is Professor v. Noorden, from Frankfort, and it is very likely that he will be asked to deliver the first lecture of the series. All lectures at the Vienna University are paid for by the state, and hitherto there has been no honorary lecture "in memoriam." The new plan has been accepted unanimously, and it is likely that it will be followed in future.

An Extraordinary Distinction for a Surgeon.

The director of the first surgical clinic, Professor v. Eiselsberg, has been appointed by the emperor, surgeon general of the fleet. This post had not been occupied for more than 20 years, and is rather an honorary one, the eminent surgeon receiving it in recognition for the services rendered to the naval staff as counsellor on medical organization and hospital boats. The navy plays rather an inferior rôle in the Austrian state, on account of the short extent of the coast line, and it has hitherto been rather neglected, but the recent development of political affairs has turned the tide in favor of the navy. Hospital ships, naval hospitals at the base of the fleet, arrangements for the care of the sick and wounded, have been, with advice from Professor Eiselsberg, added to the equipment, forming a really modern, up-to-date outfit for the needs of the uncertain future. Professor v. Eiselsberg has devoted a large amount of thought to establishing a thorough and effective system, which is partly based on the English, partly on Japanese institutions.

Weekly Surgical Demonstrations.

The directors of the hospital wards have joined in an effort to make modern surgery, its diagnostics and therapeutics, accessible to all practitioners, free of charge, by instituting weekly surgical demonstrations. It is intended to enable every doctor to show any cases of interest, to deliver a few remarks as to its special features and the treatment adopted or planned, limiting discussion to five minutes. Especially those cases which are of special interest to the general practitioner on account of their frequency, their bad results or certain other points of view come into the scope of the demonstration before the various clubs and societies. All eminent surgeons have promised co-operation. The operating theater of the first surgical clinic has been chosen, because it accommodates easily 500 persons. No invitations are sent out, as every medical man may come and listen or take part in the demonstration. Among the topics presented recently were Bier's method of artificially induced hyperemia, the sterilization of silk and catgut, radical cure of purulent ear discharge and similar practical subjects.

The Epidemic of Cerebrospinal Meningitis.

The epidemic of cerebrospinal meningitis which originated in the eastern part of Europe has not been definitely stamped out. At first the eastern border of Austria suffered severely; not only children but adults as well fell victims to the disease. Stringent measures were adopted to check its spread, and the desired effect was obtained in proportion to the intelligence and standard of cleanliness of the population of the endangered district. In Vienna a sort of quarantine was organized for passengers arriving from infected parts of the empire, and isolation barracks were kept ready for emergencies. Apart from the strictly medical provisions, such as thorough disinfection of the personal property in infective cases and hospital precautions, the public is being kept instructed by leaflets as to the chief symptoms and the need of isolation in suspected cases. With the aid of these means only sporadic cases were observed in Vienna, as is usual in all large cities, 10 or 12 a year, mostly among infants. Recently a fresh outbreak occurred near the outskirts of Vienna in the military barracks, and two cases proved fatal. These cases were all imported from the eastern borderland of Austria, from Galicia, whence the regiment affected draws its recruits. The barracks were disinfected and all other precautions adopted, thus checking the epidemic in its very beginning. So far, 72 days after the first outbreak, no fresh case has been reported. The bacteriologic examination showed the presence of the diplococci of Fränkel and of Weichselbaum.

Fighting the Dust Nuisance.

The prevalence of dust in the Vienna streets has for some time been the object of intense study by municipal men, without any apparent result. Finally a "Society for the Abolition of Dust" has been formed, whose work has already produced some remarkable effects. The experiments conducted by the society have resulted in the approval of a specially macadamized street pavement, which is rendered more dust free by the addition of oil or petroleum. Two streets have been laid out according to the directions of the society, their length being 400 and 320 m. respectively. Furthermore, the collection of household refuse and waste matter has been reorganized. The dust, coal ashes, etc., are being collected in hermetically closed dust bins, without shedding their contents into the street, as was customary until recently, and numerous shops, on the admonition of the "society," have adopted measures for reducing the dust within their premises. Considering the extent of tuberculous diseases in Vienna, which actually brought the name of *morbus Viennensis* to this disease, the fight against dust deserves the utmost attention. In concord with the above mentioned measures, the spitting nuisance has received the same attention. In every car, tram, bus and train short notices are placarded, forbidding spitting: "Passengers are requsted not to spit. Fine 200 k. (40 cents)." The progressive sanitation, the improved supply of water, the lower percentage of slums and the suppression of unhealthy food have resulted in a slow but constant lowering of the death rate in the last five years from 20.5 to 18.5 per 1,000.

Reform of the Out-Patients' Department in Public Hospitals.

The abuse of the hospitals, by the majority of the patients, has led in all the larger cities of Austria to such an intolerable state of affairs that vigorous efforts are now being made to improve the prevailing conditions. As all the hospitals are public institutions, they have no private governors, and no letters of admission are required to obtain a bed or treatment as out-patient. Nominally, only the poor classes of the population are permitted to seek relief in the hospitals, but in the course of time all, even the better well-to-do classes, have sought and obtained help gratuitously. The more the hospitals were used, the less the offices of private physicians were frequented, and in the year 1882 another enormous reduction of the possible patients for private practice was effected by a law called the Krankenkassen Gesetz, which decreed the organization of sick-relief or invalidity societies for all persons occupied or employed in factories, shops, industrial concerns, or commercial undertakings, who were not owners of that concern. Thus the middle class practice was cut down to a ridiculously low extent, as such relief societies were bound to appoint a doctor for each district, at a proportion of about one to every 7,000 or 7,500 members. This contract physician has to give free medical help and aid to them, and the remedies and medicines are also provided free to the members. These "Kassen-doctors," of whom there are about 240 in Vienna, have made it their routine practice to send all chronic cases to the public hospital, so as to save themselves the trouble and save their "Kasse" part of the expense. At last the burden on the state became too heavy, and the combined efforts of the private practitioners and the board of health have effected the adoption of new regulations relating to hospitals. Only such patients as ca · prove their poverty or want of means by a certificate given by the board of managers will obtain free medical help in hospitals. No members of a "Kasse" will be accepted as patients except on payment of the full fees; the same holds good of other classes of patients who, of course, may obtain admission, but will have to pay for medical services as they would have to pay a private doctor. The largest hospital in Vienna had last year (1905) over 25,000 in-patients and nearly 600,000 out-patients, and such figures are sufficient to show the need of immediate reform. No doubt the new drastic measure will have the effect of bringing the patients oftener to the physician's office than it was the custom hitherto, and the state will save large sums hitherto expended for those who can well afford to pay for themselves. First aid will, of course, be free in all cases, as formerly, in the hospitals; only the later treatment is affected by the new regulations.

Insurance Fees and Lodge Practice

The Recent Reduction in Insurance Fees.

The physicians of Bristol, Tennessee-Virginia, have notified the New York life insurance companies that they will not accept the recent reduction in fees for examination for life insurance. In a letter to the medical director of one of the large companies, one of the physicians of Bristol writes:

> When your company, along with other New York companies, manifested such little regard for the rights of the medical examiners, on whom the safety of all their interest depends, by reducing their compensation for examinations on account of a law made necessary by the acts of others, the physicians of Bristol concluded that the time had arrived for them to determine and agree on the proper fees for this kind of professional service, regardless of the law of New York or any state, and the rates for examinations for insurance stated in the enclosed circular were adopted unanimously, and every physician in Bristol and vicinity subscribed to the agreement and pledge to adhere to them. Therefore, the matter of fees for life insurance examinations in this city is no longer one to be adjusted by the companies.

The circular to which reference is made states that examination for ordinary old-line insurance will be $5; when urinalysis is omitted, $3, and examinations for fraternal or industrial insurance, from $2 to $3.

Societies Take Action.

FLORIDA STATE MEDICAL SOCIETY.

The following resolutions were offered by Dr. R. S. Mallory Kennedy, chairman of the committee appointed the morning of the same day to draft suitable resolutions concerning life insurance examination fees, as follows:

> WHEREAS, There is a tendency on the part of old-line or legal reserve life insurance companies to reduce the minimum fee paid for medical examination to $3.00; and
>
> WHEREAS, It being the unanimous sentiment of the members of the Florida State Medical Association in session at Gainesville, Fla., April 19, 1906, that a minimum fee of $3.00 is not a just compensation for the services rendered and responsibility assumed; therefore, be it
>
> *Resolved*, By the Florida State Medical Association that on and after July 1, 1906, no member of this association shall make a medical examination for any insurance company, old-line, fraternal or assessment, now licensed to transact business in this state, or any insurance company, which may hereafter be licensed to transact business in this state, for less than $5.00 an examination and that an additional fee of $5.00 be charged where a microscopic examination is required; and be it further
>
> *Resolved*, That a copy of these resolutions be sent at once to the secretary of each component society for their action, and that said societies after acting on the matter shall forward at once the result of said action to the secretary of the State Medical Association, who in turn shall notify each secretary of the component medical societies of the final action taken.

On offering an amendment to the foregoing, the amendment to read: "That these resolutions are endorsed by the Florida State Medical Association, in annual session at Gainesville, Fla., April 19, 1906," the same was endorsed by a vote of the members present.

Similar resolutions were passed by the Escambia County (Fla.) Medical Society.

OTHER SOCIETIES.

At a meeting of the Matagorda County (Texas) Medical Society, held June 16, a resolution was adopted making the regular fee for life insurance examinations $5; if urinalysis is omitted, the fee is $3. For fraternal insurance examinations the fee is $3. The members of the society also pledged themselves to support the companies which now pay the $5 rate.

At a recent meeting of the Smith County (Texas) Medical Society, resolutions were adopted protesting against the cut in fees. A committee was also appointed to consider the matter further.

At the June meeting of the Center County (Pa.) Medical Society, a resolution was unanimously passed that no member of the society shall make an examination for life insurance requiring a urinalysis for a less fee than $5.

Dr. Joseph S. Leach, Glasgow, Ky., writes that as a result of Dr. McCormack's address before the Barren County (Ky.) Medical Society, that society has passed resolutions not to examine for regular life insurance companies for less than $5.

Dr. J. W. Trisler, Marion, Ky., writes that the Crittenden County (Ky.) Medical Society has passed a resolution making the minimum fee for old-line life insurance examinations $5.

Correspondence

A Carelessly Edited Medical Journal.

Mescalero, N. M., June 22, 1906.

To the Editor:—I admire The Journal for its unremitting fight for the correction of abuses in the medical profession. I am writing now to call attention to one that has not hitherto been taken up, but concerning which I feel a few words editorially would not be amiss.

There is a monthly medical journal which comes to my desk regularly but whose stay there is short, as it generally finds its way promptly to the waste basket. This is not because my time is so limited that I can not spend an hour now and then with medical journals, but because, after looking over the first copy or two and finding it so carelessly gotten up, filled with misprints, misspelled words, etc., I have not the slightest respect for it as an authority or as a disseminator of medical news or the thoughts of its contributors. The last number I glanced over rather cursorily and my eye fell on some errors so flagrant that I felt they should not be allowed to go by unnoticed. Some of them might be typographical (which are rarely excusable in a first-class journal), but, alas, others I fear, can not be justly charged to the poor typesetter. These may seem small matters, but nevertheless are to the periodical what cleanliness and good manners are to the individual. The physician who is careless about his linen, fails to keep his finger nails clean, and who is ill-mannered, can not hope to gain the respect of his fellows, either professional or lay, and they will show very little regard for his professional opinions, which in nine cases out of ten will not be entitled to much regard. So with the publication that is carelessly gotten up. As such a physician as above described would be a blot on the profession as a whole, so such a medical journal is. Far better it would be if it were not published at all. Such a publication as the one I mention is a disgrace to our profession. I am sending it to you under separate cover; it is a type of a large number of medical journals. Some of the most flagrant errors are marked in the copy sent to you. R. I. McNeil.

Use of Inferior X-Ray Tubes.

Springfield, Mass., June 16, 1906.

To the Editor:—At the Boston session of the American Medical Association one of the things that struck me very forcibly was the number of good exhibits of *x*-ray apparatus made almost useless through inferior tubes. Apparatus that *per se* seemed powerful enough, developed no clear-cut image on the screen. In many instances complicated foreign tubes were being exploited. These were expensive and seemed to me only remarkable for the amount of inverse discharge they recorded. I have for some time been using Green and Bauer American-made tubes and find them much better than the imported Gundelach tubes I formerly employed. Why go past a good American product for an inferior foreign make? I agree very heartily with Dr. Piffard in his paper concerning the value of tubes that these (tube No. 2 being G. & B.) are remarkable not only as to lack of inverse but for rapidity and definition. Dealers should give attention to so important a matter and not spend all their energy in the construction of the apparatus only to spoil the ultimate result by tubes that do not work in harmony with their product.

H. W. Van Allen, M.D.

Empyema of the Pleura.

Norwood, La., June 17, 1906.

To the Editor:—In The Journal, June 16, page 1895, I notice that Braun, in his lecture, says that he does not think that simple puncture and aspiration will effect a cure in all cases of empyema in the pleura, and that he favors resection, etc.

Regarding aspiration, he is certainly right, for it will not cure in any case. If the diagnosis is made promptly, i. e., within the first week or ten days, a simple incision under local anesthesia in the intercostal space with drainage will cure without the necessity of resection. Of course, if days or weeks elapse after the formation of pus, or if the patient is tuberculous, even after resection the prognosis is unfavorable.

The aspirating needle has only one place here, and that is for purpose of diagnosis, after which the needle should not be withdrawn, but should be left *in situ* as a guide for the knife, which should immediately follow. This is a point to be especially remembered by young operators..

W. F. Hagaman, M.D.

Marriages

W. H. Carlton, M.D., to Miss Susie Lucas, both of Athens, Ga., recently.

A. J. Evans, M.D., to Miss Jessie Merritt of Pleasantville, Iowa, June 27.

Howard Eastman, M.D., to Miss Mamie C. Miller, both of Baltimore, June 19.

Richard F. Bigger, M.D., to Mrs. Anna M. Hill, both of Indianapolis, June 19.

Glenn W. Adams, M.D., Cincinnati, to Ida E. Scott of Harrison, Ohio, June 20.

Lester R. Cobb, M.D., Belleville, Mich., to Mrs. Carrie Moon at Detroit, June 13.

John A. Fritchey, M.D., to Miss Ella Shoop, both of Harrisburg, Pa., June 24.

Fayette Dunlap, M.D., Danville, Ky., to Miss Lin Lithgow of Louisville, June 20.

Elmer J. Hagenbaugh, M.D., to Miss Ella Conn, both of Elkhart, Ind., May 16.

P. J. Brannon, M.D., to Miss Genevieve Anne Lally, both of Denison, Iowa, June 19.

Will H. Lester, M.D., Greenville, Mich., to Miss Effie Carroll of Detroit, June 23.

Hugo W. Aufmwasser, M.D., to Miss Stella Blau, both of Covington, Ky., June 21.

William H. Ditmars, M.D., to Miss Anna Green, both of Jonesville, Mich., June 10.

James Lewis Fleming, M.D., Chicago, to Miss May Ormsby, Dougherty, Iowa, June 20.

Leonard H. Bussen, M.D., to Miss Anna Brady, both of Valley City, N. D., June 20.

Charles Bertram Ensor, M.D., to Miss Francis C. Bennett, both of Baltimore, June 18.

William Allen Etheridge, M.D., to Miss Annie C. Voelker, both of Baltimore, June 27.

Joseph W. Holland, M.D., to Miss Pearl Huntington Robins, both of Baltimore, June 20.

Richard M. Cogan, M.D., Philadelphia, to Miss Maud Logee of Providence, R. I., June 21.

Walter Den Bleyker, M.D., to Miss Marion Brownell, both of Kalamazoo, Mich., June 26.

Elbert A. Bing, M.D., Browns, Ill., to Miss Cora Estes Whitson of Johnsonville, Ill., June 27.

Clarence K. Haggard, M.D., Moody, Texas, to Miss Ella Baggett of Belton, Texas, recently.

Victor J. Larose, M.D., Mandan, N.D., to Miss Rose McHugh of Bismarck, N. D., June 14.

George D. Buxton, M.D., Proctorville, Vt., to Miss Veronica Nichols of Burlington, Vt., June 14.

Prentiss B. Cleaves, M.D., Cherokee, Iowa, to Miss Jane Delaplaine of Tipton, Iowa, June 11.

Frank E. Crosier, M.D., Lebanon, Ohio, to Miss Annice Poore, at Murray Hill, Ohio, June 7.

Lucian Frederic Blalock, M.D., Ocala, Fla., to Miss Irma Richardson of Atlanta, Ga., June 14.

Bruce B. Giffen, M.D., St. Clairsville, W. Va., to Miss Livingston of Columbus, Ohio, June 22.

Thomas Alpheus Evans, M.D., to Miss Wilhelmina Loechler, both of Columbus, Ohio, June 27.

Walter E. Keehl, M.D., Battle Creek, Iowa, to Miss Sylvia Duncan of Iowa City, Iowa, June 14.

Patrick V. Cunningham, M.D., Providence, R. I., to Miss Anna D. Hamley, at Baltimore, June 27.

George G. Armstrong, M.D., Buffalo, N. Y., to Miss Jane Dare Johnson, at Warrenton, Va., June 16.

A. E. Bessette, M.D., San Marcial, N. M., to Miss Mamie Toomey of Chicago, at San Marcial, June 21.

W. Emmett McClain, M.D., Packwood, Iowa, to Miss Elizabeth Agnes Burns of Keokuk, Iowa, June 20.

James Robert Caywood, M.D., Piqua, Ohio, to Miss Elizabeth Young Barber of New York City, June 4.

Hubbard North Bradley, M.D., Bay City, Mich., to Miss Harriet R. Wyman of Ann Arbor, Mich., June 25.

Dexter P. Cannaday, M.D., Hugheston, W. Va., to Miss Elizabeth Haven Vermillion of Poplar Hill, Va., May 2.

Deaths

Charles Rollin Head, M.D., College of Physicians and Surgeons in the City of New York, 1848, a member of the Wisconsin legislature in 1853, 1855, and 1862, the author of the bill abolishing capital punishment in Wisconsin, surgeon of the board of enrollment of the second congressional district from 1863 to 1865, founder of Albion College, and at one time secretary of the State Board of Pension Examiners, for more than fifty years a resident of Albion, Wis., died at his home in that place from senile debility, June 19, aged 86.

William Duff Bullard, M.D., College of Physicians and Surgeons in the City of New York, 1895, a member of the American Medical Association, New York Academy of Medicine, and the New York Physicians' Mutual Aid Association; adjunct professor of surgery in the New York Post-Graduate Hospital, and later assistant surgeon of the Hospital for the Ruptured and Crippled, died at his home in New York City, June 20, after a short illness, aged 34.

Lapsley Yancey Green, M.D., University of Louisville Medical Department, 1852, a member of the Tennessee State Medical Association, and an honorary member of the Chattanooga and Hamilton County Medical Society, a surgeon in the Confederate service during the civil war, died at the home of his daughter on Lookout Mountain, June 21, after a short illness, aged 78.

Sidney O. Heiskell, M.D., College of Physicians and Surgeons, Baltimore, 1881; assistant and physician in charge at the quarantine station on the Patapsco River since the time of his graduation, excepting for two years; acting past assistant surgeon in the navy during the Spanish-American war, died suddenly at the quarantine station, June 22, from cerebral hemorrhage, aged 53.

Thomas De L. Burckhalter, M.D., Medical College of the State of South Carolina, Charleston, 1895, of New York City, died at St. Vincent's Hospital, New York City, June 20, from disease of the kidneys and liver, after an illness of five weeks, aged 30.

Arthur Grattan Cabell, M.D., Medical College of Virginia, Richmond, surgeon U. S. Navy, retired, a prominent citizen of Richmond, died at the home of his brother in that city, June 19, from cerebral hemorrhage, aged 52.

Charles F. Faber, M.D., Department of Medicine of the University of Pennsylvania, Philadelphia, 1886, for ten years a practitioner in Cairo, Egypt, died in Philadelphia, June 23, from tuberculosis, aged 41.

William G. Hare, M.D., Faculty of Medicine of Queen's University, Kingston, Ont., 1892, of Bay City, Mich., was drowned in Saginaw Bay by the capsizing of a steam launch, June 19, aged 42.

Robert Gover Allen, M.D., Jefferson Medical College, Philadelphia, 1839, assistant surgeon in the army during the civil war, died at his home in Darlington, Md., June 24, aged 84.

Otho H. Arndt, M.D., Rush Medical College, Chicago, 1896, died at his home in Oconto Falls, Wis., June 16, from the effects of carbolic acid, accidentally administered, aged 35.

John F. Alexander, M.D., Cleveland, Ohio, died at his home in Centre Hall, Pa., May 29, from tuberculosis of the spine, after a protracted illness, aged 57.

W. R. Harbin, M.D., Medical College of the State of South Carolina, Charleston, 1858, died in Calhoun, Ga., June 6, from senile debility, aged 74.

Ashford Brown, M.D., 1844, died at his home in Webster, W. Va., June 15, aged 85.

Deaths Abroad.

John Henry Bryant, M.D., London, 1891, M.R.C.P., 1895, and F.R.C.P., 1901, assistant physician to and lecturer on materia medica and therapeutics at Guy's Hospital, died at Walmer Kent, aged 38. His death removes one of the ablest of the younger London physicians. A career marked by good work and offering still greater promise, has been cut short. Dr. Bryant entered Guy's Hospital in 1886, where he distinguished himself as a student, winning among other prizes the treasurer's gold medal in medicine and surgery in 1891. He graduated M.B., B.S., London, in 1890, taking first class honors and the gold medal in medicine, and first class honors in forensic medicine. In 1892 he was appointed medical registrar to Guy's Hospital, which he held for seven years, until he became assistant physician in 1898. In 1899 he became demonstrator of morbid anatomy and in 1903 lecturer on materia medica and therapeutics. He had a great reputation as a teacher; he had the gift of systematizing work and lucidly expounding doctrine. Everything he did was marked by thoroughness. He wrote out all his lectures before delivery and never slurred over a single point which could help the student. His writings were of high merit.

B. Tarnovski, M.D., the leading Russian authority on syphilis and cutaneous diseases, died at Paris in May, aged 68. He was the founder and president of the St. Petersburg Dermatological Society, and has published numerous works on syphilis, etc. He bequeathed his handsome estate at Jalta to be used as a sanatorium for physicians.

Forbes Tulloch, lieutenant of the Royal Army Medical Corps, died from sleeping sickness in the Alexandria Hospital at Millbank, June 26. Lieutenant Tulloch contracted the disease in Uganda, where he was sent as a member of the commission to investigate the causes of the disease and the means of prevention.

H. Obst, M.D., professor of ethnology and anthropology at Leipsic, died in May, aged 69. His atlas of anatomy has passed through two editions.

Miscellany

The New Buildings at Harvard.—The new buildings of the Harvard Medical School, which will be dedicated in September next, were much admired at the Boston session of the American Medical Association, being the meeting places of many sections and the scene of the long-to-be-remembered afternoon teas. They are built according to a consistent architectural plan around three sides of a quadrangle, the administration building being at one end and flanked on each side by two of the four laboratory buildings, which are devoted to anatomy and histology, physiology and chemistry, pharmacology and hygiene, and bacteriology and pathology. Each laboratory building consists of two wings connected by a central portion fronting the court. The building material is white marble and the style is classic adapted from the Greek. With the exception of chemistry the laboratories are constructed to accommodate small classes of 24 students, a number being provided in each building. Abundant light is secured and provisions are made for possible expansion so as to treble their present capacity. Numerous rooms for private research are provided. All the buildings are connected by corridors, which also contain lockers for students' use. The central portion of each building is provided with an amphitheater with preparation rooms on each side. The best acoustic properties have been carefully secured. Dark rooms for instruction in ophthalmology are secured in the physiology building by cutting off the light by means of rolling screens. An animal operating suite is provided with rooms adjacent for animals undergoing special treatment. General rooms for the animals are provided on the roof, where they have abundant light and ventilation and exercise yards in the open air. The laboratory tables for chemistry have tops of opaque glass made to resist the action of acids. Hoods are provided through which also the ventilation of the room is effected. The floor is of asphalt and the walls are covered with zinc paint. Centrally located in the room are emergency showers as a safeguard in case of fire to clothing occasioned by explosion of apparatus. In the lecture room of the department of physiology and chemistry is a lecture table, the central portion of which is movable and can be taken to the preparation room loaded with apparatus, and returned to its place. The department of comparative pathology occupies the entire rear portion of the wing devoted to hygiene on all floors. The space given to this department is a striking evidence of the trend of modern investigation. In a similar way the department of photography occupies the rear of one wing of the bacteriology and pathology building. The animal house of the pathology department has rooms and stalls for animals, varying in size from cows to guinea-pigs. The buildings are warmed, lighted and ventilated from a power-house. They are warmed by hot water, lighted by electricity and ventilated by mechanical injection of air screened of dust and warmed by indirect radiators, the foul air being removed by fans located on the roofs. Refrigeration of the room for cadavers and for a room in the chemistry building is secured by the circulation of brine. Refrigeration of the dissecting rooms has been provided for, but has not yet been applied. Steam and compressed air can be supplied from the power-house to the various laboratories. The Harvard Medical School has progressed from three professors, giving two courses of lectures of four months each in 1783, to its present force of 142 professors and instructors, with the requirement of a college degree for admission and a four years' course. The edifice at present occupied was deemed at the time when it was built (1883) ample for the needs of the school for fifty years. Over $3,000,000 have been provided for the erection and maintenance of the new buildings.

More Than Half a Century of Practice.—Dr. Jacob W. B. Wellcome, whose death, April 8, 1906, at his home in Sleepy Eye, Minn., was chronicled in THE JOURNAL April 21, page 1228, was one of the most remarkable men in the history of Minnesota. Dr. John W. Andrews, of Mankato, Minn., a close friend of Dr. Wellcome, sends us a very interesting outline of Dr. Wellcome's life and career. Born in Maine, he first practiced in New England, but later came to the busy frontier of Minnesota, where he spent the rest of his life. He held many positions of honor and responsibility and his career as a physician was one of great credit to him and of happy remembrance for those he leaves behind him. Dr. Andrews says that Dr. Wellcome practiced medicine in the Minnesota Valley more years than any other man, either living or dead. He adds: "Perhaps the most interesting part of his professional career was at Garden City. When he located there in 1858 he was on the extreme border of civilization; to the west lay a broad expanse of prairie, with here and there a settler; the roads were mere paths, the streams without bridges and many of the frontiersmen living in sod houses. The timbered portions of the country prior to 1862 were inhabited by the red man. He and his tepees were more numerous than the white settlers and their shanties. The night was often made hideous by the whoop of the Indian and the howl of the prairie wolf. In winter there were frequent blizzards, rendering traveling not only difficult but dangerous to life and limb. Such was the condition of the country when Dr. Wellcome began his practice in Garden City. Often at great risk to his life in winter he would respond to calls ten, twenty and thirty miles away over the broad prairie and through blinding snow storms. During the spring freshets the danger was no less because of the swollen streams. These the doctor had to ford, sometimes swimming his horses to do so. So large was his practice and so faithfully did he attend to it that in times when there was much sickness he was practically on the road all the time. In 1862 occurred the memorable and most cruel Sioux massacre. Dr. Wellcome was one of the first to take up arms to protect the frontier settlers; for awhile he acted in the double capacity of soldier and surgeon."

Tetanus.—In a communication sent to the Académie de Médecine, Paris (*Progrès Médical*, 1906, No. 1), M. Clement, Val de Grace, reported some experiments on the effect of temperature in tetanus. From seeing a case following exposure to heat without very obvious traumatism, he conceived the idea that high temperature might increase the virulence of the microbe, and therefore he inoculated two guinea-pigs each with 0.2 c.c. of a filtered culture of the tetanus bacillus and exposed one for some time to a high temperature (from 40 to 42 C.). At the end of three days the animal was seized with the symptoms of acute tetanus with dissemination of the germs throughout the organism instead of their being, as usual, localized at the point of inoculation. The other animal remained well. Subsequent experiments led him to believe that it was not the virulence of the germ that was increased, but rather that the resistance to it was decreased; the phagocytes were unable to absorb it, hence its spread throughout the organism. In commenting on the paper, M. Kelsch suggested that low temperatures might likewise diminish resistance and thus account for the occurrence of tetanus *a frigore*. He hoped M. Vincent would extend his inquiry so as to take in this factor, also to supplement the work already done on the effects of temperature in this disease.

Oath Administered to Kansas Students.—At the commencement exercises of the School of Medicine of the University of Kansas the following oath was administered to the members of the graduating class by Dr. Edward W. Shoeffler:

> Realizing the dignity and the sacredness of the practice of medicine on which I am about to enter, I promise to do all in my power to prove myself worthy of this high calling. I will guard sacredly the confidence of my patients. I will not violate the sanctity of any home into which I may be admitted. I will honor my colleagues. I will promote the advancement of the medical sciences. I will do my best to bring honor to my alma mater. I will promote fellowship and harmony in the profession, and do hereby obligate myself to follow the priinciples of medical ethics promulgated by the American Medical Association.
>
> While I continue to keep this oath inviolate may it be granted me to enjoy life and practice my art respected by all men.

Choice of Anesthetic.—C. Lull, in the *Alabama Medical Journal*, April, 1906, considers the combined statistics of anesthesia, which give one death in 2,948 cases for chloroform to one in 13,986 for ether, as of more value than opinions drawn from individual experience. If the heart is weak ether is the safer remedy; the same is true when the kidneys are affected. Ether appears to be more liable to induce bronchitis and pneumonia, but the amount used and the time and method of administration as well as other circumstances are modifying factors. More remote consequences of anesthesia, status lymphaticus, sepsis, acetonuria, acidosis and hepatic toxemia must not be lost sight of. General anesthesia should be preceded by thorough examination of the heart, lungs and kidneys. In the vast majority of cases demanding anesthesia ether is far safer than chloroform.

The Public Service

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending June 30, 1906:

(Orders issued by Commander-in-Chief of Asiatic Fleet.)

Nash, F. S., surgeon, detached from the *Monadnock* and ordered to the Naval Station, Olongapo, P. I.

Shiffert, H. O., P. A. surgeon, detached from the Naval Hospital, Philadelphia, and ordered to duty with the marine detachment on the Isthmus of Panama, sailing from New York, July 3.

Ely, C. F., asst.-surgeon, detached from duty with the marine detachment on the Isthmus of Panama and ordered home to wait orders.

Woodward, J. S., asst.-surgeon, detached from special duty in the Bureau of Equipment, Navy Department, and ordered home to wait orders.

Pickrell, G., surgeon, detached from the *Franklin*, and granted sick leave for three months.

Geiger, A. J., asst.-surgeon, ordered to the *Brooklyn*.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended June 27, 1906.

Woodward, R. M., surgeon, detailed as member of Revenue Cutter Service retiring board, to convene at Boston, June 28, 1906:

Grubbs, S. B., P. A. surgeon, granted leave of absence for fourteen days, from Aug. 2, 1906.

King, W. W., P. A. surgeon, relieved from special temporary duty at Missoula, Mont., and directed to rejoin station in Washington, D. C.

McClintic, T. B., P. A. surgeon, directed to report to the commanding officers of the Revenue Cutter *McCulloch* for special cruise in Alaskan waters.

McCoy, George W., P. A. surgeon, leave of absence granted for one month, from April 14, 1906, amended to read twenty-five days only.

Warren, B. S., P. A. surgeon, granted leave of absence for four days, from June 22, 1906, under Paragraph 191 of the Regulations.

Warren, B. S., P. A. surgeon, detailed as member of Revenue Cutter Service retiring board, to be convened at Boston, June 28, 1906.

Collins, Geo. L., asst.-surgeon, granted extension of leave of absence for two days from June 28, 1906.

Foster, S. B., acting asst.-surgeon, granted leave of absence for ten days, from June 11, 1906.

Goddard, F. L., acting asst.-surgeon, granted leave of absence for thirty days from June 20, 1906.

Houghton, M. W., acting asst.-surgeon, granted leave of absence for eleven days, from June 20, 1906.

Owen, Henry, acting asst.-surgeon, leave of absence granted for thirty days, from May 25, 1906, amended to be effective June 10, 1906.

Walker, R. T., acting asst.-surgeon, granted leave of absence for four days, from July 11, 1906.

Brown, F. L., pharmacist, granted leave of absence for two days, from June 23, 1906, under Paragraph 210 of the Regulations.

BOARDS CONVENED.

A board of officers was to meet at the Bureau, June 25, 1906, for the purpose of making physical examinations of candidates for position of second assistant engineer in the Revenue Cutter Service. Detail for the board: Asst. Surgeon-General J. M. Eager, Chairman; Assist.-Surgeon J. W. Trask, Recorder.

A board of officers was to meet at the Hygienic Laboratory, July 2, 1906, for the purpose of making an investigation as to the origin and prevalence of typhoid fever in the District of Columbia. Detail for the board: P. A. Surgeon Rosenau, Chairman: P. A. Surgeon L. L. Lumsden, and Dr. J. H. Castle, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended June 29, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, June 9-16, 1 case.

Florida: General, June 16-23, 4 cases; Jacksonville, 2 cases.

Illinois: Galesburg, June 16-23, 4 cases.

Kansas: Topeka, June 13-20, 1 case.

Kentucky: Covington, June 16-23, 1 case.

Louisiana: New Orleans, June 16-23, 16 cases.

Missouri: St. Louis, June 16-23, 1 case.

New York: Findley Lake, June 22, 1 case; New York, June 16-23, 4 cases.

North Carolina; Beaufort, June 20, 2 cases.

Ohio: Cincinnati, June 15-22, 3 cases.

Tennessee: Nashville, June 16-23, 2 cases.

Wisconsin: Appleton, June 16-23, 1 case; Milwaukee, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, May 5-12, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, May 12-19, 2 cases.

Brazil: Rio de Janeiro, May 13-27, 3 cases.

Canada: Toronto, June 2-16, 10 cases; Winnipeg, June 9-16, 1 case.

Chile: Antofagasta, May 26, 9 cases; Iquique, May 12-19, present; Talcahuana, vicinity, May 19-26, present.

China: Hongkong, May 12-19, 2 cases, 1 death; Shanghai, May 19-26, 1 death.

France: Marseilles, May 1-31, 1 death; Paris, May 26-June 2, 6 cases.

Germany: Bremen. May 26-June 2, 1 death.

Great Britain: Hull, May 26-June 2, 2 cases; Liverpool, June 2-9, 2 cases.

Greece: Athens, May 28-June 4, 2 deaths.

India: Bombay, May 22-29. 5 deaths; Calcutta, May 12-19, 44 deaths; Karachi, May 20-27, 19 cases, 4 deaths; Madras, May 19-26, 4 deaths; Rangoon, May 12-19, 17 deaths.

Italy: General, May 31-June 7, 18 cases, Messina, May 26-June 2, 1 death.

The Netherlands: Groningen, April 15-30, 5 cases.

Russia: Moscow, May 26-June 2, 4 cases, 2 deaths; Odessa, May 26-June 2, 14 cases; St. Petersburg, May 12-June 2, 27 cases, 8 deaths.

Spain: Cadiz, May 1-31, 1 death.

Turkey: Constantinople, June 3-10, 1 death.

Switzerland: Zurich, May 26-June 2, 1 case.

YELLOW FEVER—UNITED STATES.

Louisiana: Mississippi River Quarantine, June 23, 1 case (imported from Habana on S.S. *Holstein*.

Brazil: Rio de Janeiro, May 13-27, 1 case.

Honduras: Choloma, June 2-9, present; Pimienta, present; San Pedro, present.

Mexico: Merida, June 1-16, 2 cases, 2 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, May 10-17, 6 cases, 6 deaths.

CHOLERA—FOREIGN.

India: Bombay, May 22-29, 32 deaths; Calcutta, May 12-19, 37 deaths; Rangoon, May 12-19, 2 deaths.

PLAGUE.

Brazil: Rio de Janeiro, May 13-27, 1 case.

Chile: Tacna, May 26, present.

China: Hongkong, May 12-19, 90 cases, 83 deaths.

Egypt: Alexandria, June 4-5, 1 case, 1 death; Kench, June 2-7, 6 cases, 4 deaths; Minieh, June 1-7, 4 cases, 4 deaths.

India: General, May 5-12, 13,207 cases, 11,414 deaths; Bombay, May 22-29, 317 deaths; Calcutta, May 12-19, 42 deaths; Karachi, May 20-27, 101 cases, 96 deaths: Rangoon, May 12-19, 49 deaths.

Japan: Hiroshima-Ken, June 5, present; Kobe, present; Yokohama, 1 case (on S. S. *Siberia*).

Peru: Mollendo, May 15-23, 1 case.

Queries and Minor Notes

RECIPROCITY WITH MINNESOTA.

Boone Grove, Ind., June 24, 1906.

To the Editor:—What states reciprocate with Minnesota?

J. B. S.

Answer.—Illinois, Iowa, Kansas, Michigan, Maine, Maryland, Missouri, Nevada, New Jersey, Nebraska, Ohio, South Carolina, South Dakota, Wisconsin and Wyoming. See The Journal, May 19, 1906, page 1548

RECIPROCITY WITH OHIO.

To the Editor:—Under the amendment of March 19, 1906, to the Ohio law, what states are granted reciprocity with Ohio?

A. B. C.

Answer.—Illinois, Indiana, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey and Wisconsin. Ohio expects soon to increase this list.

PHENACETIN AND ACETPHENETIDIN.

Indiana, June 28, 1906.

To the Editor:—What is the difference chemically between Phenacetin (Bayer) and Acetphenetidin U. S. P.? C. A.

Answer.—The names "phenacetin-Bayer," "acetphenetidin," "acetphenetidinum U. S. VIII," refer to the same chemical substance. Although the United States patent on phenacetin has expired, the manufacturer claims that the names "phenacetin" and "phenacetin-Bayer" are still protected by trade-mark, and for this reason the article was made official under a name indicating its chemical composition. In the British, German and Swiss pharmacopeias it is official as phenacetinum.

Association News

Acceptance of President-Elect Bryant.

New York, June 27, 1906.

To the General Secretary,
American Medical Association:

I am in receipt of your communication notifying me of my election by the House of Delegates to succeed the illustrious gentleman, Dr. William J. Mayo, as President of the Association. I earnestly desire through you to express to the Association my grateful appreciation of the honor conferred on me by my selection for so high a station of confidence and trust. I regard this action as being chiefly an earnest of the desire to emphasize in no uncertain manner the great delight experienced by the members of the Association because of the rehabilitation of the entire profession of this state in the councils of the parent organization. I believe that I can assure the parent body that the profession of this state will ever be found presenting a united front in the support of all wise and beneficent efforts directed to advancing the ennobling interests of the Association. Joseph D. Bryant.

Correction of the Official Minutes.

Dr. F. F. Simpson, Pittsburg, writes concerning the report of the Committee on the Improvement of Treatment of Uterine Cancer, presented at the Boston session, which outlined the establishment of a department of public instruction by the American Medical Association and presented a plan for the organization of such a department. Dr. Daniel H. Craig, Boston, moved that the report of the committee be adopted and that the president appoint a committee of seven to investigate the matters suggested therein, such committee to report at the next annual session. This committee of seven members, whose names appear on page 1879 of the official minutes, as published in The Journal, June 16, should be designated as the Committee on Plan of Organization of a Board of Public Instruction.

OFFICIAL MINUTES OF THE SECTIONS.

The following are the official minutes of the sections:

Section on Practice of Medicine.

Tuesday, June 5—Afternoon.

Dr. Herbert C. Moffitt, San Francisco, was in the chair, and the secretary was Dr. Joseph L. Miller, Chicago.

Dr. Philip Marvel of Atlantic City, N. J., read a paper entitled

"Some Clinical Observations in a Case of Acute Lymphatic Leukemia, Suggesting Infection as an Etiologic Factor in the Disease." Discussed by Dr. Cabot.

Dr. J. Dutton Steele of Philadelphia read a paper entitled "Intermittent Fever in the Convalescence of Typhoid," which was discussed by Drs. Rochester, Stockton, Hare, Smith, Hughes, Witherspoon, Einhorn, Sippy and Steele.

Dr. James E. Talley of Philadelphia followed with a paper entitled "Post-Critical Fever and Other Sequelæ of Croupous Pneumonia, which was discussed by Drs. Rochester, Davis, Lichty, Alexander, Lambert and LeRoy.

Dr. De Lancey Rochester of Buffalo, N. Y., reported "A Case of Septicemia from the Colon Bacillus."

Dr. George Dock of Ann Arbor, Mich., read a paper entitled "Proprietary Remedies and Their Abuses."

Dr. Richard C. Cabot of Boston read a paper on "The Physician's Responsibility in the Nostrum Evil."

These two papers were discussed by Drs. Thayer, Hare, McClellan, Cohen, Hutchiuson, Francine, LeRoy, Dock and Cabot.

Dr. D. L. Edsall of Philadelphia read a paper entitled "Indications and Contraindications to the Use of X-Rays in Medical Cases." Discussed by Drs. Brown, Price and Edsall.

TUESDAY, JUNE 5—EVENING.

Dr. Richard C. Cabot of Boston demonstrated an apparatus for the reproduction of cardiac and respiratory sounds and its use in teaching these signs.

Dr. E. A. Locke of Boston reported cases of Paget's disease.

Dr. Judson Daland of Philadelphia demonstrated the Leishman-Donovan bodies.

WEDNESDAY JUNE 6—MORNING.

This Section held a joint meeting with the Section on Surgery. For minutes of the joint meeting see minutes of the Surgical Section.

WEDNESDAY JUNE 6—AFTERNOON.

At a joint meeting with the Section on Pathology and Physiology at the Y. M. C. A. Building, there was a symposium on "Diseases of the Lung and Pleura." Dr. Joseph A. Capps of Chicago read a paper on "Some Observations on the Effect of the Withdrawal of Fluid from the Thorax on the Blood Pressure."

Dr. Sherman G. Bonuey of Denver followed with a paper on "Chronic Non-Tubercular Affections of the Lung."

Dr. John H. Musser of Philadelphia read a paper on "The Diagnosis and Treatment of Abscess, Loculated Empyema and Gangrene of the Lung."

Dr. Frederick Forchheimer of Cincinnati read a paper on "Treatment of Pleurisy with Effusion."

Dr. Percy Musgrave of Boston contributed a paper entitled "Cytology of Pleural Effusions."

Dr. L. W. Ladd of Cleveland, Ohio, followed with a paper on "The Bacteriology of Pleural Effusions."

THURSDAY, JUNE 7—MORNING.

In a symposium on "Diseases of the Heart," papers were read as follows:

"Recent Advances in Physiology of the Circulation," by Dr. Joseph Erlanger of Baltimore.

"A Study of the Heart in Chorea." by Dr. W. S. Thayer of Baltimore.

"Pericarditis," by Dr. N. S. Davis of Chicago.

"Relations of the Heart in Chronic Nephritis," by Dr. Nathaniel B. Potter of New York City.

"True and False Angina Pectoris," by Dr. James M. Anders of Philadelphia.

The symposium was discussed by Drs. Gross, Hutchinson, Jones, Thayer, Tyson, Claytou, Cooper, Norris, Sippy, Rochester, Black, Potter and Anders.

Dr. A. Jacobi of New York also read a paper he was to have read in the discussion of the papers of Drs. Dock and Cabot, on Tuesday, on "Proprietary Remedies."

The nominating committee was as follows: Drs. B. W. Sippy, Chicago; George C. Smith, Boston, and Frank Jones, Memphis.

The election of officers resulted as follows: Chairman, Dr. Thomas H. Coleman, Augusta, Ga.; secretary, Dr. Joseph L. Miller, Chicago; delegate, Dr. Nathaniel B. Potter, New York; alternate, Dr. Joseph Erlanger, Baltimore.

THURSDAY, JUNE 7—AFTERNOON.

SYMPOSIUM ON DISEASES OF THE JOINTS.

Dr. Lewis Conner of New York City read a paper on "Acute Articular Rheumatism."

Dr. John A. Witherspoon of Nashville, Tenn., read a paper on "Gonorrheal Arthritis and Gonorrheal Septicemia."

Dr. James B. Herrick of Chicago read a paper entitled "Differential Diagnosis of the Rheumatoid Affections."

Dr. L. F. Barker of Baltimore read a paper on "Joint Affections in Nervous Disease."

Drs. Edwin A. Locke and Robert B. Osgood of Boston read a paper on "The Treatment of Chronic Non-Tuberculous Arthritis."

The symposium was discussed by Drs. Goldthwaite, McCaskey, Walsh, Rogers, Hutchinson, Skinner, Conner, Witherspoon, Herrick and Barker.

FRIDAY, JUNE 8—MORNING.

Dr. Franklin W. White of Boston read a paper on "The Value of Tests for Invisible Hemorrhage in the Diagnosis and Treatment of Diseases of the Digestive Organs."

Dr. Bertram W. Sippy of Chicago read a paper on "Studies on Cardiospasm."

Dr. A. O. J. Kelly of Philadelphia read a paper on "Non-Calculous Cholecystitis."

Dr. Christopher Graham of Rochester, Minn., read a paper on "Differential Diagnosis Between Duodenal Ulcer and Gallstone Disease."

These four papers were discussed by Drs. Meltzer, Hough, McCaskey and Sippy.

Dr. Ernest Bradley of New York City read a paper on "The Technic and Clinical Results of the Opsonic Index in Medicine."

Dr. Norman Ditman of New York City followed with a review of the literature of the opsonic index in medicine.

These two papers were discussed by Dr. Potter.

SYMPOSIUM ON CAUSES AND TREATMENT OF HEADACHES

Papers were read as follows:

(a) "Affections of the Nose and Adjacent Sinuses as a Cause of Headache," by Dr. C. G. Coakley of New York City.

(b) "The Relation of Eye Strain to Chronic Headache," by Dr. George M. Gould of Philadelphia.

(c) "Headaches Due to Aural Disease," by Dr. Philip Hammond of Boston.

(d) "Constitutional Headaches," by Dr. George L. Walton of Boston.

(e) "Headaches Due to Affections of the Pelvic Organs," by Dr. F. L. Davenport of Boston.

Section on Obstetrics and Diseases of Women.

TUESDAY, JUNE 5—AFTERNOON.

The Section was called to order by the chairman, Dr. C. S. Bacou, of Chicago, at Chickering Hall, at 2:15 p. m. Dr. W. P. Manton, Detroit, was secretary.

The chairman then read his address, "The Legal Responsibility of the Physician for the Unborn Child."

On account of the death of two members of the executive committee, the chairman appointed to serve in their places Dr. George H. Washburn of Boston and Dr. Frank T. Andrews of Chicago.

Dr. J. L. Lawrence of Columbus, Ohio, moved that a committee of three be appointed to draft suitable resolutions concerning the deaths of Drs. Dudley and Dunning. Seconded and carried.

The chairman thereon appointed Dr. J. L. Lawrence of Columbus, Ohio, Dr. J. H. Carstens of Detroit and Dr. Reuben Peterson of Ann Arbor, Mich.

"Fibroid Tumors of the Uterus." A Study of 2,274 Consecutive Cases, Including Also a Study of 3,544 Myomata Uteri in Their Relation to Cancer of that Organ," by Dr. Charles P. Noble, Philadelphia. Discussed by Drs. G. Betton Massey, Philadelphia; H. J. Boldt, New York; J. H. Carstens, Detroit; Seth C. Gordon, Portland, Maine: J. L. Lawrence, Columbus, Ohio; Henry O. Marcy, Boston; Alfous von Rosthoru, Heidelberg, Germany; A. Dührssen, Berlin, Germany; C. C. Frederick, Buffalo, N. Y.; Humiston, Cleveland, Ohio; Edward Reynolds, Boston; J. Wesley Bovée, Washington, D. C.

Before the discussions of Drs. Reynolds and Bovée, it had been moved, seconded and carried to ask these two gentlemen to discuss the paper.

"The Treatment of Tuberculosis of the Urinary Tract in Women," by Dr. Edgar Garceau, Boston.

"The Formation of a Vesico-Vagino-Rectal Fistula Combined with Closure of the Introitus Vaginæ for the Purpose of Overcoming Certain Forms of Urinary Incontinence," by Dr. Reuben Peterson, Ann Arbor, Mich.

The papers of Drs. Garceau and Peterson were discussed by Drs. C. P. Noble, Philadelphia; J. W. Bovée, Washington, D. C., and Emil Ries, Chicago.

"Report of the Committee on the Nomenclature of Endometritis," by Dr. Ernest F. Tucker, chairman, Portland, Ore.

In the absence of Dr. Tucker, this report was read by Dr. J. G. Clark of Philadelphia.

Dr. H. J. Boldt, New York, N. Y.: I move that this Section bestow its thanks on this committee for its painstaking work and that the report be accepted and the committee discharged. Seconded and carried.

"Success: the Surgical Desideratum," by Dr. A. Ernest Gallant, New York. Discussed by Dr. Rosenthal of Indiana.

A nominating committee was appointed to consist of the three members of the executive committee and Drs. D. R. Craig of Boston and Reuben Peterson of Ann Arbor, Mich.

WEDNESDAY, JUNE 6—MORNING.

"Pathology of Uterine Cancer," by Dr. Thomas S. Cullen, Baltimore.

"The Early Symptoms of Cancer. Report of the Committee on Uterine Cancer," by Dr. John G. Clark, Philadelphia.

"The Operative Treatment of Cancer of the Cervix Uteri," by Dr. Emil Ries, Chicago.

"The Present Status and Future Prospects of Operative Treatment of Cancer of the Uterus," by Prof. Alfons von Rosthorn, Heidelberg, Germany.

These four papers were discussed by Drs. J. F. W. Ross, Toronto, Canada; M. I. Rosenthal, Ft. Wayne, Ind.; Charles P. Noble, Philadelphia; J. Wesley Bovée, Washington, D. C.; G. Betton Massey, Philadelphia; E. W. Cushing, Boston; H. J. Boldt, New York; Laura E. Branson, Iowa City, Iowa; Prof. A. Dührsseu, Berlin, Germany; J. H. Carstens, Detroit; Philander Harris, Paterson, N. J.

It was moved that the report of the Committee on Uterine Cancer, of which Dr. John G. Clark of Philadelphia is chairman, be adopted and made public.

WEDNESDAY, JUNE 6—AFTERNOON.

"The Preservation of the Functions of the Broad Ligaments in Pelvic Surgery" (illustrated by lantern slides), by Dr. E. C. Dudley, Chicago. This paper was discussed by Drs. Edward Reynolds, Boston; E. E. Montgomery, Philadelphia; Ralph Waldo, New York; F J. Taussig, St. Louis; D. H. Craig, Boston.

"The Conservative Surgery of the Ovaries," by Dr. Edward Reynolds, Boston.

"The Present Status of Conservatism in the Surgical Treatment of Tubes and Ovaries," by Dr. J. E. Cannaday, Pain Creek, W. Va.

The above two papers were discussed by Drs. W. M. Polk, New York; Robert T. Morris, New York; J. L. Lawrence, Columbus, Ohio; Seth Gordon, Portland, Maine; H. O. Pantzer, Indianapolis; Gossett, St. Louis; Strauss, New York.

"Hernia of the Ovary and Fallopian Tube," by Dr. Frank T. Andrews, Chicago. Dr. J. H. Carstens, Detroit, discussed this paper.

THURSDAY, JUNE 7—MORNING.

SYMPOSIUM ON THE INDICATIONS FOR AND METHODS OF DILATING THE GRAVID UTERUS.

"Manual and Instrumental Dilatation of the Pregnant and Parturient Cervix." by Dr. J. Clifton Edgar, New York.

"Instrumental Dilatation of the Parturient Uterus," by Dr. Franklin S. Newell, Boston.

These two papers were discussed by Drs. Philander Harris, Paterson, N. J.; G. M. Boyd, Philadelphia; Charles Staltz, South Bend, Ind.; C. J. Hastings, Toronto, Canada; C. E. Paddock, Chicago; A. Dührssen, Berlin, Germany; A. von Rosthorn, Heidelberg, Germany; W. S. Boardman, Boston; J. H. Carstens, Detroit; R. S. Yarros, Chicago.

"Vaginal Celiotomy," by Prof. A. Dührssen, Berlin, Germany.

The Section voted to allow Dr. H. O. Marcy of Boston to read his paper at this point.

Some of the members desired to discuss the paper of Professor Dührssen. It was put to a vote, 25 being in favor and 35 against it.

"The Best Method of Closure of Aseptic Wounds, Especially of the Abdomen," by Dr. Henry O. Marcy, Boston. Discussed by Drs. E. D. Ferguson, Troy, N. Y.; S. P. Clark, Cambridge, Mass.; A. von Rosthorn, Heidelberg, Germany; A. H. Goelet, New York; Charles Staltz, South Bend, Ind.; J. J. Reynolds, Defiance, Ohio; Strauss, New York; A. Dührssen, Berlin, Germany; W. B. Dorsett, St. Louis.

Thursday, June 7—Afternoon.

The nominating committee made its report and the following officers were elected: Chairman, J. Wesley Bovée, Washington, D. C.; vice-chairman, Edward Reynolds, Boston; secretary, W. P. Manton, Detroit; delegate, W. B. Dorsett, St. Louis; alternate, C. W. Barrett, Chicago.

"Uterine Myomata Complicated with Pregnancy, with Cases," by Dr. E. E. Montgomery, Philadelphia. Discussion by Drs. S. P. Clark, Cambridge, Mass.; H. J. Boldt, New York; A. Tuttle, Cambridge, Mass.; A. E. Benjamin, Minneapolis; J. H. Carstens, Detroit; Warren, Portland, Maine; C. C. Frederick, Buffalo, N. Y.; W. B. Dorsett, St. Louis; Porter, Ft. Wayne, Ind.

"Pregnancy and Labor Complicated by Anterior Fixation of the Uterus," by Dr. George M. Boyd, Philadelphia. Discussed by Drs. Warren, Portland, Maine; J. W. Bovée, Washington, D. C.; C. C. Frederick, Buffalo, N. Y.; J. L. Lawrence, Columbus, Ohio.

Dr. J. W. Bovée, Washington, D. C., said: I understand that each section is permitted to nominate one distinguished member from each section as an honorary member of the American Medical Association, and that being the case I feel it a great honor and know the Section feels greatly honored in presenting the name of Prof. Alfons von Rosthorn as an honorary member. It was moved, seconded and carried that this nomination be sent to the House of Delegates.

The committee on the deaths of Drs. Dudley, Dunning and Johnson reported as follows:

> The past year has been peculiarly unfortunate for our Section in that death has taken from us three of our prominent members, two of whom had but recently served us as chairmen.
>
> Our loss is not one to be defined by words, and yet it is fitting that some memorial be adopted which will direct attention to their worth, and that it be published in order that by reflecting on their virtues we may, by emulation, in some small way perpetuate them: therefore, be it.
>
> *Resolved, first,* That in the death of Drs. A. Palmer Dudley, L. H. Dunning and Arthur Johnson, the Section has lost three of its most valuable and appreciated members.
>
> *Resolved, second,* That the work of Drs. Dudley and Dunning in the Section and for it as chairmen demonstrated their great scientific worth, their broad philanthropy and their unswerving devotion to duty, their work endearing them to all and giving ample proof of their well-earned right to a permanent place in our memories and affections.
>
> *Resolved, third,* That Dr. Johnson's life work was one of such earnestness and originality that the world of science is richer for his having lived and our Section poorer because of his death.
>
> *Resolved, fourth,* That in the death of these three great and good men we recognize that our loss is also the world's loss.
>
> *Resolved, fifth,* That a copy of these resolutions be spread on the minutes of the Section and published in The Journal of the American Medical Association, and that an engrossed copy be sent to the family of each of the deceased.
>
> F. F. Lawrence,
> J. H. Carstens,
> Reuben Peterson,
> Committee

The above resolutions were adopted by a rising vote.

"Hand Disinfection," by Dr. Herman J. Boldt, New York. Discussed by Drs. J. H. Carstens, Detroit, and F. F. Lawrence, Columbus, Ohio.

"The Stem Pessary for Amenorrhea and Dysmenorrhea, Some Further Observations," by Dr. J. H. Carstens, Detroit. Discussed by Drs. F. D. Reese, Cortlandt, N. Y.; W. O. Henry, Omaha; A. B. Miller, Syracuse, N. Y.

"To What Extent Can the Gynecologist Prevent and Cure Insanity Among Women?" by Dr. W. O. Henry, Omaha. Discussed by Drs. W. P. Manton, Detroit; F. F. Lawrence, Columbus, Ohio.

The chairman, Dr. C. S. Bacon, Chicago, said: The officers of the Section have been so much helped and assisted by the local committee, of which Dr. Washburn is chairman, that I feel it is not only a pleasure but a duty to acknowledge this; and I should be glad to entertain a formal motion of thanks to this committee for their kindness and courtesy to this Section. It was so moved and carried.

The chairman, Dr. Bacon, finding it necessary to make a train, asked Dr. Washburn to take the chair.

"Retroperitoneal Cysts Developing Possibly from the Wolffian Body. Report of Cases," by Dr. Francis Donaghue, Boston. No discussion.

Section on Surgery and Anatomy.

Chairman, Robert F. Weir, New York; secretary, A. MacLaren, St. Paul.

Tuesday, June 5—Afternoon.

The Section convened in Jordan Hall and was called to order by the chairman, Dr. Weir, at 2 p. m.

Prof. F Trendelenburg of Leipzig, Germany, delivered the address on surgery.

On motion, a rising vote of thanks was extended to Professor Trendelenburg for his excellent address.

The chairman announced the names of the following as having been duly elected associate members of the Section: Prof. F. Trendelenburg, Baron Takaki, Japan; Mr. Chas. A. Ballance and Mr. Hamilton Ballance, London, England; Dr. Alex. Thompson, Edinburgh, Scotland; Mr. E. Hurry Fenwick, London, Drs. Richard A. Reeves, F. Shepherd, James Bell, G. A. Armstrong, T. Wesley Mills and Irving Cameron.

"Results of Complete and Incomplete Occlusion of the Abdominal and Thoracic Aorta by Metal Bands," by Dr. W. S. Halsted, Baltimore.

"Additional Experiences in Treatment of Aneurism by Endoaneurismorrhaphy," by Dr. Rudolf Matas, New Orleans.

These two papers were discussed by Drs. Keen, Meyer, McChord. Stillman, White and Matas.

"Tumors of Carotid Gland," by Drs. W. W. Keen and Funcke, Philadelphia. Discussed by Dr. J. D. Bryant.

"Surgical Conception of Sigmoid Pathology," by Dr. H. D. Niles. Salt Lake City.

"Neoplasms of Large Intestine," by Dr. A. T. Jonas, Omaha.

These two papers were discussed by Drs. Wathen, Dawbarn. Dunsmoor, Andrews, Freeman, McGlannan, Stoltz, Boucher, McMillen, Niles and Jonas.

"Surgical Treatment of Femoral Hernia," by Dr. A. J. Ochsner, Chicago.

"Silver Wire Filigree Work," by Dr. W. Bartlett, St. Louis.

These two papers were discussed by Drs. Tuttle, Ferguson, Andrews, Dawbarn and Ochsner.

Wednesday, June 6—Morning.

SYMPOSIUM ON GASTRIC AND DUODENAL ULCER.

"Causes and Diagnosis of Gastric and Duodenal Ulcer," by Dr. Frank Billings, Chicago.

"When Do Gastric and Duodenal Ulcers Require Surgical Treatment? What Procedures are Necessary?" by Dr. William L. Rodman, Philadelphia.

"Medical Treatment of Gastric and Duodenal Ulcer," by Dr. Alexander Lambert, New York.

"Surgical Treatment of Gastric and Duodenal Ulcer and Its Results," by Dr. W. J. Mayo, Rochester, Minn.

These four papers were discussed by Drs. Hemmeter, Einhorn, Williamson, Spivak, McCaskey, Wathen, Stockton, Anders, Anderson, Francine, Black, Munro, Finney, Billings, Rodman, Lambert and Mayo.

"Recognition and Surgical Treatment of Duodenal Ulcer," by Dr. W. D. Haggard, Nashville.

"Tabulation of Ulcer Cases Recently Treated in Massachusetts General Hospital," by Dr. H. F. Hewes, Boston.

Wednesday, June 6—Afternoon.

"Treatment of Exophthalmic Goiter by a Specific Serum; Its Preparation," by Drs. John Rogers and S. P. Beebe, New York.

"Surgical Treatment of Exophthalmic Goiter," by Dr. F. J. Shepherd, Montreal.

These two papers were discussed by Drs. Bacon, Dawbarn, Ochsner, Horsley, Morris, Rodman, Rogers and Shepherd.

"Indications for Surgical Interference in Infections of the Biliary Tract," by Dr. John B. Deaver, Philadelphia.

"Indications for Prostatectomy and Its Results," by Dr. A. H. Ferguson, Chicago.

"Prostatectomy," by Mr. E. Hurry Fenwick, London, England.

These two papers were discussed by Drs. Young, Deaver, Moore and Ferguson.

"Clinical Significance of Variations of Wrist and Ankle," by Dr. Thomas Dwight, Boston. Discussed by Dr. F. J. Shepherd, Montreal..

"Appendicostomy," by Dr. J. P. Tuttle, New York. Discussed by Drs. Meyer, Dawbarn, Weir, McMillen, Coley, Lord, MacLaren and Tuttle.

"Cardiac Stimulation for Suspended Animation by Direct Digital Manipulation," by Dr. B. M. Ricketts, Cincinnati.

"Osteoplastic Resection of the Costal Arch in Order to Reach the Vault of the Diaphragm," by Dr. Willy Meyer, New York.

These two papers were discussed by Drs. Runyan, Eisendrath, Eastman and Meyer.

Thursday, June 7—Morning.

"Radium in Surgical Work," by Dr. Robert Abbe, New York. Discussed by Drs. Gordon, Weir, Heffron.

"A Primary Position in the Bloodless Treatment of Congenital Hip Dislocation," by Dr. Frederick Mueller, Chicago. Discussed by Drs. Bradford, Gibney, Freiberg and Mueller.

"Further Considerations of Surgery of Spinal Cord and Peripheral Nerves," by Dr. J. B. Murphy, Chicago.

"Results from Surgical Treatment of Facial Palsy and of Brachial Birth Palsy," by Dr. A. S. Taylor, New York.

"Ischemic Paralysis and Contracture of Volkman," by Dr. Chas. A. Powers, Denver.

These three papers were discussed by Drs. Ballance, Cushing, Keen, Roberts, Freeman, Ochsner, Lund, Murphy, Taylor and Powers.

"Spontaneous Intracranial Hemorrhage Associated with Trigeminal Nevi," by Dr. H. Cushing, Baltimore.

"Treatment of Fractures of Patella," by Dr. Joseph Ransohoff, Cincinnati. Discussed by Drs. Weir, Powers, Cabot, Gray and Ransohoff.

"Diseases of Urachus," by Dr. J. F. Binnie, Kansas City.

Thursday, June 7—Afternoon.

The executive committee reported the following nominations for officers of Section: Chairman, Dr. A. D. Bevan, Chicago; vice-chairman, Dr. J. G. Mulford, Boston; secretary, Dr. Harvey Cushing, Baltimore; delegate, Dr. F. B. Lund, Boston.

On motion, the secretary was instructed to cast the unanimous ballot of the Section for the election of these nominees.

"Treatment of Bone Cavities," by Dr. J. E. Moore, Minneapolis.

"Diagnosis and Treatment of Tuberculosis of the Kidney," by Dr. A. D. Bevan, Chicago. Discussed by Drs. Knott, Kelly, Meyer, Ransohoff, Lee, McArthur and Bevan.

"Technic of Operations on Head and Neck," by Dr. George W. Crile, Cleveland. Discussed by Drs. Dawbarn, Crile and Eisendrath.

"Dislocation of Outer End of Claviele," by Dr. Charles L. Scudder, Boston. Discussed by Dr. Cousins.

"Surgical Treatment of Congenital Hydrocephalus, with Report of Case of Meningocele and Hydrocephalus," by Dr. J. S. Horsley, Richmond, Va. Discussed by Drs. Eastman, Ballance, McGlannan and Horsley.

"Hour-Glass Duodenum," by K. A. J. Mackenzie, Portland, Ore.

"Surgical Aspects of Congenital Cystic Kidney," by Dr. F. S. Lund, Boston.

"Capillarity in Intestinal Suturing," by Dr. F. G. Connell, Salida, Colo.

A motion, introduced by Dr. Rodman, was unanimously carried, expressing the sincere thanks of the Section to the distinguished chairman and courteous secretary of the Section for a meeting which has rarely ever been equaled and never exceeded in scientific work.

Section on Hygiene and Sanitary Science.

TUESDAY, JUNE 5—AFTERNOON.

Dr. Denslow Lewis, Chicago, was Chairman, and Dr. Elmer E. Heg, Seattle, Wash., Secretary.

Chairman's Address, "The New Hygiene," by Dr. Denslow Lewis, Chicago, was discussed by Drs. S. A. Knopf, New York, N. Y.; A. D. Lake, Towanda, N. Y.; Denslow Lewis, Chicago, and on motion of Dr. Knopf the Section passed a vote of thanks to its Chairman for his admirable address.

"The Fetich of Disinfection," by Dr. Charles V. Chapin, Providence, R. I., was discussed by Drs. Clarence L. Wheaton, Chicago; W. F. Morrison, Spokane, Wash.; S. A. Knopf, New York; H. D. Holton, Brattleboro, Vt.; J. N. Hurty, Indianapolis; A. D. Lake, Towanda, N. Y.; D. M. Totman, Syracuse, N. Y.; Wallace Clark, Utica, N. Y.; Chas. S. Williamson, Chicago; Geo. T. Patton, New Orleans; Seneca Egbert, Philadelphia; A. Walter Suiter, Herkimer, N. Y.; Charles V. Chapin, Providence, R. I.; Martin Friedrich, Cleveland, Ohio.

By a rising vote the Section adopted the motion of Dr. Chas. S. Williamson, Chicago, to lay on the table the proposal of Dr. A. Walter Suiter, Herkimer, N. Y., asking for a rising vote to secure an expression of the sentiment of the Section with reference to the endorsement of the propositions set forth by the essayist, Dr. Chapin.

"Health Inspection as Applied to the Individual," by Dr. Louis Faugeres Bishop, New York, was discussed by Drs. S. A. Knopf, New York, Martin Friedrich, Cleveland, Ohio; Seneca Egbert, Philadelphia, and Louis Faugeres Bishop, New York.

The Section adopted a motion offered by Dr. A. Walter Suiter, Herkimer, N. Y., to the effect that the Section believes in the fullest discussion of every subject presented, and that every member is entitled to express his views; but that the Section desires to place itself on record as holding that thorough disinfection after communicable diseases is advantageous and desirable.

"The Epidemiology of Plague," by Dr. Ashburton Thompson, Sydney, New South Wales, was read by the Secretary, and by him discussed.

"The Plague in American Cities," by Dr. N. K. Foster, Sacramento, Cal., was read by Dr. T. B. Beattie, Salt Lake City, Utah, and discussed by the Secretary, and by Drs. J. W. Amesse, T. B. Beattie, Salt Lake City, Utah; W. C. Rucker, Marine Hospital Service, Vineyard Haven, Mass.

WEDNESDAY, JUNE 6—MORNING.

The Chairman read a communication from Max Joseph, of Berlin, in which it was stated that owing to the serious illness of his old father he was unable to attend the session.

On motion of Dr. Ludwig Weiss, New York, the Section adopted a resolution of sympathy with Dr. Max Joseph, Berlin, Germany, over the serious illness of his father, and of regret at Dr. Joseph's consequent absence from the session.

Papers on the topic, "Publicity as a Factor in Venereal Prophylaxis," were read by their respective authors, Drs. Prince A. Morrow, New York, and William J. Herdman, Ann Arbor, Mich.

A paper, "Duty of the State in Reference to Venereal Diseases," was read by Dr. Henry D. Holton, Brattleboro, Vt.

Dr. Denslow Lewis, Chairman, read his translation of a paper addressed to the same topic, but under the special title of "The War Against the Venereal Diseases in France," written by Prof. T. Tuffier, Paris, France.

Papers on the topic, "What Shall We Teach the Public Regarding Venereal Diseases?" were read by their respective authors, Drs. Albert E. Carrier, Detroit,; George S. Whiteside, Portland, Ore., and Bransford Lewis, St. Louis.

The participants in the discussion that followed on the broad question of publicity in all its phases and the duty of the state in reference to education along the foregoing lines, were: Drs. Ludwig Weiss, New York; Joseph Macfarlane, Philadelphia; C. E. Woodruff, U. S. Army; Ferd. C. Valentine, New York; Seneca Egbert, Philadelphia; L. Duncan Bulkley, New York; J. N. Hurty, Indianapolis; William Lee Howard, Baltimore; M. H. Bailey, Cambridge, Mass.

A resolution expressing the opinion that continence is not injurious to health and disapproving the contrary doctrine as a menace to the physical and moral welfare of the individual and of society (introduced by Dr. Prince A. Morrow, New York), and another declaring that gonorrhea, chancroid and syphilis should be made notifiable diseases (introduced by Dr. L. Duncan Bulkley, New York), were approved for submission to the House of Delegates, but were not finally acted on by that body (see THE JOURNAL, June 16, p. 1880, for text and action).

Papers on the topic, "The Prostitute Problem in Relation to Law, Society and Medicine," were read by their respective authors, Drs. Charles G. Cumston, Boston, and Ludwig Weiss, New York.

Dr. Charles Chassaignac, New Orleans, delivered an address, "Etiology of the Social Evil," and the morning session closed with the reading, by Dr. William E. Harwood, Eveleth, Minn., of his paper, "A Practical Lesson in Reglementation," the lateness of the hour precluding discussion (see afternoon session).

Dr. Edward L. Keyes, Jr., New York, moved a vote of thanks to the chairman for the efficient work he has done buring the past few years, along the lines of venereal prophylaxis. The motion was carried unanimously by a rising vote.

WEDNESDAY, JUNE 6—AFTERNOON.

Dr. Bayard Holmes, Chicago, read his paper, "The Physical and Evolutionary Basis of Marriage."

Dr. Albert H. Burr, Chicago, read his paper, "The Guarantee of Safety in the Marriage Contract."

Pending arrival of authors of papers, Drs. C. H. Cook, Natick, N. Y.; A. D. Lake, Towanda, N. Y.; H. S. Pomeroy, Boston, spoke on the topics of publicity and education as covered in the papers of the morning session.

Dr. J. Henry Carstens, Detroit, read his paper on the topic, "Education as a Factor in the Prevention of Criminal Abortion and Illegitimacy," the same being then discussed by Dr. John Hunter, Toronto, Canada.

Dr. Henry O. Marcy, Boston, read his paper on the same topic, the latter paper being discussed by Drs. Charles G. Cumston and Henry O. Marcy, Boston.

Dr. C. H. Cook, Natick, N. Y., spoke on the resolution adopted at the morning session with reference to continence, declaring himself unequivocally for the single standard of morality.

Dr. A. Dührssen, Berlin, Germany, read his paper on the topic "The Guarantee of Safety in the Marriage Contract."

Dr. Geo. Frank Butler, Chicago, favored reprints of papers read before the Section being sent out to the laity, and petitioning the postal authorities at Washington for permission to use the mails to that end; also, for publication of the same in the newspapers; and said that he is opposed, to the end of fair, honest treatment to all sufferers, to physicians classifying venereal diseases as "disgusting."

Dr. E. E. Munger, Iowa, spoke on the wiles of quack advertisers for enmeshing youth, and advocated the establishment of the Bureau of Education of the American Medical Association for educating the laity in these matters.

As a guest, and by special permission, Dr. C. W. Burtwell, Boston, spoke on the arduous tasks and great responsibilities imposed on the drug clerk and on the latter's function with reference to administration in cases of gonorrhea, etc.

Dr. Albert H Burr, Chicago, closed the discussion on his paper; Dr. J. Henry Carstens, Detroit, the discussion on his paper; and Dr. Henry O. Marcy, Boston, the discussion on his paper.

On motion of Dr. Liston H. Montgomery, Chicago, the Section approved a resolution and sent it to the House of Delegates for endorsement, declaring it to be the duty of state boards of health and medical associations to disseminate literature to educate the people on the subject of the great black plague (venereal diseases) as they do regarding tuberculosis and other similar disorders. This resolution is given in THE JOURNAL, June 16, page 1880, with the action taken thereon.

Dr. William Lee Howard, Baltimore, read his paper on the topic, "Protection of the Innocent"; Dr. Edward L. Keyes, Jr., New York, his paper on the same topic, and in the discussion ensuing thereon, the following participated: Drs. Daniel T. Nelson, Chicago; W. D. Calvin, Fort Wayne, Ind.; Robie, Baltimore; J. T. Scarey, Tuscaloosa, Ala.; Edward L. Keyes, Jr., New York.

THURSDAY, JUNE 7—MORNING.

On motion of Dr. Liston H. Montgomery, Chicago, the Section adopted the following:

"*Resolved,* That the Section on Hygiene and Sanitary Science deplores the loss by death of Dr. Charles A. Lindsay, late secretary of the State Board of Health of Connecticut, who for many years was a devoted and regular attendant at our annual sessions."

Dr. G. Walter Holden, Denver, read his paper, "Municipal and State Control in the Prevention of Tuberculosis."

In the author's absence, the secretary read the paper by Dr. John R. Haynes, Los Angeles, Cal., "Duty of Railroads in Transportation and Care of Tuberculous Passengers."

Dr. Clarence L. Wheaton, Chicago, read his paper, "Value of the Sanatorium in the Crusade Against Tuberculosis."

In the author's absence and by his request, Dr. A. S. Taussig, Denver, read the paper by Dr. William N. Beggs, Denver, "Some Ways to Prevent the Spread of Tuberculosis."

Dr. S. A. Knopf, New York, read his paper, "A Plea for Cremation in Tuberculosis and Similarly Infectious Diseases."

In the ensuing discussion the following participated: Drs. C. S. Williamson, Chicago; Lobin, Wilmington, Del.; C. C. Browning, Los Angeles, Cal., the last-named member presenting the following resolution, which was adopted:

"*Resolved*, That the American Medical Association's Section on Hygiene and Sanitary Science appoint, through its chairman, a committee of three, which shall report at the next session a form of ordinance which may be recommended to municipalities as suitable for adoption for the prevention of the spread of tuberculosis."

The Chairman appointed the following committee: Drs. C. C. Browning, Los Angeles, Clarence L. Wheaton, Chicago, S. A. Knopf, New York.

The discussion was then continued by Drs. P. H. Bailhache, New York; J. Pitta, New Bedford, Mass.; F. A. Tucker, Noblesville, Ind.

"Venereal Diseases in Children," was the next paper, by Dr. Alfred C. Cotton, Chicago.

The Chairman appointed a nominating committee, consisting of: Drs. Liston H. Montgomery, Chicago; Gardner T. Swarts, Providence, R. I.; W. F. Morrison, Spokane, Wash.; and C. E. Woodruff, U. S. Army.

The discussion of the morning's papers, as read before the Section, was continued by Drs. Liston H. Montgomery, Chicago; J. T. Searcy, Tuscaloosa, Ala.; H. S. Pomeroy, Boston; S. A. Knopf, New York; G. Walter Holden, Denver; Clarence L. Wheaton, Chicago.

On motion of Dr. G. Walter Holden, Denver, seconded by Dr. Clarence L. Wheaton, Chicago, the Section referred the question of forming a department on tuberculosis in THE JOURNAL of the American Medical Association, to the House of Delegates, and urged that such a department be organized.

On motion of Dr. Liston H. Montgomery, Chicago, seconded by Dr. S. A. Knopf, New York, unanimous consent was given to hear the report of the Nominating Committee, the vote thereon being deferred until 2 p. m.

The following were nominated: Chairman, Prince A. Morrow, New York. Secretary, Elmer E. Heg, Seattle, Wash. Delegate, Denslow Lewis, Chicago.

Thursday, June 7—Afternoon.

On motion of Dr. A. D. Lake, Towanda, N. Y., properly seconded, the report of the Nominating Committee, after having been read again at this session, was adopted.

Dr. T. Alex. MacNicholl, New York, read his paper, "Effects of Alcohol on the Human System, Relating to Effect on School Children."

In substitution for paper of Dr. John Madden, Portland, Ore., a paper, "The Physiologic Action of Alcohol," was read by its author, Dr. Winfield S. Hall, Chicago.

Dr. Matthew Woods, Philadelphia, read his paper, "The Relation of Alcohol to Epilepsy."

Mrs. M. H. Allen, Oneida, N. Y., read her paper, "The Value of Temperance Instruction."

Dr. Charles E. Woodruff, U. S. Army, read his paper on "Limitation of Intemperance."

On motion of Dr. T. D. Crothers, Hartford, Conn., duly seconded, the Section tabled, for consideration at the close of the reading of the papers and of the discussion, the following resolution presented by Dr. Charles E. Woodruff, U. S. Army:

RESOLUTION ON THE ARMY CANTEEN.

Whereas, It has been proved that the sale of beer and light wines in the army canteen has been productive of good by reducing drunkenness and by eliminating the objectionable saloons surrounding Army posts, and

Whereas, Though it is undoubtedly objectionable to place alcoholic beverages so as to be convenient to young men, yet the restrictions on its sale in the army canteen not only render it comparatively harmless but so greatly reduce the evils now existing, as to leave no doubt as to its being infinitely preferable as the choice of two evils; therefore, be it

Resolved, By the Section on Hygiene and Sanitary Science of the American Medical Association, that the restoration of the sale of beer and light wines in the army canteen is highly desirable as an instrument for reducing drunkenness, disease and crime.

(Resolution tabled, see below.)

Dr. T. D. Crothers, Hartford, Conn., Dr. George F. Butler, Chicago, and Dr. L. D. Mason, Brooklyn, read their respective papers on the topic, "The Care of the Inebriate."

The following papers were then received on the subject of alcohol: Dr. T. H. Mays, Philadelphia, "Relating to Tuberculosis;" Dr. Eugene S. Talbot, Chicago, "Relating to Degeneracy"; Dr. Winfield S. Hall, Chicago, "Relating to the Value of Instruction Regarding Alcohol"; Dr. P. A. Lovering, U. S. Navy, "Limitation of Intemperance."

The participants in the discussion on all these papers were: Drs. T. D. Crothers, Hartford, Conn.; William Lee Howard, Baltimore; John Hunter, Toronto, Canada; Charles E. Woodruff, U. S. Army; T. Alex. MacNicholl, New York; William E. Harwood, Eveleth, Minn.

The Section then went into executive session, non-members retiring.

Dr. F. A. Tucker, Noblesville, Ind., presented, and Dr. T. D. Crothers, Hartford, Conn., seconded, the following resolutions, which were approved for submission to the House of Delegates (no action was taken by that body, however):

Resolved, That the protection of the public health is one of the chief duties of a government; and be it further

Resolved, That we unreservedly endorse the action of the United States Senate in passing the Beveridge bill, which provides for a more rigid inspection of meats than that which now exists, and for the maintenance of strict sanitary conditions in all packing houses engaged in foreign or interstate commerce; and be it further

Resolved, That in the Pure Food Bill now before the House, the Government is asserting its just authority to prevent the manufacture, sale or transportation of adulterated or deleterious foods and drugs, which bill does not, but should, cover all packing house products, which form so great a part of the food supply of the American people.

On motion of Dr. Winfield S. Hall, Chicago, seconded by Dr. George F. Butler, Chicago, the Section, by a rising vote, reconsidered and indefinitely tabled the "Resolution on the Army Canteen" (see above), presented by Dr. Charles E. Woodruff, U. S. Army, and later seconded by Dr. Laura E. C. Hughes, Boston, and in the same vote tabled the following, having been presented by Dr. T. Alex. MacNicholl, New York, and seconded by Drs. Winfield S. Hall, Chicago, and T. D. Crothers, Hartford, Conn.:

Resolved, In view of the fact that some of the most important provisions of the anti-canteen law have not been extensively enforced, that it be the sense of the Section on Hygiene and Sanitary Science, that, before condemning the present law, we are in favor of its complete and thorough enforcement.

Dr. George F. Butler, Chicago, presented, and Dr. T. D. Crothers, Hartford, Conn., seconded, the following, which was approved for submission to the House of Delegates (no action recorded by that body):

"Whereas, It is generally believed by the medical profession that inebriety, or its more rabid form, dipsomania, is a disease and its prevalence is doing untold damage to the public and to our country; be it

"*Resolved*, That the Section on Hygiene and Sanitary Science of the American Medical Association urgently recommend the establishment of sanitaria or institutions by the various states for the care and treatment of inebriety and drug addiction."

Section on Ophthalmology.

Tuesday, June 5—Afternoon.

The meeting was called to order at 2 p. m. by the chairman, Dr. Lewis H. Taylor, Wilkesbarre, Pa., who delivered the chairman's address. Dr. Albert E. Bulson, Jr., Fort Wayne, Ind., was Secretary.

Dr. Charles H. Williams, Boston, read a paper on "A More Uniform Standard for the Illumination of Visual Test Types." Discussed by Drs. O. F. Wadsworth, Boston; Nelson M. Black, Milwaukee; George F. Keiper, Lafayette, Ind.; Myles Standish, Boston; H. V. Würdemann, Milwaukee; Lucien Howe, Buffalo, and Charles H. Williams, Boston.

Dr. Nelson M. Black, Milwaukee, read a paper on "A New Supplementary Test for Color Vision; the Semaphore Lamps Used in Railway Service Being the Source of Illumination." Discussed by Drs. Charles H. Williams, Boston; Mortimer Frank, Chicago; W. R. Parker, Detroit, and Nelson M. Black, Milwaukee.

Dr. George T. Stevens, New York, read a paper on "A New Phenomenon in Color Conversion." Discussed by Drs. Charles H. Williams, Boston; Nelson M. Black, Milwaukee; F. H. Verhoeff, Boston; Edward Jackson, Denver; Myles Standish, Boston, and George T. Stevens, New York.

Dr. E. C. Ellett, Memphis, Tenn., read a paper on "Dendritic Keratitis of Malarial Origin." Discussed by Drs. E. C. Ellett, Memphis; C. J. Kipp, Newark, N. J.; H. Moulton, Ft. Smith, Ark.; George F. Keiper, Lafayette, Ind.; John Green, Jr., St. Louis; Leartus Connor, Detroit; Edward Jackson, Denver; S. D. Risley, Philadelphia, and W. H. Merrill, Lawrence.

Dr. A. A. Hubbell, Buffalo, read a paper on "Uniocular Inflammation of the Optic Nerve and Retina." Discussed by Eugene Smith, Detroit; J. T. Herron, Jackson, Tenn.; J. A. Patterson, Colorado Springs; Wendell Reber, Philadelphia; A. R. Baker, Cleveland; C. J. Kipp, Newark, N. J.; E. E. Holt, Portland, Maine: S. D. Risley, Philadelphia; William H. Wilder, Chicago; George E. de Schweinitz, Philadelphia; Nelson M. Black, Denver, and A. A. Hubbell, Buffalo.

Dr. C. J. Kipp, Newark, N. J., read a paper on "Retrobulbar Neuritis Following Childbirth." Discussed by Drs. George S. Derby, Boston; Nelson M. Black, Milwaukee, and C. J. Kipp, Newark, N. J.

The Committee on Portraits of Deceased Members reported the result of their work, a collection of 400 portraits, of which 250 had been selected for exhibit.

Wednesday, June 6—Morning.

Dr. George S. Derby, Boston, read a paper on "Bacteriology of the Eyelids."

Dr. Edward A. Shumway, Philadelphia, read a paper on "The Pathogenic Bacteria of the Conjunctiva."

Dr. John E. Weeks, New York, read a paper on "The Pathogenic and Pyogenic Bacteria of the Eyeball."

Dr. Brown Pusey, Chicago, read a paper on "The Diplobacillus of Morax-Axenfeld."

These four papers were discussed by Drs. Robert L. Randolph, Baltimore; E. V. L. Brown, Chicago; William Campbell Posey, Philadelphia; George S. Derby, Boston; Edward Jackson, Denver; C. D. Westcott, Chicago; George E. de Schweinitz, Philadelphia; C. W. Hawley, Chicago; William M. Sweet, Philadelphia; Charles H. Williams, Boston; Nelson M. Black, Milwaukee; E. V. L. Brown, Chicago; Brown Pusey, Chicago; Edward A. Shumway, Philadelphia, and John E. Weeks, New York.

Dr. Edgar S. Thompson, New York, read a paper on "The Staining and Examination of the Bacteria of the Eye by Simple, Practical Methods." Discussed by Drs. Brown Pusey, Chicago; Arnold Knapp, New York; George S. Dixon, New York: John E. Weeks, New York; E. L. Meierhof, New York; Luedde, St. Louis; Brown Pusey, Chicago, and Edgar S. Thompson, New York.

Dr. E. E. Holt, Portland, Maine, read a paper on "Physical Economics." Discussed by Drs. H. V. Würdemann, Milwaukee; L. W. Fox, Philadelphia, and Edward Jackson, Denver.

Dr. William Zentmayer, Philadelphia, read a paper on "Some Unusual Ocular Manifestations of Arteriosclerosis." Discussed by Dr. D. J. McCarthy, Philadelphia.

Wednesday, June 6—Afternoon.

Dr. Casey A. Wood, Chicago, presented "A Demonstration of the Fundi of Some Birds, with Remarks on Their Eyes and Eyesight."

Dr. Edward Jackson, Denver, read a paper on "Relations of the Superior and Inferior Recti Muscles to Convergent Squint." Discussed by Drs. Francis Valk, New York; M. D. Stevenson, Akron, Ohio; Frank Todd, Minneapolis; John E. Weeks, New York; Myles Standish, Boston, and Edward Jackson Denver.

Dr. Wendell Reber, Philadelphia, read a paper on "A Study of Convergence and Its Defects, Including an Analysis of 441 Cases of Exophoria." Discussed by Drs. Edward Jackson, Denver; Alex. Duane, New York; M. D. Stevenson, Akron, Ohio; G. C. Savage, Nashville; Oscar Wilkinson, Washington, D. C., and Wendell Reber, Philadelphia.

Dr. G. C. Savage, Nashville, read a paper on "Some Axioms Concerning Ocular Rotations." Discussed by Drs. George H. Price, Nashville; M. D. Stevenson, Akron, Ohio; F. H. Verhoeff, Boston; Lucien Howe, Buffalo, and G. C. Savage, Nashville.

Dr. Francis Valk, New York, read a paper on "Ophthalmic Practice of the Present Time." Discussed by Drs. A. E. Prince, Springfield; Oscar Wilkinson, Washington; George M. Gould, Philadelphia; Leartus Connor, Detroit; G. C. Savage, Nashville, and Francis Valk, New York.

Dr. J. H. Claiborne, New York, read a paper on "Conjugate Lateral Deviations." Discussed by Drs. M. D. Stevenson, Akron, Ohio; William Zentmayer, Philadelphia, and Alex. Duane, New York.

Dr. George M. Gould, Philadelphia, read a paper on "Incurable Eyestrain." Discussed by Drs. Peter A. Callan, New York, and George M. Gould, Philadelphia.

Thursday, June 7—Morning.

Dr. W. Franklin Coleman, Chicago, read a paper on "Some Personal Experiences in the Use of Electricity in Ophthalmic Practice." Discussed by Drs. S. Lewis Ziegler, Philadelphia; Leartus Connor, Detroit; Lucien Howe, Buffalo; H. V. Würdemann, Milwaukee; Charles H. Williams, Boston; E. J. Brown, Chicago; George F. Keiper, Lafayette, Ind., and W. F. Coleman, Chicago.

Dr. G. Oram Ring, Philadelphia, read a paper on "The X-Ray in Ocular Therapeutics." Discussed by Drs. George S. Dixon, New York; W. F. Coleman, Chicago; C. S. Bull, New York; John E. Weeks, New York; Edward Jackson, Denver; A. R. Baker, Cleveland; John Green, Jr., St. Louis; Casey A. Wood, Chicago; C. D. Wescott, Chicago; W. B. Marple, New York; William Sweet, Philadelphia; F. W. Fox, Philadelphia; C. L. Leonard, Philadelphia: U. L. Edsall, Philadelphia, and G. O. Ring, Philadelphia.

Dr. William M. Sweet, Philadelphia, read a paper on "Ocular Injuries from Foreign Bodies, with a Report of 420 Cases." Discussed by Drs. Howard F. Hansell, Philadelphia; W. F. Coleman, Chicago; Frank Todd, Minneapolis; S. D. Risley, Philadelphia: William H. Wilder, Chicago; Edward Jackson, Denver; T. J. McCoy, Los Angeles, and William M. Sweet, Philadelphia.

Dr. George E. de Schweinitz, Philadelphia, read a paper on "Autointoxication in Relation to the Eye." Discussed by Drs. Casey A. Wood, Chicago; Charles S. Bull, New York; W. B. Marple, New York; William C. Posey, Philadelphia; William Zentmayer, Philadelphia; John E. Weeks, New York; F. S. de Luc, Boston; S. D. Risley, Philadelphia; Edward Jackson, Denver; John Green, Jr., St. Louis, and George E. de Schweinitz, Philadelphia.

Dr. Robert L. Randolph, Baltimore, read a paper on "The Eye Injuries of Independence Day; A Further Contribution to the Subject." Discussed by Drs. G. C. Savage, Nashville, and Lucien Howe, Buffalo.

Dr. W. B. Marple, New York, read a paper on "Injuries of the Eye with Bird Shot." Discussed by Drs. George E. de Schweinitz, Philadelphia; H. V. Würdemann, Milwaukee; Edward Jackson, Denver; Robert L. Randolph, Baltimore; S. D. Risley, Philadelphia; R. D. Gibson, Youngstown, Ohio; Charles H. Beard, Chicago; William M. Sweet, Philadelphia, and W. B. Marple, New York.

THURSDAY, JUNE 7—AFTERNOON.

The Executive Committee, by Dr. John E. Weeks, New York, Chairman, reported the following nominations for officers for the ensuing year: Chairman, Dr. G. C. Savage, Nashville; vice-chairman, Dr. A. A. Hubbell, Buffalo; secretary, Dr. A. E. Bulson, Jr., Fort Wayne, Ind.; delegate, Dr. S. D. Risley, Philadelphia.

Unanimous consent being given, the chairman (in the absence of the secretary) cast the ballot for the election of the above-nominated officers.

The Executive Committee, reporting on the plan of presentation of papers as followed at this session, preferred to make no recommendations, but briefly explained the method and left its adoption or rejection to the society.

Dr. Edward Jackson, Denver, offered a resolution as follows:

Resolved, That it is the sense of the Section that the plan of printing papers for distribution before the session should be continued for the coming year, which resolution was unanimously adopted.

The Executive Committee recommended the adoption of a rule that all papers to be presented must be in the hands of the Secretary eight weeks before the session of the Association, which was adopted by the Section.

Dr. Lucien Howe, Buffalo, offered the following resolutions, and moved that they be adopted. The motion was seconded by Dr. E. E. Holt, Portland, Maine:

WHEREAS, It is a well-established fact that when making tests of the strength of the extraocular muscles, if the examiner selects different prisms from the test case, or when using prisms in series, or revolving prisms, if he begins with those which the patient *can not* overcome, and gradually *decreases* their strength to a prism which the patient can overcome, then one set of results is obtained. But, on the other hand, when using prisms in series or revolving prisms, if the examiner begins with those which the patient *can* overcome, and gradually *increases* the strength of the prisms, then the one found necessary to produce diplopia is decidedly stronger than by the former method; and,

WHEREAS, When the former method is adopted the results are much more constant and exact than by the latter method; and,

WHEREAS, No matter in what way the measurements have been made, when the result is recorded in the strength of the prism, which can be overcome, some practitioners count that as if a prism were held before each eye, and others as if one prism of twice the strength were held before one eye only; and,

WHEREAS, These differences in methods of using prisms and of recording the results of tests, have given rise to different estimates of the strength of the extraocular muscles, with corresponding confusion of our ideas on the subject; and,

WHEREAS, One of the prime objects of a national medical association is to make our methods and records more uniform, and, therefore, more intelligible to ourselves and to each other; therefore, be it

Resolved, That it is the sense of the Section on Ophthalmology of the American Medical Association, that hereafter, when any member describes the strength of the extraocular muscles, it is to be understood, unless specified to the contrary, that in making these measurements the examiner has used prisms selected from the ordinary test case, or if he did use prisms in series or revolving prisms, in doing so he commenced the measurement with prisms which were sufficiently strong to produce a well-marked diplopia, and then *decreased* the strength of the prisms until one was found which could be overcome by the patient; and,

Resolved, That in recording the strength of the prism which can be overcome by any such tests, it is to be understood, unless specified to the contrary, that the number given is to express the total fusion power, that is, the strength of the one prism which is required to produce the result, and not half the fusion power, as when a prism of half that strength is held before each eye.

Dr. Edward Jackson, Denver, offered an amendment to Dr. Howe's motion, providing that the resolutions be referred to a special committee of three, with instructions to report on the matter at the next annual session, which amendment was accepted by Dr. Howe, and the motion as amended was carried.

Dr. A. A. Hubbell, Buffalo, offered the following resolution proposed by Dr. F. Park Lewis:

WHEREAS, Notwithstanding the long-continued efforts of the medical profession to make generally known the infectious character of ophthalmia neonatorum and its danger to sight, the ranks of the blind are still largely increased annually by those who have unnecessarily lost their vision as a result of this disease; and

WHEREAS, We possess in the silver salts an almost absolute specific for its prevention and treatment.

Resolved, That this Section recommend that a committee be appointed, consisting of at least one ophthalmologist, one obstetrician and one sanitarian, with the invited co-operation of a subcommittee, consisting of the president and secretary of each state association, to formulate and make effective the details of a plan that may give uniform legislation and definite instruction to the profession and laity concerning the prevention and treatment of this disease.

Resolved, That this Section recommend an ophthalmologist for such committee, to be appointed by the incoming chairman and Executive Committee.

The resolution was adopted and referred to the House of Delegates, who approved them (see THE JOURNAL, June 16, page 1877).

The following resolution, offered by Dr. Nelson M. Black, Milwaukee, was adopted by the Section:

Resolved, That a committee of three be appointed by the chairman to determine on a standard of illumination for test-type charts to be expressed in candle-power units, or some standard used for measurement of light, and that the committee report at the next session of the Section.

Dr. Charles H. Beard, Chicago, presented an "Exhibition, by Means of the New Opaque Projector, of Original Colored Ophthalmoscopic Drawings."

Dr. Frank C. Todd, Minneapolis, read a paper on "The Ripening Operation for Immature Senile Cataract; Its Place."

Dr. Mark D. Stevenson, Akron, Ohio, read a paper on "Some Important Considerations in the Extraction of Cataract."

Dr. F. H. Verhoeff, Boston, read a paper on "Cataract Extraction with Modified Iridotomy."

Dr. Melville Black, Denver, read a paper on "The Use of the Secondary Cataract Knife."

These four papers were discussed by Drs. M. Wiener, St. Louis; A. E. Bulson, Jr., Fort Wayne, Ind.; Allen Greenwood, Boston; Casey A. Wood, Chicago; F. W. Fox, Philadelphia; Oscar Wilkinson, Washington; Wendell Reber, Philadelphia; S. L. Ledbetter, Birmingham, Ala.; S. L. Ziegler, Philadelphia; A. R. Baker, Cleveland; C. W. Hawley, Chicago; W. B. Marple, New York; E. E. Jack, Boston; W. R. Parker, Detroit; R. D. Gibson, Youngstown, Ohio; T. J. McCoy, Los Angeles; E. E. Holt, Portland, Maine.

Dr. William Campbell Posey, Philadelphia, read a paper on "The Value of Myotics in the Treatment of Chronic Simple Glaucoma." Discussed by Drs. John E. Weeks, New York; Charles S. Bull, New York; George E. de Schweinitz, Philadelphia; W. H. Wilder, Chicago; Peter Callan, New York, and William C. Posey, Philadelphia.

FRIDAY, JUNE 8—MORNING.

Dr. E. V. L. Brown, Chicago, read a paper on "So-Called Leucosarcoma of the Iris." Discussed by Drs. F. H. Verhoeff, Boston; H. V. Würdemann, Milwaukee, and E. V. L. Brown, Chicago.

Dr. H. V. Würdemann, Milwaukee, read a paper on "The Differential Diagnosis and Prognosis of Tumors of the Uveal Tract." Discussed by Drs. Charles S. Bull, New York; William Thompson, Philadelphia; Edward Shumway, Philadelphia; Charles H. Williams, Boston; O. F. Wadsworth, Boston; R. D. Gibson, Youngstown, Ohio, and H. V. Würdemann, Milwaukee.

Dr. Charles S. Bull, New York, read a paper on "The Treatment of Progressive Atrophy of the Optic Nerve, Due to Acquired Syphilis, by Subconjunctival and Intravaginal Injections of Sublimate of Mercury." Discussed by Drs. S. D. Risley, Philadelphia; A. A. Hubbell, Buffalo; George E. de Schweinitz, Philadelphia, and Charles S. Bull, New York.

Dr. William H. Wilder, Chicago, read a paper on "Paraffin Plates as an Aid in Operations for Extensive Symblepharon and the Restoration of Cul-de-Sacs for Prothesis." Discussed by Drs. Charles H. May, New York; C. W. Hawley, Chicago; John E. Weeks, New York; S. D. Risley, Philadelphia; C. D. Wescott, Chicago, and William H. Wilder, Chicago.

Dr. Frank E. Brawley, Chicago, read a paper on "The Relation of Diseases of the Nasal Accessory Sinuses to Diseases of the Eyes." Discussed by Drs. Nelson M. Black, Milwaukee, and S. L. Ledbetter, Birmingham, Ala.

Dr. Nelson M. Black, Milwaukee, exhibited a number of pieces of colored glass, such as those used in railroad signaling, showing the different quality of transmissibility and spectroscopic properties.

Dr. S. D. Risley, Philadelphia, exhibited a spectacle frame devised by him for the holding of prisms and practicing of adduction exercises.

The chairman announced the appointment of the committee on Dr. Howe's resolution: Dr. Lucien Howe, Buffalo; Dr. Edward Jackson, Denver, and Dr. Alexander Duane, New York. Also the committee on resolution of Dr. Black: Dr. Nelson M. Black, Milwaukee: Dr. Charles H. Williams, Boston, and Dr. M. D. Stevenson, Akron, Ohio.

Dr. Leartus Connor, Detroit, offered the following resolution, which was adopted:

Resolved, That the thanks of the Section on Ophthalmology of the American Medical Association be given all who have contributed to the profit and pleasure of our session, especially (1) to Dr. Myles Standish and his associates for untiring courtesies; (2) to the Massachusetts Charitable Eye and Ear Hospital for the typical New England seaside lunches served us in the hospital and a glimpse of the workings of the institution; (3) to President Taylor, Secretary Bulson and our Executive Committee for their indefatigable efforts in making our session the best possible; (4) to the Harvard Medical School and other institutions that have added to our comfort and convenience; (5) and to the general management which sympathetically co-operated in making possible the novel features of this session.

Section on Diseases of Children.

TUESDAY, JUNE 5—AFTERNOON.

Meeting called to order at 2:15, by the Chairman, Dr. W. C. Hollopeter, of Philadelphia; Dr. W. J. Butler, Chicago, being Secretary.

The "Address of Welcome" was given by Dr. Thomas Morgan Rotch, Boston.

Dr. W. C. Hollopeter, Philadelphia, delivered the Chairman's address, entitled "The Pediatric Outlook."

Dr. B. Sachs, New York City, read a paper on "Injuries to the Child's Head During Labor." The paper was discussed by Drs. Effie Davis, of Chicago; C. G. Kerley, New York City; R. B. Gilbert, Louisville, Ky.; J. C. Cook, Chicago, and Dr. Sachs.

Dr. C. F. Wahrer, Fort Madison, Iowa, read a paper entitled "Heredity and Environment as Factors in the Life and Diseases of Children," which was discussed by Dr. F. A. Rhoades, Pittsburg; D. S. Hansell, Cleveland, Ohio; Gilbert, Louisville; G. E. Robbins, Ohio; J. W. Kyger, Kansas City, Mo., M. E. Dunning, New York City, and Dr. Wahrer.

Dr. H. McClanahan, Omaha, contributed a paper on "Hemorrhage in the New Born." This was discussed by Drs. A. Garcelon, Maine; I. A. Abt, Chicago; Litzenberg, Minneapolis; Melinda Germann, Quincy, Ill.; Effie Davis, Chicago, and Dr. McClanahan.

A paper entitled "The Value of Blood Cultures in the Diagnosis of Acute Infectious Diseases in Children" was read by Dr. Thomas Morgan Rotch, Boston. Discussed by Dr. E. E. Graham, Philadelphia and Dr. Rotch.

Dr. J. Madison Taylor, Philadelphia, read a paper on "Fever and the Place of Salines in Treatment." Discussed by Dr. H. C. Worthington, Illinois.

A volunteer paper sent to Dr. A. C. Cotton, Chicago, on "A Case of Meningitis with Isolation of the Bacillus Diphtheriæ from Cerebrospinal Fluid," was read by Dr. Cotton. The case occurred in the service of Dr. Walls, in the Cook County Hospital.

Wednesday, June 6—Morning.

Dr. J. C. Cook, Chicago, read a paper on "Bacteriologic and Blood Findings in Thirty-six Cases of Bowel Infection in Infants." Discussed by Drs. J. L. Morse and A. H. Wentworth, Boston, and Dr. Cook.

A paper entitled "A Further Contribution to the Study of the Stools in Starch-fed Infants," contributed by Drs. C. G. Kerley and H. N. Mason, New York City, was read by Dr. Kerley. The paper was discussed by Drs. Samuel Amberg, Baltimore; G. R. Pisek, Thomas W. Southworth and T. W. Kilmer, New York City; A. H. Wentworth, Boston; J. B. Learned, Northampton, Mass.; B. B. Simms, Talladega, Ala., and Dr. Kerley.

Dr. A. C. Cotton, Chicago, read a paper on "Sodium Citrate in Infant Feeding."

On motion it was seconded and carried that the paper by Dr. Cotton and the papers following, entitled, "The Trend of Pediatric Opinion Concerning the Artificial Feeding of Infants," by Dr. Thomas S. Southworth, New York City, and "Whole Milk vs. Laboratory Feeding," by Dr. A. McAlister, Camden, N. J., be discussed jointly. After the reading of the papers by the respective authors this was done. Those taking part in the discussion were: Drs. D. E. English, Mill Burn, N. J.; J. L. Morse, Boston; C. G. Kerley, New York City; R. B. Gilbert, Louisville; T. W. Kilmer, New York City; Effie Davis, Chicago; A. H. Wentworth, Boston; J. W. Vanderslice, Chicago; C. F. Wahrer, Fort Madison, Iowa; Samuel Amberg, Baltimore; W. C. Brewer, Miss.; M. G. Campbell, Atlanta; G. R. Pisek, New York City, and Drs. Cotton, Southworth and McAlister.

Wednesday, June 6—Afternoon.

"The Use of Sodium Citrate as a Modifier of Cow's Milk from a Chemical and Physical Point of View" was the title of a paper read by Dr. Joseph W. England, Philadelphia.

Dr. E. E. Graham, Philadelphia, read a paper on "Diagnosis of Tuberculosis in Infants and Children." The paper was discussed by Drs. W. P. Northrup, New York; J. W. Vanderslice, Chicago; Arthur W. Fairbanks, Boston; C. G. Kerley, New York; T. J. Elterich, Pittsburg; William J. Butler, Chicago, and Dr. Graham.

Dr. W. P. Northrup, New York City, read a paper on "The Open Air Treatment of Pneumonia." This was discussed by Drs. J. L. Morse, Boston; I. A. Abt, Chicago; E. E. Graham, Philadelphia; C. F. Wahrer, Fort Madison, Iowa; W. C. Brewer, Miss.; F. S. Churchill, Chicago; H. McClanahan, Omaha; George N. Acker, Washington, D. C.; A. C. Cotton, Chicago; D. E. English, Mill Burn, N. J.; H. C. Worthington, Chicago; R. B. Gilbert, Louisville; B. B. Simms, Talladega, Ala.; and Dr. Northrup.

Dr. J. L. Morse, Boston, read a paper entitled "An Analysis of Forty Cases of Meningitis in Children." The paper was discussed by Drs. F. S. Churchill, Chicago; W. P. Northrup, New York; C. G. Kerley, New York; Arthur W. Fairbanks, Boston; E. E. Graham, Philadelphia; William J. Butler, Chicago, and Dr. Morse.

Dr. Arthur W. Fairbanks, of Boston, read a paper on "Cerebral Syphilis in Childhood." The paper was discussed by Drs. W. P. Northrup, New York, and William J. Butler, Chicago.

"Tetanus Neonatorum; A Statistical Study." This paper was presented by Dr. James M. Anders and Dr. Arthur C. Morgan, Philadelphia. The paper was discussed by Dr. R. B. Gilbert, Louisville; W. C. Watson, Baltimore, and Dr. Anders.

Dr. W. E. Darnall, Atlantic City, read a paper on "Neuroma and Neurofibroma."

Thursday, June 7—Morning.

Dr. I. A. Abt, Chicago, read a paper on "Acute Encephalitis." It was discussed by Drs. J. Ross Snyder, Birmingham, Ala.; William J. Butler, Chicago; George N. Acker, Washington, D. C.; M. L. Rhein, Philadelphia; H. Lowenburg, Philadelphia, and Dr. Abt.

Dr. J. Herbert Claiborne, New York City, read a paper entitled "Concerning Types of Congenital Symbol Amblyopia." Discussed by Drs. T. W. Kilmer, New York City; M. L. Rhein, Philadelphia, and Dr. Claiborne.

Dr. Daniel R. Brown, Salem, Mass., read a paper on "Accurate Modification of Milk, Simple and Practicable."

Dr. C. Townsend, of Boston, read a paper on "Simplicity in Infant Feeding."

Dr. C. W. M. Brown, Elmira, N. Y., presented a paper on "Certified Milk in Small Cities."

Dr. H. Lowenburg, Philadelphia, read a paper entitled "Why Percentage Feeding Fails—A Plea for Its More Frequent Adoption by the General Practitioner."

These four papers were discussed by Drs. C. F. Wahrer, Fort Madison, Iowa; S. M. Hamill, Philadelphia; J. W. Kyger, Kansas City, Mo.; W. G. Murphy, Hartford, Conn.; Melinda Germann, Quincy, Ill.; Robert W. Hastings, Boston; C. G. Kerley, New York City; S. M. Hamill, Philadelphia; Thomas Morgan Rotch, Boston, and Drs. Brown, Townsend, Brown and Lowenburg.

Thursday, June 7—Afternoon.

The Executive Committee recommended the following for officers: Chairman, Dr. J. Ross Snyder, Birmingham, Ala.; secretary, Dr. A. H. Wentworth, Boston; delegate, Dr. Thomas S. Southworth, New York City.

It was moved, seconded and carried that the report be adopted.

The report of the Committee on Pediatric Teaching in the Medical Schools in the United States was read by the chairman, Dr. J. Ross Snyder. It was moved, seconded and carried that the report be accepted and placed on file.

Dr. H. McClanahan, Omaha, offered a resolution that the reports from the 93 medical schools mentioned in the report of the Committee on Pediatric Teaching in the Medical Schools in the United States be filed for reference with the secretary of the Section; that the secretary as nearly as possible complete these reports; and, that as the Section deems advisable, the secretary be instructed to further address the medical schools of the country for information concerning the teaching of pediatrics in their institutions.

Dr. J. C. Cook, Chicago, moved that the resolution offered by Dr. McClanahan be accepted and placed on file in connection with the report of the committee. Seconded and carried.

Dr. Melinda Germann, Quincy, Ill., read a paper entitled "Pleuritic Exudate in Children." This was discussed by Drs. J. L. Morse, Boston; T. W. Kilmer, New York City; Thomas S. Southworth, New York City; William J. Butler, Chicago; J. L. Morse, Boston; T. W. Kilmer, New York City, and Dr. Germann.

Dr. J. Ross Snyder read a paper entitled "Rheumatism in Children."

Dr. Charles Hunter Dunn, Boston, read a paper on "The Clinical Aspects of Rheumatic Fever in Childhood and Their Significance in the Question of Specific Etiology."

These two papers were discussed by Drs. S. M. Hamill, Philadelphia; I. A. Abt, Chicago; R. L. Glendenning, Manchester, Mass.; Arthur W. Fairbanks, Boston; William J. Butler, Chicago, and Drs. Snyder and Dunn.

Section on Stomatology.

Tuesday, June 5—Afternoon.

The meeting was called to order at 2:30 p. m. in Tufts Medical College.

On account of the death of Dr. Charles Allen and the inability of Dr. H. P. Carlton, San Francisco, to be present, it was necessary to elect a chairman. Dr. R. R. Andrews was elected chairman.

The secretary read the following names as eligible for membership: Drs. L. D. Shepard, 330 Dartmouth Street, Boston; G. E. Savage, Worcester, Mass.; A. J. Flanagan, Springfield, Mass.; Waldo E. Boardman, 184 Boylston Street, Boston; James E. Power, Providence, R. I.; R. G. Richter, 128 Wisconsin Street, Milwaukee, Wis.; M. C. Smith, Lynn, Mass.; Charles C. Potter, 16 Arlington Street, Boston; Frank T. Taylor, 419 Boylston Street, Boston; R. Gelkey Horue, Watertown, Mass.; Estes, Newport, R. I.; Edgar O. Kinsman, Cambridge, Mass.; Carl R. Lindstrom, Boston; F. Messerschmidt, Rochester, N. Y.; C. W. Rodgers, Dorchester, Mass.; Isidore Lett, Boston; Eugene Smith, Boston. All were duly elected to membership.

The secretary, Dr. Eugene S. Talbot, Chicago, said: "We are fortunate that at this time the Massachusetts Dental Association is in session, and the officers of the Association and those of the Section on Stomatology were anxious to have the members of the association meet with the Section this year; therefore, as secretary, I extend a cordial invitation to members of the Massachusetts Dental Society to meet with us this year."

The next business was the adoption of the program. On motion, duly seconded, it was unanimously adopted.

The first paper read was by Dr. M. H. Fletcher, Cincinnati, entitled: "What Is Effect on Progeny of Loss of Teeth in Ancestry?" Discussed by Drs. Talbot and Rhein.

Dr. Charles Hunter Dunn read a paper on "Reflexes of Dentition from the Physician's Standpoint." Discussed by Drs. Thomas M. Rotch, Boston; Cotton, Latham, Fletcher, Rhein, Brown and Schamberg.

Dr. Samuel H. Hopkins, Boston, read a paper entitled "Medical Phases of Dental Disorders," which was discussed by Drs. Rotch, Schamberg and Steeves.

Dr. James E. Power, Providence, R. I., read a paper entitled "The Relation of Systemic Diseases to the Conditions of the Oral Cavity," which was discussed by Drs. Hopkins, Latham, Schamberg and Power.

Dr. Alice M. Steeves, Boston, read a paper entitled "Two Cases of Infantile Scurvy," which was discussed by Drs. Rhein and Steeves.

The chairman appointed Drs. Fletcher, Latham and Steeves as nominating committee.

Wednesday, June 6—Afternoon.

The first paper read was entitled "Structure of the Jaws of Lower Vertebrates," by Dr. J. S. Kingsley, Boston.

Professor Minot, Boston, followed with remarks on "Development of the Human Jaw." Discussed by Drs. Talbot, Fletcher and Andrews.

Dr. G. V. L. Brown, Milwaukee, Wis., followed with a paper entitled "Conservatism in the Treatment of Infants with Harelip and Cleft Palate." Discussed by Drs. Fillebrown, Schamberg, Talbot and Brown.

Dr. Thomas Fillebrown, Boston, read a paper entitled "Conservative Surgery of the Lip." Discussed by Drs. Brown, Fletcher and Fillebrown.

Thursday, June 7—Afternoon.

The first business in order was the election of officers. The following were nominated and duly elected: Chairman, Dr. M. I. Schamberg, Philadelphia; vice-chairman, Dr. E. W. Branigan, Boston; secretary, Dr. Eugene S. Talbot, Chicago; delegate, Dr. G. V. I. Brown, Milwaukee, Wis.

Dr. M. L. Rhein, New York, read a paper entitled "Treatment of Loosened Teeth."

Dr. Eugene S. Talbot, Chicago, followed with a paper entitled "Interstitial Gingivitis Produced by Autointoxication as Indicated by the Urine and Blood Pressure." These two papers were discussed by Drs. Schamberg, Fletcher, Brown, Rhein and Latham.

Dr. V. A. Latham, Chicago, read a paper on "Some Pathologic Features of the Pulp." Discussed by Drs. Fletcher, Schamberg, Talbot and Latham.

Dr. Andrews: I wish to call attention to the fact that we have lost two of our most valued members. Dr. Charles Allen, who was to have presided over this session, died some few months ago, and a few weeks ago Dr. Williams of this city, one of the original seven who formed this Section, passed away. Resolutions on the death of Dr. Allen and Dr. Williams have been prepared, and Dr. Eames, the chairman of the committee, will please read the resolutions.

Dr. Brown: Before the resolutions are read I would like to call the attention of the members to the fact that Dr. Charles Chickering has passed away. He is a distinct loss to the profession, and I move that his name be added to the list. Motion seconded and passed.

Dr. Andrews: I name Dr. Brown as a committee to present a resolution on the death of Dr. Chickering.

The resolutions were presented as follows and adopted:

Dr. Jacob L. Williams, Boston, who died recently at his home on Walnut Street, was one of the seven original members who organized the Section of Stomatology of the American Medical Association at Richmond, Va., in 1881. He was always an active and enthusiastic member of the Section, rarely missing a session. At Nashville, Tenn., in 1890, he was chairman of the Section, and during his membership he was the contributor of many able scientific papers to the Section.

Your committee would therefore offer the following resolutions of respect:

Whereas, The Section on Stomatology hears with the deepest sorrow and regret of the death of our friend and professional brother, Dr. Jacob L. Williams, Boston, after a long life of useful and earnest labor for his profession and for humanity; therefore, be it

Resolved, That we appreciate to the utmost the earnest, conscientious services of his life work, and remember with admiration his ability and his candid generous action in all matters pertaining to professional thought and investigation.

Resolved, That the services rendered during a long and busy career will cause his name to be remembered as one who occupied a distinguished place within the ranks of his profession, and one whom it is a delight to remember and to honor.

Resolved, That our heartfelt sympathy is hereby tendered to his family, his relations and to his friends; and we wish to express our deep sense of loss in the death of one of our members who has been so long associated with our Section and its interests.

R. R. Andrews, Chairman Committee.

Whereas, In the mysterious dealings of an All-Wise Providence, our friend and fellow-member, Dr. Charles Frederick Ailen, Newburgh, N. Y., has been taken from us, in the midst of an active professional career; therefore, be it

Resolved, That in the death of Dr. Allen this Section has sustained the loss of a presiding officer who promised much in the interests of this Section and for the welfare of the whole profession.

Resolved, That although his membership in this Association had been of short duration, his upright character and genial friendliness, his professional ability as shown both by operative demonstrations and his writings, his wide knowledge of men and affairs have been deeply impressed on us; and be it further

Resolved, That we appreciate his allegiance to his country, which he served during the War of the Rebellion, his loyalty to his professional brethren and faithfulness to his patients, ever seeking the best methods, and never sparing expense or effort, that the best service might be rendered.

Resolved, That in the death of Dr. Allen we mourn the loss of a good friend and faithful practitioner, that we miss the genial smile and friendly hand clasp that revealed a loyal and generous heart. We sincerely mourn with our late brother's relatives and family and extend to them our sincere sympathy.

George F. Eames, Chairman.

Dr. Fletcher: I move that these resolutions be sent to the families of the deceased members and that they be prepared for publication. Seconded and carried.

Dr. M. I. Schamberg, Philadelphia, was then introduced as the chairman for the coming year and expressed his gratitude for the honor bestowed on him. He said further: "I hope to fill the office to the best of my ability and I trust that those who have been so active in the past in furthering the interest of this Section will lend their aid during the coming year as they have in the past. Dr. Talbot, I believe, deserves all the credit for the progress that this Section has made. I feel that both the medical profession and the dental profession are greatly indebted to Dr. Talbot for his work in bringing this Section to such a successful issue during the years in which he has been secretary and in furthering the advancement of those subjects which are so closely related to both medicine and dentistry."

Section on Nervous and Mental Diseases.

Tuesday, June 5—Afternoon.

The meeting was called to order at 5 p. m. in Natural History Building, by the chairman, Dr. Wharton Sinkler, Philadelphia. The secretary was Dr. T. H. Weisenburg, Philadelphia.

The chairman's address was read by Dr. Wharton Sinkler, Philadelphia.

Wednesday, June 6—Morning.

The meeting was called to order at 9:30 a. m. in the New Harvard Medical School by the chairman.

"Manic-Depressive Insanity and Visceral Disorder" was read by Dr. Henry S. Upson, Cleveland, Ohio, and discussed by Drs. W. H. Hnmiston, Cleveland; Francis X. Dercum and Alfred Gordon, Philadelphia, and Dr. Upson.

"Motor Degenerative Sequence in Dementia" was read by Dr. H. A. Tomlinson, St. Peter, Minn.

"Lucid Intervals in the Insane and Their Medicolegal Importance," by Drs. D. J. McCarthy and W. W. Hawke, Philadelphia, was read by Dr. Hawke and discussed by Drs. McCarthy and Hawke.

"Trauma as a Cause of Insanity" was read by Dr. Charles W. Burr, Philadelphia and discussed by Drs. William G. Spiller, Francis X. Dercum, Philadelphia; H. H. Hoppe, H. A. Tomlinson, St. Peter, Minn.; P. C. Knapp, Boston; Richard Dewey, Wauwatosa; Jones, Minneapolis; Julius Grinker, Chicago; Alfred Gordon, Philadelphia, and Dr. Burr.

"The Paranoid Group" was read by Dr. F. X. Dercum, Philadelphia, and discussed by Drs. L. Mettler and Harold N. Moyer, Chicago; P. C. Knapp, Boston, and Dr. Dercum.

"Blood Pressure in Paresis" was read by Dr. G. L. Walton, Boston, and discussed by Dr. F. X. Dercum, Philadelphia.

"Migrainic Psychoses. Apropos of Twelve Cases," was read by Dr. Alfred Gordon, Philadelphia, and discussed by Drs. S. Weir Mitchell and Charles K. Mills, Philadelphia; G. L. Walton, Boston; C. Eugene Riggs, St. Paul; William G. Spiller, Philadelphia; L. Mettler, Chicago; Flsher; P. C. Knapp, Boston; F. X. Dercum, Philadelphia; Gordon and S. Weir Mitchell.

Wednesday, June 6—Afternoon.

"Cases of Basilar Thrombosis," by Drs. E. E. Soutbard and N. K. Wood, Boston, was read by Dr. Southard.

"Paralysis of the Pharynx, with Four Years' Feeding with the Tube," was read by Dr. S. Weir Mitchell, Philadelphia, and discussed by Drs. P. C. Knapp, Boston, and Charles L. Dana, New York.

"Palliative Operations (Cerebral Decompression) in the Treatment of Tumors of the Brain" was read by Drs. William G. Spiller and Charles H. Frazier, Philadelphia.

"Present Status of Brain Surgery" was read by Dr. M. Allen Starr, New York.

These two papers were discussed by Drs. Charles K. Mills, Philadelphia; P. C. Knapp, Boston; Harvey Cushing, Baltimore; C. B. Burr, Flint, Mich.; C. H. Hughes, St. Louis; D. W. Crouse, Iowa; F. X. Dercum, Philadelphia, and Drs. Starr and Spiller.

"Unilateral Ascending Paralysis; Unilateral Descending Paralysis; Their Varieties; Their Causes and Pathology," was read by Dr. Charles K. Mills, Philadelphia, and discussed by Drs. Hoppe and Mills.

Thursday, June 7—Morning.

"Myasthenia Gravis" was read by Dr. C. Eugene Riggs, St. Paul.

"Multiple Neuritis Resembling Progressive Muscular Atrophy, with Report of Cases," was read by Dr. Julius Grinker, Chicago.

"Collective Versus Individualized Treatment of Neuroses and Psychoses," was read by Dr. Richard Dewey, Wauwatosa, Wis.

"Tumor of the Right Versus Tumor of the Left Frontal Lobe of the Brain" was read by Dr. W. C. Krauss, Buffalo, and discussed by Drs. P. C. Knapp, Boston; Henry D. Fry, St. Louis; H. A. Tomlinson, St. Peter, Minn.; Charles K. Mills, Philadelphia, and Dr. Krauss.

"Conjugate Deviation of the Eyes and Head and Disorders of the Associated Ocular Movements in Tumors and Other Lesions of the Cerebrum" was read by Dr. T. H. Weisenburg, Philadelphia, and discussed by Drs. Charles K. Milis and William G. Spiller, Philadelphia, and Dr. Weisenburg.

"Pathology of Uremic Hemiplegia" was read by Dr. J. H. W. Rhein, Philadelphia, and discussed by Drs. D. J. McCarthy, Philadelphia; Morton Prince, Boston; William G. Spiller, Philadelphia; E. D. Fisher, New York; T. H. Weisenburg, Philadelphia and Drs. Hoppe and Rhein.

"Pathology of Paralysis Agitans, with a Report of Twelve Cases with Necropsy," was read by Dr. C. D. Camp, Philadelphia, and discussed by Drs. D. J. McCarthy, Philadelphia; P. C. Knapp, Boston; E. J. Fisher, New York, and Dr. Camp.

The chairman announced the appointment of the following nominating committee: Drs. Howell T. Persbing, Denver; Edward B. Angell, Rochester, and Henry D. Fry, St. Louis.

Dr. Edward B. Angell, Rochester, N. Y., presented some *x*-ray and stereoscopic apparatus.

Thursday, June 7—Afternoon.

The nominating committee presented the following names to serve as officers for the ensuing year, and on motion the secretary cast the ballot for them: Chairman, Dr. George L. Walton, Boston (*withdrew, see below*); secretary, Dr. T. H. Weisenburg, Philadelphia; delegate, Dr. D'Orsay Hecht, Chicago; alternate, Dr. Juiius Grinker, Chicago.

"Serum Treatment of Exophthalmic Goiter," by Drs. J. J. Putnam and G. A. Waterman, Boston, as read by Dr. Waterman, and discussed by Drs. Harold N. Moyer, Chicago; Beebe, New York; Crafts, Minneapolis; Richard Dewey, Wauwatosa, and Dr. Waterman.

Dr. Howell T. Pershing, chairman of the nominating committee, reported that Dr. Walton had declined to accept the position as chairman, and on motion it was unanimously carried that the vote electing Dr. Walton be reconsidered, which was done.

The nominating committee then presented the name of Dr. Morton Prince, Boston, and on motion the secretary was instructed to cast the ballot for Dr. Prince as chairman.

"Personal Experience in the Treatment of Tabes by Co-ordinative Exercise" was read by Dr. E. W. Taylor, Boston, and discussed by Dr. W. N. Bullard, Boston.

"Multiple Neuritis, Non-diphtheritic, in Children," by Drs. H. M. Thomas and H. S. Greenbaum, Baltimore, was read by Dr. Thomas, and discussed by Drs. W. N. Bullard, Boston; P. Zenner, Cincinnati, and Dr. Thomas.

"Clinical Physiopathology: Need of a New Classification of Diseases of the Nervous System," was read by Dr. L. H. Mettler, Chicago, and discussed by Dr. Howell T. Pershing, Denver, and Dr. Mettler.

"The Gradual Cure of Hysterical Paralysis" was read by Dr. Howell T. Pershing, Denver.

"Neurasthenia as Modified by Modern Conditions and Their Prevention" was read by Dr. Thomas C. Ely, Philadelphia.

"Landry's Paralysis, with a Report of Four Cases," by Drs. J. N. Hall and S. D. Hopkins, Denver, was read by Dr. Hall, and discussed by Drs. L. H. Mettler, Chicago; Wharton Sinkler, Philadelphia, and Dr. Hall.

"Affections of the Spinal Cord in Epileptics" was read by Dr. W. N. Bullard, Boston, and discussed by Dr. Howell T. Pershing, Denver, and Dr. Bullard.

Section on Cutaneous Medicine and Surgery.

Tuesday, June 5—Afternoon.

Dr. Abner Post, Boston, announced that the chairman of the Section, Dr. Douglas W. Montgomery, San Francisco, would be unable to be present on account of the recent earthquake and conflagration in his city. He also announced that the secretary, Dr. R. R. Campbell, Chicago, would be unable to be present.

It was thereon moved and carried that Dr. Ludwig Weiss of New York City be appointed temporary chairman. Dr. M. L. Heidingsfeld, Cincinnati, was appointed temporary secretary.

"Generalized Multiple Pigmented Sarcoma Originating in the Skin," by Drs. William Frick and Frank J. Hall of Kansas City, Mo. (Read by Dr. Hall.) Discussed by Drs. David Lieberthal, Chicago; A. Ravogli, Cincinnati; Alexander J. Anderson, Newport, R. I.; B. W. Stearns, Binghamton, N. Y., and Dr. Hall.

"Consequence of Lupus Vulgaris of the Ear," by Dr. A. Ravogli, Cincinnati. Discussed by Drs. M. L. Heidingsfeld and A. Ravogli, Cincinnati.

"Erythema Indurata (Bazin)," by Dr. Ludwig Weiss, New York City. Discussed by Drs. A. Ravogli and M. L. Heidingsfeld, Cincinnati; James C. White, Boston, and Dr. Weiss.

Dr. James C. White, Boston, announced that at a meeting of the American Dermatological Association, held in Cleveland, Ohio, last week, he was requested to present to the Section on Cutaneous Medicine and Surgery of the American Medical Association some information in regard to the progress which was being made by the Organization Committee in preparing for the next International Dermatological Congress, to be held in New York City in September, 1907. At the last meeting of the congress, held in Berlin, an invitation was presented to the congress on behalf of the Section on Cutaneous Medicine and Surgery of the American Medical Association by Dr. Henry W. Stelwagon, and another on behalf of the American Dermatological Association, to meet in this country, and that invitation had been accepted. An Organization Committee was selected by the officers chosen at the Berlin meeting, which was composed of 25 men from different parts of the country. That committee had been steadily at work and subcommittees had been appointed. The Committee on Finance had already raised nearly $12,000 for the expense of the meeting, this money having been subscribed almost exclusively by dermatologists in this country. Efforts were being made to increase this fund to at least $20,000. Three themes had been selected for general discussion at the meeting: "The Etiologic Relationship of the Micro-Organisms Found in the Exanthemata," "The Tropical Dermatoses." "The Immunization and Parasitology of Syphilis." Many prominent specialists, both from this country and abroad, are expected to take part in these discussions. Dr. White said that in September, 1906, a general prospectus of the meeting will be mailed to dermatologists in this country and abroad, inviting them to attend the meeting and to present papers. It will be specified, however, that the committee reserves the right to reject such communications as they see fit. This will be done to obviate the fault that has been found with past meetings of the congress, where so many papers have been presented that they failed to receive proper consideration In June, 1907, a full program of the meeting will be sent to those interested in this field of medicine, which would contain all the details.

The chairman, Dr. Weiss, conveyed the thanks of the Section to Dr. White for his interesting communication.

The following nominating committee was appointed by the chairman: Drs. David Lieberthal and W. L. Baum, Chicago, and Albert E. Carrier, Detroit.

Wednesday, June 6—Afternoon.

The secretary, Dr. Heidingsfeld, read a communication from Dr. Kaspar Pischel, San Francisco, announcing the death of Dr. F. R. Day, in Honolulu, Hawaii, June 1, 1906. Dr. Day's name was on the program of the Section for an exhibition of wax models in cases of leprosy, which Dr. Pischel said were really works of art, as he could testify from personal observation while in Honolulu. Dr. Day was among the foremost physicians in Honolulu, and as a physician, citizen and man he was highly esteemed by the whole community.

Dr. William M. Davis, Denver, expressed the regret of the Section on the death of Dr. Day, and moved that the secretary be instructed to convey to the relatives of the deceased the sincere condolence of the Section on Cutaneous Medicine and Surgery on their heavy loss.

Dr. Henry G. Piffard announced the recent death, in Gibraltar, of Dr. Charles W. Allen, New York City, who had been an active member of the Section.

Dr. William S. Gottheil, New York City, expressed the regrets of the Section on the death of Dr. Allen, and moved that the secretary be instructed to convey to the daughters of the deceased, who were his sole survivors, the sincere condolence of the Section on Cutaneous Medicine and Surgery on their heavy loss.

"The Therapeutic Value of Chrysophanic Acid in Dermatology," by Dr. Charles James Fox, Hartford, Conn. Discussed by Drs. Henry G. Piffard and William S. Gottheil, New York City; James C. White, Boston; R. A. McDonnell, New Haven, Conn.; Edmund L. Cocks, New York City; Henry C. Baum, Syracuse, N. Y.; Ludwig Weiss, New York City.

"Lichen Planus of the Mouth and Lips, with Report of Case," by Dr. David Lieberthal, Chicago. Discussed by Drs. L. Duncan Bulkley, New York City; James C. White, Boston; Henry G. Piffard, New York City, and Dr. Lieberthal.

The chairman, Dr. Ludwig Weiss, gave a lantern slide exhibition bearing on his paper on "Erythema Induratum (Bazin)," which was read at the previous session of the Section.

"Myomata Cutis, with Report of Two Cases (Demonstrated from Lantern Slides)," by Dr. M. L. Heidingsfeld, Cincinnati.

"Aids to Accuracy and Efficiency in Radiotherapy," by Dr. Henry G. Piffard, New York City. Discussed by Drs. L. Duncan Bulkley, New York City; Williams, Richmond, Va.; J. C. Price, Scranton, Pa.; William S. Gottheil and L. Duncan Bulkley, New York; Mihran K. Kassabian, Philadelphia; John B. Kessley, Iowa City, Iowa; H. P. Wells, St. Louis; William S. Newcomet, Philadelphia; David Lieberthal, Chicago, and Piffard.

"Endothelioma of the Skin," by William S. Gottheil, New York City. Discussed by Drs. L. Duncan Bulkley, New York City; M. L. Heidingsfeld, Cincinnati; Edmund L. Cocks, New York, and William S. Gottheil.

Thursday, June 7—Afternoon.

"The Cure of Psoriasis; with a Study of 509 Cases Observed in Private Practice," by Dr. L. Duncan Bulkley, New York City. Discussed by Drs. Frederick A. Rhodes, Pittsburg, Pa.; C. P. Sylvester, Boston; William S. Gottheil, New York City; Francis J. Shepherd, Montreal; James C. White, Boston; W. D. Calvin, Fort Wayne, Ind.; Gardner T. Swarts, Providence, R. I.; John B. Kessler, Iowa City, Iowa; Henry W. Stelwagon, Philadelphia; F. A. Kleinhans, Milwaukee, Wis.; William L. Baum, Chicago; David Lieberthal, Chicago, and Dr. Bulkley.

The nominating committee reported as follows: Chairman, R. R. Campbell, Chicago; secretary, Henry R. Varney, Detroit; delegate, M. L. Heidingsfeld, Cincinnati; alternate, Ludwig Weiss, New York City.

Dr. Heidingsfeld requested that his name be withdrawn from the list of nominations.

Dr. L. Duncan Bulkley, New York, moved that the report of the nominating committee be received. Seconded and carried.

On motion of Dr. Bulkley, Dr. R. R. Campbell, Chicago, was elected chairman for the ensuing year.

Dr. Bulkley then moved that Dr. Heidingsfeld be nominated for secretary. Seconded.

Dr. Varney withdrew his name in favor of Dr. Heidingsfeld.

Dr. Heidingsfeld was thereon elected secretary for the ensuing year.

On motion of Dr. Bulkley, Dr. Henry R. Varney, Detroit, was elected member of the House of Delegates.

On motion of Dr. Lieberthal, Dr. Ludwig Weiss was elected alternate member of the House of Delegates.

"A Note on the Erythemas Complicated with Internal Lesions," by Dr. Alembert W. Brayton, Indianapolis.

"A Record of Some Unusual Cases," by Dr. William S. Gottheil, New York City.

"The Relation of Nerve Impulse to Cutaneous Inflammation," by Ernest L. McEwen, Chicago.

"A Case of Pemphigus Affecting the Mucous and Serous Membranes Only," by Dr. Edmund L. Cocks, New York City. Discussed by Dr. William S. Gottheil and L. Duncan Bulkley, New York City.

Dr. Henry W. Stelwagon exhibited a number of photographs of interesting skin lesions.

Dr. Weiss, before declaring the Section adjourned, thanked the members for having honored him by electing him their temporary chairman, and for their prompt attendance and for the excellence of the papers presented.

Section on Laryngology and Otology.

Tuesday, June 5—Afternoon.

The first session met in the New Harvard Medical School at 2 p. m., and was called to order by the chairman, Dr. O. T. Freer, Chicago. Dr. W. Sohier Bryant, New York, was secretary.

A short address of welcome was given by Dr. Clarence J. Blake, Boston.

The chairman then read his address.

Dr. J. F. Byington, Michigan, read a paper on "The Submucous Resection of the Nasal Septum, with Report of Fifty Operations."

Dr. Lee Maidment Hurd, New York City, read a paper on "Some Remarks on Submucous Resection, Based on Seventy-five Cases."

Dr. Robert C. Myles, New York City, read a paper entitled "A Second Report, After Ten Years' Experiences, Procedures and Results in Subperichondrial Operations on Cartilages of the Nasal Septum, and First Report on Subperiosteal Operations on the Bones of the Nasal Septum."

These three papers were discussed by Drs. T. R. Chambers, New York; J. S. Wishart, Toronto; J. C. Roe, New York; S. G. Richards, Massachusetts; Lilly, Boston; W. E. Casselberry, Chicago; Barnhill, Indiana; Emil Mayer, New York; Pischel, San Francisco; J. F. Byington, Michigan; L. M. Hurd, New York; R. C. Myles, New York. Dr. Sidney Yarkaner, New Jersey, exhibited instruments for the operation.

Dr. Pond spoke briefly of the appreciation of San Francisco physicians for the kindness shown by the profession after the calamity of April 18.

Wednesday, June 6—Morning.

Dr. Frederick L. Jack, Boston, read a paper on "Sinusitis and Orbital Abscess, with Recovery After Killian's Operation." Discussed by Drs. G. C. Coakley, New York City; H. P. Mosher, Boston; J. H. Harris, New York City; Eagelton, New Jersey; G. L. Richards, Fall River, Mass.; E. F. Ingals, Chicago; O. T. Freer, Chicago, and F. L. Jack.

Dr. Emil Mayer, New York City, read a paper on "Foreign Bodies in the Bronchi; Report of Three Cases." Discussed by Drs. E. F. Ingals, Chicago; A. Coolidge, Boston; S. H. Lodge, S. Yankowe, New York City; Horsfield, Hartford, Conn.; Shurly, Detroit; E. Mayer, New York City.

Dr. H. P. Mosher, Boston, read a paper on "Surgery of the Upper End of the Esophagus." Discussed by Drs. E. F. Ingals, E. Mayer, G. C. Coakley, Clark, Utica, N. Y.; R. C. Myles; C. M. Robertson and H. P. Mosher.

Dr. E. T. Gwathmey, New York City, read a paper entitled "Demonstration of a New Method of Anesthesia, Especially Adapted for Operations of the Upper Air Tract." Discussed by Drs. W. S. Bryant, R. C. Myles, L. A. Coffin, Sherman, Casselberry, Ingals, Robertson, M. H. Cryer and E. T. Gwathmey.

Wednesday, June 6—Afternoon.

The Section was called to order by the chairman at 2 p. m.

Dr. M. H. Cryer, Philadelphia, read a paper on "Some Variations in Frontal Sinuses."

Dr. C. G. Coakley exhibited radiographs illustrating a paper on "Skiagraph of the Air Sinuses."

These papers were discussed by Drs. L. A. Coffin, R. C. Myles, F. S. Snow, J. P. Clark, J. H. Harris, M. H. Cryer, H. P. Mosher, G. E. Shambaugh, N. H. Pierce and O. T. Freer.

Dr. George L. Richards, Fall River, Mass., presented a paper on "Atrophic Rhinitis, a Reproach to Rhinology." Discussed by Drs. W. E. Casselberry, O. T. Freer, A. H. Andrews, R. C. Myles, F. S. Snow, Elser, H. Smith, Cobb, Colby, Pond, C. F. Welty, J. L. Goodale, McDonald and Richards.

Dr. Cullen F. Welty, San Francisco, read a paper on "Acute and Chronic Suppuration of the Ear and Nose the Direct Cause of Facial Erysipelas." Discussed by Drs. J. L. Harris, J. W. Farlow, H. P. Mosher, John O. Roe and C. F. Welty.

Thursday, June 7—Morning.

Dr. C. M. Robertson, Chicago, read a paper on "Certain Facts Concerning Faucial Tonsils." Discussed by Drs. J. W. Farlow, J. L. Goodale, F. B. Sprague, C. F. Prince, C. F. Welty, A. H. Andrews, O. T. Freer and C. M. Robertson.

Dr. George E. Shambaugh, Chicago, gave a blackboard illustration of Histologic Specimens of Development of the Membranes of the Labryinth." Discussed by Drs. N. H. Pierce, O. T. Freer and Shambaugh.

Dr. H. O. Reik, Baltimore, read a paper and exhibited a "Protection Sheet for Mastoid Surgery. An Algesimeter." Discussed by Drs. Danser, F. B. Sprague, Eagelton, W. S. Bryant, P. Hammond and H. O. Reik.

Dr. W. Sohier Bryant, New York City, read a paper on "Results of Improved Technic in Otologic Surgery." Discussed by Drs. A. H. Andrews, P. Hammond, C. J. Blake, G. F. Welty, F. B. Sprague, Pond, J. F. Barnhill, H. O. Reik, E. B. Dench and W. S. Bryant.

Drs. E. S. Plummer and H. H. Germain, Boston, presented a paper on "A Modification of the Simple Mastoid Operation, which Shortens Convalescence by Facilitating Wound Repair." Discussed by Drs. F. B. Sprague, A. H. Andrews, J. F. Barnhill, G. L. Richards and E. M. Plummer.

Dr. Edward B. Dench, New York City, read a paper on "The Treatment of Intracranial Complications." Discussed by Drs. Hamilton Ballance, London, England; Charles L. Ballance, London, England; H. N. Pierce, F. L. Jack, A. B. Duell and E. B. Dench.

"Meninginism as Distinguished from Meningitis, from an Otologic Viewpoint," by Dr. Chevalier Jackson, Pittsburg.

Thursday, June 7—Afternoon.

The election of officers resulted as follows: Chairman, Dr. S. Makuen Smith, Philadelphia; vice-chairman, Dr. Philip Hammond, Boston; secretary, Dr. W. Sohier Bryant, New York City; executive committee, Drs. J. F. Barnhill, Indianapolis; Robert C. Myles, New York City; Otto T. Freer, Chicago; delegate, Dr. Otto T. Freer, Chicago.

Dr. Philip Hammond, Boston, read a paper on "Technic in the After-Care of Radical Mastoid Operation." Discussed by Drs. J. C. Blake, E. A. Crockett, Barnhill, Prince, C. F. Welty, Pischel and Hammond.

Dr. Philip D. Kerrison, New York City, read a paper on "The Use of Tuning Forks in the Diagnosis and Treatment of Deafness Due to Ossicular Rigidity." Discussed by Drs. C. J. Blake, Langhenbach, C. F. Welty and Philip D. Kerrison.

Dr. Clarence John Blake, Boston, read a paper on "Otology in Its Relation to Rhinology and Laryngology." Discussed by Drs. Shambaugh, Freer and Blake.

Dr. E. A. Crockett, Boston, read a paper on "Tuberculosis of the Middle Ear and Mastoid." Discussed by Drs. Pond, Ryerson, Toronto; C. F. Welty, F. L. Jack, Gildea and Crockett.

Dr. G. Sterling Ryerson, Toronto, Ont., read a paper on "Keratosis Obturans." Discussed by Drs. Crockett and Blake.

A hearty vote of thanks was given the profession of Boston for their handsome entertainment of the Section.

Section on Pharmacology and Therapeutics.

Dr. Thomas F. Reilly, New York, was in the chair and Dr. C. S. N. Hallberg, Chicago, was secretary.

Tuesday, June 5—Afternoon.

The meeting was called to order at 2:30 p. m. by Chairman Reilly in Tufts College Medical School.

The chairman introduced Dr. Frank G. Wheatley, Boston, who delivered the address of welcome.

The chairman then read a communication from the American Pharmaceutical Association, naming delegates to the Section.

Dr. Henry P. Hynson of Baltimore was introduced as chairman of the delegation from the Pharmaceutical Association and addressed the Section.

Dr. O. T. Osborne, New Haven, Conn., occupied the chair during the delivery of Chairman Reilly's address, which followed.

Dr. Heinrich Stern, New York, moved that a committee of three be appointed to act on the suggestions of Chairman Reilly, which were: 1, Revision of Pharmacopeia by representatives of the American Medical Association, the American Pharmaceutical Association and the National Chemical Society; 2, closer study of native plants and their active principles; 3, to study the relations of pharmacy to medicine.

Secretary C. S. N. Hallberg, Chicago, made a partial report.

Dr. O. T. Osborne, New Haven, Conn., read a paper entitled "The Therapeutic Uses of Thyroid Preparations." This paper was discussed by Drs. S. S. Cohen, Philadelphia; W. J. Robinson, New York; A. C. Croftan, Chicago; T. F. Reilly, New York; John Rogers, New York; A. W. Baer, Chicago; H. P. Hynson, Baltimore, and W. R. White, Providence, R. I., and Dr. Osborne.

Dr. Osborne appointed as members of the committee to act on the chairman's suggestions: Drs. H. Stern, New York; H. C. Wood, Jr., Philadelphia, and Chairman Reilly.

Dr. Robert A. Hatcher, New York, read a paper entitled "The Pharmacology of Digitalis."

Dr. H. C. Wood, Jr., Philadelphia, read a paper entitled "The Pharmacology of Veratrum."

These two papers were discussed together by Drs. G. H. Beebe, New York; H. R. Slack, Atlanta, Ga.; W. F. Waugh, Chicago; W. J. Robinson, New York; M. I. Wilbert, Philadelphia; W. C. Abbott, Chicago; C. S. N. Hallberg, Chicago; T. F. Reilly, New York, and Drs. Hatcher and Wood.

Dr. H. B. Sheffield, New York, read a paper entitled "Palatable Medication," which was discussed by Drs. John Rauschkolb, Columbus, Ohio; T. F. Reilly, New York; C. S. N. Hallberg, Chicago; W. J. Robinson, New York; H. P. Hynson, Baltimore, and Dr. Sheffield.

Wednesday, June 6—Morning.

Dr. F. Pfaff, Boston, read a paper entitled "Normal Peristalsis of the Stomach and Intestines and the Effects on It of Certain Drugs." This paper was discussed by Drs. H. C. Wood, Jr., Philadelphia; A. L. Benedict, Buffalo, N. Y.; T. F. Reilly, New York, and Dr. Pfaff.

Dr. De Lancey Rochester, Buffalo, N. Y., read a paper entitled "The Treatment of Asthma," which was discussed by Drs. George Dock, Ann Arbor, Mich.; M. H. Fussell, Philadelphia; H. Stern, New York; S. S. Cohen, Philadelphia; G. N. Jack, Buffalo, N. Y.; W. J. Robinson, New York; W. D. Calvin, Ft. Wayne, Ind., and Dr. Rochester.

Dr. A. L. Benedict, Buffalo, N. Y., read a paper entitled "The Measurement of Diet in Ambulant Patients," which was discussed by Dr. H. Stern, New York; W. R. White, Providence, R. I.; E. B. Fullerton, Columbus, Ohio, and Dr. Benedict.

Dr. H. Stern, New York, read a paper entitled "The Diet in Albuminuria; a Clinical Experimental Study," which was discussed by Drs. A. C. Croftan, Chicago; A. L. Benedict, Buffalo, N. Y.; H. C. Wood, Jr., Philadelphia, and Dr. Stern.

Dr. M. H. Fussell, Philadelphia, read a paper entitled "Prescribing Versus Dispensing," which was discussed by Drs. H. D. Jump, Philadelphia; H. R. Slack, Atlanta, Ga.; W. D. Calvin, Ft. Wayne, Ind.; C. A. E. Codman, Philadelphia; Mary E. Dunning, Newburgh, N. Y.; Tracy, South Boston: F. R. Dame, Medford, Mass.; M. I. Wilbert, Philadelphia; N. B. Bayley, Haverstraw, N. Y.; C. S. N. Hallberg, Chicago, and Dr. Fussell.

Wednesday, June 6—Afternoon.

Dr. W. F. Waugh, Chicago, read a paper entitled "Solanin," which was discussed by Drs. George F. Butler, Chicago; M. C. Thrush, Philadelphia, and Dr. Waugh.

Dr. Max Einhorn, New York, read a paper entitled "The Dietetic Treatment of Diabetes Mellitus," which was discussed by Drs. Stern, New York; S. S. Cohen, Philadelphia; O. T. Osborne, New Haven, Conn., and Dr. Einhorn.

Dr. M. I. Wilbert, Philadelphia, read a paper entitled "The Coming Revision of the U. S. Pharmacopeia. Some Suggestions and a Plea for More Active Medical Representation." This paper was discussed by Drs. O. T. Osborne, New Haven, Conn.; W. J. Robinson, New York, and C. S. N. Hallberg, Chicago (and others, see below).

Dr. O. T. Osborne made a motion that a committee of three be appointed by the chairman to consider the recommendations in Dr. Wilbert's paper and to report at the next annual session. This motion was discussed by Drs. W. J. Robinson, New York, and S. Solis Cohen, Philadelphia. The chairman appointed the following on this committee: Drs. O. T. Osborne, New Haven, Conn.; W. J. Robinson, New York; F. Edwin Lewis, New York.

Discussion was continued on Dr. Wilbert's paper by Drs. H. P. Hynson, Baltimore; M. G. Motter, Washington; S. S. Cohen, Philadelphia; Reid Hunt, Washington, D. C., and Dr. Wilbert.

Prof. C. Lewis Diehl, Louisville, Ky., read a paper entitled "The National Formulary. Its Attitude to Pharmaceutical Proprietaries."

Dr. H. Stern asked for instructions, as he must leave for the meeting of the House of Delegates. In accord with this, Secretary Hallberg read a report and a motion was made that the Section on Pharmacology and Therapeutics favors the establishment of a National Board of Health, that the delegate be instructed to lay that matter before the House of Delegates. The motion was discussed by Drs. S. Solis Cohen and F. Edwin Lewis. It was decided to have the chairman appoint a committee of three to consider the resolution suggestion by Dr. Hallberg. On this committee the chairman appointed Drs. S. S. Cohen, Philadelphia; H. E. Lewis, New York; H. Stern, New York.

Mr. Lyman F. Kebler, Washington, D. C., read a paper entitled "Nostrums and Fraudulent Schemes for Exploiting Them."

Dr. S. Solis Cohen, Philadelphia, read a paper entitled "The Limit of Proprietorship in Materia Medica," which was discussed by Drs. W. J. Robinson, N. Y.; M. I. Wilbert, Philadelphia; H. E. Lewis, New York; Reid Hunt, Washington, D. C.; H. P. Hynson, L. F. Kebler, Washington. D. C.; C. L. Diehl, Louisville, Ky., and S. Solis Cohen, Philadelphia.

Thursday, June 7—Morning.

Dr. E. B. Fullerton, Columbus, Ohio, read a paper entitled "The Quinin Treatment of Chorea." Discussed by Drs. N. R. Coleman, Columbus, Ohio; E. B. Fullerton, Columbus, Ohio; S. S. Cohen, Philadelphia; A. W. Baer, Chicago; F. E. Lewis, New York; C. H. Hughes, St. Louis, and Butler.

Prof. W. A. Puckner, Chicago, read a paper entitled "The Chemistry of the Organic Silver Compounds." Discussed by Drs. S. S. Cohen, Philadelphia; W. J. Robinson, New York; H. P. Hynson, Baltimore; C. H. Hughes, St. Louis, Mo.; C. S. N. Hallberg, Chicago, and Professor Puckner.

Dr. J. M. Johnston, Boston, read a paper entitled "Addenda to Therapeutic Measures in Certain Forms of Nephritis." Discussed by Drs. W. J. Robinson, New York; A. R. Elliott, Chicago, and Dr. Johnson.

Dr. W. J. Robinson, New York, read a paper entitled "A Novel Method of Using Strychnin and Hydrastin, Particularly in Vesical and Sexual Weakness." Discussed by Drs. E. T. Tracy, Boston; W. C. Abbott, Chicago; A. L. Benedict, Buffalo, N. Y., and Dr. Robinson.

Dr. A. L. Benedict, Buffalo, N. Y., called the attention of the members of the Section to the working of an ingenious dietetic apparatus invented by Prof. Irving Fisher of Yale College.

Thursday, June 7—Afternoon.

Mr. W. A. Puckner, Chicago, was elected a pharmaceutical member of the Section.

Dr. H. E. Lewis presented the report of the committee on resolutions, which was approved.

Dr. H. Stern, delegate of the Section to the House of Delegates, reported a great deal accomplished during the session.

A vote of thanks was tendered Dr. G. H. Simmons, Chicago, General Secretary of the Association, for the able and efficient manner in which he has conducted the business of the Association during the past year, and for his especial interest in this Section.

Dr. O. T. Osborne, New Haven, Conn., in behalf of the Nominating Committee, announced the following nominations, which were unanimously elected: Chairman, H. C. Wood, Jr.; vice-chairman, H. R. Slack, La Grange, Ga.; Secretary, C. S. N. Hallberg, Chicago; Delegate, S. Solis Cohen, Philadelphia.

The chair appointed as a delegation to the next meeting of the American Pharmaceutical Association Dr. W. J. Robinson, New York; Mr. W. A. Puckner, Chicago; Drs. F. G. Wheatley, Boston; M. V. Tyrode, Boston; M. I. Wilbert, Philadelphia.

Dr. E. Otis, Boston, read a paper entitled "The Tuberculosis Dispensary. Its Value, Methods and Limitations." Discussed by Drs. O. T. Osborne, New Haven, Conn.; K. Dunham, Cincinnati; F. E. Lewis, New York; S. S. Cohen, Philadelphia; Kenyon, Boston; T. F. Reilly, New York, and Dr. Otis.

Dr. C. S. N. Hallberg, Chicago, read a paper entitled "The External

Preparations of the U. S. Pharmacopeia (Eighth Decennial Revision)." Discussed by Drs. A. W. Baer, Chicago; W. J. Robinson, New York; H. P. Hynson, Baltimore, and Dr. Hallberg.

Dr. A. Jacobi, New York, read a paper entitled "Methylthionin Hydrochlorid in Inoperable Cancer." Discussed by Drs. H. R. Slack, Atlanta, Ga.; W. J. Robinson, New York; S. S. Cohen, Philadelphia; J. M. Morton, New York, and Dr. Jacobi.

Dr. Slack assumed chair, owing to Chairman Reilly having to leave.

The Section tendered a vote of thanks to the retiring chairman and secretary for their efficient work and fair conduct of the sessions.

Dr. C. L. Leonard, Philadelphia, read a paper entitled "The Therapeutic Uses and Dangers of the Roentgen Rays."

Dr. R. H. Boggs, Pittsburg Pa., read a paper entitled "The Application of the Roentgen Rays in the Treatment of Superficial Lesions."

Dr. Ennion G. Williams, Richmond, Va., read a paper entitled "The Treatment of Malignant Disease by the Roentgen Rays."

These three papers were discussed by Drs. G. C. Johnson, Pittsburg, Pa.; Percy Brown, Boston; J. H. Stuart, Minneapolis, Minn.; C. A. Dennett, Boston; J. M. Morton, New York; M. K. Kassabian, Philadelphia; K. Dunham, Cincinnati; M. H. Wheatland, Newport, R. I.; C. S. N. Hallberg, Chicago, and Drs. Leonard and Boggs.

Section on Pathology and Physiology.

Tuesday, June 5—Afternoon.

Dr. Henry A. Christian, Boston, chairman, delivered an address on "Recent Work in Pathology and Physiology."

Dr. E. E. Southard, Boston, read a paper entitled "A Study of Acute Leptomeningitis (*Streptococcus pyogenes*)."

Dr. Gustav F. Ruediger, Chicago, read a paper on "Bacteria of Scarlatinal and Normal Throats," which was discussed by Drs. W. J. Raymond, Washington, D. C.; Henry A. Christian, Boston; W. H. Welch, Boston; G. W. McCaskey, Ft. Wayne.

Dr. S. B. Wolbach, Boston, read a paper on "Blastomyces Groups of Organisms," which was discussed by Dr. W. Ophüls, San Francisco.

A paper by Drs. R. M. Pearce and J. L. Archambault, Albany, N. Y., on "Tuberculosis of an Adenomyoma of the Uterus" was read by Dr. Robertson, and discussed by Dr. Henry A. Christian, Boston.

Dr. E. E. Tyzzer, Boston, read a paper entitled "The Simultaneous Occurrence of Two Non-Related Tumors in a Mouse."

Dr. John C. Hemmeter, Baltimore, described and gave a blackboard illustration of "An Improved Operative Method of Forming an Experimental Accessory (Pawlow) Stomach of the Dog."

Dr. Samuel F. Orton, Boston, read a paper on "Pathologic Findings in Two Cases of Mycosis Fungoides."

Wednesday, June 6—Morning.

Dr. Winfield S. Hall, Chicago, read in abstract the paper on "Determination of the Normal Temperature of Closed Inguinal Fold of Child and Its Clinical Significance," by Dr. A. H. Parks, Chicago, which was discussed by Dr. Meltzer, New York.

Dr. Winfield S. Hall, Chicago, also read in abstract a paper on "The Influence of Intraperitoneal Injection of Warm Sterile Normal Saline Solution in Cases of Intraperitoneal Hemorrhage," by Dr. Mark Jampolis, Chicago, which was discussed by Drs. S. J. Meltzer, New York, and V. C. Vaughan, Ann Arbor.

Dr. Winfield S. Hall, Chicago, presented an abstract of a paper on "Diagnosis of Abdominal Hemorrhage," by Dr. H. S. Hollenbeck, Chicago.

Dr. W. T. Lombard, Ann Arbor, Mich., read a paper on "Recording Changes of Weight Occurring within Short Intervals of Time," which was discussed by Drs. Graham Lusk and S. J. Meltzer, New York.

A committee to nominate officers for the ensuing year, to report after the morning session June 7, was announced as follows: Drs. W. Ophüls, San Francisco; F. B. Wynn, Indianapolis, and W. B. Cannon, Boston.

Dr. W. B. Cannon, Boston, read a paper on "Motor Activities of Alimentary Canal After Splanchnic and Vagus Section," which was discussed by Drs. W. Ophüls, San Francisco; S. J. Meltzer, New York, and Winfield S. Hall, Chicago.

Dr. Henry Sewall, Denver, read a paper entitled "Experiments on Venous Blood Pressure in Man," which was discussed by Dr. W. T. Lombard, Ann Arbor.

Dr. Frederick P. Gay, Boston, read a paper on "Causes of Error in Elective Absorption Experiments."

Dr. Max von Frey, Wurzburg, Germany, read a paper on the "Distribution of Afferent Nerve Fibers in the Skin," which was discussed by Drs. L. F. Barker, Baltimore; S. J. Meltzer, New York; S. T. Frank, Waverly, Mass., and Harvey Cushing, Baltimore.

Wednesday, June 6—Afternoon.

A joint meeting was held with the Section on Practice of Medicine.

Dr. Joseph A. Capps, Chicago, read a paper entitled "Some Observations on the Effect of the Withdrawal of Fluid from the Thorax on the Blood Pressure."

Dr. Sherman G. Bonney, Denver, read a paper on "Chronic Non-Tubercular Affections of the Lung."

Dr. John H. Musser, Philadelphia, read a paper on "The Diagnosis and Treatment of Abscess, Loculated Empyema and Gangrene of the Lung."

Dr. Frederick Forchheimer, Cincinnati, read a paper on "Treatment of Pleurisy with Effusion."

The above four papers were discussed by Drs. J. C. Wilson, Philadelphia; J. N. Hall, Denver; C. E. Edson, Denver; C. M. Cooper, San Francisco, and D. L. Rochester, Buffalo.

Dr. Percy Musgrave, Boston, read a paper on "Cytology of Pleural Effusions."

Dr. L. W. Ladd, Cleveland, read a paper on "Bacteriology of pleural effusions."

Thursday, June 7—Morning.

The paper on "Treatment of Emaciation," by Dr. L. Breisacher, Detroit, was read by the secretary.

Dr. T. W. Hastings, New York City, read a paper on "Albumins in the Urine," which was discussed by Drs. Henry A. Christian, Boston; G. W. McCaskey, Ft. Wayne, Ind.; F. C. Wood, New York, and L. W. Ladd, Cleveland.

Dr. H. E. Robertson, Albany, read a paper on "Ether Glycosuria."

Dr. G. W. McCaskey, Ft. Wayne, Ind., read a paper on "Relation of Uric and Phosphoric Acid Excretion, with an Analysis of One Hundred Cases," which was discussed by Dr. Graham Lusk, New York.

Dr. Graham Lusk, New York, presented a paper on "Lactic Acid in Metabolism."

Dr. William J. G. Gies' paper on "Mucoid Salts" was read by Dr. William Salant, New York.

Dr. William Salant, New York, read a paper on "The Pathology of the Bile."

Dr. Wesley Mills, Montreal, read a paper entitled "A Physician's Creed, Past and Present, as to the Physiology of the Heart." A vote of appreciation was extended to Dr. Mills.

The nominating committee presented the names of Dr. Walter L. Bierring, Iowa City, Iowa, for chairman; Dr. W. B. Cannon, Boston, secretary, and Dr. W. S. Hall, Chicago, delegate.

The report was adopted and the ballot cast by the chairman on motion of Dr. T. W. Hastings, New York.

Friday, June 8—Morning.

Dr. Walter L. Bierring, Iowa City, Iowa, read a paper entitled "A Study of Blood in Banti's Disease Before and After Splenectomy," which was discussed by Dr. Maximilian Herzog, Manila, P. I.

Dr. M. J. Rosenau, Washington, D. C., read a paper on "Cause of Sudden Death Following the Injection of Horse Serum," which was discussed by Drs. V. C. Vaughan, Ann Arbor, Mich.; G. F. Ruediger, Chicago, and Theobald Smith, Boston.

Dr. D. H. Bergey, Philadelphia, presented a paper entitled "Studies in Phagocytosis," which was read by Dr. Christian.

Dr. Joseph McFarland, Philadelphia, read a paper on "Experimental Phagocytosis."

Dr. Warfield T. Longcope, Philadelphia, read a paper entitled "A Study of Bone Marrow in the Terminal Stages of Acute Infections."

Dr. W. G. MacCallum, Baltimore, read a paper on "Unusual Varieties of Cirrhosis of the Liver," which was discussed by Dr. W. Ophüls, San Francisco.

Dr. W. S. Hall, Chicago, made a motion, that, owing to the shortness of time, papers 8, 28 and 33 be regarded as "read in brief," and referred to the executive committee with the recommendation that they be published. Motion carried. These papers were: "Melanotic Carcinoma," by Dr. Henry Albert, Iowa City, Iowa: "Specific Therapy in Typhoid Fever—Six Years' Experience in 132 Cases," by Dr. Mark W. Richardson, Boston; and "Blood Plates; Their Significance as an Index to the Effects of Climatologic Changes, Especially Altitude, on the Blood," by Dr. George T. Kemp, Champaign, Ill.

Dr. J. H. Pratt, Boston, read a paper on "Variations in the Number of Blood Plateiets in Disease."

Dr. Shepherd I. Franz, Waverly, Mass., read a paper entitled "Observations on the Functions of the Association Areas (Cerebum) in Monkeys."

Dr. Claude A. Smith, Atlanta, Ga., read a paper entitled "The Causative Factor in the Production of the Dermatitis of Ground Itch," which was discussed by Dr. Henry A. Christian, Boston.

Dr. William Salant, New York, made a brief preliminary report on "Influence of Alcohol on Hepatic Glycogen."

Book Notices

Treatment of Gonorrhea in the Male. By C. Leedham-Green, M.B., F.R.C.S., Senior Surgeon to Out-Patients, Queen's Hospital, Birmingham, etc. Cloth. Pp. 151. Price, $2.00 net. New York: William Wood & Co.

The anatomy of the bladder and urethra is briefly given, the important distinction between anterior and posterior urethra due to the action of the compressor urethræ being emphasized. After four chapters devoted to symptoms and diagnosis, in which emphasis is laid on the careful examination of the urine, the treatment is taken up. Prophylactic and abortive measures, it is stated, have not proved efficacious; internal remedies may be used in the earliest stages, but in the majority of cases local injections of non-irritating antiseptics may be begun at once. Stress is laid on the methods of determining when the inflammatory process is terminated. In chronic urethritis irrigation of the entire urethra by Diday's method is recommended, with subsequent treatment of localized inflammation by instillation or eventually dilatation of contracted portions of the urethra. The complications of gonorrhea are fully described with the exception of conjunctivitis and some of the rarer constitutional manifestations. The relation of gonorrhea to marriage is dealt with in the final chapter.

Case Teaching in Medicine. A Series of Graduated Exercises in the Differential Diagnosis, Prognosis and Treatment of Actual Cases of Disease. By R. C. Cabot, A.M., M.D., Instructor in Medicine in the Harvard Medical School and Physician to Out-patients at the Massachusetts General Hospital. Cloth. Pp. 214. Price, $1.50. Boston: D. C. Heath & Co. 1906.

This little book has the merit of being novel. It is not intended to take the place of bedside work or ordinary clinical instruction, but to give the student training in the interpretation of facts. The successful physician, of course, has to learn, first, to see things, and, second, to interpret what he sees. The exercises in this book are designed to train him in the latter ability. As Cabot puts it, "After the student has learned to open his eyes and see, he must learn to shut them and think." If rightly used, the book will be a valuable help in training students to correct and logical thinking. The case histories are concisely yet clearly given, with just enough of the leading points omitted, and enough misleading facts included to exercise the student in the ability to disregard the non-essentials and to seek by still further questioning for the essentials that are omitted. These are not purely hypothetical cases, but are, we judge, cases whose histories have been obtained from hospital and private records. In the teachers' edition suggestive hints are given as to questions that can be asked of the class, and the answers also are included. The indexes are very complete. While something might be said against this method of teaching as compared to the similar methods with a concrete case before the student, there are many things that can be said in favor of this plan, and to those who wish to adopt the case teaching in medicine the book can be most heartily recommended.

Operative Otology. Surgical Pathology and Treatment of Diseases of the Ear. By C. J. Blake, M.D., Professor of Otology in Harvard University, and H. O. Reik, M.D., Associate in Ophthalmology and Otology, Johns Hopkins University. Cloth. Pp. 359. Price, $3.00. New York: D. Appleton & Company, 1906.

This book contains 359 pages including a well arranged index. There are 13 full-page plates and 40 illustrations in the text and, as a rule, it must be said that the pictures are very inferior. Such illustrations as are found opposite the title page or on pages 4, 5, 13, 15 are very unsatisfactory, provided they are intended to mean anything. The brain and skull specimens, when seen in the original were, doubtless, both interesting and instructive, but as reproduced in the illustrations they are uninstructive.

A similar criticism may be made of some of the bone specimens reproduced in the illustrations, as they seem to be rather meaningless in their appearance. We regret to see so many time-honored pictures in the text. It would seem as if most of these old pictures had nearly served their usefulness, and while perhaps nothing better can be found on certain phases of the subject, nevertheless, for the sake of novelty, it would be refreshing to find a text-book in which new pictures had taken the place of the old.

While we do not desire to discourage a high literary plane for medical books, we earnestly believe that books of this character written in perfectly plain, readable and uncomplicated English, are much better for the average medical reader. It is difficult to read a book in which the literary style is so "high" as to require one to read a sentence over a number of times in order to ferret out the author's meaning. Perhaps this criticism would not be necessary for others, but we have been compelled to follow this course in a good many pages of the book under consideration.

Many of the chapters are both interesting and instructive, as, for instance, chapter 2, on "Aseptic Technic." This chapter is particularly commendable because it goes into all of the minute preparations for an operation, the preparation of instruments and appliances, the preparation of the operator, operating suit, etc. Not many books are as satisfactory in their explanations and suggestions concerning these subjects as the one under consideration. We believe that it would be decidedly advantageous to everyone expecting to do aural surgery to peruse this chapter carefully several times. The suggestions on the subjects of anesthesia and anesthetics are very good and clear.

Chapter 7, on mastoid operations, is an interesting chapter, and contains many points on which the aural surgeon may rely. We distinctly object, however, to the paragraph on page 246 in which the authors says, "The first opening in the cortex may be made either with a *gouge* or chisel, and should in all cases be large enough to admit of free access to the mastoid cavity." The modern mastoid operator should be sufficiently well posted as to the anomalous positions of the sigmoid sinus to preclude the possibility of the use of any instrument which may plunge or bore itself into the substance of the mastoid cortex as does a gouge or drill. In this operation the cortex should be removed gradually, shaving by shaving, until the interior of the shell is exposed and we are well aware as to the normal or abnormal position of its contents. We also take the liberty of criticising the picture showing the position of Allport's retractors in the mastoid wound. If we recall aright Allport devised these retractors some years ago, when the usual opening in the wound was small. At that time one pair of retractors was sufficient to keep the wound open and to produce sufficient pressure to control hemorrhage, but as the mastoid operation developed and became more extensive in its character, and a much larger wound was necessary in order to fully expose the parts, it became necessary to use two retractors instead of one, one pair in the upper angle of the wound and the other in the lower; for by using two sets of retractors instead of one and expanding the arms of the retractors with sufficient force, the operative area becomes fully exposed and all hemorrhage in the soft parts ceases. For the modern operator, therefore, one retractor is not sufficient, and the retractors should also be much stronger and thicker than the one depicted in this book and should also be expanded with much more vigor in order to control all soft part hemorrhage. The authors in this chapter recommend the blood clot method of dressing. We can not agree with them as regards the wisdom of this method of procedure, and believe that it will at least have to be tried much more and longer before it will receive the endorsement of modern operators.

Chapter 8, devoted to adenoids, and also to blood infusions and lumbar punctures, is a very commendable chapter, especially as it goes into details concerning the operative methods of the last two procedures.

State Boards of Registration

COMING EXAMINATIONS.

New Hampshire State Medical Board, Concord, July 6-7. Regent, H. C. Morrison, Concord.

Arkansas State Medical Examining Board, Little Rock, July 10. Secretary, J. P. Runyan, Little Rock.

Boston State Board of Registration in Medicine, State House, Boston, July 10-11. Secretary, Edwin B. Harvey, Boston.

Connecticut Medical Examining Board, City Hall, New Haven, July 10-11. Secretary, Charles A. Tuttle, New Haven.

Maine Board of Registration of Medicine, State House, Augusta, July 10-11. Secretary, W. J. Maybury, Saco.

Oregon State Board of Medical Examiners, Portland, July 10-12. Secretary, Byron E. Miller, Portland.

Vermont State Board of Medical Registration, Burlington, July 10-12. Secretary, W. Scott Nay, Underhill.

West Virginia State Board of Health, Charleston, July 10-12. Secretary, H. A. Barbee, Point Pleasant.

Wisconsin State Board of Medical Examiners, Madison (Park Hotel), July 10-12. Secretary, J. V. Stevens, Jefferson.

South Dakota Board of Medical Examiners, Watertown, July 11-12. Secretary, H. E. McNutt, Aberdeen.

District of Columbia Board of Medical Supervisors, Washington, D. C., July 12. Secretary, W. C. Woodward, Washington, D. C.

Reciprocity in Illinois.—The State Board of Health withdrew from the American Confederation of Reciprocating State Medical Examining and Licensing Boards at the meeting held in Chicago, June 20, 1906, and by unanimous resolution declined to reciprocate after Jan. 1, 1907, with any state board which exacts a supplemental examination of an applicant who has passed an examination before another board, or which requires that the applicant shall have practiced one year in the state in which he was licensed, or requires that the license issued to said applicant be dated one year previous.

The following resolutions were also adopted:

1. *Resolved*, That the Illinois State Board of Health will accept, in lieu of the examination provided for in Section 2 of the Act to Regulate the Practice of Medicine in the State of Illinois, approved April 24, 1899, satisfactory evidence of an examination at least equivalent to that exacted by the rules of the Illinois State Board of Health, successfully passed in the United States Army, the United States Navy or the United States Public Health and Marine-Hospital Service, by a surgeon in the service of the United States at the time of making application for a state certificate to practice medicine in the State of Illinois.

2. *Resolved*, That the application of a physician for a state certificate based on a state license issued, after examination, by a

state board with which the Illinois State Board of Health sustains reciprocal relations, must be accompanied by letters of recommendation with regard to the moral, professional and ethical character of the applicant:

(a) From at least two members of the state board of examination issuing the original license, who shall certify that they have personally known the applicant for one year or more; or

(b) From a state, district, county or city medical society in the state from which the applicant comes; or

(c) From at least two of the duly elected officers of such state, district, county or city medical society, who shall certify that they have personally known the applicant for one year or more; or

(d) From at least two physicians approved by the state board of health, who are of national reputation, and who reside in the state from which the applicant comes, and who shall certify that they have personally known the applicant for one year or more; and

(e) From at least two reputable physicians, approved by the state board of health, of the county in which the applicant last resided.

Massachusetts March and May Reports.—Dr. E. B. Harvey, secretary of the Board of Registration in Medicine, reports the written examinations held at Boston, March 13-14, and May 8-9, 1906. The number of subjects examined in was 11; total number of questions asked, 60; percentage required to pass, 70.

At the March examination the total number of candidates examined was 77, of whom 47 passed, including 3 non-graduates and 4 osteopaths, and 30 failed, including 13 non-graduates and 2 osteopaths. The following colleges were represented:

College.	Year Grad.	Per Cent.
PASSED.		
College of P. & S., Iowa*	(1882)	70.1
Baltimore University	(1905)	71.6
University of Boston (1903) 77.8;	(1905)	75
Harvard University. (1902) 76.6; (1903) 75.6; (1904) 73.5, 77.8, 84; (1905) 70.3, 73.5, 73.5, 74.3, 75.1, 75.3; (1906) 74.5.		
College of P. & S., Boston (1904) 70, 75;	(1905)	70, 70.6
Tufts College Med. School, (1905) 70.5, 72.8, 73.1, 73.3, 81.8, 80.8; (1906) 74.6.		
New York Homeo. Med. Coll	(1903)	72
Leonard Med. Coll	(1904)	71.5
University of Pennsylvania	(1904)	79.3, 81
Medico-Chirurgical College, Philadelphia	(1901)	81 6
Woman's Med. Coll. of Philadelphia. (1883) 84.3;	(1904)	74.3
University of the South	(1905)	71.8
University of Vermont	(1905)	74.6, 77.5
Queen's University, Ontario (1905) 70, 72;	(1903)	75.8
FAILED.		
Illinois Med. Coll	(1902)	66.1
Kentucky School of Med	(1904)	66.6
Baltimore Med. Coll. (1901) 61.1; (1903) 43.5; (1904) 64.8; (1905) 54, 66.3; (1905)†.		
Maryland Med. Coll	(1905)	64.3
College of P. & S., Boston	(1905)	52.5
Tufts College Med. School	(1905)	67, 68.1
Albany Med. Coll	(1892)	55.8
Laval University, Quebec	(1905)	54.8, 57.3

At the May examination the total number of candidates examined was 47, of whom 22 passed, including 2 non-graduates and 3 osteopaths, and 25 failed, including 10 non-graduates and 5 osteopaths. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Medical School of Maine (1897) 71.8;	(1905)	75.5
Baltimore Med. Coll	(1905)	71.6
Tufts College Med. School	(1905)	71, 76
Harvard University (1903) 73; (1904) 72.1, 80.1; (1905) 70.3; (1906) 72.8, 73.1.		
Boston University	(1903)	76
University of Michigan	(1897)	71.5
Dartmouth Med. Coll.	(1906)	76.5
Albany Med. Coll. (1905) 76.5;	(1906)	77.3
McGill University, Quebec	(1905)	76.3
FAILED.		
Kentucky School of Med	(1904)	66
Baltimore Med. Coll. (1905) 53.5;	(1905)	†
Maryland Med. Coll	(1905)	64.1
Baltimore University (1903) 38.3;	(1904)	50 8
Tuft's College Med. School	(1905)	64.8
College of P. & S., Boston	(1905)	50.5
Leonard Med. Coll	(1905)	63.1
Laval University	(1905)	55.6

* Now the Keokuk Medical College, College of Physicians and Surgeons.

† Examination not completed.

South Carolina June Report.—Dr. W. M. Lester, secretary of the South Carolina State Board of Medical Examiners, reports the written examination held at Columbia, June 12-14, 1906. The number of subjects examined in was 13; total number of questions asked, 11; percentage required to pass, 75. The total number of candidates examined was 52, of whom 39 passed and 13 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Howard University	(1905)	75.7
Atlanta College of P. & S.	(1906)	83.7
University of Georgia	(1906)	80.2
University of Louisville	(1905)	89.5
Hospital Coll of Med., Louisville	(1905)	79.1
University of Maryland	(1906)	82.1, 82.3, 86.7
North Carolina Med. Coll	(1906)	90.5
University of North Carolina	(1906)	83.1
Leonard Med. Coll. (1905) 81;	(1906)	83.6
Jefferson Med. Coll (1893) 91.1;	(1906)	90.1
South Carolina Med. Coll., (1901) 81.7; (1905) 75, 79.3, 81.7, 86, 88, 94; (1906) 78.3, 79.7, 82, 83.5, 83.6.		
University of the South	(1897)	83.8
University of Nashville (1905) 78, 83.6;	(1906)	78.1, 81.3, 85.6, 91.1
Meharry Med. Coll	(1906)	75, 81
Vanderbilt University	(1906)	88.7
Med. Coll. of Virginia	(1906)	80.5, 85.3, 90.5
FAILED.		
University of Georgia	(1906)	54.3, 66.7, 69.2
Maryland Med. Coll. (1904) 62.7, 71.1, 79.5;*	(1906)	65.8
Leonard Med. Coll	(1906)	71.2
South Carolina Med. Coll	(1905)	55.6
Meharry Med. Coll.	(1906)	71.5
University of Tennessee	(1905)	48.2
Knoxville Med. Coll.	(1905)	53.1
Chattanooga Med. Coll	(1905)	68.6

* Made less than 60 per cent. on one branch (chemistry).

Wyoming June Report.—Dr. S. B. Miller, secretary of the Wyoming State Board of Medical Examiners, reports the written examination held at Cheyenne, June 6, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 4 passed and 3 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent.
PASSED.		
Denver & Gross Coll. of Med	(1905)	80.1, 81.3
St. Louis University	(1904)	75
University of Pennsylvania	(1904)	78.7
FAILED.		
University of Michigan*	(1883)	
Missouri Med. Coll*	(1889)	
Royal University, Padua, Italy*	(1884)	

* Per cent. not given.

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Academy of Ophthal. and Otolaryn., Detroit, Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held at Cleveland, Ohio, May 30-June 1, 1906.

(*Continued from page 2017.*)

Carcinoma and Sarcoma Appearing in Same Patient.

Dr. Albert Vander Veer,[1] Albany, N. Y., for many years has had in mind the possibility of the duality of malignant diseases, that is, as to carcinoma and sarcoma presenting in the same patient, and as to the genesis of many cases appearing in the same family. He was first attracted to this subject by the case of Mrs. P. R., aged 57, who had an acute carcinoma of the left breast. While being prepared for operation she was suddenly seized with a convulsion, ending in immediate death. An autopsy revealed a tumor of the dura, extending outward, ulcerating nearly through the cranium, and which caused deep pressure on the brain substance. No other growths were found in the brain, and, aside from the left breast, all other organs were in a healthy condition. Microscopical examination classed the brain tumor as a sarcoma. Microscopical examination of the tumor of the breast showed it to be an acute scirrhus carcinoma.

In May, 1880, he was called to see Miss C. J., aged 50. For nearly two years she had noticed a growth in her left breast, which finally ulcerated. On examination a carcinoma, far advanced, was found. There were large masses in the axilla and in the supra and infraclavicular spaces. No operation was possible, the patient dying June 10, 1880, from sepsis. There was no autopsy. Her family history was of interest. Her father, aged 73, had recently died from an extensive and long-standing epithelioma of the lip and face, and which had involved the glands of the neck. A paternal uncle died at the age of 56, with some form of malignant disease of the foot. Her mother, aged 70, was in good health and gave a good family history, but later died from some kidney complication.

Some time after Miss J.'s death her sister, aged 53, noticed a tumor in her left breast. It was plainly a movable, acute carcinoma, without axillary complications. An immediate operation was advised and agreed to. The operation was very thorough, extending far up in the axilla, but not removing the pectoral muscle. She remained well for about fifteen months, when a few nodules appeared in the cicatrix, which ulcerated, giving her little annoyance, but within a short time she died from metastases of the liver and stomach. No autopsy was held. Examination of the tumor removed classed it as an acute scirrhus.

In May, 1889, he saw another sister, aged 50, married, mother of one child. She had a tumor in her left breast, associated with sharp, lancinating pains, retraction of the nipple, and all the symptoms which she had noticed in her sisters' cases. She was operated on and remained well until January, 1903, when she had marked abdominal pain. On examination it was evident she was suffering from an ovarian cyst. At operation a multilocular cyst was found connected with the left ovary. Pathologic examination of the tumor demonstrated it to be an ovarian cyst with secondary papillomatous and carcinomatous degeneration. In May, 1904, she began to suffer with severe abdominal pain; abdomen tender to touch, and some slight nausea. Incision revealed a large cyst connected with the right ovary. This was aspirated, but the cyst wall was found so thoroughly adherent to the surrounding tissues, including appendix, head of cecum, and small intestines, that it was found impossible to remove it entirely. The greater portion was excised and laboratory examination revealed the same general characteristics as the previous tumor of the left ovary. She was improved after this, being quite comfortable until within two weeks of her death, October, 1904. There was no autopsy, but every evidence of the mesenteric glands and stomach being involved. The breast scar showed no return of the growth and in every way she had enjoyed perfect use of her arm.

In April, 1897, he saw this lady's husband, aged 56. He had an enlargement of the right testicle, sarcomatous in character. A thorough operation was done for removal of the diseased organ, and he remained well for years. There was no return of growth in cicatrix, nor metastasis, as shown at the autopsy. He died in May, 1900, of arteriosclerosis and great dilation of heart.

In September, 1897, he saw the third sister, aged 51, and mother of six children. She called his attention to a sore she had noticed under right breast, in the flexure of the skin, which had existed for several months. It had all the appearance of a true epithelioma. She begged not to have the knife used and he treated it with Vienna caustic and arsenious acid paste. The ulcer healed kindly and remained well, she passing her menopause without any growths appearing elsewhere. From May, 1903, he had this same patient under observation for prolapse of the uterus, second degree, with a constant leucorrheal discharge, occasionally tinged with blood. He made a number of careful examinations and was unable to locate any malignant growths. Under the use of douches and the wearing of a rubber ring pessary she was made very comfortable. October, 1905, she noticed a small tumor in the left breast. He kept close watch of the growth, and in January, 1906, insisted on an immediate operation. She was now 60 years of age. He did a thorough dilatation and curettement of the uterus, repair of perineum, removed several hemorrhoids, and while under ether made a complete examination of the pelvis and abdomen. There was no abnormal condition present. He then removed the left breast and contents of axilla. Microscopic examination showed the case to be one of carcinoma of the breast, with metastasis to lymphnodes; chronic endocervicitis, with papillomatous proliferation of surface epithelium. Patient made a good recovery.

In May, 1896, the daughter of the third sister met with a severe accident, accompanied with concussion of the brain. She, however, made a good recovery. Later she passed through a severe attack of typhoid fever. Not long after her convalescence she developed epileptic seizures, at times very serious, then better. She lingered some years, and died May 15, 1900, with marked symptoms of tumor of the brain. The case was considered to be one of sarcoma of the brain.

In the study of these cases the thought of house infection is to be considered. The first two sisters were born in the house where the uncle passed much of his time, when suffering from malignant growth of the foot. The last two were born in the house and lived where the father was attacked with epithelioma of the lip and face, and was ill for a long time. It is somewhat interesting to note that of the four sisters it was the left breast implicated in each case.

Some Experiences in Intracranial Surgery.

Mr. Charles A. Ballance, London England, said that surgical intervention is, at present, the only remedy for certain intracranial diseases, but only too generally the same apathy prevails in adopting this remedy. Prominent among the obstacles to successful operation for intracranial disease, and particularly for brain tumor, is the difficulty of making a precise diagnosis at an early stage of the disease. Another point of practical interest is that a highly cellular tumor of the brain is not necessarily very malignant. This is true not of brain tumors only, but of tumors of other parts of the body; thus a large cellular *carcinoma mammæ* may prove less malignant than a small atrophic scirrhus with few cellular elements. In 1903 he drained a large gliomatous cyst in the left frontal lobe of a man under the care of Sir William Gowers. The symptoms were relieved, but recurred two years later. He then removed a large mass of tumor from the same region. The patient left the hospital well and proposed to resume his work. In 1889 he removed a tumor from the cerebellum of a child, aged 3½ years. The main localizing sign was a bulging occipital fossa. Last year a boy, 6½ years, was admitted to his ward with signs of cerebellar tumor. The right cerebellar region was slightly more prominent. This sign, anatomical in this case, led to exploration on the wrong side. The symptoms were paroxysmal headache, vomiting and cerebellar gait; unsteadiness in standing, but without marked tendency to fall to one side more than to the other; deviation to the right in walking and in running; inco-ordination of limbs to an equal extent on the two sides; optic neuritis on both sides, most marked on the left. The attitude of the head was that described by Batten as corresponding to left cerebellar tumor. The cyst was drained at a second operation, but the child did not survive. Male, aged 4 years and 10 months. Left occipital fossa bulged considerably. Inco-ordination of left upper limb. Large tuberculous tumor removed. Child is now well. Female, aged 7 years and 10 months. No bulging of occipital region. No regional diagnosis possible. Right cerebellar region first explored; then left. Large tuberculous tumor removed. Patient made good progress for three months. Death then occurred suddenly from hemorrhage, possible scorbutic in origin, tearing up the whole left cerebral hemisphere. In 1894 he removed an encapsulated fibrosarcoma from the right cerebellar fossa of a woman, aged 49 years, and she is alive and well.

Abscess in the brain should be treated like an abscess elsewhere. In most cases of slowly spreading infection from chronic disease adhesions occur at the site of infection, binding together dura, arachnoid, pia and cortex. In the case of subdural hematoceles, satisfactory results are obtained by removing such cysts. In one case of his a cyst 7 by 4½ by 1½ inches, was successfully removed. He has seen three other cases. In meningitis serosa the withdrawal of fluid may prevent the meningitis going on to suppuration.

There are two methods of dealing with hydrocephalus. (1), Intradural drainage. This can be carried out through the lateral angle of the anterior fontanelle, or the descending cornu of the lateral ventricle on the right side may be opened by the method of Keen. A fine tube, bent at right angle, made of gold and iridium, or of pure platinum, should be used. (2), Ligature of both carotids. The secretion of fluid may be lessened by ligature of one or both common carotid arteries. This can safely be done in hydrocephalic infants, in whom the blood supply to the brain stem is of much more relative importance than that to the cerebral substance and the choroid plexus.

A Year's Experience in Intestinal Surgery.

Dr. John B. Deaver, Philadelphia, Pa., said that his cases comprise 12 simple enteroenterostomies; 11 intestinal resections, with enteroenterostomy; one enterotomy; two colostomies; 7 enterorrhaphies for various forms of fecal fistula; one suture of a typhoid perforation; one reduction by manipulation of an intussusception; and 8 instances in which strangulating bands or adhesions were divided, besides three other (atypical) operations—a total of 46 operations on 40 patients.

There are 13 cases of intestinal carcinoma, all in the large bowel. The cecum was dissected in 4 cases, the hepatic flexure of the colon in 2, and there was one case each in which the part affected was the transverse colon, the splenic flexure of the colon, and the rectum; while there were 4 patients in whom the sigmoid was the seat of malignant disease. Five of these 13 patients died—those patients in whom the splenic flexure and the rectum was involved; one of those with the cecum affected, and two of those in whom the sigmoid flexure was diseased. The remaining eight patients recovered from the primary operation and were relieved temporarily, but of the four successful cases in which the patients were seen sufficiently early for a radical operation to be done, two developed symptoms of recurrence about eight months later, and were again temporarily relieved by further operation; and in the case of two others, on whom a radical operation was done, sufficient time has not elapsed since the operation to permit of their being considered in this connection.

Treatment of Congenital Dislocation of the Hip.

Dr. E. H. Bradford, Boston, said that in a large number of cases of congenital dislocation of the hip, complete cure can be accomplished by manipulative reduction. In difficult cases efficient mechanical reduction is of assistance. In certain cases, owing to a distorted capsule, the femoral head is not placed deep in the acetabulum, or is kept from the bottom of the acetabulum by a capsular fold, and relapse takes place. Under these circumstances the surgeon can, by incision of the capsule, widen the capsular constriction, place the capsular flaps around the head and neck, secure the head of the femur until cicatrization has formed a retaining capsule about the reduced head. In a relaxed capsule much depends on the after-treatment. If the capsule is loose, the head will drop out if not held in place, until the tissues have become reformed, so that they hold the head firmly. A certain number of relapses are due to this. The head should be placed well in the socket and kept there until it is firm in its improved position and not kept long enough in a distorted position for the tissues to become too stiff or non-elastic. If the head is not properly reduced, it is inadvisable to postpone attempts at other measures of relief, i. e., incision or a repeated manipulation.

Open Treatment of Fractures.

Dr. Edward Martin, Philadelphia, said that the wounds necessitated by the open treatment of fracture are more prone to suppurate than are those made in the performance of other operations, partly because foreign bodies, often of considerable size, are buried in the wound, but mainly because as a result of prolonged manipulation and rough handling and the use of tools ill adapted to the purpose, there is left at the end of operation a large amount of tissue so hopelessly devitalized that an abundant culture material is provided for even the slight infection which inevitably takes place during the course of the most carefully conducted operation. Of the many ingenious devices employed for permanently fixing broken bone ends in their proper relation to each other, chromicized catgut, wire, screws and silver plates are the most serviceable. If the surgeon could be assured of a perfectly sterile No. 3 catgut so largely deprived of chromic acid as not to prove irritating to the tissues, this would be the material of choice in all cases where suture or encircling ligature is applicable.

Screws are extremely serviceable in that they represent foreign bodies of moderate size, are readily applied, and will often hold bones in perfect apposition. They are especially applicable to the repair of oblique fractures of long bones. In fractures of the extremities of these bones the cancellous tissue gives a grip so feeble as to make their use of little service unless driven through and through. The proper application of a screw implies the selection of an almost cylindrical instrument with a deep thread cut clear to the head, and of such length as to pass completely through the bone at right angles to the line of fracture, but not beyond. The easy application of the screw is dependent on the proper selection of a drill and the use of a clamp so devised that the bones having been placed in accurate apposition are immovably held while the drill is being used and the screws are being driven home. The drill should be of such size that it bores a hole through both fragments the full length of the screw, and of a diameter slightly greater than its core. When but one of the two fragments is adequately drilled, as the screw is driven in it pushes the bones apart in place of bringing them together. The same result follows after having used the drill to a proper depth when the relation of the fragments to each other is changed; this frequently happens when the bones are loosely held in the bottom of the wound by the fingers of an assistant. This should be obviated by the use of bone clamps which should be powerful enough to hold the largest bone in their grasp. The drilling should be done either by an electric or foot engine. When wire or gut is to be passed through drill holes, the instrument should be provided with an eye near its cutting end, through which, when it has been driven completely through the bone, can be passed a guiding thread. McCurdy accomplishes the same purpose by a notch placed just above the end of the instrument.

The silver plate finds its most useful application in transverse fractures. Its proper fitting is made easy by the use of grasping instruments which not only hold the two bones in accurate apposition, but also secure the plate firmly in place while the holes are being bored and the screws applied. The starting of the screws in the drill holes, particularly in the treatment of broken small bones, such as the ulna, clavicle or fibula, or when the fragments to be held in apposition lie at the bottom of a deep wound is greatly facilitated by a screw-driver which firmly holds in a jaw devised for the purpose the screw until it is fixed in its drill hole. The open treatment of simple fracture should not be regarded as an emergency operation, and considering the fact that nine out of every ten adults who sustain a fracture of the shaft of the femur exhibit as a result of conservative treatment permanent deformity and crippling, it would seem desirable to practice formal operation more frequently than is now done.

Thyroidectomy, Partial and Complete.

Dr. Francis J. Shepherd, Montreal, said that the first 25 cases he operated on he employed the method of Socin, viz., enucleation; but, meeting with two severe cases of secondary hemorrhage, he gave up this method in the larger tumors for excision. Only once in about 100 operations has he wounded the laryngeal nerve. The indications for operation in simple goiter are as follows: (1) Progressively increasing size of the tumor; (2) rapid growth, with dyspnea; (3) narrowing of the trachea; (4) difficulty in swallowing; (5) alteration of the voice; (6) tachycardia and increasing nervousness; (7) inconvenience and deformity due to the size of the tumor.

As regards anesthesia, Dr. Shepherd stated that he always uses general anesthesia. He uses equal parts of ether and chloroform. So far he has had no death and no alarming symptoms. He has operated in seven malignant cases with one permanent recovery. He has had no deaths in simple goiters, though he has had two following operation in exophthalmic goiter. He prefers the straight incision internal to the sterno-mastoid, and he ties the superior thyroid before turning out the gland; then the inferior thyroid and recurrent nerve are looked for and identified. After operation he uses a drainage tube for twenty-four hours; sometimes if there has been much oozing he packs with iodoform gauze. High temperature occurs after operation in 60 to 80 per cent. He has seen only one case of myxedema following extirpation of the gland, and this was in a case of malignant disease. In only one case had tracheotomy to be performed.

New Method of Utilizing Sac in Radical Cure of Hernia.

Dr. Roswell Park, Buffalo, described the method as follows, especially with inguinal hernia: To isolate the sac, then to empty it and to clean it of all superficial fat. It is thus separated from the cord and made to appear as a distinct, separate structure up to the level of the internal ring. His usual procedure for many years has been to penetrate the abdominal aponeurosis with forceps at a point opposite the internal ring. The forceps introduced through this opening is made to appear lower in the inguinal canal and here to seize the sac, and in the act of withdrawal pull it after it and thus bring it out at the punctured point. Instead of cutting off the sac outside the point where it is fastened, he utilizes it as a band of suture material, with which a coarse but strong suture is made, binding together the lateral margins of the inguinal canal. Of course, much will depend on the thickness and length of the sac. Old and large sacs will be far too cumbersome for this purpose, and short sacs will be too short to serve as sutures when twisted into a cord. These difficulties are easily overcome by either reducing the sac, cutting out a strip which can be used for the purpose in one case, or in the other lengthening it by division, by which a sac two inches long can be so divided as to furnish a cord five or six inches in length.

Having prepared the sac, or so much of it as is needed for the purpose, it may be now used in two or three ways. One may thread it into the eye of a very large needle, or one may use a Cleveland ligature carrier, passing it through the tissues on either side as if it were an ordinary needle, then grasping the end of the sac and pulling it back through the openings thus made as the instrument is withdrawn. Sometimes he has passed into the end of the sac a silk suture, threading it into the larger needle and making it serve as a means of traction, the procedure varying a little with the density and strength of the sac wall. Again, in certain cases that portion utilized may be divided into two halves, making two tapes, which can be used for making a shoelace suture of the pillars of the ring by either of the expedients just mentioned. When the ends are drawn down at the lower end of the ring they may be tied and fastened with a suture.

The method can not be applied to all cases and can never be expected to always displace other procedures, nor should one ever think of adopting it when he is not operating deliberately and in the absence of all infectious processes.

Use of Thyroid Extract to Shorten Coagulation Time of Blood.

DR. WILLIAM J. TAYLOR, Philadelphia, advised that it be used in cases of hemophiliacs where surgical operation is demanded, or where they have received any accidental wound, and also in patients whose blood has been altered by disease. Normal blood is not affected in any way by the use of thyroid extract, even where its use has produced distinct constitutional effects. He cited three cases of bleeders in which thyroid extract was used with marked benefit, and mentioned one instance in which it was used in a case of profound jaundice due to obstruction of the hepatic duct. He recommends that in all cases of suspected or probably delayed coagulation time the blood should be tested carefully and dried thyroid extract given in three-grain doses, in capsules, three times a day. It has been used with very great effect in several cases of purpura with spongy and bleeding gums, occurring during the course of typhoid.

(*To be continued.*)

ST. LOUIS MEDICAL SOCIETY OF MISSOURI.

Regular Meeting, held May 26, 1906.

Diseases of the Biliary Passages.

DR. MAURICE H. RICHARDSON, Boston, said that little is known of the diagnosis of gallstones in their earlier manifestations, or of the diagnosis of stones of atypical or unusual form. The symptoms of gallstones, he said, are well-defined when there is a passage of gallstones out of the bladder, producing "colic." This is pathognomonic, especially if the passage of the stone is slow enough to cause jaundice. Pain in the gall bladder simulates pain in the gall duct only when the pain lasts a long time. In the earlier forms of gallstone disease, before the stone has made its way into the ducts or duodenum, the symptoms are trivial and not understood. Later, when the irritation of the gall bladder mucous membrane ensues, with ulceration, thickening of the walls of the bladder, etc., there is a regular sequence of events. There is a great variation, however, in the way in which impaction of stones is felt. In many cases in which gallstones are found in the cystic duct and common duct, there is no history of pain and other symptoms. The wide variation which has been found in many cases shows that the history should have been taken more carefully and the diagnosis could then have been made. All symptoms in the right hychondrium are suggestive of gallstones. Because the patients do not complain of excruciating pain it by no means follows that there is no stone present. Dr. Richardson is convinced that all gallstones produce symptoms from their beginning until their final passage. The profession should be impressed, he said, with the difference between the slight danger of removing gallstones in their early formation and the great danger of removing them in their later manifestations when there has been thickening of the gall bladder, or ulceration or impaction in the ducts.

For all practical purposes it can be said that the nidus of gallstones is in the gall bladder, and that a micro-organism of some kind is usually the cause. Between the time of the aggregation of the crystals making up the gallstone and its final passage, there must necessarily ensue a long period of time. If the gallstones are found many years after typhoid, and if one accepts the thought that the typhoid bacillus acts as the nucleus of the stone, then the life history of the stone might be said to date from the attack of typhoid. The size of the stone is not a thing by which to judge its age; the consistency is more important. Symptoms referable to the gall bladder do not always mean the presence of gallstones. In some cases inspissated bile will cause symptoms in this region. Symptoms are accounted for in some cases by other conditions, i. e., malignant disease of the intestines, with gallstones impacted in the duct. Occasional pains accompanying intestinal peristalsis should be suggestive of gallstones. Stones too large to pass the cystic duct may give rise to a suspicion of their existence by causing cholecystitis. In many cases the stone fills the entire gall bladder. Gallstones firmly grasped by the lower fibers of the gall bladder may give rise to intermittent colicky pains. The very early symptoms of gallstones are usually described as "indigestion," gastralgia, with no jaundice. The most that can be said about this symptom is that it is a kind of discomfort. The pain is the most constant symptom of stone, either a spasm or the consciousness of a discomfort in the right hypochondrium or in the left hypochondrium for which the patient seeks some relief by means of some simple remedy. The pains of gallstones might be said to come with a "regular irregularity," or rather with an "irregular regularity." If on top of the history of discomfort there is a history of spasmodic pain at times, and rise of temperature indicating infection in the gall bladder, then the suspicion of the existence of gallstones is strong indeed. In many instances the surgeon finds stones impacted in the cystic or common ducts. The error in not noting jaundice in such cases has been said to be explicable on the ground that the stone passes quickly into the duodenum, without stopping the flow of bile. A careful search of the stools without finding a stone is a flimsy means of basing a diagnosis of no stone in the gall ducts. When pain comes on in paroxysms, whether there is jaundice or not, there is a suggestion of gallstone.

Pain is the most important point, and the cause of the pain in cases in which the gallstone is found in the gall bladder is muscular spasm. When the stone passes to the duodenum, there is pain with or without jaundice. The fact that the bile is completely obstructed is not the cause of pain, because total obstruction of bile is found in malignant disease of the biliary passages, without pain. When the stone is impacted, the symptoms will be similar to those already suffered, due to the efforts of the muscular fibers to push the stone along. In case there is infection in connection with a thickened gall bladder, this must have something to do with the pain. Occasionally there is necrosis of the gall bladder with perforation into the alimentary canal. In such cases of giving way of the gall bladder walls there may be the pain of a beginning peritonitis. The less severe are the symptoms the less imperative are the indications for operation, and when the indications of their existence are severe, then the necessity for operation is urgent.

DISCUSSION.

DR. N. B. CARSON thought that the discussion belonged more to the medical man than to the surgeon, because most of these cases are first seen by the medical man and after the diagnosis is made, the surgeon undertakes to give treatment and to confirm the diagnosis. There is a tendency on the part of the surgeon to trust too much to the medical man for a diagnosis and in this tendency there is a trend toward mechanical work by the surgeon. Many of these cases present symptoms of stomach trouble. Recently Dr. Carson operated on a woman from whom he removed 146 gallstones from the gall bladder. She gave very little indication of the presence of this mass of gallstones. In another case the gall bladder was tightly packed with gallstones, and the patient's history was simply occasional attacks of "stomach trouble," until a short time before presenting herself at the hospital when she became jaundiced.

Dr. W. E. Fischel said that the symptoms of which Dr. Richardson spoke as indicating the presence of gallstones in the bladder or ducts can often be accounted for by a disturbance of the alimentary tract. Fischel said that he has not yet learned to distinguish between the pains of a frequently recurring gastric indigestion and the pain of a stone in the gall bladder. The fact that so frequently there is found recurrence of jaundice does not indicate that there is danger of the presence of stone in the gall bladder. He emphasized the fact that it would be a dangerous practice indeed for the internist, after he has exhausted every means in his power to diagnosticate a condition in the upper right quadrant of the abdomen, to send all such patients to the surgeon for operation.

Dr. H. Tuholski agreed that in most cases that are sent to the surgeon by the internist the diagnosis is already made, but that he questioned whether it is right to yield the palm of diagnostic skill to the internal man. Many people have gallstone disease without characteristic symptoms. The difficulty is in making a diagnosis of some change in the biliary passages requiring operative interference. The diagnosis of cholecystitis is just as imperative as if gallstone were added to it. The surgeon makes the mistake of thinking that if when a case is referred to him he does not make a diagnosis immediately the patient is liable to slip from his hands to another surgeon. The speaker argued that the surgeon should have plenty of time to make his diagnosis, keeping the case under his observation for weeks, if necessary. If this could be done, the surgeon would make a correct diagnosis in most instances.

The pain has certain characteristics in gallstone disease, especially the pain which the patient feels after the acute attack of colic is over. There is a peculiar feeling of discomfort two or three inches below the scapula, a feeling quite "uncanny." The surgeon is handicapped by not seeing the patient during the acute attack. After the diagnosis is made, the surgeon should not hesitate to operate. The fact that many patients get over their attacks after going to Carlsbad does not mean that they have been cured of this disease. There has simply been a cessation of the catarrhal condition in the gall bladder. Some such patients are really helped so much by drinking Carlsbad water that they are cured and pass their gallstones. Dr. Tuholski has made it a habit of examining the gall bladder in all cases in which he opens the abdomen. One patient must have been cured by the Carlsbad treatment, because, after opening the abdomen later for the extirpation of fibroids of the uterus, he passed his hand up to the gall bladder and found no stones.

Dr. W. G. Moore said that if a patient was able to go to Carlsbad he would send him there. He does not think there is any remedy for gallstone disease except an operative procedure. He liked Dr. Carson's suggestion that the surgeon relies too much on the medical man to make his diagnosis because the medical man usually makes a diagnosis for the surgeon with which the surgeon agrees before the operation and disagrees after the operation.

Vaginal Method of Gynecology.

Prof. Dr. Dührssen, Berlin, gave a description of his method of performing gynecologic operations through the vagina by his anterior incision method. He said that the main objection raised against his method is that one cannot see the operative field, but he maintained that one can see everything if the proper instruments are used. The mortality with this method is strikingly low compared to that from operations by the abdominal route. In 1600 cases he had a mortality of less than 2 per cent., and even this mortality was due to the fact that these were bad cases of extrauterine pregnancy or of large fibroids of the uterus. The use of the method for operating on large fibroids is attended with the worst results because of the large area exposed in the operation, especially when there is a following pregnancy. After these operations by the vaginal route there is not so much pain as after the abdominal method. Patients are walking four weeks after the operation. He mentioned the prejudice against this operation on the part of American surgeons, who claim that they can not see what they are doing, yet the first vaginal hysterectomy was performed by an American, Thomas. He said that operating posteriorly through the cul-de-sac is bad surgery because asepsis is not so good and because forcible traction must be made, with consequent danger of tearing the pedicle. In the anterior operation, there is no such traction. The uterus can be pulled out with the finger. The appendages are easily within reach through the anterior operation.

DISCUSSION.

Dr. Geo. Gellhorn said that it is a fact that there is less shock, as a rule, in operating by the vaginal route than by the abdominal. It is also a fact that vaginal operations are attended by less danger of infection than are those performed by the abdominal route. Dr. Richardson had said in a previous paper that there is always an element of danger in opening the abdomen. Dr. Gellhorn thinks this danger is minimized if the approach to the pelvic organs is made through the vagina. If every step of the operation can not be seen, there is either faulty technic or insufficient vaginal instruments. The instruments the ordinary operator usually uses in vaginal work are those designed for abdominal surgery; the objection to them is that they are not long enough to permit the operator to gain easy access. Another more important objection is that in vaginal operations one is not able to operate on the appendix or on the gall bladder. If this is done, there will be found many cases in which there is no disease of the appendix or gall bladder. If this is true, then the vaginal route can be used. If there are symptoms of appendicitis or gallstone, then the abdominal route can be used.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Enuresis.

Percy G. Lewis, in the *British Medical Journal*, states that when undertaking the treatment of a case of enuresis it should be ascertained first whether the case is simply a general want of tone; second, whether or not intestinal asepsis is a prominent feature, and if so is the urine passed at night abnormally acid and diminished in quantity, or is it of low specific gravity, alkaline or neutral, and increased in quantity; third, whether the case is simply one of habit remaining after the cause has been removed, or after improvement in the general health has become such that enuresis need not occur. In dealing with these cases the author states that failure along one line of treatment will soon be followed by success in other lines. In the first of these classes, when the patients do not look ill, and also in those cases in which anemia is present without evidence of intestinal disturbance, tonics are indicated. Any good tonic, according to the author, will lead to a cure. The phosphate of iron or the perchlorid of iron or strychnin, as advised by some authorities, will tend to improve the health, and these should be accompanied by cold douches, massage, or plenty of exercise in the country, change of air, and other things which will improve the general health and tone of the patient. The practice of taking the child up several times during the night, as he states it, is a very convenient method of protecting the bed, but is in no wise a means of cure. In the second class which he mentions evidences of indigestion are to be found, and the causes which tend to produce sepsis from the intestinal canal should be searched for and removed if at all possible. It is this class of cases which can be so easily dealt with and cured by means of proper diet. In the acid form, when the urine shows such a decided reaction, the elimination of meat alone from the diet may lead to a cure, and in the alkaline form the use of non-farinaceous diet is not infrequently productive of good results. A good routine treatment, according to Lewis, consists in securing a daily evacuation of the bowels by giving calomel in ¼-grain doses every night, followed by a mild saline laxative in the morning. In addition to this treatment, one or more of the many so-called intestinal antiseptics may be administered. In the third class, sources of irritation must be looked for and corrected, if possible. Such sources of irritation may be intestinal worms, anal fissure, adherent prepuce, etc. Other surgical methods, such as blistering the sacrum, freely cauterizing the urethra, the passage of large metal bougies, and the various methods of treatment by electricity are, in the opinion of the author, more or less psychical in character, or they, by producing less profound sleep, frequently break the habit of enuresis.

In speaking of the former methods of treatment he states that the limitation of the amount of fluid drunk rather tends to aggravate than to relieve the symptom by adding to the digestive disturbance. Belladonna in small doses may act as a tonic to the nervous system and, consequently, may be of value in the first class of cases. When given in semi-poisonous doses this preparation acts chiefly on the mind, and tends to divert the attention of the patient. Others are of the opinion that it acts by making sleep less profound, so that complete loss of control of the sphincter muscle does not take place. In this connection belladonna in association with strychnin is recommended in some cases as of great value. Jacobi states in this connection also that belladonna is useful only when vesical catarrh is present. Chloral and bromid, as sedatives, are of value by blunting the nervous mechanism of micturition, but in no way reach the cause of the disease, and consequently their employment is not placed on a scientific basis.

Thursfield states that in the treatment of enuresis two points require emphasis. The first is that in order to insure success prolonged treatment is necessary, as the condition has been allowed to become a habit before treatment has begun, and it requires time to break the force of this acquired tendency, and although success in these cases may be obtained for a time rather quickly, a relapse is extremely frequent unless the treatment is continued. In the second place, the necessity of varying the surroundings of the patient should be considered. Some patients will derive no benefit whatever from the treatment so long as they continue their ordinary mode of life, but improve instantly with new surroundings and different environments.

Another point of importance, according to Thursfield, is avoidance of those articles of food or drink which have an irritative or diuretic effect. Tea and coffee are to be absolutely prohibited. Sugar in all its forms must be eliminated from the diet. On the other hand, the child should be permitted to drink water or milk as desired, provided it be taken at regular times and limited in quantity at the last meal.

In nervous, excitable children school work should be discontinued for a time, if practicable.

The author states that although he has employed a large variety of drugs in the treatment of this disease, he has found three only to be of value, and of these three belladonna or atropin is by far the most successful. This preparation may be given in the form of the extract or the tincture or as liquor atropinæ, as desired. He recommends 10 minims (.65) of the tincture three times a day as the initial dose, and raises the dose week by week up to 60 minims (4.00) three times a day. At this period it is essential not to abandon the drug but slowly to diminish the dose until it can safely be dispensed with. This may require a period of from three to six months, before permanent relief is obtained. He states in this connection that the danger of poisoning is very slight. Although he has employed this drug in a great many cases, in one only has he noticed delirium, although the loss of accommodation is nearly always present in the beginning. This condition, however, soon passes off and is not an indication for relaxing the use of the drug. Dryness of the throat and mouth and the smarting sensation in the pharynx may be complained of at times, but are only temporary in character. He recommends potassium citrate in conjunction with the belladonna in the majority of cases, especially when hyperacidity of the urine is present. The third preparation which he recommends is urotropin (hexamethylenamin), and this is especially indicated in cases of bacteriuria. This should be given well diluted, for in concentrated solution it has been known to produce hematuria and painful micturition. He states that his experience does not favor the use of ergot, antipyrin, rhus aromatica, lycopodium, etc. In cases in which the children are subjects of night terrors, he recommends a small dose of potassium bromid at bedtime, and in poorly nourished, anemic children, iron and strychnin are recommended as tonics.

Lumbago.

In considering the treatment of lumbago, J. J. Levy, in the *New York Medical Journal*, states that there are two varieties of lumbago, namely, the acute and chronic. In the treatment of the acute cases he recommends dry cupping applied to the lumbar region, and states that he can not understand why this method of treatment is not more frequently employed, as the results following its use guarantee it. In connection with this treatment, Levy gives the following combination internally:

℞.	Potassii acetatis	ʒiv	15
	Sodii salicylatis	ʒiii	12
	Aquæ gaultheriæ q. s. ad	℥iii	90

M. Ft. solutio. Sig.: One teaspoonful in a glass of water every four hours.

The following local application is recommended:

℞.	Methyl salicylatis	℥i	30
	Spiritus chloroformi	℥ss	15
	Linimenti saponis q. s. ad	℥iii	90

M. Ft. linimentum. Sig.: To be rubbed in thoroughly for ten minutes, night and morning, over the affected region.

One will find the treatment of chronic cases much more difficult, as medicinal preparations have comparatively little influence. It is in this class of cases that physical remedies are of value. Rational massage and scientific hydrotherapy are very serviceable, even in the most obstinate cases. He recommends the following plan of treatment: The patient is instructed to take hot air or vapor baths, or hot tub baths (105 F.), followed by hot blanket pack twice a week. The local shock douche, as he speaks of it, should be employed, and this consists in alternate sponging of the affected part with hot (120 F.) and cold water (50 F.), or, better, alternating the hot and cold water thrown from pails against the lumbar region. In this way a most profound local effect is produced and a rapid reaction is brought about, as these shock douches improve the nutrition of the lumbar muscles and should be given every day. General massage and hot fomentations applied to the lumbar region are of great value. If these compresses are thoroughly wrung out, and if the lumbar region is oiled with petrolatum, there is practically no danger of burning the patient. As to the diet, he recommends that alcoholic drinks, excess of meat, tea or coffee should be excluded. Sodium phosphate is recommended in tablespoonful doses one hour before breakfast, in order to keep up proper eliminations from the gastrointestinal tract. Patients should be instructed to wear woolen underwear winter and summer.

Holdridge, in the same periodical, recommends the following mixture in the treatment of this condition:

℞.	Menthol	℥ss	15
	Olei gaultheriæ		
	Ceri albi, āā	℥i	30
	Ceri flavi	℥ss	15
	Lanolini		
	Liquidi petrolati, āā	℥i	30

M. Ft. unguentum. Sig.: Apply locally three times a day, followed by a brisk rubbing for five minutes.

The patient is then directed to lie on his abdomen. The back is covered by one or two thicknesses of a flannel blanket, and the back ironed with a laundry iron as hot as can be borne for ten minutes.

If the patient gives a rheumatic history, sodium salicylate should be administered in 15-grain doses (1.00) every three hours. The subacute and chronic cases demand more vigorous treatment, and in such cases Holdridge recommends that two or three cantharides blisters, one inch square, be applied over the affected part and permitted to remain for eight hours. The vesicles should then be opened and an antiseptic dressing applied with a bandage about seven inches wide, drawn firmly around the body. In long standing cases he states that internal treatment is of no value. Galvanism, the positive pole over the affected region, is of service, and massage should be given once daily, or as indicated in the individual case.

Medicolegal

Damages for Death of Dentist.

The Second Appellate Division of the Supreme Court of New York affirms, in the case of Morhard vs. Richmond Light and Railroad Co., a judgment for $40,000 damages for the death of a dentist. It says that it does not think this amount excessive, it appearing that the dentist was 37 years of age at the time of his death; that his income from his dental profession had been from $17,000 to $20,000 a year, and that he left three children, the eldest being 11 years of age, besides a posthumous child, born six months after his death.

Prescription Not Competent Evidence of Insanity.

The Supreme Court of Nebraska holds, in the case of Ames vs. Ames, that the fact that the attending physician prescribed certain drugs for a patient which are used in the treatment of mental disorders is not competent evidence tending to establish the insanity of the patient. Assuming that the prescription in some way indicated that the patient was under treatment for some disease which affected his mind, the Supreme Court commissioners say, it would merely reflect the opinion entertained by the prescribing physician, at the time the prescription was given, that the patient was suffering from such disease. If, instead of such prescription directed to a pharmacist, the physician had written a letter in which he expressed the opinion that the patient was insane, will it be claimed that such letter would be admissible in evidence on the question of the patient's sanity? The prescription certainly stands on no better footing.

Closes Sleepers to Persons with Contagious Diseases.

The Supreme Court of Alabama says, in Pullman Co. vs. Krauss, that the right of a person to a berth or passage on a sleeping-car is not an unlimited right. But it is subject to such reasonable regulation as the company had prescribed for the due accommodation of passengers and for the safety and comfort of passengers. Sleeping-car companies are not bound to admit persons as passengers on their cars who are guilty of gross and vulgar habits of conduct, or who make disturbances on board, and, by a stronger reason, persons who are afflicted with contagious or infectious disease, so that there would be a probability of other passengers contracting the disease with which said afflicted person was suffering. In this case, after proving that it had rules with reference to persons afflicted with contagious or infectious disease, the company offered in evidence this rule: "Persons known to be afflicted with any contagious or infectious disease, or to be insane, will not be permitted in the cars of this company." This rule, it would seem, the court says, was adopted for the safety and comfort of the company's patrons or passengers, and, whether the company is to be treated as a common carrier or otherwise, the rule is a wise and salutary one, and the court has no difficulty in reaching the conclusion that it is a reasonable one, and that the lower court should have so declared.

Admissible Aid to Memory of Medical Witness.

The Supreme Judicial Court of Massachusetts says, in Holden vs. Prudential Life Insurance Company of America, an action on a policy of life insurance where the company claimed that the policy was procured by fraud practiced on it in regard to the risk, that the company called a medical witness who had examined the insured for another company a long time before the policy in the suit was issued, and had written out his statements at the time of the examination. The witness testified that he had no recollection of the circumstances of the examination, and that seeing and examining the application then made did not refresh his memory in any way, although he could state that he then knew that the statements written in the application were true when made by him. The writing containing the statements was excluded, and the witness was not permitted to use it to refresh his memory. The writing was plainly inadmissible, but what the witness said of it was enough to justify him in using it to aid him in testifying. With the aid of the paper he could testify with absolute certainty what statements were made by the assured at the examination. The tendency of recent decisions has been to enlarge the use of entries in writing, made by a witness, as a memorandum, to aid him in testifying. In this case the witness may not have been quite accurate in saying that the paper did not refresh his recollection in any way, while he was doubtless correct, in the sense that it did not bring back to his recollection the circumstances of the particular occasion. The court is of the opinion that he should have been permitted to testify of the matters stated in the writing, using it as an aid to his memory.

Requisites to Law Authorizing Revocation of License.

The Supreme Court of California says, in the case of Hewitt vs. Board of Medical Examiners of the state, that legislation of the character embraced within the general scope of the act of 1901 for the regulation of the practice of medicine and surgery and for the appointment of a board of medical examiners in the matter of such regulation, in so far as it provides for the revocation of the certificate of a physician, is sustained on the ground that the legislature has authority under its general police power to provide all reasonable regulations that may be necessary affecting the public health, safety or morals, and with this object in view to provide for the dismissal from the medical profession of all persons whose principles, practices and character render them unfit to remain in it. As the duty of determining whether such professional or moral unfitness exists must necessarily be vested in somebody other than the legislature, it is usually committed by appropriate legislation to boards composed of men learned in their profession. Such power, however, to revoke the license of a practitioner when conferred on a board must be under provisions of law which are reasonable, must apply to matters of conduct on the part of the practitioner which affect the health, morals or safety of the community, and the acts or conduct which shall render him liable to the penalty of forfeiture of his right to practice his profession must be declared with such certainty and definiteness in the act that he may know exactly what they are. The right to practice medicine is, like the right to practice any other profession, a valuable property right, in which, under the Constitution and laws of the state, one is entitled to be protected and secured. And so the court holds void the provision in the act of 1901 authorizing the board of medical examiners to revoke the certificate of a physician for "grossly improbable statements" in an advertisement of medical business. It says that the right which a person possesses under the Constitution and laws to practice his profession as a physician and surgeon can not be made to depend on a provision of a statute as vague, uncertain and indefinite as this one. If a physician's license is to be revoked for "grossly improbable statements;" if he is to be thereby deprived of his means of livelihood, of his right to practice a profession which it has taken him years of study and a large expenditure of money to qualify himself for, on the ground that he has made "grossly improbable statements" in advertising his medical business—it is requisite that the statute authorizing such revocation define what shall constitute such statements so that the physician may know in advance the penalty he incurs in making them. It is an easy matter for the legislature to declare what statements in the advertisement of medical business shall be deemed "grossly improbable," and it must do so, and not leave it to a board of medical examiners after the publication is made to determine, in its judgment, whether the statements were or were not "grossly improbable," and according to its particular view of the matter revoke or refuse to revoke the license. The right to practice medicine can not be made to depend on such a vague, uncertain and indefinite provision. The conclusion the court reaches as to the invalidity of this provision is, in its judgment, sustained by the general principles announced in the main and concurring opinions in ex-parte McNulty, 77 Cal. 164, and in Matthews vs. Murphy (Ky.), 63 S. W. Rep. 785.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 23.

1 Observations on Prostatectomy. L. B. Bangs, New York.
2 Feeding of Infants During the Hot Weather. I. L. Polozker, Detroit.
3 *The Diagnosis and Treatment of Ectopic Pregnancy. H. N. Vineberg, New York.
4 Treatment of Pneumonia. W. F. Waugh, Chicago.
5 *The Tuberculides, with Report of Cases Illustrating the Papulonecrotic Variety. M. B. Hartzell, Philadelphia.

3. **Diagnosis and Treatment of Ectopic Pregnancy.**—Vineberg bases his article on 53 operative cases. The ages of these patients varied from 22 to 41 years. Six had never been pregnant before. The author gives the three cardinal symptoms of ectopic pregnancy as amenorrhea, of longer or shorter duration, irregular uterine bleeding, and abdominal pain. Although the diagnosis of ectopic pregnancy is in some cases extremely difficult, in the vast majority of the cases the condition can be detected by the medical attendant if he will keep his mind alert. Vineberg does not approve of the practice of purposely leaving a large quantity of blood within the peritoneal cavity. He believes that some of these patients are lost on account of undue haste on the part of the operator. All bleeding should be arrested before the abdomen is closed.

5. **The Tuberculides.**—Hartzell speaks of the classification of cutaneous tuberculoses and considers these affections as belonging to two groups, bacillary tuberculides, in which the tubercle bacillus is regularly demonstrable, and toxi-tuberculides in which this organism can not be demonstrated. In the latter group the skin lesions are presumably due to toxins produced in foci, more or less distant from the seat of the eruption, and which reach the skin through the blood channels. The author cites the history of several cases of the so-called tuberculide, which is described in most recent textbooks under the name of folliclis. This affection is most common in children and adolescents. It is characterized by an eruption of small, dark-red or bluish nodules, generally most abundant on the backs of the hands, the elbows and knees, the feet and ankles, and the helix of the ear. In practically every case there is evidence of tuberculous infection. A more or less marked cyanosis of the extremities is almost invariably present. Drugs have little or no effect on the eruption.

New York Medical Journal.

June 23.

6 *Joint Diseases, Especially Those of Children. DeF. Willard, Philadelphia.
7 *The Irish Riviera. C. E. Nammack, New York.
8 *Atypical Clinical Features of Appendicitis. (To be concluded.) E. Eliot, Jr., New York.
9 Arteriosclerosis; Its Relation to Disease of the Nervous System and to Disorder of Its Function. (Concluded.) J. Collins, New York.
10 Dual Acute Otitic Cerebral Abscess, Operation, Recovery. C. Jackson, Pittsburg.
11 *Digitalis and Barium Chlorid. M. R. Lamela, New York.
12 Two Cases of Double Uterus. L. L. Roos, New York.
13 Bite of the Ombuta (*Clotho Arietans*, Gray) Treated with Potassium Permanganate. Recovery. F. C. Wellman, Angola, West Africa.

6. **Joint Diseases of Children.**—Willard reviews this subject in all its phases and summarizes it as follows: 1. Early diagnosis is the most important of all considerations. Physicians are responsible for a large majority of joint destructions, chiefly from carelessness or indifference in the examination of their patients. A child with any peculiarity of gait or carriage should be examined naked. 2. Every physician should abandon the thought that pain in a single joint in a child means rheumatism. A limp or peculiar gait with rigidity of periarticular muscles in a child always means some form of invasion, probably tuberculous, possibly septic. 3. An effort should be made to abort tuberculous infection by immediate absolute rest and fixation of the joint. 4. The patient should be kept out of doors, day and night, for a long period of time. 5. Wise conservatism consists in the prompt application of all methods of relief, whether hygienic, mechanical, or surgical. In children conservatism should be the rule, since youth has remarkable recuperative power. In adults, however, operative measures are much more frequently demanded. A limb that can readily be saved in a child, in the adult will demand amputation. If an operation will best accomplish a cure, such operation is true conservatism. 6. In septic cases following streptococcic, staphylococcic, pneumococcic, or gonococcic infection, the joint should be opened early and freely.

7. **Irish Riviera.**—Nammack recommends a trip to Ireland, around its southern and western coasts, lakes and mountains, as a suitable place for the over-worked business or professional man or woman to spend a vacation agreeably. He lays out a route and describes the points of interest, giving hints of value to travel.

8. **Atypical Appendicitis.**—Eliot reports a number of acute atypical cases of appendicitis in which there existed pathologic conditions entirely and completely out of proportion to the accompanying symptoms, and in which the appendix was the site of abscess formation or even gangrene, while the clinical picture was about that ordinarily observed in a catarrhal attack. The pulse was either normal or but slightly increased; in fact, the constitutional symptoms were such as not to direct attention to the appendix. In the cases cited, operation was prompted by the diffuse rigidity extending over the entire lower right quadrant of the abdomen. Eliot has found this to be, without exception, the most reliable and trustworthy guide in determining the desirability of an immediate operation, for in every instance in which this symptom existed operation disclosed a suppurative or gangrenous condition of the appendix of such a character that delay would have greatly jeopardized the chances of the patient's recovery. In the second class of cases reported, a mass was palpable, but no abscess was found. Still another class of cases of acute suppurative appendicitis resembled intestinal obstruction.

11. **Digitalis and Barium Chlorid.**—Lamela reports a case to prove that barium chlorid is capable of replacing digitalis without the accumulative danger of the latter nor its irritant action on the gastric intestinal mucosa.

Boston Medical and Surgical Journal.

June 21.

14 *How Progress Comes in Medicine. F. C. Shattuck, Boston.
15 Observation Hospital for Mental Disease. L. V. Briggs, Boston.
16 *Case of Multiple Ulcers of the Gall Bladder. E. A. Locke and S. B. Wolbach, Boston.
17 Apparatus for Local Application of Dry Cold and Heat. A. W. Baird, New York.
18 Case of Double Uvula in a Child. W. P. Coues, Boston.

14. See The Journal, A. M. A., June 9, 1906.

16. **Multiple Ulcers of Gall Bladder.**—Locke and Wolbach report the case of a woman, aged 56, who sought relief from painful varicose ulcerations on the anterior part of the right lower leg. The patient was examined carefully and a diagnosis was made of arteriosclerosis, myocarditis, chronic bronchitis, emphysema and varicose ulcers. About one month after her admission to the hospital there was a sudden onset of severe abdominal symptoms suggesting appendicitis. An operation was performed but nothing abnormal was found. The patient recovered promptly from the operation, but for several days subsequently there was persistent vomiting, which finally approached a fatal character, and a moderate watery offensive, and at times, bloody diarrhea. Peritonitis developed, finally a terminal lobar pneumonia, and death ensued 23 days after the operation. At the autopsy the entire gall bladder was found to be lined with chronic ulcers, two of which had apparently perforated, causing a general peritonitis.

Lancet-Clinic, Cincinnati, Ohio.

June 23.

19 Surgical Aspect of Cholecystitis. S. Stark, Cincinnati.
20 Closure of Uretero-Vaginal and Vesico-Vaginal Fistulæ. M. I Rosenthal, Ft. Wayne, Ind.

St. Louis Medical Review.

June 16.

21 The Psychology of Graft. G. F. Lydston, Chicago.

The Laryngoscope, St. Louis.

May.

22 Affections of the Lips, Mouth and Tongue, as Seen by the Dermatologist. (To be continued.) W. S. Gottheil, New York.
23 *Sounds for the Eustachian Tube. S. Yankauer, New York.
24 *Tuberculosis of the Tonsils. G. B. Wood, Philadelphia.
25 Empyema of Frontal, Ethmoidal and Sphenoidal Cells, with Abscess in Orbit, Serous Meningitis, Optic Neuritis, Otitis Media, Operation, Recovery. N. L. Wilson, Elizabeth, N. J.
26 An Improved Office Sterilizer. E. Pynchon, Chicago.
27 Antitoxin Treatment of Hay Fever. L. S. Somers, Philadelphia.
28 Case of Adeno-Sarcoma of the Tonsillar Ring; Resection of Both External Carotid Arteries; Recovery. W. R. Dabney, Marietta, Ohio.
29 Case of Abscess of the Parotid Gland Simulating Mastoid Abscess. J. C. McAllister, Ridgeway, Pa.
30 Abscess of the Cartilaginous Nasal Septum; Deformity Corrected by the Subcutaneous Injection of Paraffin. M. D. Lederman, New York.

23. **Sounds for Eustachian Tube.**—The special features of the instruments described by Yankauer lie in the material in which they are made, in their shape, in the markings, by which the distance they are introduced can be measured, and in the special methods of treatment which these advantages permit. The sounds are made of strands of catgut, surrounded by an elastic resinous substance which resists the action of boiling water, so that they can be sterilized. This covering is soft and smooth, and the sound is very flexible, so that it follows the curves of the Eustachian tube with greater ease, and consequently with less pain, than the usual form of bougie. The sounds are of uniform caliber throughout except at the tip, which is tapered to such a degree that the tip of each sound is slightly smaller than the shank of the next smaller size. They differ from the ordinary bougie in that the bulbous extremity is absent. In order to measure the distance to which the sound is introduced, a scale has been provided. As the instruments are so small that a numerical scale can not be used, a series of black marks and spaces, arranged in an arbitrary manner, has been employed.

24. **Tuberculosis of Tonsils.**—Wood reviews his previous work in this field and reports an additional case in support of his claim that the tonsil is the avenue of infection in tuberculosis of the lungs.

Brooklyn Medical Journal.

June.

31 *An Improved Technic for Operation for the Removal of Hemorrhoids. L. S. Pilcher, New York.
32 Are Tuberculous Clinics Dangerous to the Public Health? J. H. Raymond, New York.
33 Anatomy and Pathology of Intestinal Obstruction. W. H. Rankin, New York.
34 Associated Stomach and Gynecologic Lesions. C. R. Hyde, Brooklyn, N. Y.
35 Middle-Ear Catarrh. L. Emerson, Orange, N. J.
36 Effect of the Kindergarten on the Development of Children's Eyes. N. L. North, New York.
37 Causes of Delayed and Non-united Fractures. W. L. Duffield, Brooklyn.

31. **New Operation for Hemorrhoids.**—For ordinary hemorrhoids of moderate severity, Pilcher employs the following method: The sphincter having first been divulsed, the mass to be removed is grasped by a ring forceps and pulled out so as to put the parts at its base well on the stretch; then a longitudinal incision through the mucous membrane and skin on either side of the cone thus drawn out is made, which passes out on to the skin so as to include as much as it may be necessary to remove, in order sufficiently to retrench the redundant skin tissue. Beginning with the apex of this triangular flap of skin, the mass is dissected up from the deeper tissues to the base of the pile proper; then, into the sulcus produced by this skin elevation and the lateral incisions, an ordinary pair of Kocher's hemostatic forceps is thrust so as to clamp the comparatively narrow pedicle of the tissue left. The portion of the pile that protrudes beyond the clamp is now cut off; then a ligature is applied by a needle passing through a fold of the mucous membrane just beyond the point reached by the clamp. When this is tied, the main part of the blood supply of the parts below is cut off. The long end of this ligature thread is then carried by the needle as a running suture around the mass in the grasp of the clamp, from within outward, until all the tissue grasped by the clamp has been included. The clamp is now loosened and withdrawn and the ligature is drawn up tight. By these maneuvers a complete excision of the pile and a definite and satisfactory closure of the wound by suture is accomplished.

Chicago Medical Recorder.

June.

38 *Indications for Surgical Interference in Disease of the Faucial Tonsils and Methods of Choice in Operating. W. E. Casselberry, Chicago.
39 *Gram Stain of the Stools; Method Applicable in the Diagnosis of Carcinoma of the Stomach. C. A. Elliott, Chicago.
40 Commercialism in Medicine. H. B. DeBey, Chicago.
41 Diagnosis and Differential Diagnosis of Hip Disease. J. L. Porter, Chicago.
42 Somnoform Anesthesia. C. M. Paden, Chicago.

38. **Surgical Interference in Disease of Faucial Tonsils.**—Casselberry states that the methods of choice in operating have reference particularly to the avoidance of hazard, the minimizing of pain, and the effectiveness, permanence, and harmlessness of the results. Of children under 14 years of age operated on under general anesthesia, there were 165, in a series of 480 cases, of whom nine-tenths took ether, alone, or preceded by a few whiffs of A. C. E. mixture. The other one-tenth had gas or bromid of ethyl, the suitability of which for modern tonsillectomy, Casselberry claims, is limited to easy cases of pedunculated type, which should not require prolonged dissection. Of children under 14, but mostly over 10 years of age, operated on with local (cocain) anesthesia, there were 112. In these two series of cases there was no case of unusual hemorrhage. Casselberry has succeeded in obtaining final information in about two-fifths of these cases, from which it is estimated that the ratio of recurrences in the ether series is one to six, and in the cocain series, one to four. Out of 203 operations, mostly double, in adult life, serious troublesome hemorrhage occurred in 14, two of which were in persons 15 years of age. One was a cautery snare case, three were incident to fragmental dissection, and 10 followed the use of the tonsillotome. None resulted from the use of the cold snare.

39. **Gram Stain of Stools.**—Of 25 cases examined by Elliott 16 showed Gram-negative, 7 Gram-positive, and 2 almost exclusively Gram-negative stools. In the 16 cases showing Gram-negative stools this fact was considered the point which spoke against the probability of a carcinoma of the stomach being present, and of this group only 1 case was a case of carcinoma of the stomach. Of the 7 cases showing Gram-positive stools, 6 were carcinomas of the stomach and 1 was acute gastric ulcer. Elliott believes that a Gram stain of the stools may throw considerable light on the diagnosis in abdominal cases in general, and especially where the diagnosis lies between a gastro-intestinal process on the one hand and a pathologic process occurring in some other abdominal organ on the other. While a Gram-positive stool is in no way pathognomic of carcinoma of the stomach, yet it very frequently occurs in this condition. The presence of a typical Gram-positive stool is a sign which may be used to advantage in establishing a diagnosis of carcinoma of the stomach, and especially in cases where the use of the stomach tube is contraindicated. In cases in which an old gastric ulcer is known to exist, a Gram stain of the stools may be made from time to time, with the idea that when a carcinoma develops on the site of the ulcer, it may manifest itself by a change in the stool flora, which would be detected by a Gram stain, and thus lead to an early diagnosis. An exclusively Gram-negative bacillary stool, while uncommon, yet speaks very decidedly against a carcinoma of the stomach being present.

University of Pennsylvania Medical Bulletin, Philadelphia.

June.

43 *Malignant Disease of the Thyroid Gland. G. P. Müller and J. Speese.
44 Pneumonia in a Four Days' Old Infant, Due to the Bacterium Mucosus. H. Fox and R. S. Lavenson, Philadelphia.
45 Hysteria Simulating Brain Tumor. T. H. Weisenburg, Philadelphia.
46 Typhoid Fever—Accidental Infection with Bacillus of Malignant Edema. N. B. Gwyn, Philadelphia.

43. **Malignant Disease of Thyroid.**—A very careful review of 31 cases of carcinoma and 117 cases of sarcoma of the thyroid

recorded in the literature is summarized by Müller and Speese as follows: 1. Malignant disease of the thyroid gland is not a common affection, particularly in this country, where only eleven sarcomas have been recorded. 2. It is encountered more frequently in women (three to two) and the greater number of cases (53 per cent.) occur between the ages of 40 and 60. Only 11 per cent. of the sarcomas occurred in patients under the age of 30. 3. In 53 per cent. of cases a history of a previous goiter will be obtained, which in over half the cases is of more than ten year's duration. 4. Adenocarcinoma and the round-cell and spindle-cell sarcomas are the most frequent types of tumor. Papillary cystadenocarcinoma is the least malignant form of carcinoma and presents the most favorable prognosis. 5. The metastasis involves the lungs and bones most commonly and of the latter the skull and inferior maxilla the most frequently. Carcinoma invades distant structures by way of the blood vessels and sarcoma may be disseminated through the lymphatic channels with greater frequency than is the usual rule. 6. Malignant goiter causes death in at least 70 per cent. of cases.

Albany Medical Annals.

June.

47 *Adams-Stokes Disease. H. C. Gordinier, Troy, N. Y.
48 Albany Medical College in War Time. T. D. Crothers, Hartford, Conn.

47. **Adams-Stokes Disease.**—Gordinier reports three cases of this disease, two of which terminated fatally. The other patient improved considerably under the administration of nitroglycerin, iodid of potassium and strychnin.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

June 1.

49 Strangulated Hernia. H. Holte, Crookston, Minn.
50 *Ulcer and Cancer of the Stomach; Their Relationship. C. Graham, Rochester, Minn.
51 *Rapid Healing in Septic Cases, Including the Use of Iodoform Wax in Bone Cases. A. T. Mann, Minneapolis.

50. **Ulcer and Cancer of the Stomach.**—Graham presents the evidences for the belief that cancer arises from a previous ulcer. He suggests that what is most needed today is better and earlier diagnosis in both ulcer and cancer of the stomach so that non-medical cases may be reached by the surgeon by the time promises for life are greatest and when the pathologic conditions is easiest to demonstrate.

51. **Iodoform Wax in Bone Cases.**—Mann has had excellent results in the use of von Mosetig's bone wax in the treatment of chronic and subacute osteomyelitis, both septic and tubercular. This wax is made of iodoform 60 parts, oil of sesame 40 parts, and spermaceti 40 parts. It is solid at the body temperature, but it is easily made fluid by placing a bottle in hot water; when poured into a bone cavity it rapidly hardens.

Journal of Nervous and Mental Disease, New York.

June.

52 *Multiple Sclerosis; Its Clinical Course and Pathologic Anatomy. E. W. Taylor, Boston.
53 Subcortical Cerebral Gumma Accurately Localized in the Comatose State; Death; Recovery. G. A. Moleen, Denver, Colo.
54 The Paradoxic Reflex. A. Gordon, Philadelphia.

52. **Multiple Sclerosis.**—Taylor is of the opinion that multiple sclerosis occurs far more often in this country than is supposed. He emphasizes the need of a more careful examination of atypical cases and a more open mind in diagnosis, as well as the importance of observing and properly estimating minor symptoms of the disease, particularly unexplained spasticity and ocular disorders. As to the pathologic anatomy of the disease, Taylor believes that present evidence points toward a primary destruction of the myelin with either a secondary or coincident proliferation of the neuroglia.

Indiana Medical Journal, Indianapolis.

June.

55 President Stone's Address to the Graduates and Faculty of the Indiana Medical College.
56 Spinal Analgesia. J. W. Sluss, Indianapolis.
57 Address to the Graduating Class of the City Hospital Training School for Nurses. T. Potter, Indianapolis.
58 *Asbestos as a Surgical Dressing. A. S. Jaeger, Indianapolis.
59 Relation of the State to Tuberculosis. A. F. Tucker, Noblesville.
60 Diagnosis of Paralysis of the Individual Ocular Muscles Simplified. W. N. Sharp, Indianapolis.

58. **Asbestos as a Surgical Dressing.**—For the past two years Jaeger has used asbestos as a surgical dressing and also for making pneumonia jackets, dry poultices and continuous wet dressings with most gratifying results. He is convinced of its superiority over cotton and gauze. Asbestos can be sterilized and re-sterilized thoroughly; it does not become adherent to the wound and possesses great hygroscopic properties. Used as a continuous wet dressing Jaeger has found by actual experiment that it remains moist from 2 to 3 hours longer than cotton or gauze compresses. Although asbestos is more expensive than cotton or gauze, yet one pound of asbestos will practically go as far as two pounds of cotton.

Detroit Medical Journal.

June.

61 *Treatment of Tetanus. T. B. Cooley, Detroit.
62 The Speaking and Singing Voice as Affected by Abnormal Conditions of the Nose and Throat. W. S. Anderson, Detroit.
63 The House of the Surgeon at Pompeii. A. H. Griffith, Detroit.

61. **Treatment of Tetanus.**—Cooley does not offer anything new but sets forth those methods which on theoretical and practical grounds seem most rational in the treatment of tetanus. He believes that the mortality with which the disease has heretofore been attended has been far too high, and that this often is due to perfunctory treatment on the part of the attending physician when he feels that the case is so severe that no form of treatment can be of avail. Cooley advises the free use of antitoxin, subcutaneously and intravenously, in doses sufficiently large to be of value in neutralizing the toxin. He thinks that from 50 to 75 c.c. daily is not an excessive dose, especially at the beginning of the treatment.

Northwest Medicine, Seattle, Wash.

June.

64 Early Diagnosis of Cancer of the Breast. J. W. Bean, Tacoma, Wash.
65 Early Diagnosis of Cancer of the Uterus. C. A. Smith, Seattle.
66 Early Diagnosis of Cancer of the Stomach. E. C. Wheeler, Tacoma.
67 Early Diagnosis of Cancer of Lip and Tongue. T. F. Smith, Tacoma.
68 *Intramuscular Injections in the Treatment of Syphilis and the Use of the Sozoiodolate of Mercury. A. Garceau, San Francisco.
69 Diphtheria and the Action of the *Bacillus Diphtheriæ* as Compared with Other Bacteria. H. M. Greene, La Crosse, Wash.
70 The Chambers Abdominal Suture. R. J. James, Seattle.

68. **Intramuscular Injections in Syphilis.**—In primary and secondary cases Garceau gives 20 or 30 minims of the Lengfeld solution until complete disappearance of all manifestations or until he preceives symptoms of mercurialization. He continues this treatment every third or fourth day until the expiration of two months. He then begins by giving mild mercurial medication, say one-eighth of a grain of protoiodid, with opium, twice a day for an interval of two months. His patients are never disturbed by this internal medication after having taken mercury by injection. Further treatment is carried on by the demands of the individual cases. Garceau prefers the use of a soluble salt. Though inconvenient from the necessity of frequent injections, these salts are the best absorbed and best tolerated and there remains no danger of leaving any mercury in the tissues for further trouble. They are less painful than the insoluble salts, and keep the patient, during the most acute stage, almost daily under personal supervision. The technic which he employs is as folows: A site is chosen on the buttock at a point about midway from the trochanter of the femur to the sacral prominence. This spot is cleansed carefully by swabbing with ether and a sufficient time is allowed for evaporation which produces a mild anesthesia. The syringe is filled with the solution, then a trochar-needle is quickly plunged into the gluteus muscle. The trochar is removed and if there is no oozing from the wound the barrel is attached to the needle and the solution slowly introduced. The point of insertion is then covered with absorbent cotton and vigorous massage maintained for a few minutes. This massage is to obviate any danger of nodulation and relieves the pain of injection materially. The prick point can then be covered with collodion. The needle and syringe, of course, should be well sterilized before and after using. Since Garceau has been using intramuscular injections he has never had an abscess, deep nodulation, or any accident whatever, and has never received any complaint from his patients.

Archives of Otology, New Rochelle, N. Y.

April.

71 Circulatory Disturbances Following Ligation of the Internal Jugular Vein in Sinus Thrombosis. W. P. Eagleton, Newark, N. J.
72 Otitis Interna Sinistra Hemorrhagica; Vicarious Menstruation. E. Amberg, Detroit, Mich.
73 What Cases of Chronic Purulent Otitis Require the Radical Operation? A. Knapp, New York.
74 Leucocyte Count in Inflammatory Diseases of the Ear and of the Temporal Bone and in Otitic Intracranial Complications. Suckstorff, Hanover, Germany.
75 Postoperative Pyocyaneous Perichondritis of the Auricle. Tatsusaburo, Sarai, Japan.
76 A Congenital Fibrolipoma of the Palatine Tonsil. Zolki, Strassburg.
77 The Course of the Sigmoid Sinus in the Child's Skull. P. Rudloff, Wiesbaden.

The Philippine Journal of Science, Manila.

April 15.

78 Flora of the Lamao Forest Reserve. E. D. Merrill, Manila.

Southern California Practitioner, Los Angeles.

May.

79 An Earthquake Symposium. E. W. Fleming, Los Angeles; J. C. King, Banning; W. E. Hibbard, Pasadena; F. D. Bullard, H. G. Brainerd, Los Angeles, and others.
80 Early Diagnosis of Pulmonary Tuberculosis. C. C. Browning, Monrovia, Cal.

Medical Examiner and Practitioner, New York.

May.

81 Syphilis in Regard to Life Insurance. J. Kucher, New York
82 Physiology of Glycolysis. D. L. Edsall, Philadelphia.
83 Varieties of Glycosuria. L. N. Boston, Philadelphia.
84 Relation Between Diabetes Insipidus and Diabetes Mellitus. A. G. Ellis, Philadelphia.
85 Management of Cases of Diabetes Mellitus. J. Tyson, Philadelphia.
86 Clinical Analysis of 979 Cases of Nervous and Mental Diseases. J. Punton, Kansas City, Mo.
87 Eye Symptoms in Medical Diagnosis. F. E. Franchere, Sioux City, Iowa.
88 Effect of Tobacco in Health and Disease. L. Brunton, London.

Denver Medical Times and Utah Medical Journal.

May.

89 Treatment of Fatty Heart. H. W. McLauthlin, Denver.
90 Id. E. Stuver, Ft. Collins.
91 Fatty Degeneration of the Heart. W. J. Rothwell, Denver.
92 Treatment of Fatty Degeneration of the Heart. A. S. Taussig, Denver.
93 Treatment of Fatty Heart. F. P. Gengenbach, Denver.
94 Osteoplastic Operation on the Lower Jaw. E. J. A. Rogers, Denver.
95 Pneumonia. G. F. Butler, Chicago.
96 Ocular Symptoms in General Diseases. E. W. Stevens, Denver.
97 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.

Texas Medical News, Austin.

May.

98 The Leucocyte Count in Appendicitis. J. T. Moore, Galveston.
99 Passing of the Truss. R. W. Knox, Houston.
100 The Uterus and Ovary of Neurasthenia. R. L. Dickinson, New York.

Wisconsin Medical Journal, Milwaukee.

May.

101 Ventrofixation of the Uterus; Its Effects on Subsequent Pregnancy. V. F. Marshall, Appleton.
102 Splanchnoptosis. D. W. Harrington, Milwaukee.
103 Relapsing Syphilis. W. F. Bernart, Chicago.
104 Physiologic Therapy and Its Application as an Adjuvant to the Drug Treatment of Consumption. J. Moeller, Milwaukee.
105 Case or Tetanus. D. Waters, Grand Rapids, Wis.

Fort Wayne Medical Journal-Magazine.

May.

106 Complicated Fractures. C. B. Stemen, Ft. Wayne.

Journal of the South Carolina Medical Association, Charleston.

May 21.

107 Address of the President Before the South Carolina Medical Association. D. Furman, Greenville.
108 Subsidiary Contributions to Medical Success. W. T. English, Pittsburg.

The Medical Standard, Chicago.

June.

109 Notes from Nothnagel's Clinic. G. B. Hassin, Chicago.
110 Nephroptosia in Splanchnoptosia. B. Robinson, Chicago.
111 Practical X-Ray Therapy. N. M. Eberhart, Chicago.
112 Syphilis. V. V. Hunt, Blackwell, O. T.

Journal of the Kansas Medical Society, Lawrence.

June.

113 Surgical Treatment of Stenosis of the Pylorus. A. L. Blesh, Guthrie, Okla.
114 Syphilis of the Lungs. M. Shoyer, Leavenworth, Kan.
115 Acute Endocarditis. R. C. Lowermilk, Galena, Kan.
116 Conjunctivitis. (To be continued.) D. F. Longenecker, Emporia, Kan.
117 Pneumonia. E. Smith, Lawrence.

The Postgraduate, New York.

June.

118 Xanthoma Tuberosum Diabeticorum. R. Abrahams, New York.
119 Atonia Gastrica in Relation to Cholelithiasis. A. Rose, New York.
120 Infection by the Gonococcus. J. Pedersen, New York.
121 Gonorrheal Infection of the Joints. H. N. Taylor, New York.
122 Gonococcal Infection of the Seminal Vesicles. E. Fuller, New York.
123 Gonococcal Infection, in Reference to the Eye. F. Valk, New York.
124 Gonococcal Infection of the Kidney. F. Cabot, New York.
125 Renal Casts and Their Clinical Significance. B. F. Cline, New York.

International Journal of Surgery, New York.

June.

126 Observations in a Traumatic Hospital Service, Including Amputations, Fractures, Injuries of the Brain and Spinal Cord. J. M. Wainwright, Buffalo, N. Y.
127 Hysterectomy for Large Fibrocystic Tumor of the Uterus; Rupture of the Bladder Wall; Closure of the Opening by Peritoneum. P. F. Eve, Nashville, Tenn.
128 Tuberculosis Verrucosa Cutis. W. S. Gottheil, New York.
129 Tubercular Peritonitis. T. E. Potter, St. Joseph, Mo.
130 Best Method of Removing the Uterus Through the Vagina. E. Lanphear, St. Louis.
131 A Visit to the Mayo Brothers. D. McCaskey, New York.

St. Louis Courier of Medicine.

June.

132 Selection of Remedies for Neuralgias. W. C. Abbott, Chicago.
133 Significance of Vomiting. H. R. Coston, Birmingham, Ala.
134 Treatment of Retroflexion of the Pregnant Uterus. G. Gellhorn.
135 Passive Hyperemia. E. A. Babler.

American Practitioner and News, Louisville, Ky.

June.

136 Uterine Displacements. I. Abell, Louisville.
137 Abscess of the Lung After Typhoid Fever. J. W. Irwin, Louisville.
138 Rheumatism as a Factor Entering into Eye and Throat Diseases. C. Joyes, Ft. Worth, Texas.
139 A Simple Method of Expanding the Lung After Operation for Empyema. J. D. Maddox, Rockport, Ky.

Journal of the Medical Society of New Jersey, Newark.

June.

140 Unusual Heart Murmurs. C. D. Bennett, Newark.
141 Treatment of Pulmonary Tuberculosis. W. Reynolds, Atlantic City.
142 Some of the More Common Forms of Acute Peritonitis. M. A. Shangle, Elizabeth, N. J.
143 Diagnosis of the Exanthemata. J. F. Schamberg, Philadelphia.
144 Observations on the Care and Treatment of Infants and Young Children. L. W. Halsey, Montclair, N. J.

Columbus Medical Journal.

June.

145 Address of Welcome to the Ohio State Medical Association at Canton Meeting, May 9, 1906. J. F. Marchant, Canton.
146 Tuberculous Pericarditis, with Presentation of a Specimen. C. W. McGavran, Columbus.
147 Typhoid Fever of Childhood. H. B. Blystone, Columbus.
148 Treatment of Pulmonary Tuberculosis in Private Practice. J. P. De Witt, Canton.
149 Chronic Eczema. J. V. Shoemaker, Philadelphia.

Virginia Medical Semi-monthly, Richmond.

June 8.

150 Early Diagnosis and Management of Pulmonary Tuberculosis. R. J. Kline, Portsmouth.
151 Production and Therapeutic Value of Roentgen Rays. J. C. McGuire, Washington, D. C.
152 The Eyes of the New Born. J. M. Coleman, Jerome.
153 Peripheral Neuritis. F. B. Bishop, Washington, D. C.
154 Intestinal Antiseptics; Systemic "Depoisoners." J. R. Landers, Bernadotte, Ill.
155 Appendicitis as Seen by the Country Doctor. W. B. Daniel, Templeton, Va.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 9.

1 *Endemic Sporadic Dysentery (with Shiga's Bacillus) in England. R. Saundby.
2 Clinical Features of the Several Types of Colitis. H. A. Caley.
3 *Two Cases of Ruptured Duodenal Ulcer. J. Clay.
4 Mind and Matter. T. C. Shaw.
5 General Convulsions in Early Infancy Induced by the Taking of Food. E. Smith.
6 Infectivity of Enteric Fever. W. Wright and W. Archibald.
7 *Successful Amputation of the Leg at 94 Years, with an Account of a New Operation. C. W. Branch.

1. **Endemic Sporadic Dysentery.**—Saundby reports two cases f this affection which had been diagnosed previously as cases f ulcerative colitis. Neither patient had ever been out of ngland yet Shiga's bacillus was found in both instances on acteriologic examination. One patient gave a history of coninuous diarrhea for six months and the other for eleven eeks. This patient died from perforation, with extensive lceration of the colon, after having been under the treatment or three weeks. Saundby employs the treatment recomnended by Gemmel.

3. **Ruptured Duodenal Ulcer.**—The two cases reported by lay are cited as examples of perforation of the duodenum ithout either vomiting or abdominal distension. One patient ad suffered from severe pain in the epigastric region for nine ears. Suddenly the pain became so severe that the patient as obliged to lay down. There was no vomiting, the bowels id not act and no flatus was passed. The ulcer, which was ound in the duodenum, one inch from the pylorus, was closed y one suture of thick catgut through all the coats of the owel. This was buried with Lembert sutures; the peritoneal avity was washed out with hot saline solution and drained from both flanks and from above the pubes by means of rubber tubes. The patient made an uneventful recovery. The second patient had a sudden severe pain in the lower part of the abdomen, the pain being deflected into the right testes. There was no vomiting, no bowel movement and no flatus was passed. The operation was similar to that in the first case, the ulcer being similarly situated. The patient died twenty-four hours after the operation. In both cases the abdomen was very tender, retracted and extremely rigid.

7. **New Method of Amputation of Leg.**—Branch performs this method where great rapidity is desirable and the leg is spare enough to permit it. The left hand seizes the outer side of the leg at the point of section of bone, thumb to the front. The skin over the tibial surface is drawn forcibly outward, the point of the knife is made to enter at the edge of the tibia, graze the fibula and emerge as far inward as possible on the back of the leg, and a flap is then cut downward. On releasing the leg the front of the incision flies inward, so that it is now possible to enter the knife and clear the tibia to reach the point of exit behind, and cut the internal flap, which should equal the external. With the catlin a semilunar periosteal flap is cut from the front of the tibia, and quickly stripped upward, the bones cleared and the saw entered at first obliquely, then straight, in the usual way, so as to take off the front corner of the tibia. This point of bone is in the anterior angle of the wound, but being covered by the periosteal flap never becomes adherent. Two acupressure pins are inserted between the bones crosswise, so that the anterior and posterior tibial arteries lie in the opposite angles. A stout silk is now wound by figures-of-eight so as to close the pins together and compress the arteries. The pins are slightly withdrawn from their cannulæ, so that the points are hidden, and the tourniquet removed. Two vessels in the heads of the gastrocnemius usually require ligature, and nothing remains but to suture, leaving the heads of the pins and the end of their silk protruding from the anterior angle of the wound. The pins are removed about three or four days after, and the silk, then loose, easily comes away.

The Lancet, London.

June 9.

8 *Chronic Appendicitis and the Early Diagnosis and Treatment of Acute Appendicitis in Children. A. Broca.
9 Dyspepsia. A. G. Barrs.
10 *Pneumococcic Peritonitis in Children. W. F. Annand and W. H. Bowen.
11 Achondroplasia; Its Occurrence in Man and in Animals. C. R. Keyser.
12 *Tuberculous Disease of the Seminal Tract. K. E. Gunn.
13 *Case of Acute Yellow Atrophy of the Liver. H. C. Keates.
14 Deep Alcohol Injections in Facial and Other Neuralgias and in Histrionic Spasm. F. Ostwalt.
15 Case of Acute Poisoning with Oil of Eucalyptus. J. Benjamin.
16 *Hygienic Measures Against Syphilis. E. Metchnikoff.

8. **Appendicitis in Children.**—Broca is of the opinion that muco-membranous enteritis is a frequent cause of appendicitis both in children and in adults, thus indicating the need of carefully combined surgical and medical treatment. Patients who for years have been treated for obstinate dyspepsia, even for supposed intestinal and peritoneal tuberculosis, may have been suffering only from chronic appendicitis. The symptoms of the treatment are described at great length.

10. **Pneumococcic Peritonitis in Children.**—Annand and Bowen studied 16 cases, from which they draw the following conclusions: 1. Pneumococcic peritonitis is a comparatively rare disease in children, but in the past many cases have not been recognized. 2. It is in about a third of the cases secondary to some remote pneumococcal lesion; of these, affections of the lungs and pleuræ are by far the commonest, the middle ear being the next most common site. The infection is carried to the peritoneum in the blood stream. 3. In the remaining two-thirds the peritoneum is probably infected from the bowel in the vast majority. No microscopic lesion is, as a rule, found. 4. In half the cases the pus is encysted; in these the diagnosis is fairly easy, the prognosis is good, and the treatment is laparotomy and drainage. 5. In the other half of the cases the peritonitis is diffuse, the diagnosis is very difficult, and the prognosis very gloomy. The treatment is laparotomy. 6. The pathologic appearances are characteristic.

12. **Tuberculous Disease of Seminal Tract.**—Gunn summarizes the results of a careful study of six cases as follows: 1. Infection may readily pass along a normal vas to the vesicle or prostate; the fact that the vas above a diseased testis feels healthy is no proof that the tubercle has not extended to the vesicles. 2. When both testicles and seminal vesicles are infected radical treatment alone is likely to be followed by success. 3. When the disease is confined to the seminal tract it can be completely removed and that without any great risk to the patient. 4. In all probability the patient is functionally no worse after such an operation than after a partial operation on both testes.

13. **Acute Yellow Atrophy of Liver.**—Keates reports a case occurring in a man, aged 18, who was thought to be suffering from a severe case of catarrhal jaundice. When the patient became delirious and vomiting and bleeding from the gums occurred it was evident that a simple jaundice could not account for all these symptoms. When it was found that the liver dullness which had previously been normal was greatly diminished and that leucin crystals appeared in the urine, there was little doubt of the diagnosis. Tyrosin crystals were not seen in the urine until the day before the man's death. Previous to his illness the man was perfectly healthy, there were no signs of syphilis, and being a Mohamedan, he had probably never touched alcohol. There was no enlargement of the spleen and there was no great tendency to hemorrhage; the only one that occurred was from the gums. The jaundice was most intense and both the tears and saliva were tinged with bile.

16. **Hygienic Measures Against Syphilis.**—Some of the experiments detailed by Metchnikoff have been referred to in The Journal, page 1779. The conclusion from those experiments was that mercurial ointments might certainly be useful prophylactics against syphilis in all those cases in which a contact had taken place. Instead of gray ointment, which caused much irritation in the skin and mucous membranes, the use of salves made up with non-irritating mercury salts should be recommended, such as calomel. The results obtained on lower monkeys and on anthropoid apes agreed so well as to justify the conclusion that the same method might also serve for the prevention of syphilis in man. Nevertheless, to make sure, they decided to try an experiment on a man. They inoculated at his own request a young medical student, who had almost completed his studies, with virus from the chancres of two syphilitic men. An hour after the parts inoculated were rubbed for five minutes with an ointment which contained in three parts one part of calomel. The young man, although certainly free from any former syphilitic taint, developed no primary lesion. Four macaci were treated with the same virus with which he was inoculated. Two of them, used as control animals, showed primary lesions seventeen days later. A third macacus was rubbed with the calomel ointment an hour after inoculation of the virus and remained free from any syphilitic lesion, like the young man. The fourth macacus was rubbed with the ointment twenty hours after inoculation

and showed a primary lesion after thirty-nine days. That experiment, therefore, showed that man could with advantage employ mercurial ointments after every suspicious contact in order to preserve himself from syphilis. In a long series of experiments carried out on chimpanzees, baboons and macaci, mercurial inunction successfully prevented the outbreak of a primary lesion. The virus was inoculated either on the eyebrows or on the genital organs of the males and females. It was taken from a primary lesion in man and was thoroughly applied with a scarifier. The ointments employed were prepared either with metallic mercury or with calomel, white precipitate, or salicyl-arsenite of mercury. The substances were suspended in lanolin (1 in 3 or 1 in 4). Inunction was carried out for from four to five minutes and was begun between one and twenty hours after the inoculation. Even when applied eighteen and one-half hours after infection calomel salve still proved effective.

Journal of Tropical Medicine, London.

June 1.

17 Diseases Met in South Sylhet, India. A. B. Dalgetty.
18 Anatomy of the Biting Flies of the Genera *Stomoxys* and *Glossina*. (To be continued.) G. M. Giles.
19 Purn of the Malay Peninsula. (To be continued.) T. D. Gimlette.

Journal of the Royal Army Medical Corps, London.

June.

20 Bacteriologic Examinations of Cases of Mediterranean Fever. J. C. Kennedy.
21 An Examination of Goats in Malta, with a View to Ascertain to what Extent They are Infected with Mediterranean Fever. T. Zammit.
22 Contact Experiments. W. H. Horrocks.
23 Ambulatory Type of Case in Mediterranean or Malta Fever. (To be continued.) E. A. Shaw.
24 Hints Regarding the Management and Use of X-Ray Apparatus. (To be continued.) F. Bruce.
25 *A Modified Artery Forceps. F. F. Carroll.
26 The Leisman Body, the Gregarine Stage of a Herpetomonas. C. Birt.
27 Latrine Infection in the Enteric Fever of India. D. Wardrop.
28 The Goux System and Its Application to India. R. J. Blackham.
29 An Indian Incinerator. H. A. Haines.
30 Continental Surgical Procedure. F. F. Carroll.
31 Preserving Health of Soldiers in the Field. G. S. McD. Elliot.
32 Army Bearer Corps. A. E. Milner.

25. **Modified Artery Forceps.**—The forceps devised by Carroll is said to facilitate the tying of arteries situated at a depth from the surface of the body, and particularly in those cases in which, owing to want of space, great difficulty is experienced in slipping a loop of ligature along the forceps already *in situ*. Carroll has found them of great assistance in cranial surgery. The method of using is extremely simple. The ligature material, whether silk or catgut, is first looped over the notch in the lower blade and both ends crossed under the spring catch on the handle, where they are held tightly. The forceps can now be applied to an artery. When the vessel has been clipped the ends of the ligature should be released and tied in a surgical knot. If the knot is tightened the ligature will be found to slip by itself off the nose of the forceps on to the artery.

Annales de Dermatologie et de Syphiligraphie, Paris.

Last indexed XLV, page 359.

33 (VI, No. 6.) Trois nouveaux cas de porokératose. V. Mirbelli and M. Truffi.
34 Gonococcie métastatique de la peau (Angiodermite suppurée à gonocoques). C. Audry.
35 (Nos. 8-9.) Prurigo lymphadénique. W. Dubreuilh.
36 (No. 10.) Successful Inoculation of Eyelids of Monkeys with Syphilitic Products.—Etudes de vénéréologie expérimentale. G. Thibierge and P. Ravaut. (Commenced in No. 7.)
37 Etude de la nutrition dans les dermatoses. A. Desgrez and J. Ayrignac.
38 (No. 11.) Le spirochète de la syphilis. E. Buruet.
39 De l'herpès récidivant de la fesse (of nates). W. Dubreuilh.
40 (No. 12.) Le lupus érythémateux à forme d'atrophodermie en plaques. G. Thibierge.
41 Les formes bulleuses de l'hydroa vacciniforme (Baziu). E. Constantin.
42 (VII, No. 1.) Pathogénie des éruptions bromiques. A. Pasini.
43 Les edèmes aigus circonscrits de la peau et des muqueuses (circumscribed edema of skin and mucosa. R. Morichau-Beauchant.
44 (No. 2.) Cas de syphilis héréditaire tardive du foie (of liver). E. Devic and J. Froment.
45 Histologie du lichen plan des muqueuses. W. Dubreuilh.
46 (No. 3.) Etude des tuberculides papulo-squameuses. 3 cas de tuberculides à forme de parapsoriasis. A. Civatte.
47 *Traitement de la syphilis par la voie rectale. C. Audry. (First part in No. 10.)
48 (No. 4.) Dermatomycose des regions glabres causée chez l'homme par le *Microsporon canis*. J. Nicolas and L. Lacomme (Lyons).
49 Tension superficielle des urines dans la syphilis, dans la blenorrhagie et dans quelques dermatoses (psoriasis, etc.). C. Combéléreau.

47. **Mercurial Treatment by Way of the Rectum.**—Audry has been giving this method of mercurial treatment a thorough trial in 48 cases and has been much pleased with the results. He gives the details of 30 typical cases, all showing that mercurial medication by way of the rectum is perfectly tolerated and is as effectual as by other technics. He administers the mercury in the form of suppositories made of cocoa butter and a liquid preparation of metallic mercury in olive oil and vaselin; each suppository contains 2 c.c. of mercury. One suppository is used every evening for a month; they are then omitted for four or five days and then again given. One child of 3 was thus treated with 100 suppositories during four months, each suppository representing 1.5 c.c. of mercury. No local or general inconveniences of any kind were observed. The effect seems to be the same as from other methods of mercurial treatment. In some control cases the course of the lesions under this and parallel mercurial treatment by the ordinary technics seemed to be identical. The action of the rectal medication was particularly prompt and certain in case of lesions in the anogenital region and in the mouth and throat.

Bulletin de l'Académie de Médecine, Paris.

50 (Year LXX, Nos. 15-16.) Tuberculose inflammatoire à forme néoplasique. Adénomes du mamma, du corps thyroide, etc. d'origine tuberculeuse. A. Poncet and R. Leriche.
51 (No. 22.) Paralysie générale et syphilis chez les Arabes. Marie.
52 Sur les mélanges titrés de chloroforme et d'air. Procédé de Paul Bert. N. Gréhant.
53 *Unnecessary Operations for Appendicitis.—Erreurs de diagnostic et erreurs opératoires. Dieulafoy.

53. **Operations for Non-existent Appendicitis.**—Dieulafoy's communication was summarized in a cable dispatch and has appeared in the daily papers. He has always been an advocate of prompt surgical intervention in case of appendicitis, but he now announces that appendicectomy is frequently done when the symptoms indicate merely an affection of the colon or cecum or both and the appendix is entirely sound. He described a dozen cases in detail in which the patient had had his or her appendix removed without affecting in the least the course of the intestinal affection producing the symptoms. The removed appendix was sound. The slight changes discovered on histologic examination have by no means the significance usually ascribed to them. The ordinary hypertrophy of the closed follicles in the appendix has been branded as folliculitis and used to justify the removal of a sound organ. The hemorrhagic folliculitis chronicled in many cases is merely the result, he states, of the operative injury. Letulle in his extensive study of the subject has never been able to discover this follicular apoplexy except in an appendix that has been operated on. Dieulafoy enters a vigorous protest against the assumption that the appendix frequently becomes inflamed as a result of inflammation of the colon and cecum. On the contrary, he says, the co-existence of true appendicitis and enterocolitis is the very rarest exception. The diagnosis is generally unmistakable under these conditions. A physician practicing at a French watering place has collected 22 cases of mucomembranous or gallstone typhlo-colitis in which the patients came to get relief from a course of the waters, after having been vainly operated on for appendicitis. Their attacks recurred the same as before the operation. Lancereaux corroborated Dieulafoy's statements, relating that he had witnessed a number of similar cases. Besides mucomembranous typhlo-colitis, hysteria and absinthe intoxication are liable to induce a similar syndrome. In one case the patient had a feverish cold with abdominal pains. McBurney's point was very sensitive, but so was the symmetrical point on the other side, and the course of the case confirmed the diagnosis of absinthe poisoning without appendicitis.

Archiv f. Gynäkologie, Berlin.

Last indexed XLVI, pages 1403 and 1482.

54 (LXXVIII, No. 3.) *Zur physiologischen Wirkung der Hydrastis canadensis und des Ergotins auf die Circulations-Organe und die Uterus-Musculatur. L. Fellner.

55 Ueber die Reaction des Vaginal-Sekrets. R. Bengelsdorff.
56 *Mikroskopische Befunde an roentgenisirten Kaninchen-Ovarien (of rabbits). O. Specht.
57 Die physiologische Variationen im Bau des normalen Ovariums und die chronische Oöphoritis. A. Theilhaber and A. Meier.
58 *Gangraena uteri puerperalis (Metritis dissecans?). K. Schmidlechner.
59 *Weitere Studien zur Pharmakologie des Uterus und deren klinische Würdigung. E. M. Kurdinowski.
60 *Scopolamin-Morphin Anesthesia in Labor.—Geburten in künstlichen Dämmerschlaf. C. J. Gauss.
61 *Results of Abdominal Extirpation of Uterine Cancer.—Ergebnisse der abd. Radical operation des Gebärmutterkrebses. G. Brunet.
62 Zur Reform des Hebammenwesens unter Zugrundelegung der sachsischen Verhältnisse (regulation of midwifery). F. Weindler.
63 Complication of Pregnancy and Delivery with Prolapse of a Loop of Intestine with Mucosa Outside.—Darmvorfall mit Schleimhautumstülpung aus einem Anus praeternaturalis heraus. L. Blumreich.

54. **Physiologic Action of Hydrastis Canadensis and Ergot on the Uterus, Etc.**—Fellner's researches confirm those of Kurdinowski in regard to the way in which these drugs act on the uterus independently of their action on the vascular system. The contraction of the uterus induced by preparations of ergot resemble tetany, while hydrastis seems to be able to deprive the ergot contractions of their tetanic character, to render them slower and to prolong the period of relaxation. It might be possible, Fellner thinks, by combining the two drugs, giving one after the other, to induce effectual and harmless labor. This combination would do away with the enormous increase in the intrauterine pressure which Schatz regards as the great drawback to the use of ergot, and which Fellner's researches on animals have confirmed. It would also restore the alternations of contraction and relaxation, important for the expulsion of the fetus.

56. **Microscopic Findings in Rabbit Ovaries After Roentgen Exposures.**—Specht has continued Halberstädter's experiments on rabbits. He found marked changes in the ovaries in from twelve to twenty-four hours after a single exposure of one or two hours with comparatively mild tubes. The vessels of the ovary did not seem to be injured, the changes affected mostly the cells, especially those of the primary follicles and of the interstitial parenchyma. He remarks that it is important to protect the ovaries in exposing the abdomen of female patients. It may prove possible to treat the ovaries directly by proper therapeutic dosage of *x*-ray exposures. The conditions are less favorable than in rabbits, as rabbit skin is much less sensitive to the rays than human skin, but it seems probable that repeated exposures spread over a sufficiently long period might induce atrophy of the ovaries without secondary injury.

58. **Puerperal Gangrene of the Uterus.**—Schmidlechner sketches the history of what used to be called dissecting metritis, but for which puerperal gangrene is a better term. Forty-eight or 50 cases have been reported during the last thirty years, most of them in Russia. One case has been under observation at Budapest, which he describes in detail. The patient was a iv-para of 27, three months pregnant, with sudden uterine hemorrhage, followed by considerable discharge, fever and weakness. The interior of the uterus was found to be gangrenous and the organ was removed about a month after the first symptoms, with the prompt recovery of the patient.

59. **Pharmacology of the Uterus.**—Kurdinowski is continuing his research on this subject, now working in Liebreich's Institute of Pharmacology at Berlin. He describes his technic for study of the isolated, living, rabbit uterus, and then relates the particulars of his tests of various drugs. He found that quinin displayed a marked effect in causing contraction of the uterus. When injected into a vein it causes a few strong contractions and then its effect subsides, but when injected subcutaneously the effect is different. It is more gradually felt, owing to the more gradual absorption of the drug, but it exerts a much more powerful influence, causing a marked, continuous contraction of the uterus, resembling actual tetany, which only very gradually subsides again. This long contraction might cause the asphyxia and even the death of the fetus by its unfavorable action on the circulation. On the other hand, this property might be utilized in combating atony of the uterus and the consecutive hemorrhage, also to favor involution of the uterus after delivery and to arrest uterine hemorrhage of whatever cause. The quinin should be injected subcutaneously, as its effect by the mouth is much less reliable. It is advisable to refrain from the use of quinin during pregnancy on account of this tetanic action on the uterus. He found that berberin and physostigmin have a marked effect in reinforcing the natural contractions of the uterus without affecting their character. His conclusions in regard to adrenalin are that it is unsuitable for use in obstetries except as a last, desperate resort, when a woman is bleeding to death and all other measures have failed. An intravenous injection of adrenalin would certainly expel the blood from the organ so that further hemorrhage from it would be impossible for the time being. Its action is brief. He found that an intravenous dose of 0.0005 gm. of adrenalin always induced an extremely violent reaction in the rabbit uterus, especially noticeable when the uterus had been previously quiet. Contractions occurred at once and became extremely vigorous, reaching their acme rapidly but subsiding very slowly. The blanching of the uterus for a few minutes, no longer, was followed by a return of the blood, making it appear even redder than normal. Hamamelis, he found, acts on the uterine contractions by reinforcing while modifying them. The article is accompanied by tracings showing the behavior of the uterus under the influence of the various drugs.

60. **Morphin-Scopolamin Anesthesia for Labor.**—Gauss devotes 53 pages to a detailed presentation of his experience with 600 parturients who were delivered under morphin-scopolamin anesthesia. They formed 70 per cent. of the total number of patients at the Freiburg gynecologic clinic during the period in question. He regards it as the ideal method for conducting a labor, the drowsiness induced reducing the perception of the pains almost to the vanishing point. This is accomplished, he says, without any disagreeable subjective byeffects on the woman herself, without essentially modifying the birth act, and without danger to the mother or injury to the child.

61. **Abdominal Hysterectomies for Cancer.**—Brunet analyzes the findings in 70 cases of cancer of the uterus treated by abdominal extirpation at Mackenrodt's private clinic, 1901-4. He compares them with those reported by others recently, classifying thus 251 cases. Among other points brought out, he states that in nearly 50 per cent. of all the cases in which the operation was undertaken in less than four weeks after the first development of symptoms, the cancer had already spread macroscopically beyond the uterus. This was also the case in 20 per cent. after two months of symptoms, in 26 per cent after three months, and in 40 per cent. after six months. About 45 per cent. of the women operated on in 1902 have remained healthy since.

Beiträge z. Geb. und Gynäkologie, Hegar's, Leipsic.

Last indexed XLVI, page 2024.

64 (X, No. 2.) *Fatal Affections of Gastric and Intestinal Mucosa After Laparotomies.—Ueber tödliche Affektionen der Magen- und Darmschleimhaut nach Laparotomien, nebst Bemerkungen zur Melaena neonatorum. O. von Franqué (Prague).
65 Die occipito-sacralen Vorder- und Hinterscheitel- Lagen (vertex presentation). F. A. Kehrer.
66 Ueber einen Ovarial-Tumor mit chorionepitheliomartigen Metastasen im Peritoneum. H. Schmaus.
67 Placenta prævia cervicalis. F. Kermauner.
68 *Ueber Infantilismus und Hypoplasie des Uterus. K. Hegar.
69 Blutuntersuchungen bei Puerperalfieber. Kownatzki.
70 *Preventive, Artificial Filling of the Bladder During Gynecologic Operations.—Ueber die Künstliche Blasenfüllung bei gyn. Op., insbes. bei Laparotomien, als Mittel zur Verhütung nachfolgender Harnverhaltung und zur Ausschaltung toter Räume im Becken. K. Frankenstein (Kiel).
71 Bakteriologische Beiträge zur puerperalen Wundinfektion. H. Hellendall. (Commenced in No. 1.)

64. **Postoperative Fatal Affections of Gastrointestinal Mucosa.**—In von Franqué's experience 2 patients have succumbed to hemorrhages in the digestive tract a few days after apparently successful gynecologic operations. He discusses the various hypotheses advanced to explain such occurrences. Busse has collected reports of 34 such cases occurring after gynecologic operations in a total of 96 after various other operations. As possible adjuvant causes von Franqué mentions compression by a bandage, or from sand bags, etc., used during or after the operation, and forcing the stomach against the spine. Another possible cause is the accumulating secretion

of hydrochloric acid in the stomach purposely kept fasting during and after the operation. The explanation suggested by von Eiselsberg for the ulcerative processes in stomach or intestines, the source of the hemorrhages, is the assumption of retrograde embolism from the portal vein by thrombi resulting from the ligature of vessels in the omentum or mesentery. This explanation might apply likewise to the melena of the new-born. Still another explanation is suggested by 2 other gynecologic cases in his experience in which the findings in the kidney were typical of mercurial intoxication. In both these cases a 1 per thousand solution of corrosive sublimate had been used scantily for the external disinfection of the abdomen and vagina. These cases suggest that it is wiser not to use this preparation for both the field of operation and the vagina at the same time. He does not know of any means of preventing postoperative gastrointestinal hemorrhages.

68. **Treatment of a Rudimentary Uterus.**—Hegar reviews the cases observed in the Freiburg clinic in which the uterus was defectively developed. They include all phases from the fetal, infantile, congenitally atrophied and hypoplastic to the pubescent uterus. The commencement of menstruation was unusually tardy in more than half the cases, and was accompanied by dysmenorrhea in the majority, and the menses were scanty and irregular in many, with an early menopause. The outlook for a successful pregnancy is bad when the uterus has a pronounced infantile shape, with hypoplasia, and when the ovaries are also defective. With better developed organs, if menstruation has not appeared after the usual age of puberty, or has ceased for a few years after scanty menses for a longer or shorter period, and if other physical anomalies are observed, improvement can scarcely be expected. Severe infections during childhood or puberty, constitutional affections and the like, the age of 25 to 30, also render further development improbable. The outlook is more favorable for the uterus which has passed beyond the infantile stage but is not yet fully developed. It has the shape of the adult uterus, but not its size and weight. General tonic measures are indicated, and, in younger patients, with slight degrees of infantile conditions and hypoplasia, the development of the uterus might be directly stimulated by measures to induce congestion in the pelvic organs. These measures might include the administration of emmenagogues and carbonated or brine baths. The local application of electricity and other mechanical measures is not without danger. The enlargement of the uterus sometimes noted after them is more often pathologic, the result of inflammation induced in the parts. If local measures can do any good they should be restricted, he thinks, to lavage of the uterus and vagina after dilatation of the cervix, and, possibly, introduction of a sound. It must not be forgotten that the dysmenorrhea may be traceable to the ovaries or to conditions in the walls of the uterus or to nervous troubles. Before attempting the above treatment the physician should decide whether the general condition of the genitalia and organism as a whole renders probable the prospects of normal development of a fetus.

70. **Prophylactic Filling of Bladder at Operations.**—Frankenstein states that postoperative retention of urine is observed at the Kiel clinic in only 3.4 per cent. of the patients now, while it used to occur in 55 per cent. of all the laparotomy patients. He attributes this improvement to the rule of pouring into the bladder a 0.9 per cent. tepid salt solution, with or without the addition of from 10 to 20 c.c. of an emulsion of iodoform. This is done before the abdominal cavity is entirely sutured so that the bladder can be watched as it fills, to determine the individual amount of fluid required. From 350 to 400 c.c. is the average; very rarely is 600 c.c. needed to distend the bladder sufficiently. In the last series of 875 laparotomies postoperative ischuria was observed in 85 cases. In 20 of these patients the pelvis had been drained with tampons which might easily have pressed on the bladder and hindered its functioning. Only 52 patients had this tampon drainage and the ischuria was noticed in 20 of these. In 9 cases spontaneous urination followed removal of the tampon. In 25 of the cases with ischuria there had been preceding inflammatory processes in the vicinity of the bladder. This suggests the possibility of a reflex paresis of the parts. In 12 other cases the urinary functions had been previously disturbed by a tumor or other trouble. In 2 other cases the bladder was not filled until after the peritoneum had been sutured. The filling was not done under direct visual control, and thus probably was not strictly according to the special requirements of the case. The results are less striking in operations by the vaginal route, as visual control is not favored by the exposure of the bladder, while the organ is more liable to be injured during the operation. In his experience, the first urination usually accompanied the first stool. This confirms the analogy between the paresis of bladder and intestines. One of the great advantages of filling the bladder is that it does away with dead spaces in the pelvis, and restores the pelvic organs to their normal position, while it prevents the small intestine from sliding down into the small pelvis. It is an important aid in the Pfannenstiel suprasymphyseal transverse incision. In 62 cases in the clinic an abscess in the abdominal wall followed in only two instances, and both were in tuberculous patients.

Centralblatt f. Chirurgie, Leipsic.

Last indexed XLVI, page 1978.

72 (XXXIII, No. 19.) *Disturbances in Growth After Brief Roentgen Radiation.—Ueber Wachstumsstörungen nach kurzdauernden Roentgenbestrahlungen. K. Försterling.
73 Ueber schwere Respirations-Störungen infolge medullärer Stovain-Anästhesie (2 cases of serious respiratory disturbances from spinal anesthesia). W. Greiffenhagen.
74 (No. 20.) Fall von Herznaht (suture of heart). Dolcetti (Trieste).
75 *Zur Technik der Gastroenterostomie und Enteroenterostomie. E. Joseph.
76 (No. 21.) Zur Aetiologie der punkt-förmigen Hämorrhagien im Wurmfortsatz (punctate hemorrhages in appendix). Lotheissen. Id. C. Bayer. (First part in No. 17.)
77 Instrumentarium, Technik und Erfolge der epiduralen Injektionen. M. Hirsch (Vienna).

72. **Disturbances in Growth After Brief Exposure to Roentgen Rays.**—Försterling exposed 20 dogs and rabbits to the Roentgen rays for a period ranging from five to twenty minutes, at 20 cm. distance, the strength of the radiation much less than those used in therapeutics. He found that a single brief and mild exposure of this kind had a marked effect on the growth of the part thereafter. A normal rabbit weighing about 500 gm. when 50 days old weighs about 860 gm. by the hundredth day. The control rabbits exposed for ten or fifteen minutes weighed only 700 and 460 gm. by the hundredth day. When one side only was exposed the arrest in the development of that side was strikingly apparent. No dermatitis was observed in any instance. The younger the animal the more marked this almost constant inhibiting action on the growth. The findings suggest extreme caution in the use of the rays on young children. They also indicate that the minimum dose causing eventual injury has not yet been determined.

75. **Cutting Clamp for Gastroenterostomy and Entero-enterostomy.**—Joseph's clamp resembles that put forth by A. Gilbert in 1904. The two long branches are inserted in the parts to be united, and by pressing the branches together the parts are brought into apposition and they are sutured together around the smooth cylinder formed by the closed branches. A knife blade slides back and forth in a groove between the branches, cutting the apposed tissues and thus making the opening of the desired size. The clamp can be applied with great force by the parallelogram arrangement of the base of the branches. The instrument is shown in an illustration.

Centralblatt f. Gynäkologie, Leipsic.

Last indexed XLVI, page 1978.

78 (XXX, No. 19.) *Die Ventralsuspension der verkürzten Ligamenta rotunda als Retroflexions-Operation. H. W. Freund.
79 Zur Kasuistik der Hernia ovarica inguinalis. E. Zurhelle.
80 Zur Frage der Leukocytose post partum bei gleichzeitige Splenektomie. M. Penkert.
81 Zur Retroflexio uteri gravidi partialis. H. Thomson (Odessa).
82 (No. 20.) *Tabes dorsalis und Gravidität. J. Thies.
83 The Magnet in Diagnosis in Gynecology. H. Sellheim. Id. H. W. Freund. (First part in Nos. 11 and 16.) See abstract 53 on page 1569.
84 *Eine neue Operations-Art der künstlichen Vagina (artificial vagina). J. J. Fedorow.
85 (No. 21.) Zur Kasuistik der nervösen Erkrankungen im Puerperium. H. Füth.
86 Zur Vollendung der Geburt bei Beckenendlagen (delivery with pelvic presentation). O. Bunge.
87 Extraktion des in partu abgerissenen zurückgebllefenen Kopfes (of detached head). Rühl.

78. **Ventrosuspension of Shortened Round Ligaments for Retroflexion.**—Freund takes up a fold in each round ligament in front of the uterus and then fastens the uterus to the abdominal wall through them. The round ligaments are shortened by the loops taken up in them, but otherwise they are not disturbed and remain in their normal position with normal blood and nerve supply. The uterus is sustained by the ventrofixation although it is not so directly fastened as by the usual technic, on account of the interposed loops of the round ligaments. These loops hold it at about the normal distance from the abdominal wall, and it can enlarge during a subsequent pregnancy without disturbance from its attachment to the wall. The only objection against this combined shortening of the ligaments and fixation of the uterus is that the abdomen has to be opened for the purpose.

82. **Pregnancy in a Tabetic.**—Thies relates the history of a woman in the paralytic stage of tabes who was delivered spontaneously of a viable child. No labor pains were perceived except some pains in the thighs. The delivery and involution of the uterus proceeded apparently normally, with this exception, and the patient was dismissed on the twenty-fifth day with a healthy child. The mother's condition was, on the whole, much better than when she entered the hospital, especially in the subjective sensations. The bladder and rectal disturbances were much less pronounced, and the severe nervous symptoms were materially improved.

84. **Artificial Vagina.**—Fedorow recently operated on a married woman with congenital absence of vagina, uterus and ovaries. His operation was comparatively simple and yet very successful. He constructed the vagina out of the very elastic part of the rectum between the third sphincter and the internal sphincter or ampulla. Resection of the rectum at this point, even to half its circumference, does not interfere with its functioning later. The strip of rectum thus obtained was sutured to the entrance to the vagina, forming an elastic blind passage, lined with mucosa, reinforced with muscle tissue. He worked through an incision in the perineum. The minor details of the technic were similar to those followed by Subbotin in his method of making an artificial urethra in the rectum.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

88 (XXXII, No. 19.) *Eine serodiagnostische Reaktion bei Syphilis. A. Wassermann, A. Neisser and C. Bruck.
89 *Inflammation of Retina and Optic Nerve from Congenital Syphilis.—Ueber Entzündung der Netzhaut und des Sehnerven in Folge von angeborener Lues. J. Hirschberg.
90 Pruritus als Initial-Erscheinung des Herpes zoster. Bettmann.
91 *Zur Behandlung des Morbus Basedowii mit Antithyreoidin Möbius. Heinze.
92 *Resultate der chirurgischen Behandlung der Blasen-Tumoren (of bladder). Treplin.
93 *Calomel Treatment of Myiasis.—Die Fliegenkrankheit und ihre Behandlung. J. A. Roorda Smit (Rotterdam).
94 *Roentgen Photographs in Relief.—Herstellung plastisch wirkender Roentgen-Photographien. G. Schellenberg.

88. **Serodiagnosis of Syphilis.**—Wassermann, Neisser and Bruck have succeeded in producing a serum which gives a specific reaction with syphilitic blood, and also determines the proportion of the antibodies in the blood examined. The reaction is based on the total or partial arrest of the otherwise inevitable destruction of red corpuscles, that is, on the inhibition of hemolysis. It is similar to Wassermann's recent researches in this line in typhoid fever, meningitis and tuberculosis. The prepared serum is made by mixing the inactive serum of monkeys previously treated with syphilitic material from patients, to which is added the complement in the form of fresh normal guinea-pig serum. The mixture is then tested with an inactive specific hemolytic serum and its corresponding red corpuscles to determine whether the added complement is "anchored." When this is the case it becomes evident in the total or partial suspension of hemolysis.

89. **Differentiation of Inflammation of Retina and Optic Nerve in Inherited Lues.**—Hirschberg describes the various points for differentiating the ocular disturbances due to inherited syphilis. He cites some examples to illustrate the remarkably rapid and effectual action of mercurial treatment in puzzling cases.

91. **Treatment of Exophthalmic Goiter with Serum from Thyroidectomized Goats.**—In the 6 cases reported the results of treatment were far from satisfactory.

92. **Results of Surgical Treatment of Bladder Tumors.**—Treplin reviews the ultimate fate of 45 patients with bladder tumors on whom Kümmel has operated during the last 20 years. In 32 the tumor was of the villous form. In 19 it was malignant, and in 6 of these the transformation of an innocent into a malignant growth was more than probable. Malignant recurrence was observed with 3 out of the 12 innocent growths removed. Nine of the 11 tumors that did not exhibit villous characteristics were carcinomas, the others being a sarcoma and a large cyst. Treatment was on the principle that in order to avoid leaving cancer germs behind the bladder wall must be excised into sound tissue, and this can be done only with a high incision. Recurrence was observed with only two of the innocent growths; in one case multiple papillomas recurred four times in the course of twelve years. Only 6 of the 30 patients with malignant tumors are still living after an interval of from seven to sixteen years. One of the tumors in these cases was a spindle-celled sarcoma; the others were forms of villous malignant growth. In one of these cases a third of the entire bladder wall had to be removed. Primary union after resection was favored by the site of the tumors as they were all in the vertex of the bladder. Two patients were cured for nine and twelve months by resection of half the bladder and detachment of one ureter, but they succumbed later to recurrence. An operation is indicated in all cases of malignant bladder tumors. Permanent recovery is sometimes possible, and, in any event, the patient's condition is rendered much more bearable.

93. **Affections Caused by Maggots.**—It occasionally happens that a fly lays its eggs in the skin of a human being or in the nose or ear. Weyenbergh has published a monograph on this subject, and Smit has observed several cases of this myiasis. The prognosis is liable to be grave unless the maggots can be got rid of at once, and he has found that this can be accomplished by covering the part or filling the cavity with calomel. In one case 52 maggots were found in the dressings the day after the application of calomel to the lesions made by the laying of the eggs under the skin and the development of the maggots. In another case a young man was stung inside the nose by a fly. The nose in a few days swarmed with maggots, crawling in and out of the mucosa. Calomel was blown into the nose and 93 maggots crawled out in a day or so. The lesions healed at once.

94. **Roentgen Photographs in Relief.**—Schellenberg states that remarkably lifelike skiagraphs can be made by superposing a positive plate on the negative plate. Films should be used without gelatin on the back. The two films are placed face to face, the photograph on one slightly overlapping that on the other. Still better results can be obtained with removable plates. The picture stands out in relief. The article is illustrated.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed XLVI, page 1806.

95 (LXIII, No. 5.) *Ueber die therapeutische Verwendung des Tuberkulin im Kindesalter (for children). F. Ganghofner (Prague).
96 *Duodenal Ulcer in Infants.—Duodenal-Geschwür im Säuglingsalter. F. v. Torday (Budapest).
97 Liquor Drinking by School Children.—Alkoholgenusses bei Schülern. R. Hecker (Munich).
98 *Larynx- und Tracheal-Stenosen, mit bes. Berücksichtigung eines durch Thymus-Exstirpation geheilten Falles. F. Theodor.
99 Greater Mortality of Illegitimate Children.—Die Mehrsterblichkeit unehelichen Kinder. S. Rosenfeld (Vienna).

95. **Tuberculin Treatment of Children.**—Ganghofner gives the detailed histories of a dozen tuberculous children under prolonged treatment with "old" tuberculin. His experience has convinced him that it is entirely harmless under the conditions described. As only comparatively few tuberculous children can have the ideal constitutional treatment, he believes that tuberculin treatment should be given a more extended trial. His impressions of the results in 2 cases of pulmonary and laryngeal lesions and in 2 with tuberculous peritonitis were decidedly favorable.

96. **Duodenal Ulcer in Infant.**—The symptoms suggested congenital stenosis in the case reported, but the autopsy at the ninth month revealed a round ulcer in the duodenum.

98. **Tracheal Stenosis.**—Theodor reports what he says is the third case on record of tracheal stenosis caused by hypertrophy of the thymus and cured by removal of that gland. This case was previously reported by Ehrhardt; see abstract in The Journal, May 19, 1906, page 1568.

Monatsschrift f. Geb. und Gynäkologie, Berlin.

Last indexed XLVI, page 1807.

100 (XXIII, No. 5.) *Tuberkulose und Gravidität. Alf Rosthorn.
101 Steam Cauterization of Uterus.—Zur Frage der Atomocausis uteri. J. Pfannenstiel.
102 *Visual Disturbances at Childbirth.—Ueber Sehstörungen bei der Geburt. S. Bauer.
103 Ueber Endometritis haemorrhagica, mit bes. Berücksichtigung der histologischen Form. L. Goth.
104 *Obstetric Nomenclature.—Geburtshilfliche Nomenclatur. Karl Hennig (Leipsic).

100. **Tuberculosis and Pregnancy.**—Twenty-five women with pulmonary tuberculosis have been encountered by von Rosthorn during the last three years among 1,500 patients at his maternity. The tuberculous affection was decidedly aggravated by the pregnancy in 67 per cent.; in 36 per cent. the rapid aggravation of the objective findings was most striking. In most of the cases the tuberculous affection dated from childhood or puberty, and had recurred during the pregnancy. Spontaneous abortion occurred in 3; 13 of the women bore children at term, generally well developed; 5 were artificially delivered at the third or fourth month. All bore the intervention well. In one instance the benefit was very striking. In two other extremely severe cases premature delivery was induced at the seventh or eighth month, but the patients succumbed a day or two after the delivery, with dyspnea, cyanosis and dysphagia. Analysis of the various cases shows that the gravest prognosis follows long-continued fever, even if the rise in temperature is slight, gradual loss of weight, and complication with laryngeal or intestinal tuberculous processes. Prolonged observation of the patient is more instructive than mere physical examination alone. When the process seems to remain restricted to one or both apices, or has cirrhotic characteristics, the outlook is more favorable. The involvement of both superior lobes and of the middle or lower lobes, and the infiltrative forms have a graver outlook, while processes of softening and cavity formation are the most serious. A woman with existing tuberculosis may pass through one or more pregnancies without affecting the tuberculosis unfavorably. Cases are known in which a pregnancy had a surprisingly favorable effect on existing tuberculosis. In many instances girls with a tendency to tuberculosis and with suspicious family antecedents, and even those known to have been actually affected, may grow strong and healthy after marriage. Even women with well-developed pulmonary tuberculous lesions may pass successfully through several pregnancies and bear healthy children, without injury to themselves. Pregnancy seems comparatively safe for tuberculous women whose pulmonary lesions have been stationary for years or are relatively cured, with the objective findings favorable, with or without tubercle bacilli in the sputa, well nourished, free from fever for more than a year, and without hemorrhages. Also for women with more recent but well circumscribed apical processes, without fever, not growing worse during the pregnancy. Pregnancy in a tuberculous woman has a direful outlook under all circumstances in case of florid processes, or when, with even slight objective findings, there is fever that can not be controlled by sanatorium or other treatment. The outlook is also unfavorable when the middle and lower lobes are involved besides the apices and upper lobe, when the pulmonary affection is complicated with an affection of the heart, urogenital system or intestinal tract, and especially with laryngeal phthisis, and when there is a marked family tendency to the disease. The intrauterine transmission of tuberculosis is the exception.

102. **Disturbances in Vision at Childbirth.**—Bauer's patient was a healthy woman who had suffered for three years from headaches, accompanied with nausea during the last three weeks of her pregnancy. Delivery proceeded rapidly and was followed by complete blindness which on the fifth day passed into hemianopsia, with final recovery by the end of the month. Treatment included repose, ice, with tonics for the heart, expectorants and a remedy for insomnia. The eyes appeared normal except for transient edema of the retina, congestion of the veins and slight blanching of the right papilla. There was high fever for nine days, following the onset of severe cerebral symptoms with a complicating endometritis. Considerable albuminuria was noted at first, but it soon subsided. He reviews the scanty literature on the subject of postpartum blindness. In seven instances it was referred to uremic or eclamptic toxins. Seven cases have been reported recently in which the presence of eclampsia without convulsions is discussed as the probable source of the symptom-complex observed. Bauer is inclined to accept this theory as the explanation for his case—all the symptoms and findings suggested the possibility of eclampsia, although no convulsions were observed. The blindness and its transition into hemianopsia were probably due, he thinks, to a toxic paralysis of the central optic nerve tracts, affecting later the right hemisphere alone.

104. **Obstetric Nomenclature.**—Karl Hennig of Leipsic has elaborated a nomenclature for obstetrics in Latin, English, Greek, French, German and Italian. It is presented in six parallel columns, one for each language. Some of the English terms are rather surprising, as, for instance, embryotomy—"breaking up the child;" adherent placenta—"joined placenta;" dressing forceps—"curved pinces;" the blunt hook—"crotchett;" cephalotomy—"cephalic carve." The list, he states, is offered merely as a suggestion, a foundation on which a suitable structure can be built. Hennig seems to be perfectly at home in all languages except the English.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Eye and Nervous System, Their Diagnostic Relations. By Various Authors. Edited by W. C. Posey, A. B., M.D., Professor of Ophthalmology in the Philadelphia Polyclinic; Surgeon to the Wills Eye Hospital, etc., and W. G. Spiller, M.D., Professor of Neuropathology and Associate Professor of Neurology in the University of Pennsylvania, etc. Illustrated. Cloth. Pp. 988. Price, $6.00. Philadelphia: J. B. Lippincott Company.

Golden Rules of Surgery, Aphorisms, Observations and Reflections on the Science and Art of Surgery. Being a Guide for Surgeons and Those Who Would Become Surgeons. By A. C. Bernays, A.M., M.D., Life Member of the German Society for Surgery of Berlin, Chief Surgeon Lutheran Hospital, etc. Cloth. Pp. 232. Price, $6.00. St. Louis: The C. V. Mosby Medical Book Co., 1906.

Catarrhal Fevers, Commonly Called Colds, Their Causes, Consequences, Control, and Cure. By R. P. White, M.D., Ed., M.R.C.S., Life Vice-President and Honorary Medical Officer, Royal Albert Edward Infirmary. Cloth. Pp. 111. Price, $1.60. Philadelphia: P. Blakiston's Son & Co., 1906.

Second Annual Report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis. An account of the Work of the Second Year, a Review of the Subject of Immunization in Tuberculosis, etc. Paper. Pp. 452. Philadelphia: Henry Phipps Institute, 1906.

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Address

A REVIEW OF SURGICAL PROGRESS.*

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Being kindly invited to open the proceedings of the Section on Surgery and Anatomy of this large assemblage of my American colleagues, I am fully impressed with the high honor thereby conferred on me. This honor is accepted by me with sincere appreciation as an evidence of the great hospitality which distinguishes this country above all others and of which I have had ample proof during my present sojourn, and as a proof as well of the close bond existing between American and German science. An introductory address may primarily be expected to include an extended review of the various branches of surgery, together with an account of the changes and advances which have brought this branch of medicine to its present high standard. A retrospect of this kind can not fail to afford many striking facts and pleasant memories, particularly to those of us who are now more advanced in years and can look back to the conditions of surgery in our youth.

The preantiseptic period we look back on as a distant dream, a dream somewhat unpleasant in character, which we would wish to forget. Surgery at that time groped around in the dark, and, although its intentions always have been the best, the question may naturally arise as to whether its practice produced more harm or benefit to mankind. Since Joseph Lister lifted the veil the progress of surgery has been along well-defined paths, marked by one triumph after another, until now, without fear or favor, both credit and debit sides of the ledger may be thrown open to the inspection of the world.

During recent years, also, there has been no lack of fruitful ideas and discoveries, and as instances of this I need only refer to the still increasing importance of the x-rays and to local and spinal anesthesia. Physics, chemistry, physiology and pathology have each extended a helping hand, and surgery, originally founded on uncertain empiricism, has from year to year become more firmly established on a scientific basis.

But it is my object to direct your attention to the future rather than to the past, and I desire to confine my discussion to a limited field rather than to the subject of surgery in general. I refer to a field which surgery has attempted to conquer, but in which it can not as yet be said to have been favored with any marked success. I shall endeavor to present to you certain facts pertaining to the surgical treatment of puerperal pyemia. Although not an obstetrician, I have, nevertheless, had the opportunity of making some observations on septic puerperal cases admitted to the large general hospital with which I am connected. As the division line between surgery and gynecology is entirely artificial, I felt that I need not hesitate to discuss a chapter in gynecologic surgery before this assemblage of surgeons.

The idea of treating pyemic processes which originate from external wounds, by local surgical measures, is not a new one. John Hunter, the foremost surgeon of his day, suggested that the extension of a suppurative thrombosis might be combated by compression of the efferent vein. Lee, in 1865, obtained a cure in two cases of pyemia following cellulitis of the hand by ligature of the cephalic vein; Rigaud, in 1876, in an analogous case, tied off the saphenous vein; Kraussold, in 1877, successfully resected a portion of the femoral vein above a pyemic thrombus, and more recently Hartmann reported a case similar to Lee's.

In former days, when this condition occurred much more frequently, as a general thing, the unfortunate patient was either given up as a hopeless case or the attempt to save life was limited to amputation of the affected limb, which procedure was sometimes successful. Sedillot, Billroth and Neudorfer have all reported cases of this type, and I can recall two instances where amputation was the means of saving the patient's life, in conjunction with the many fatal cases in Langenbeck's clinic.

In the meantime we have got rid of pyemia as a surgical wound infection in our hospitals, and at the present time ordinarily only meet with the otitic and the puerperal varieties of the disease; that is to say, pyemia by infection from the ear or from the uterus. I need not go into details regarding the great importance of the surgical treatment of otitic pyemia first suggested by Zaufal in 1884. This method includes the exposure and clearing out of the thrombosed transverse sinus, together with or without ligature of the jugular vein. Viereck collected 108 cases from the literature which had been subjected to early operation, and he found that in 89 recovery was complete. No difference of opinion exists at the present day with regard to the advisability of early operative interference in every case of pyemic sinus thrombosis following an otitis, and it is only concerning the technical details of the procedure, such as the clearing out of the sinus and ligation of the jugular vein, that opinions vary.

It seems quite natural to ask why this same plan of procedure can not be followed in the treatment of puerperal pyemia, if such brilliant results are obtained in other analogous conditions. There are no marked differences, in the pathologic sense, between these two forms of pyemia. In both we meet with instances of pure thrombophlebitis, and in some cases the lymphatic vessels are involved in the infectious process.. The clot formation extends in the same manner in both types, metastatic deposits are liable to occur in both, and the bacteriologic findings are likewise identical, in both examination of the circulating blood often may prove negative even in severe cases (Lenharz, Brieger). In both forms of pyemia we may find a diffuse inflammation or a localized abscess in the neighborhood of the thrombus; in the otitic variety, meningitis or cerebral abscess; in the puerperal, peritonitis or abscess of the ovary or of the parametrium. Finally, in either type of pyemia a spontaneous recovery may result, the thrombus becoming organized.

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*Introductory Address on Surgery, read by invitation in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

We also meet with the same variability in the clinical picture of puerperal pyemia as are noted in the otitic, which increases the difficulty in diagnosis. In addition to the acute form of the disease, most common in both types of pyemia, we have the less frequent chronic variety, and the cardinal symptom—the recurring chills—also exhibit great variability in both types. In contrast to the typical cases with early and rapidly recurring chills, we find others in which this very important symptom may fail to appear for a long time. Brieger, in one instance, noted a complete absence of the chills and fever, although there was a well-marked thrombophlebitis of the sinus transversus. One of my cases of puerperal pyemia did not experience her first chill until 4½ weeks after delivery, although a suppurative thrombosis of the saphenous vein had been present for two weeks previously and was followed by an extensive thrombosis of the femoral vein and a metastatic abscess in one of the bulbs. Just as in otitic sepsis where chills may be caused by suppuration in the neighborhood of the sinus without any thrombosis of the latter, so they may likewise be produced in puerperal infection by an abscess in the parametrium. Experienced otologists have concluded, therefore, that the diagnosis of sinus thrombosis very often depends on direct exploration of the sinus and its contents. I believe that this conception should also be made to apply to the recognition of the thrombosis in the veins of the uterine plexus, and a correct diagnosis in many cases must await an exposure and exploration of the affected veins.

In view of the many points of similarity between otitic and puerperal pyemia, the statements of various authors with reference to the prognosis are worthy of note. Thus Jansen claims a mortality of 90 per cent. in otitic pyemia without operation, while Opitz admits a mortality of only 55 per cent. for puerperal pyemia, and Curschmann believes that by treatment with antipyrin the death rate may be reduced still further. I am very doubtful whether these favorable figures express the true conditions. They would undoubtedly possess positive value if the thrombi in the pelvic veins had been actually seen in every instance or extracted, this being the case in Viereck's statistics of otitic pyemia referred to above. The uncertainty of the diagnosis, which is quite generally acknowledged, admits the possibility of including cases in which there may have been a puerperal infection, but not a true thrombophlebitis. The mortality figures of Fehling, 72 per cent., and Bumm, 85 per cent., even in reference to the chronic cases, are probably more nearly the correct ones.

Even if the statement were true that only 50 per cent. of the cases of puerperal thrombophlebitis ended fatally, we would still be compelled to regard this affection as one of the most serious and fatal maladies with which womankind may be afflicted. At any rate, such statistics should not stand in the way of any legitimate attempts to better these conditions by appropriate and rational means. Statistics have often been arrayed against new surgical procedures which have in the course of time proven invaluable. Among the surgical measures which have had to combat this opposition may be included laparotomy for the relief of ileus, celiotomy for septic peritonitis and the early operation for appendicitis. Also in reference to these affections, the statement was often made that statistics showed frequent recovery without operation, and the belief became prevalent that the diagnosis was too uncertain in these conditions to warrant such dangerous interference, and that opium gave better results than the knife. Operation for a long time was only permitted as a last resort, and the bad results obtained by following such bad practice seemed to confirm the prevailing view. Not until the necessary courage had developed and the proper opportunity presented itself for early operation was surgery permitted to demonstrate its capabilities.

I am fully convinced that it will be the same in regard to the surgical treatment of puerperal pyemia. At the present time the many unsuccessful attempts at saving patients thus afflicted are counterbalanced by only a limited number of successful cases, but the latter are quite sufficient to show that we are on the right road. No doubt of the efficacy of the treatment can possibly exist in the minds of those who have witnessed the immediate cessation of the chills, the lowering of the temperature and the rapid and plainly evident improvement in the general condition of the patient after ligation of the thrombosed veins in the pelvis.

Sippel was the first to suggest that in doing a hysterectomy for puerperal pyemia the adjacent thrombotic veins might be also removed. Freund, Bumm and myself were the first to perform ligation of these vessels without hysterectomy. Up to the present time, recovery has been reported in 7 cases of puerperal pyemia after this operation. In 1901 I tied off the right internal iliac, the branches of which were all filled with thrombi, in a woman of 35, who presented a chronic pyemia which came on six weeks after abortion and was marked by very severe chills. Four and a half weeks later these returned after having ceased entirely after operation, and then the right ovarian vein was also tied off. The fever then rapidly subsided, and after incising a metastatic abscess which subsequently developed recovery was complete.

Another similar case is reported by Michels, of London. Here the daily chills were likewise severe. Three weeks after the miscarriage had occurred the left ovarian vein, which was filled with soft decomposing thrombi, was tied off about one-half of an inch from its entrance into the renal vein, its wall incised and the cavity cleaned out. No further chills appeared and the patient got well. Bumm, in a case of chronic pyemia, tied off the ovarian and internal iliac vein of one side eight weeks after delivery, and in another case, both ovarian and internal iliac five weeks after delivery. Both patients made a rapid recovery. Haeckel likewise ligated, with good results, all four veins, six and a half weeks after the removal of a hydatid mole. Lenhartz reports a case with frequent chills, in which an infiltration of the lower lobe of the left lung occurred and likewise retinal hemorrhages. Ligature of the thrombosed right internal iliac vein was done eight weeks after abortion had taken place, and, as the chills continued, this was followed by ligation of the right ovarian vein. Eleven days later the patient had recovered. Finally, Bumm was favored with a rapid recovery in a case of acute pyemia which came on nineteen days after abortion, in which he tied off the ovarian and internal iliac on the right side. It will thus be seen that the hope expressed by me when I published my first successful case of ligature of pelvic veins for chronic pyemia, viz., that acute pyemia could be similarly cured, has already begun to be fulfilled.

The chronic cases are distinguished from the acute by the slower growth of the thrombi. In the chronic type of the disease the thrombotic process, even after the lapse of several weeks, may still remain restricted to the internal iliac and ovarian veins, while in the acute form it rapidly extends up the common iliacs and also backward along the external iliacs and femoral veins as well as to the vena cava. Into the latter it may also extend from the ovarian vein. An extensive thrombosis of this character is not necessarily accompanied by any evidences of stasis, and at the time of operation one may be surprised by a thrombus in the vena cava where none was looked for.

The prognosis in the acute variety can, therefore, only be favorable when an early operation is possible, and early operations as yet have seldom been done. I have not been favored with an opportunity.

It is known, however, that even in the presence of a thrombus in the vena cava spontaneous recovery may follow and that complete obliteration of the lumen of the vein may be succeeded by the development of a sufficiently extensive collateral circulation. It would seem feasible, therefore, in thrombosis of the vena cava, to ligate even this vessel above the site of the process and thus stop the progress of the latter. The vena cava has, moreover, been repeatedly ligated during the extirpation of a renal tumor by Marconi, Bottini and Hartmann, and in no case has any harm resulted. I have, indeed, attempted ligature of the common iliac and the lower section of the vena cava in puerperal thrombosis of these veins. One patient lived six days, another thirteen, and the evidences of stasis were not any more marked after than before the operation. I do not desire by any means to advocate this procedure, for one can scarcely hope to accomplish very much by it; but would strongly urge that in acute cases of pyemia ligation of the ovarian and internal iliac veins might be undertaken at an early period in order to stop thrombosis before entering the common iliac vein and the vena cava. The favorable experiences with cases of acute pyemia following ear infections and the brilliant result obtained by Bumm in the case already referred to seem to afford sufficient justification for this step. In cases where the diagnosis is doubtful, an exploratory incision, which fully exposes the veins so that they may be seen and palpated, seems as clearly indicated as in the presence of a gastric cancer, abdominal injuries or any number of other conditions in which an exploratory operation is done for the purpose of clearing up the diagnosis and in order that surgical assistance may be rendered if possible. Neither an incision into the peritoneal cavity nor an extraperitoneal exposure of the veins of the parametrium through a wound made above Poupart's ligament is a procedure the danger of which need be at all considered in comparison with the greater one which menaces the life of the patient in consequence of the disease itself.

It is not possible to decide at the present time which is the preferable method of exposing these veins; the transperitoneal procedure advocated by Bumm or the extraperitoneal operation chosen by myself. The transperitoneal operation is simpler perhaps. The incision being made within the linea alba and using the high pelvic position, the intestines may readily be pushed back sufficiently to allow of a proper exposure and palpation of the tense cord along the ureter which represents the thrombosed ovarian vein and of the thrombosed venous plexus of the parametrium as well. If the overlying peritoneum is carefully divided, ligation of the vein above the thrombus can be done without much difficulty. In the case of the ovarian vein the ureter is pushed to one side, and in the case of the internal iliac vein the internal iliac artery is put aside in a similar manner. The latter must be done with great care and is not always an easy matter, for the inflammatory induration surrounding the thrombosed vessels binds all these structures closely together and the walls of the vessels themselves are also rendered extremely brittle by the inflammatory process. The danger of the transperitoneal route lies in the possibility of a peritoneal infection by the septic material from the veins, when the latter are opened either by accident or intentionally. For this reason it is also not possible thoroughly to clean out these structures.

The extraperitoneal operation necessitates a much larger wound, especially if not only the internal iliac, but also the ovarian vein requires exposure along its entire length, and is perhaps at the same time more difficult and tedious. The danger to the peritoneum is, however, certainly lessened, although not entirely absent, inasmuch as this structure is liable to tear when making our way into the bottom of the wound. In contrast to this we have the fact that the thrombosed veins may be either partially excised or cleaned out. Experience has not taught the invariable necessity for the latter procedure as practiced by otologists on the sinus; the mere exclusion of the thrombus from the circulation by ligating the vein centrally seems all sufficient for the purpose. As the blood passes over the free edge of the thrombus it becomes impregnated with toxins and laden with bacteria, and it is here that the danger lies. By simply tying off the venous trunk this contamination of the circulating blood by the thrombus ceases.

In doing the extraperitoneal operation, the incision is made as for ligation of the iliac artery or for exposure of the ureter. After cutting through the various intervening layers the peritoneum is exposed. The latter is then carefully pushed back by blunt dissection until the parametrium is reached and the ureter together with the affected veins fully exposed. It may be possible to combine with advantage the intra- and extraperitoneal routes of approach. Future experience alone can decide the practicability of these details of the operation.

Original Articles

THE TREATMENT OF ACUTE INSANITY IN A GENERAL HOSPITAL.*

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The questions pertaining to insanity present themselves to us to-day most forcibly in two aspects: First, its increased frequency and, second, its diminished curability. The increased frequency is a product of the feverish activity of the age in which we live. Events that a few years ago moved with stage-coach slowness now go with electric speed. Many can not bear up under the stress to which they are subjected and can not adjust themselves to the present complicated environment in which we are all placed, and consequently fall by the wayside. It is less curable because of racial degeneracy, so manifest round about us, due to much the same causes as tend to produce insanity that has impressed its characteristics on many of the present- day psychoses; and, furthermore, because of the difficulty of securing for many of these cases that scientific treatment with sufficient promptness so necessary for their restoration.

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* Read at the International Medical Congress, Lisbon, 1906.

If we go back but little more than one hundred years to the days of such eminent physicians and philanthropists as Rush, Pinel and Tuke, we can easily note the mighty strides that have been made in the care and treatment of the insane. They are no longer regarded to-day as they were in the times of those great men as, on the one hand, special recipients of Divine favor; or, on the other, as victims of diabolical possession. The efforts of these men and their associates have raised the unfortunate lunatic to the dignity of the sick, and they are no longer either regarded as saints or chained in dungeons, and in all civilized communities special hospitals for their care and treatment have been constructed. But, unfortunately, the establishment of these splendid institutions has tended to build up a specialty of the most exclusive character in which the general practitioner has no part nor lot, and, indeed, even our medical colleges have quite neglected to give a sufficiently conspicuous place in their curriculum to the teaching of psychiatry, and hence the average practitioner is almost entirely ignorant of these cases, and he is altogether unprepared to care for them properly; and, feeling his incapacity, he seeks as rapidly as possible to be relieved of their responsibility by hurrying the patients to special hospitals. But the delivery of patients even to the hospital is not as prompt as it should be to secure the best results of treatment, for when it is proposed to make such disposition of the patient the family must take the question under advisement for a longer or shorter space of time, and when the conclusion is reached that he must be sent away then come certain necessary court proceedings that are frequently detrimental; and, finally, the long journey often to a special hospital, all of which events are well calculated, in some cases at least, to turn the balance against restoration.

The problem is how to give these patients prompt treatment without any of the exposures already enumerated. I think we are all agreed that home treatment in the great majority of cases will result in failure, and we also appreciate the necessity for a change of environment, radical in character.

I began thirty years ago the treatment of selected cases of acute insanity in general hospitals. Patients were admitted without any legal process just as other sick people were, and from that time until the present I have never been without such cases, and believe the results have been sufficiently satisfactory to urge this plan of treatment on the profession generally.

The question of insanity has rested for ages under a great weight of superstition. We must divest ourselves of any idea of the supernatural in this sickness and place it on the same plane as other diseases. The acute insanities that are especially amenable to general hospital treatment are the autotoxic and exhaustional cases; these are classified as primary dementias, acute confusions, melancholias, and the ordinary manias without degenerative basis. The progressively degenerative forms should not be classed with these cases. Their only proper resting place is the special hospital for the insane.

The treatment that I have used in acute insanity in a general hospital is familiarly known to us all as the Weir Mitchell rest cure. Its fundamentals are a competent nurse, isolation, rest in bed, generous diet, daily massage, bath and faradization, with special attention to elimination by the bowels, kidneys and skin. The first proposition is the selection of a judicious nurse or nurses, which ought not to be difficult in a general hospital, extremely difficult as it is to do anything for these patients in a private house. Isolation must be complete, so far as the family and friends are concerned. Companionship should be limited to the few persons who are necessary for the proper care of the patient. The rest in bed for the first few days should be absolute, and I see no objection to enforcing this rest, if needs be, by mechanical means. The diet should consist of easily digestible and assimilable food, milk and eggs, and meat juice in abundance, and if not taken in sufficient quantities by the patient voluntarily it should be administered by nasal feeding. The form of baths well suited to many of these cases is the hot pack and the sheet rub. For excitable patients the hot pack may be prolonged for hours, followed frequently by subsidence of the excitement and refreshing sleep. In melancholias the sheet rub is an admirable stimulant to the general circulation and promotes the activity of the skin. Massage is of great advantage, judiciously administered, in allaying excitement, in increasing the functional activity of the skin and improving the circulation generally. Intestinal fermentation is frequently present and there are few patients of them who do not need colonic flushings with normal saline solution and the internal use of intestinal antiseptics.

Insomnia is usually a troublesome symptom, and its judicious relief is often a most perplexing problem. All of the sleep-producing remedies are double-edged swords; they cut both ways. In promoting sleep they may derange the general nutrition, and the remedy that seems to be well suited to one case may be absolutely of no avail in another. As one of the characteristics of all of these cases is exhaustion, the hypnotics that are much depressing should be avoided. The following prescription will produce sleep in many cases without cardiac depression:

℞. Veronal ....gr. xl 2|40
Codein phosphatis ....gr. iv |24
M. Fiat in pulveres No. viii. Sig.: One at bedtime.

Hyoscin hydrobromate will produce the same result in other persons and not infrequently the three drugs may be combined in the same prescription with great advantage. In the depressive cases the deodorized tincture of opium or the aqueous extract given in repeated doses during the day will secure sleep at night and also relieve the intense psychic pain from which they suffer. When these remedies fail to relieve insomnia, my preference is for chloralamid or trional, and only with very great reluctancy do I use chloral. Anemia when present will yield promptly to the free use of Blaud's pills, freshly prepared. The profound error in metabolism that is a part of the pathogenesis of insanity is sometimes overcome by alteratives, and, in my judgment, the best method with which to accomplish this purpose is the use of chlorid of gold and sodium combined with the resin of guaiac as in the following prescription:

℞. Aurii et sodii chloridi.................gr. iss |10
Pulv. res. guaiaci ....ʒ iss 6|
M. et div. in caps. No. xxx (dry). Sig.: One before each meal.

In the general consideration of the therapeutics of acute insanity, we must ever be mindful of the necessity to pay close attention to the constitution of the patient. Rheumatism, gout, tuberculosis and syphilis will be recognized more or less by us and will demand special consideration. The rest cure should be followed by a course of judicious exercises, some congenial occupation, and by what may be called education. The patient's mind must be in the most forceful manner directed into normal channels. The treatment above outlined should be continued for at least three months and at the expiration of that time some of the cases will be found to have made rapid progress toward recovery; such being the case the treatment should be continued until this desired end is reached; others at the expiration of three months will be found to show no improvement; the further continuation of the treatment is then not to be desired and they should be provided for in a special hospital for the insane; others will have improved sufficiently at the expiration of this time to make a return to their homes not only possible but desirable and this may be a material assistance in their progress towards recovery.

In conclusion, I desire to emphasize the opinion that many cases of acute insanity can be more certainly and rapidly restored to health in a well-governed general hospital than in any of our best special institutions for the care and treatment of the insane, and I urge on my confrères greater efforts in this direction for the relief of these unfortunate people.

THE PRESENT STATUS OF THE BEDBUG IN THE TRANSMISSION OF HUMAN DISEASES.

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Scientists, medical men and entomologists have demonstrated beyond doubt that fleas, house flies and mosquitoes carry and transmit certain dangerous diseases. Fleas carry bubonic plague; house flies, numerous pathogenic bacteria, including those of cholera, bubonic plague, tuberculosis and typhoid fever, also myasis and even some of the parasitic worms that live in the intestines of man; mosquitoes carry yellow fever and malaria and also that most horrible filarial disease known as elephantiasis. It is not strange, therefore, that at last the bedbug should come in for its share of suspicion and experiment, though rather singular that it should be the last in order.

It is the purpose of this article to point out what is now known regarding the carrying of disease germs by this insect, a question which should be of interest to all, especially those who live in large, crowded cities, where its presence is becoming a serious factor. It is also hoped that in a measure it will serve to arouse the general public against an insect whose very presence is a disgrace to our times, and which is the very personification of all that is foul and filthy, and which, besides, has now become a hidden menace to our social communities. It is indeed remarkable that civilized man, who prides himself on his cleanliness, on the comfort and decency of present-day living, and on his freedom from many diseases hitherto common, and who, in fact, at least pretends if he does not actually feel that the very idea of uncleanliness is abhorrent, should wink at the insinuating presence of such a low-bred pest.

This disgusting creature false modesty "dooms" to ostracism and thereby fosters its safety and increase. Its widespread distribution and its abundance can not be denied; statistics are unnecessary to show this. Suffice it to say that it is surprising, even to an entomologist, to find it as numerous as it is, with all the ready means now available for its certain destruction and considering the fact that man is now civilized.

Although the bedbug has been known for centuries and its literature comprises as high as five hundred and some odd articles, but very little, at present, is really known concerning its habits and life history. On the contrary, much has been conjectured. In addition to this, its host relations are entirely unknown. If it is able to live on the blood of man only, then it is at once seen that its scope in potential transmission of diseases is limited; it could transmit but from man to man. But if it is able to subsist and breed also by attacking the small mammals found associated with man, such as mice and rats, when its preferred host is not conveniently reached by it, then its scope in potential transmission is at once greatly enlarged. It would then be able to carry diseases not only from man to man, but also from animals to man, as the flea does in the case of bubonic plague. It is certain that blood comprises its only food, in spite of what has been stated to the contrary.

Several months ago I had an opportunity of performing a few interesting experiments bearing on this question. Hungry bedbugs, obtained by shaking beds in a large mission house in the city of Washington, were confined with both living and recently dead mice, on which they fed until glutted with their blood. From all appearances they were just as fond of the blood of these mice as they are of that of man, and showed no hesitancy at all in accepting it. It was also indicated that the absence of human blood did not interfere with their continued breeding, which would probably have been the case if the blood of the mice had not proved to be of real food value. The experiments are far from conclusive, however, because of the small scale on which they were performed.

Experiments were also conducted with a closely related species, the fowlbug (*Cimex columbarius Jenyns*), which associates with pigeons and chickens, often in great numbers. It seemed very fond of human blood, readily attacked living mice and eagerly went to young, recently born mice, though the bodies of the latter are cold. "While placing them under the bell-jar the evening before, one of the adults accidentally fell on the body of one of the young mice, which it immediately attacked. When its beak was inserted, the mouse jumped from the pain and a struggle then ensued, the almost helpless little animal trying desperately to dislodge the sucking insect by rolling and kicking. Several times the bug lost its hold, but turned at once and renewed the attack, until at last it obtained a position on the breast of the mouse, between the forelegs, where it was simply impossible for it to be reached. Here it fed until satisfied." These experiments are pregnant with suggestions, viewed in the light of our present knowledge of the relations of certain insects to the transmission of human disease. It may be interesting to note in this connection that no marked differences could be found in the behavior of these two species toward the hosts mentioned in foregoing.

The history of the pathogenic relations of the bedbug is brief and rather obscure. Unlike that of the mosquito, no romance is intertwined with it, no new martyrs have been made in the cause of science. It has arisen quietly, at first mere conjectures being made at the end of an article which discussed the general pathogenic relations of insects, or generalizations were made including insects of its kind. Gradually, as the knowledge of the rôle played by mosquitoes, fleas and flies (insects closely related to the bedbug by essential habit) became better and more generally known, and their true relations to human diseases determined, medical writers began to assume also that the bedbug played a rôle, at least in part, similar to that of those insects. Brief statements to that effect were made, which from their very nature were not more than mere suggestions. Hence quite a number of years elapsed from the time of the rise of the idea of the transmission of diseases by the mosquito and other sucking and biting insects, and that marking the origin, from analogy, of a similar idea in regard to the bedbug. As has just been intimated, medical men were the first to call attention to this phase of the insect's economy. A complete survey of the world's scientific literature, as far as the bedbug is concerned, will show that the idea has been developed almost entirely by them.

On account of the nature of the publications in which these ideas were brought out, the general public, probably, did not even dream of such a thing, until years afterward, or until within the beginning of the present century. It was not until "consumption's ghastly form" arose, and the popular magazines and newspapers began to tell of this disease, and others as they became prominent, and thus aroused public opinion, within the last two years perhaps, that a vague idea of this insect's probable rôle began to be formed.

Even then, although seemingly tending in that direction, no definite statements were made concerning the bedbug as a carrier of specific diseases, except those made in reference to relapsing fever in a New York magazine early in 1905. This is, apparently, all that the public knew of the matter; the rest was hidden in more or less obscure scientific journals. At various colleges and universities, however, the general idea of the bedbug as a transmitter of disease was brought out by some teachers in class lectures as early as 1898, or earlier, and the practice has now become more common.

In 1887, Metchnikoff, in an article on certain phases of relapsing fever, published in a well known medical journal of Berlin, made general references to the bedbug as a carrier of disease. This is believed to be the first time that the idea was definitely mentioned, and Metchnikoff may be held to be the originator of it.

A period of about five years then elapsed before anything more was said about the question, when in 1892 a Dr. Dewèvre published in Paris[1] an account of a supposed case of the transmission of tuberculosis, which he discussed at length, and tried to establish. His evidence was quite insufficient, and the whole case did no more than throw grave suspicions on the bedbug. Since then the case has been quoted and reviewed from time to time in medical journals and general treatises on medicine. It was founded on suspicious circumstances only.

In 1895, M. Morau,[2] a Frenchman, published an article on the contagiousness of cancer, in which he tried to establish, by means of experiments, that bedbugs carried the causative agent of that disease. The experiments were entirely negative.

Two years later, articles ascribing to the bedbug means of spreading diseases became more or less common. Dr. George H. F. Nuttall, formerly of Johns Hopkins University, Baltimore, then began his series of important experiments on the rôle of insects in the spread of diseases, which were continued over several years, and then, in the year 1900, summarized, together with a critical and historical study of the whole question. The possibility of the transmission of relapsing fever by bedbugs was considered by Dr. Tictin, with negative experiments, while a Japanese writer, M. Yamagiwa, stated definitely that out of a large number of clinical cases of bubonic plague, one case was caused by the bite of a bedbug.

In the following year, 1898, Dr. Charles F. Craig, then acting assistant surgeon, U. S. army, quoted the cases of Tictin and Morau, and called attention to the lack of knowledge of the question involved. Experiments on the transmission of anthrax by bedbugs were recorded by M. Joly, with negative results, while one of his fellow countrymen, Dr. Simond of the Pasteur Institute, stated in a lengthy article on bubonic plague, that the flea and the bedbug were the two "parasites," *a priori,* which were able to assume a rôle in the transmission of that dangerous disease. He thought it probable that the bedbug intervened in the transmission of that disease from man to man.

During 1899, MM. Calmette and Salembni[3] wrote of a case of bubonic plague in which the bedbug's bite formed a starting point of the disease. During the same year Dr. Carmichael of the U. S. Public Health and Marine-Hospital Service, said, "It is suspected that certain insects play a part in the transmission of leprosy, the common house fly, mosquito and bedbug being the principal carriers of infection." In 1899 Dr. Coplin of the Jefferson Medical College proved that pure cultures could be inoculated from infected bugs; the infections were those of typhoid fever. After discussing the parts played by household insects in spreading certain diseases, he concludes by saying, "The danger from the bedbug and roach would probably be great in diphtheria, and all would share in the possible dissemination of tuberculosis, anthrax and similar bacterial diseases." Conclusions opposite to this, however, were reached by Mühling in a paper published at Jena about the same time. He concluded that of themselves, bedbugs could not carry contagions, but that their bites would naturally form a *porte d'entrée* for pathogenic bacteria.

With the exception of minor articles, the only other important writing which has been published on bedbugs and their relations to human diseases, is that of Dr. Nuttall, above mentioned. This was first published at Berlin in 1899, and reprinted the following year in the *Johns Hopkins Hospital Reports.* It critically discussed all the experimental evidence then recorded concerning the transmission by bedbugs of anthrax, bubonic plague, mouse septicemia, chicken cholera, *Bacillus septicus,* relapsing fever, and tuberculosis. Nuttall concluded that nothing had been positively proved, and his conclusion holds up to the present.

Before closing, a pertinent quotation may be taken from an address made by Dr. George Homan to the Division of Maritime Hygiene and Quarantine at the third Pan-American Medical Congress, Havana, in February, 1901. Among other things, he says, in conclusion:

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[1] This article was reprinted in the Medical Record of New York, and in the year following it was reviewed in Insect Life, a periodical published by the then Division of Entomology, U. S. Department of Agriculture, and in the American Monthly Microscopical Journal of Washington.

[2] Revue Scientifique, Paris, lv, series 3, pp. 42, 43.

[3] Annales l'Institut Pasteur, Paris, xiii, p. 883.

One of the most cosmopolitan and formidable of human parasites remains to be mentioned—*Cimex lectularius*—and one whose potency for harm in a public health sense has hardly been adequately measured perhaps by reason of its . . . nocturnal habits, . . . but its activity in temperate climates coincides very nearly with the usual maximum prevalence of yellow fever and malarial diseases . . . Its stubborn inhabitancy of human dwellings, however, points significantly to it as at least a coadjutor in the persistence of the first-named disease, where it is endemic, and as an influential agent in the spread of other infections as certain forms of tuberculosis, syphilis, leprosy, carcinoma and peradventure, bubonic plague.

Notwithstanding the fact, therefore, that as yet nothing definite has been proved against the bedbug, it is plainly evident that the investigation of the question has just begun. Comparatively few experiments have been performed, and the most enthusiastic optimist would find it a difficult matter to conclude that no danger is to be apprehended from this source. Hence every consideration, that of personal cleanliness, that of personal health, that of self defense, uniting for the welfare of all, bids us look to this filthy creature with a cry of "Wherefor?"

NEGRI BODIES IN HYDROPHOBIA.*

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Negri,[1] an Italian investigator of the University of Pavia, in 1903 described certain bodies, which he observed in the nervous system of animals dead of hydrophobia. He detected a definite structure in them, believed them to be protozoan in character, and associated them with the etiology of the disease. Since that time many workers, especially Italians, have corroborated his findings and extended the work along various lines. Much of it has been done with a view of utilizing the presence of these bodies as a rapid and reliable means of diagnosis and it appears that in this respect marked success has been attained. Negri first reported the occurrence of these bodies in animals, finding them in nearly every case of suspected rabies, which gave a positive result by the inoculation method. In 75 animals, mostly dogs, suspected of this disease, the inoculation test was positive in 52, and 50 of these 52 animals showed the presence of the bodies. They were not found in any of the remaining cases which were negative also to the inoculation test.

These bodies, which have now come to be universally known as Negri bodies, are found in the protoplasm and occasionally in the processes of the nerve cells. They have not been seen in the nucleus, but are frequently in immediate contact with it. Their distribution in the nervous system varies. In general they are more numerous and larger in the hippocampus major than elsewhere, but are frequently found in the Purkinje cells of the cerebellum, in the pyramidal cells of the cortex and in the cells of the pons, Gasserian ganglia, spinal ganglia and spinal cord. Negri claimed that their distribution depended on the point of inoculation. In animals in which rabies are produced by inoculation in the sciatic nerve the bodies are found chiefly in the cord and spinal ganglia; in the brain in these cases they are rarely found, or if present are small. This is questioned, however, by Bertarelli, who never failed to find them in the hippocampus major in animals inoculated in the sciatic nerve.

The bodies vary a great deal in size and shape, depending on their location in the nervous system, the stage of the disease and on the animal in which they are found. Some forms are so small that they may just be seen with the highest power of the microscope. They vary from this size to bodies 25 to 30 micra in diameter. Usually they measure from 4 to 10 micra. They are, as a rule, oval or round, not infrequently irregularly oblong, and have a distinct internal structure. Negri pictured in his first paper the bodies as containing definite, ring-like structures. Frequently they are arranged around the periphery and in the center is a distinct body, thus representing a rosette-like appearance. The smaller bodies are usually homogeneous. They are all strongly eosinophilic, but by proper staining, basic staining granules are seen within the body, which are different from the ring-like structures. Further details concerning the staining of these bodies will be considered later.

The number of these bodies found in a single nerve cell varies from one to a very large number, this depending on the animal and also on other factors, such as the stage of the disease and the locality in the nervous system. In many of the cells only one body is seen, but it is very common to see two, three or four bodies in the same cell, and occasionally a very much larger number.

Negri found these bodies in dogs, cats, rabbits and in the human, and observed them in experimental rabies, street rabies and in rabies produced with the fixed virus. Since that time a considerable number of workers have reported their results and it now appears that they are found in all animals, with, perhaps, few exceptions, dead of rabies and are never found in any other condition. Without going into the details of the reports of the various investigators, it may be said that up to the present many hundreds of examinations made by numerous workers in various countries have confirmed the first observations of Negri in nearly every detail. Among these reports may be mentioned as most important those of Volpino, d'Amato, Daddie, Bertarelli, Guarnieri, Luzzani, Schiffman and Frothingham. The bodies have been found in man, in dogs, cats, rabbits, guinea-pigs, rats, horses and cattle. Negri also investigated a large number of animals which were not rabic and in no instance could these bodies be found. Others have corroborated this also. Brains from animals and from man dying from various infections, strychnin poisoning, tetanus toxins and the like have been examined carefully and in no instance have bodies corresponding to these been found.

The fact should be emphasized that occassionally in undoubted cases of rabies these bodies are not found. Negri called attention to this in his first paper and thought it was due to an anomalous distribution. In dogs and rabbits in reports thus far made such cases do not amount to more than 2 per cent. And it is probable with improved staining methods and better knowledge of their distribution this number will become much less. As to their general occurrence in animals susceptible to the disease it may be said that Bertarelli could not find them in 5 marmots which he inoculated with the virus and which died of typical symptoms of this disease. With this exception they have been found in all the varieties of animals examined.

The time at which the bodies make their appearance in the nerve cells has been determined at 1 to 3 days before the onset of the symptoms. Negri found, for instance, that in animals inoculated with a virus which caused death in from 12 to 13 days they were present on the tenth or eleventh day. They appeared following subdural inoculation first in the hippocampus major, and at this time were very small. This work has been confirmed by Bertarelli. Schiffman obtained different results. He claimed that the number of passages has an effect on the structure and distribution of the bodies. By frequent passages the more complex forms and later the simpler forms disappear first from the hippocampus major and then from the cerebellum so that after numerous passages, as in the fixed virus, the bodies are not found in the cerebellum and hippocampus major at all.

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* From the Pathological Laboratory of Rush Medical College.

[1] Zeit. f. Hyg. u. Inf., 1903, 43, p. 507.

NEGRI BODIES IN HUMAN RABIES.

The brains of five human cases in the Pathologic Laboratory at Rush Medical College were examined. The results are given in tabulated form (Table 1). The Negri bodies were found in all, and the Nelis-van Gehuchten reaction was also well marked in all.

TABLE 1.—Hydrophobia, Human.

Case No.	Sex.	Age.	Where Bitten.	Period of Incubation.	Duration of Symptoms.	Pasteur Treatment.	Inoculation Test with Rabbits.	Nelis-Van Gehuchten Reaction.	Negri Bodies.
1	M	38	Right forearm by cat.	75 da.	3 da..	Not given.	None made	Positive.	Right and left motor cortex positive; other parts of brain not examined.
2	M	17	Right cheek and eyelid by dog.	15 da.	2 da..	1 w'k after bite 2 injec. daily for 8 days.	None made	Positive.	Present in hippocampus; in Purkinje cells few and small; not found in the cortex.
3	M	56	Left hand by dog.	21 da.	2 da..	Not given.	Positive.	Positive.	Cerebellum, left and right Gasserian ganglia and cortex positive. Cord and medulla negative.
4	F	6	Right forehead by dog.	22 da.	2 da..	Treatm't begun 7 days after bite.	Positive.	Positive.	Hippocampus and cerebellum positive. Cortex and medulla negative.
5	M	43	Left hand by dog.	43 da.	2 da..	Not given.	Positive.	Positive.	Cortex positive. Cerebellum, temporal lobe, lumbar and cervical cords negative.

The brains of 12 rabbits dying as a result of subdural inoculation with suspected rabic virus were examined for these bodies, with positive results in all cases. They were found in the hippocampus major, cortex and cerebellum and were, as a rule, very numerous. In some of the rabbits they occurred in nearly every nerve cell and often several bodies occurred in the same cell. Two of the rabbits had been inoculated with cord emulsion from case No. 3; 2 from case No. 4; and 3 from case No. 5. Five were inoculated with virus from a rabic dog. In the dog's brain the bodies could not be found. No Zenker-fixed preparations were obtained here, since the brain had been placed at once in formalin, and this may be responsible for not finding them in this instance. However, it should be said that in some of the cases they were found in tissues which had been fixed in formalin, but in these preparations they were much less numerous and much more difficult to find.

The bodies in the human cases were less numerous than in the rabbits and slightly smaller. In the rabbits the round or oval forms with the distinct ring-like bodies were by far the most common. The small homogeneous forms were not uncommon and the distinctly rosette forms were only occasionally found. Some of the bodies appear to have a double contour. The bodies, especially in the rabbits, are often in direct contact with the nuclei and usually at its inner or outer pole. Occasionally they are seen far out in the process of the cell, and in this position are always more elongated than when in the body of the cell as though conforming to the shape of the narrow dendritic structure.

THE DIAGNOSIS OF RABIES.

As has been stated, much of the work thus far on these bodies has been done for the purpose of establishing their value as a reliable and rapid means of diagnosis in animals suspected of being rabic. Since this depends largely on staining methods, a brief summary of the most important will here be given.

For fixing the tissues Zenker's fluid is the most satisfactory; sublimate has also been highly recommended. Formalin and alcohol are not suitable. For detecting the bodies no special staining is necessary. Any of the ordinary stains, such as hematoxylin and eosin, bring them out distinctly. For differentiating a number of methods have been employed. Negri recommended above all others the eosin-methyl-blue of Mann. This has been used by many workers and proved very satisfactory. The bodies stain a pink or purple, and in some are dots which take a blue stain. The nuclei of the cells stain a deep blue. Frothingham[2] recommends Unna's methylene-blue and 5 per cent. aqueous eosin, equal parts. Romanowski's stain has been recommended by Bertarelli.[3] Volpino, for a rapid method, recommends fixing in 10 per cent. osmic acid for 4 or 5 hours, treating with absolute alcohol and cutting free hand sections which are mounted in glycerin. The bodies appear black. Negri noted that the bodies could be seen after teasing the nerve tissue in dilute acetic acid, and recommended this for rapid work. This has not proved satisfactory. Frothingham has strongly recommended smear or impression preparations of fresh brain tissues fixed in Zenker's fluid or dried in the air and stained with Unna's methylene-blue followed by eosin. This method has the advantage of not requiring embedding and sectioning and will probably largely replace the other methods for rapid diagnostic work. If in a suspected case they are not found in smear preparations, sections of various parts of the brain should then be made.

Compared with the inoculation test, the examination for Negri bodies possesses distinct advantages, the most important being the saving of time, which is so important in giving the Pasteur treatment. So far as reliability is concerned, there is little to choose from, for it is known that occasionally an inoculated animal does not react. Again, these bodies have the property of resisting putrefaction for several days. This is important, for frequently suspected dogs are shot through the head and are not sent to a laboratory for examination for several days. In such contaminated condition the brain is quite unfit for subdural inoculation into a rabbit, whereas the Negri bodies remain unaffected by the putrefaction.

The proliferation of the endothelial cells in the capsule of the ganglion cells and other places described by van Gehuchten and Nelis is a lesion which is usually, if not always, present in rabies and as a confirmatory test should always be noted. It can not be said, however, to be absolutely diagnostic, for a similar change has been found in the central nervous system as a result of other infectious diseases. No special staining methods are required for noting this reaction, and in examining for Negri bodies in suspected animals its occurrence may be noted.

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[2] Jour. Med. Research, 1906, xiv, p. 475.

[3] Centralb. f. Bakt., 1905, xxxix, I Abt., Orig. p. 407.

To sum up the proper steps as we know them at present, in the diagnosis of rabies in animals, the following points may be noted: Any animal suspected of being rabic should, if possible, be captured alive, placed in a cage where it can do no harm and watched. If it has rabies it will die in a few days. No rabic animal ever recovers. To exclude other causes of death, the brain should be removed and an examination of its various parts made according to the methods above described for Negri bodies and incidentally for the Nelis-van Gehuchten reaction. If the bodies are found, the diagnosis may be considered absolute. This will take only a few hours. If the bodies are not found, then the inoculation test on animals should be made, which requires, as a rule, from 2 to 3 weeks. The demonstration of the bodies of hydrophobia, therefore, is of great importance to the physician in cases of persons bitten by suspected animals, for by sending the brain of the animal to a well-established laboratory an almost absolute diagnosis may be had in a few hours, and, if positive, the Pasteur treatment advised at once.

NATURE OF THE NEGRI BODIES.

Concerning the nature of these bodies, little of a definite character may be said. Negri, in his first paper, stated that he believed them to be protozoa and probably the cause of the disease. This, of course, he could not demonstrate. Volpino[4] has attempted to arrange in a cycle the various forms which he observed in the hippocampus major in dogs inoculated with street virus and killed at the first appearance of rabic symptoms. In this cycle he has 8 different steps, but this does not include all the forms he observed. It has been shown by Remlinger, Barratt, Bertarelli and others that the virus passes through the Berkefeld filter No. 5. This does not exclude the Negri bodies from being etiologically associated with the disease, for forms so small that they can hardly be seen with the highest magnification occur, and there is no reason why forms still smaller may not also exist. Volpino, in his cycle, considers one stage as that of the filterable virus.

That Negri bodies as we see them can not be considered identical with the virus seems quite clearly demonstrated. It has been shown that the hippocampus major where they are most numerous is no more virulent than other parts of the brain in which they may not be found at all. The medulla of rabic animals is considered to be the most virulent part of the nervous system, yet the bodies are often absent from this region or occur in small numbers. Bertarelli[5] also showed that the hippocampus became virulent 2 to 3 days before the appearance of Negri bodies in that region.

The possibility of these bodies being degeneration products has been carefully considered. In this respect they must pass through the same critical ordeal to which the analogous bodies of cancer, smallpox, scarlet fever and the like have been subjected. All that can be said at present is that they are different from any degeneration product or any morphologic entity, normal or pathologic, thus far known. They are specific, therefore, for this disease and, whether degeneration product or protozoa, are important as diagnostic structures.

Uremia.—Dr. S. West says that we seem driven to suppose that the symptoms of uremia are due to some substance suddenly developed in the body in some mysterious way, and it is on chemico-physiologic lines that we must seek an explanation. —*Clinical Journal*, May 30, 1906.

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[4] Centralb. f. Bakt., Referate 1905, xxxvii, p. 459.

[5] Centralb. f. Bakt., I Abt. Orig. vol. 39, p. 399.

THE STAINING AND EXAMINATION OF THE BACTERIA OF THE EYE BY SIMPLE PRACTICAL METHODS.*

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The staining of the bacteria of the eye with a view to the practical benefits to be derived therefrom may be conveniently divided as follows: Film preparations, including both smears from fresh conjunctival discharge and culture preparations; scrapings from corneal or conjunctival ulcers; tissue preparations.

Film preparations from the fresh conjunctival discharge, which represent the greater proportion of our work at present in the Laboratory of the Manhattan Eye, Ear, and Throat Hospital, are of value not only in arriving at a correct diagnosis, but also in the study of the progress of the disease. Every case which is admitted to the contagious wards has several films made, followed by cultures if this latter seems necessary; and thereafter, as long as the patient remains in the hospital, film preparations are made every two or three days. In preparing the films some care is necessary in order to secure the best results. After thoroughly cleansing the slides in alcohol, a small amount of pus from the conjunctival cul-de-sac is taken up on a platinum wire loop and spread as thinly as possible on the slides. In doing this, the drop should be led gently over the slide rather than rubbed on, for if too much violence is used the relations of the cells and bacteria may be disturbed. The practice of taking the pus on a cotton swab and rubbing it over the slide is a very bad one and likely—in the case of gonococcus at least—to lead to erroneous results. The slides are then dried and are ready for staining.

For general work, Loeffler's methylene blue continues to be our most useful stain. It is made by adding 30 parts of concentrated alcohol solution of methylene blue to 100 parts of 1 to 10,000 aqueous solution of caustic potash. This solution is poured over the slide and rocked back and forth until the smear is colored a fairly deep blue, generally in from a few seconds to a minute. The slide is then washed freely and dried, when it is ready for examination with the oil immersion lens. No cover-glass is necessary; the drop of oil is placed directly on the slide. The pus and epithelial nuclei are stained deep blue, the cytoplasm and mucus faintly, while the majority of the bacteria are stained to about the same intensity as the pus nuclei. Carbol fuchsin in 5 per cent. solution may be used in the same way, but it offers no especial advantages in the majority of cases over the methylene blue, so in practice we do not often use it.

Counter-staining is of distinct advantage in showing certain details not ordinarily visible; the cytoplasm shows more plainly, the contrast is greater, and there is better cell differentiation, showing the relation of cells to bacteria. Our pathologist, Dr. E. G. Zabriskie, uses Wright's modification of Jenner's blood stain (eosinate of methylene blue), or Goldhorn's polychrome methylene blue. In preparing the eosinate of methylene blue the first step is to precipitate the red in methylene blue by dissolving 1 gm. of methylene blue in a 0.5 per cent. solution of sodium bicarbonate. This mixture is steamed for one hour in an Arnold steam sterilizer, then cooled rapidly, and poured into a large porcelain dish. Under constant stirring, a 1 to 1000 aqueous solution of yellow eosin is then added until a metallic scum appears.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

About 400 or 500 c.c. of the eosin solution will be found necessary for 100 c.c. of the original methylene blue solution. The precipitate is then collected by filtration, carefully dried by gentle heat, and a saturated solution is made of the precipitate in pure methyl alcohol. About 0.3 per cent. is necessary for saturation. The mixture should then be carefully filtered, and 25 per cent. of methyl alcohol added.

In using the stain no preparatory fixation is required. The stain is applied for one minute, during which fixation takes place through the methyl alcohol. Distilled water should then be added, drop by drop, until a metallic scum forms on top of the liquid and the edges are a purplish red color. The actual staining now takes place, and this is kept up for from 3 to 5 minutes. The slide is then washed and dried and the smear examined.

The washing is a delicate process; on it depends in great part the success of the stain. It must be done very slowly, carefully and thoroughly. The nuclei will be found blue to purple green, the bacteria purplish, and the neutrophilic granules purplish pink. Goldhorn's polychrome methylene blue is used exactly as Loeffler's methylene blue. The stain may be bought already mixed, and the smear is simply stained for one minute or less, washed and dried.

Decolorization is of great value, from a diagnostic standpoint, owing to the fact that different bacteria give up the stain with very different degrees of readiness. It is especially valuable in the case of the gonococcus, and is best accomplished by the method of Gram, which is as follows:

Fix with gentle heat.

Stain with anilin gentian violet three minutes.

Wash with salt solution.

Add iodin solution for one minute.

Wash.

Decolorize with absolute alcohol until the smear looks steel-gray.

The most important germ with which we have to deal from the practical clinical standpoint—both from the severity of its effects and its relative frequency—is the gonococcus. In typical cases, soon after the onset of the disease, we find under the microscope large clusters of perfectly characteristic biscuit-shaped diplococci lying chiefly within the pus and epithelial cells and showing a pale capsule surrounding each pair of individuals. Tetrads are uncommon in the conjunctiva. They stain well with Loeffler's methylene blue or either of the counter-stains above mentioned.

In the great majority of cases, the clusters are perfectly characteristic for the first 5 to 7 days after the onset of the disease, and if the clinical appearances of gonorrheal conjunctivitis are well marked we make no further examination. If, however, the clinical appearances are not characteristic and the smears show many varying forms lying outside of the cells, we next proceed to decolorize by Gram's method. If the bacteria decolorize, we have either the gonococcus or the diplococcus of meningitis, or perhaps the *Micrococcus catarrhalis*. Modern observers almost all agree that staphylococci, though they may assume the form of diplococci, never have the concavities facing each other as in the case of the gonococcus, and the capsule—except in the pneumococcus—is also lacking. It is easy, therefore, to say that a case which has the typical appearance and in which the clinical symptoms are characteristic is gonorrheal; while it is extremely difficult to say that any given case—especially late in the disease—is not gonorrheal. The meningococcus may assume the typical form of the gonococcus, but is rather rare in the conjunctiva and causes a much less severe inflammation. Many diplococci will be found lying outside of the cells and numerous varying forms will be present. If doubt still remains, cultures alone will decide the diagnosis.

As the attack of gonorrheal conjunctivitis yields to treatment, the groups of gonococci grow smaller and show many varying forms (involution forms) of less characteristic shape, but as long as the least amount of discharge remains the germs will be found. Some writers assert that the gonococci may be found even after the discharge subsides. On this point I can not speak from actual experience, but when the pus cells disappear and the discharge assumes the catarrhal form, with mucus predominating, gonococci can not usually be demonstrated, and it is our custom to discharge the patient from the hospital wards.

The diplococcus of meningitis deserves mention, not from the frequency of its occurrence—for all agree that it is rare in the conjunctiva—but on account of its similarity to the gonococcus. It occurs within the polynuclear leucocytes, but, according to Park,[1] "it never appears within the nucleus and rarely within other cells." It is decolorized by Gram, as is the gonococcus, but the cultural differences—into which I will not enter here—are decisive. During about eight years we have seen at the Manhattan Eye, Ear and Throat Hospital only three or four well-established cases to about 400 cases of gonorrheal ophthalmia. Of course, it should be said that the severe cases do not come into the wards, and this would, no doubt, somewhat reduce the number of the meningococcus cases. Parsons[2] says: "The rarity of this organism scarcely vitiates the ordinary rules of procedure, but in cases of doubt cultivation experiments must be resorted to." The *Micrococcus catarrhalis* (R. Pfeiffer) is believed by Park to have been at times confused with the meningococcus, and it is possible, of course, that our cases were caused by this organism. The clinical symptoms were those of a very insignificant conjunctival affection, and a few days' treatment sufficed to clear up the discharge; so that, lacking the peculiar cell penetration that is so characteristic of the gonococcus, it seems fairly certain that they were either meningococci or one of its allied forms, and not the gonococci, and, as this was for us the point of practical importance, I regret to say that no careful culture studies were made. Of course, the clinical condition and history were carefully considered, as they should always be.

Other diplococci occasionally resemble gonococci, but most of them are positive to Gram. In this connection it should be remembered that, on account of the rapid onset and alarming appearance of gonorrheal ophthalmia, such cases usually come under our care early, at a time when the gonococcus is well developed and is most characteristic in smears. Later, when involution forms begin to appear, the diagnosis is more difficult and smears are of less value. Another fact which makes early smear examinations important is that the other pus cocci develop more slowly than the gonococci, and early smears show very few other organisms.

The detection of the Koch-Weeks bacillus in smears is fairly easy. It belongs to the group of influenza bacilli and seems to be the commonest cause of acute contagious conjunctivitis. The clinical characteristics of the disease caused by it vary considerably. It is worse in some epidemics than in others, so that we have little to help us in the clinical symptoms. They appear as short fine rods (0.8 by 10 micromillimeters) lying frequently between the pus cells and also within the cytoplasm in great numbers. They frequently lie end to end in the shape of the letter V. They take the stain with difficulty, and in methylene blue preparations stain usually to about the intensity of the cytoplasm, so that a first glance through the microscope gives only a faint idea of the number usually present. As more careful examination is made the bacilli may be seen by hundreds. They are best stained with Ziehl's solution of carbol fuchsin, 1 part to water 9 parts, or with

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[1] Park: Pathogenic Micro-organisms, p. 361.

[2] "The Pathology of the Eye," vol. i, p. 44.

According to Park, it is to be differentiated from: 1, the influenza bacillus of Pfeiffer; 2, the so-called influenza bacillus of conjunctivitis, of Müller; 3, the pseudo influenza bacillus of Zur Nedden. All these grow only on a hemoglobin medium, which is not required by the Koch-Weeks bacillus. They are nearly allied forms and can not be morphologically differentiated from the Koch-Weeks, but from a practical standpoint the film diagnosis is of considerable value, as the other forms are probably much rarer. In cultures of the Koch-Weeks, club-shaped involution forms commonly appear. It is decolorized by Gram.

The Morax-Axenfeld diplobacillus has quite a characteristic appearance in smears. It causes a low grade of chronic blepharo-conjunctivitis, and occurs plentifully in the conjunctival discharge in such cases. The bacilli are large (2 micromillimeters by 1), though this varies, and they are frequently found in chains. They stain well with ordinary anilin stains and are decolorized by Gram. According to Parsons, the *Bacillus liquefaciens* of Petit is a diplobacillus closely allied to the Morax-Axenfeld. It occurs in corneal ulcerations, especially of the corneal margin, and. as a rule, is smaller than the Morax-Axenfeld. Cultural differences are marked and will establish the diagnosis.

The Klebs-Loeffler bacillus of diphtheria, which occurs very rarely with us in the conjunctiva, is a short thick bacillus which varies considerably in size and virulence, facts which Parsons believes account for many of the so-called pseudo-diphtheria bacilli. There are no differential stains of reliability, and cultures, which are best made in Loeffler's blood serum, are invariably necessary. The cultural forms vary considerably and show a marked beading or polar staining.

The xerosis bacillus of Colomiatti closely resembles the bacillus of diphtheria, both morphologically and culturally. The whole question of differential diagnosis is an involved one. Both bacilli stain readily with the ordinary anilin dyes and are easily cultivated, and, aside from the chemical differences—which have recently been studied a good deal and seem to promise well—the subject seems to resolve itself into the degree of virulence of the individual growth. Within the past eight years we have had but four cases of genuine conjunctival diphtheria in our wards, and in these the severity of the clinical symptoms left no doubt that we were dealing with true diphtheria.

Staphylococci. streptococci and their allied forms deserve only a passing mention in the present connection. They all stain readily with anilin dyes, have no differential stains of value, and must be studied by cultures and inoculations to arrive at a correct bacterial diagnosis.

The pneumococcus of Fränkel and Weichselbaum is of importance, both as regards its rôle in conjunctivitis and in ulcus serpens of the cornea. It frequently has a characteristic shape in smears, and a diagnosis can be made with a fair degree of certainty in many instances, but in other cases the forms vary so greatly that cultures must be made. When typical, it has the shape of two cartridges placed end to end and surrounded by a pale capsule. In many instances this capsule is absent and the lanceolate shape is not marked, and it may even form short chains. As a modern writer puts it: "Its chief characteristic is variability." It is best stained with weak carbol fuchsin, as in the case of the Koch-Weeks. The slide is gently heated during the staining, in which case the capsule, if present, will show clearly.

Scrapings from a conjunctival or a corneal ulcer may frequently give valuable information. If the case is one of suspected tuberculosis of the conjunctiva, it is best, on account of the scanty distribution of the bacilli, to excise a piece of tissue from the margin of the ulcer carefully and to "shred" it in a small amount of normal salt solution, and then to spread the whole on slides which are stained for tubercle bacilli with carbol fuchsin and methylene blue, a method that is so well known as to need no description here. Corneal scrapings should be treated in the same manner and then stained with methylene blue. It is not, however, always possible to find the distinctive germ in such specimens, as every one knows who is familiar with such examinations. Even in positive cases we usually find but a few bacteria. Tissue preparations are also unsatisfactory at times and frequently in undoubted cases of infection bacteria can not be demonstrated in the sections. This is partly due to the fact that it is so difficult to get the sections thin enough for accurate bacterial study, and partly due to the early destruction of the bacteria by the phagocytes. We use in preference the toluidin blue stain, which is not difficult and at times gives good results. The various steps of this method are as follows:

Dissolve 1 per cent. of toluidin blue in 1 or 2 per cent. carbolic water.

Stain from fifteen to thirty minutes.

Decolorize in 95 per cent. alcohol, to which, if the color is given off slowly, add a few drops of glacial acetic acid.

If the acid is added it is again washed with 95 per cent. alcohol.

Clear rapidly in carbol xylol.

Immerse for a few seconds in oil of origanum.

Mount.

The proper degree of decolorization is reached when the sections show only a faint trace of the original blue color—in other words, show only a sharply defined stain of the nuclei, basophilic granules, and bacteria. If counter-staining is desired, the sections, after staining in toluidin blue, are immersed in water and then in a 0.5 per cent. solution of aqueous yellow eosin, where they are allowed to remain 10 minutes or longer. They are then transferred to 95 per cent. alcohol, where the dehydration and decolorization take place at the same time. They are then cleared and mounted. By this modification the fibrous tissues are stained pink.

Unna's method may also be used by simply substituting Unna's alkalin methyl blue for the toluidin blue. The other steps in the staining are the same.

DISCUSSION.

Dr. Brown Pusey, Chicago. said that he thought the paper would be greatly improved if the title read, "The Staining and Examination of the Bacteria of the Eye by Accurate Methods." This point seemed the more important because recently he had been asked often for advice as to how one can quickly and easily get a working knowledge of bacteriology for use in this specialty and how quickly to make examinations of the secretion. His answer to the first question was that the matter is so important that it deserves not quick and simple consideration, but thorough work, and to the latter that such an examination should not be a matter of quickness, but of accuracy, that it is so important in every case that abundance of time should be given to make a careful examination. In answering this question the matter of depending on the clinical conditions for determining the character of the infectious agent had come up several times, and to answer this question he had but to cite two recent cases. One in the clinical diagnosis was made by capable men of probable gonorrheal conjunctivitis; bacteriologic examination showed the diplobacillus of Morax-Axenfeld to be the pathogenic agent. Another was in an elderly woman who was caring for a case of gonorrheal conjunctivitis. On one of his visits he found this woman's eyes slightly red, and bacteriologic examination showed the presence of gonococci; the conjunctivitis resulting from this infection was so trivial, however, that the patient did not realize that anything was wrong, and she recovered without treatment. These two cases show how reckless it would be to venture an opinion of the nature of the infectious agent from clinical conditions.

Dr. Pusey emphasized the importance of cultures in bacteriologic diagnosis even more than did Dr. Thomson. He said that he had been able to make a diagnosis from cultures when smears failed, or rather when he failed to find organisms in smears. He had heard the complaint that it is difficult to keep on hand a supply of culture media. The media that one really needs is not hard to get if one makes a little effort.

As regards the frequency of occurrence of the various pathogenic organisms of the conjunctiva, his experience in Chicago differs from that of Dr. Thomson. Last year he had 14 cases of pneumococcus conjunctivitis, 13 cases of diplobacillus conjunctivitis, 4 cases of conjunctivitis due to the influenza bacillus, 3 due to the gonococcus and a few cases due to the staphylococcus. He has not yet found the Koch-Weeks bacillus in Chicago.

Dr. Arnold Knapp, New York, believed that the bacillus of influenza would be found more frequently in these cases if proper culture media were used. The relative importance of the smear and cultures for determining the organisms he considered a difficult question. No less an authority than Morax states that a smear is all that is necessary, that a culture of the organism in the conjunctiva is of little value and apt to be misleading. While that may be true in some cases, Dr. Knapp said it certainly is not of the diphtheria bacillus. It can not be told from the non-virulent forms simply by its morphology, and the practiced bacteriologist will not make a diagnosis simply by the character of the culture. The Board of Health of New York will not make a diagnosis of diphtheria from cultures obtained elsewhere than from the throat, without knowing the clinical manifestations of the case. By the fermentation tests in serum water media (Journal of Medical Research, vol. xii, No. 4) this differentiation can be made in a much simpler manner than by animal inoculations.

Dr. George S. Dixon, New York, agreed entirely with Dr. Knapp in regard to the diphtheria bacillus. He did not think a diagnosis should ever be made of diphtheria without cultivation. Often even that is not sufficient and physiologic experiments are necessary. Within the last two weeks there was in the New York Eye and Ear Infirmary a case undoubtedly due to the Klebs-Loeffler bacillus. The smear showed absolutely nothing, but on cultivation the Klebs-Loeffler bacillus was found. There was no membrane. It was decided by Dr. Price, in whose service the case occurred, that it might be well to use antitoxin, and application was made to the Board of Health for it, but they did not get a satisfactory cultivation and refused the antitoxin. Except for the Klebs-Loeffler bacillus it is seldom necessary to make cultivation. It is a very easy matter, in his experience, to make a diagnosis of gonococcus; if there is any doubt, then, of course, a cultivation can be made. The pseudodiphtheria bacillus has caused him considerable trouble, and in nearly every case examined he has found at least a few so-called pseudo-bacilli. In two instances in which there was apparently nothing else present he lost the eyes. It seemed in these cases there must have been something else present. He has always been in the habit of advising against operation (in the presence of these pseudo-bacilli) if there is much secretion present, waiting until the conjunctiva completely clears up.

Dr. John E. Weeks, New York, has seen a case of gonorrheal ophthalmia presented as a case of diphtheria of the conjunctiva by one of the best clinicians, and when a properly stained preparation was examined the diagnosis was cleared up at once. He has seen cases of gonorrheal conjunctivitis that were not more severe than the ordinary case of mucopurulent conjunctivitis. Microscopic examination, however, revealed the true nature of the infection. The clinical examination alone is not sufficient. In regard to the diphtheria bacillus, if the clinical aspect of the case is taken in connection with the findings of the microscope he considers that sufficient to enable one to make the diagnosis.

Dr. E. L. Meierhof, New York, said that unless one is constantly cultivating this work his bacteriologic diagnosis is very uncertain. He thinks this work, after all, should be left to men who are constantly associated with it. It is surprising what different opinions come from men constantly doing this work. This question between the Klebs-Loeffler or the pseudodiphtheria bacillus is one in point. He recalled the case of a physician he treated, who had an appearance like that of trachoma. Diagnosis was made by two different men; one obtained the Klebs-Loeffler bacillus and the other the pseudobacillus. The patient got well ultimately, after a long time. Unless one is constantly doing bacteriologic work his examinations in many cases will be unsatisfactory.

Dr. Brown Pusey, Chicago, protested against the idea of turning the examinations over to some one else. A large per cent. (probably 50 per cent.) of the inflammatory cases that come to the ophthalmologist are of infection of the conjunctiva and cornea, and the diagnosis, treatment and prognosis of these cases depends entirely on the bacteriologic examination; the clinical diagnosis is utterly unreliable. Such being the case, it behooves the man treating these cases to find out for himself the nature of the infectious agent.

Dr. Edgar S. Thomson, New York, said that there was just one thing more that he would call attention to with regard to examinations for diagnostic purposes, and that was whether we make smears or culture that is not the whole question as to causal relations of the disease. The questions of relative virulence of the germ and immunity of the patient must be considered as well as the clinical picture. In a conjunctivitis in which a certain germ of known virulence is found to predominate it may be assumed with reasonable certainty that it is the cause of the disease, but in a mixed infection it is a difficult matter, even with cultures and smears, to tell which is the causative factor. The diphtheria bacilli and the pneumococci exist in the conjunctiva in a non-virulent state, and we must, therefore, consider the whole question in order to arrive at an intelligent opinion. For that reason he doubted many of the mild cases of gonorrheal conjunctivitis. He believed that when the gonococci are the causative factor, and of any virulence, they penetrate and there is a severe reaction.

HISTORY OF THE MASTOID OPERATION.

ITS SURGICAL ANATOMY, ETC.

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So much has been written concerning the mastoid and its associated organs, and the ground has been surveyed by so many leaders in otology, that it seems almost presumptuous to say anything further on the subject, unless distinctly new light can be cast on places that now seem more or less enveloped in darkness.

The last word, however, has not yet been uttered on mastoid and its allied surgery, and until it has, individual experience and observation may, nay must, assist us in the accumulation of future information and in the systematizing and clarifying of present knowledge.

Mastoid surgery, with such complicating features as cerebral and cerebellar abscesses, sinus and jugular thromboses, extensive tympanic necroses, easily takes its place with the most important surgery of the body, and only those who appreciate its significance and are ready to prepare themselves anatomically for the work should participate in the undertaking.

We have no longer a license to consider operations on the mastoid bone as a mere opening of a pus cavity, although not long since this was the extent of warrantable operative interference. In those days the surgeon was considered bold who ventured to perforate the mastoid cortex with a simple drill, for but a short span further back the Wilde's incision was deemed the limit of mastoid surgery.

HISTORY OF MASTOID SURGERY.

The date of the first crude operation for opening the mastoid process is clouded in uncertainty, some authors attributing it to Riolan, in the middle of the seventeenth century; others to Berger, of Copenhagen, who, in 1784, opened his own bone with a gimlet and afterward died; while others credit Petit with the first operation, in 1750; Morand, in 1751, and Jasser, in 1776, were certainly pioneers in this work. For our primary knowledge of its great importance credit must be given principally to von Troltsch, in 1861, and Schwartze, in 1873.

The first step in what is now called the "radical" operation for the purpose of surgically cleansing the middle ear and its adnexæ by removing the posterior superior wall of the meatus was taken by Küster, whose ideas were rapidly followed and elaborated by such men as von Bergmann, Stacke, Zaufal, Schwartze and others. Zaufal, in 1880, first proposed the surgical removal of sigmoid sinus thrombosis and operated on his first case in 1884 with a fatal result. This achievement was followed by Horsley, of London, who, in 1888, first tied the jugular vein for the prevention of general infection as the result of aural suppuration. His patient died; but Lane, Hoffman and Ballance soon followed with successful operations. It must always be remembered, however, that this operation does not entirely do away with the danger of general infection, as the poisonous microorganisms may pass into the circular and cavernous sinuses and from there to the opposite side or down the condyloid or vertebral veins to the posterior plexus and thence to the subclavian veins, etc.

It is interesting to scan the literature of fifteen and twenty years back and observe the men who were then and are now, if living, our leaders and teachers, standing dumb, helpless, hopeless, before problems that are now as clear as clearest crystal. In those days a mastoid disease was truly a *terra incognita*, filled with mystery and almost regarded as a special dispensation of Providence, against whom it were indeed hopeless to battle. The records show that these cases were treated by eardrops, irrigations, poultices, blisters, cathartics, quinin, stimulants and, as a last resort, the Wilde's incision. Most of them died but here and there a spontaneous opening through the mastoid cortex, possibly enlarged by probe or drill during the performance of the Wilde's incision, followed by the cure of the patient, formed the beacon light of reason and hope that blazed the way and beckoned on to better days. Some men, by studying the anatomy of the mastoid bone and seeing no unsurmountable obstacles to its opening, and observing that some cases recovered where spontaneous openings occurred, naturally and logically reasoned that there could be no valid objection to opening the bone by proper surgical procedure. Thus was reached the first real milestone of progress in mastoid surgery, and from this beginning advances came quickly and surely, until the heights were reached on which we pause and gaze back wonderingly.

Those bold pioneers first made a Wilde's incision and then carefully examined the cortex for softened bone or fistulous perforations, to indicate the avenue of attack, which, once found, was enlarged by drill and burr until the opening was deemed sufficient for care and drainage. But if a careful survey of the osseous area failed to reveal an advantageous spot for interference, and the patient's condition evidently demanded the liberation of pathogenic products, the bone was drilled open over the antrum and its abnormal contents were given an opportunity of escape. This was a great step in advance of previous methods; many patients recovered and the operation became popular, though still far from being distinctly successful. Deaths still occurred, and postmortem examinations revealed principally perforations through the inner plate of the bone, extending into the sigmoid sinus and brain. Instances were chronicled where, after extensive and softening necrosis of the mastoid cortex had been curetted away during operative procedures, similar necroses were observed in various portions of the inner temporal plate which, after removal, gave exit to pathogenic products, whose liberation resulted in a cure.

It, therefore, became evident that instead of delaying for tardy Nature to accomplish an ofttimes impossible task, this work should be undertaken by the operator, and another milestone in the progress of mastoid surgery was passed. The drill-hole opening was now discarded as being unsafe and unscientific; many instances were observed of puncture of the sinus, facial nerve, semicircular canal, brain, etc., by using an instrument whose point was hidden from view, and besides this the opening was far too meager to permit the thorough work of investigation and relief which was now contemplated. The Wilde's incision as a therapeutic measure was also practically relegated to oblivion as being almost useless and, from its antiphlogistic effect, tending to obscure the actual condition of the patient.

The modern mastoid operation now became the vogue; the tissue incision was greatly extended to facilitate extensive explorations and surgical procedures; the chisel supplanted the drill; the mastoid cavity was fully exposed for inspection and operation; pus, necrosis and granulations were searched for and removed wherever found, whether in the bone, brain, sinus or jugular vein, and the operation finally became fully established as one of the great modern surgical procedures.

But otologic surgery has not stayed its progress even here, and it having been observed that almost all cases of brain abscess were sequential to purulent otorrhea, and that mastoid operations were frequently followed by the cure of the latter condition, the "radical" mastoid operation, as it is known, was conceived and executed for the relief of chronic purulent otorrhea, and this menace to human life has been thereby shorn of much of its terror.

The term "radical" operation is a composite expression, conveying to the mind a variety of surgical procedures, recommended by several surgeons, but always involving the dominating idea of the absolute extermination of all pathologic elements from the diseased area and the uniting of the meatus, tympanum, antrum and cells into one large, healthy cavity, lined by new and old skin, whose healing covers the operated territory and produces an effectual barrier to further pathogenic invasion. In order that the various surgical procedures grouped under the term "mastoid" may be well understood, a practical study of the surgical anatomy of the temporal bone is essential, and it will be the object of this communication to endeavor to consider this subject in such a manner as will relieve it of all unnecessary technicality and uncertainty, and with this hope in view we will first proceed to examine the essential surgical features of the external surface of the mastoid process.

THE EXTERNAL ASPECT OF THE MASTOID PROCESS.

It is neither essential nor desirable to attempt a general and minute description of the entire adult temporal bone, such details being accessible in any standard anatomic textbook; it will be simply undertaken in this connection plainly and practically to refresh the mind of the surgeon with those details likely to pass under his observation during the performance of mastoid operations.

The external aspect of the mastoid process is by no means uniform, but the general contour usually resembles the other dimensions of the cranium; if the latter is large and ample, the mastoid is broad and roomy, but if the skull is small and contracted the mastoid corresponds in appearance. These points are interesting to the surgeon, as they frequently indicate the situation of the sigmoid sinus, for in large mastoids this venous channel is apt to be found further back from the external meatus than in those of smaller dimensions, thus affording greater space for operative manipulations than in those of the latter variety. The surface of the bone also varies in appearance, both in health and disease, sometimes being smooth and again more or less roughened. These differences may be indicative of the pathologic condition in the interior, as a roughened, inflamed and porous cortex is apt to accompany acute inflammatory mastoiditis, while a smooth, hardened exterior often follows a chronic otorrhea with general sclerosis of the mastoid structure. The density of the mastoid cortex varies under thoroughly physiologic conditions, possessing a thickness in the adult of from 1 to 6 mm. A thick cortex should, therefore, not necessarily be understood as indicating pathologic sclerosis with few or no mastoid cells. In acute otorrhea with antrum and mastoid involvement the as yet unruptured cortex just over the antrum, or over any other depot of pus, is apt to be thinned and dotted with inflamed bony porosites (Fig. 1.6), indicating the principal purulent focus, and thereby providing a suitable area for operative initiative. Toward the mastoid apex its roughened surface serves as areas for the insertion of the sternomastoid, trachelomastoid and splenius capitus muscles, a large portion of which are usually detached by curved scissors and curette during mastoid operations to facilitate the exposure of the entire bone.

A landmark not always described in anatomic literature, and somewhat variable in its appearance, sometimes being prominent and again almost absent, is a sharp bony projection at the upper outer posterior orifice of the external auditory meatus denominated the spine of the meatus, or Henle's spine (Fig.1.5). It is almost always present in people of ten years of age, and is an important guide to the mastoid antrum, as chiseling should commence just back of the spine, below the posterior extension of the zygomatic process and a little below the superior wall of the meatus and should proceed inward, forward and on a line with the course of the external auditory meatus (Fig.1.4), keeping as close as possible to the latter, and below the zygomatic extension until the antrum is reached. The operative territory thus simply described seems so far as possible to be well within the limits of safety, as, while the floor of the cerebral fossa may be higher than the superior meatal wall, it is practically never lower; the danger, therefore, of accidentally wounding the dura and brain is infinitesimal, if strict adherence to the prescribed area is maintained. It should also be remembered that the superior border of the prolongation of the zygomatic process or supramastoid ridge, as it is called, corresponds to the floor of the middle fossa of the brain. It is sometimes situated exactly on a level with the most dependent portion of the temporal lobe, but is usually located just a little above the latter, thus emphasizing the caution to restrict operative procedures to the territory below the supramastoid ridge, if a position of safety is to be maintained. The possibility of injuring the sigmoid sinus (Fig. 1.3), especially in case of its malposition, is also reduced to a minimum if the foregoing directions are followed, for it must be remembered that, while the knee of the sinus usually lies a little less than one inch back of the posterior meatal wall, it frequently rests much further forward, even in extreme cases being found so close to the meatus as to nullify all orthodox rules of operation.

Much needless description, with complicated diagrammatic and mathematical drawings, may be found in mastoid literature, guiding the operator toward safety and surety in searching for the antrum. It is, however, believed that adherence to the simple rules just enunciated will achieve the desired result, and that they may be safely relied on by operators of ordinary skill and caution. It should be remembered that, although the mastoid process is frequently thought to comprise all that projection of bone from the inferior border of the zygomatic extension to the mastoid tip, in reality the superior limit of the mastoid process terminates at the mastosquamosal suture (Fig. 1.2), and that the portion of bone through which entrance is gained to the antrum is contained within the boundaries of the descending plate of the squamous portion of the temporal bone, the antrum itself being situated in the petrous and not the mastoid portion of the temporal bone.

Directly back of the external auditory meatus, at the extreme limit of the mastoid bone, in or near the masto-occipital suture, is the mastoid foramen (Fig. 1.1), transmitting an emissary vein from the lateral sinus to the cutaneous occipital vein and also giving passage to the mastoid branch of the occipital artery on its way to the cranial cavity. Phlebitis and thrombosis of the lateral sinus are frequently prominently evidenced by soreness and swelling of this region, a point which should not be overlooked by the careful diagnostician.

On the under surface of the mastoid tip may be seen two grooves, separated by a thin crest of bone; the external groove is deep, is called the digastric groove (Fig. 2.6), and gives origin to the posterior belly of the digastric muscle; the inner groove lodges the occipital artery (Fig. 2.7).

The digastric groove is especially interesting to surgeons, for, owing to the thinness of the cortex at this point and the dependent position of the mastoid apex, pus often gravitates toward the groove, perforates the bone and passes into the cervical tissues, producing what is known as Bezold's mastoiditis. Owing to the possibility of the existence of this condition in its incipiency, it is considered good surgery by many operators to remove the muscular attachments at the mastoid tip and inspect its external and digastric region by digital and other examinations for diagnostic and possibly surgical purposes. Thorough inspection of this nature, together with the complete exposure of all the mastoid cells, even to the large cells at the apex of the process, is regarded as almost essential to modern surgery, for pus often lies unsuspected in cells remote from the chief focus and is only discovered by conscientious search, as just indicated.

Fortunately there is little, if any, risk in opening the bone as we proceed toward the apex, as the storm center of danger is in the upper portion of the mastoid process, where are concentrated the sinus, brain, facial nerve, etc., a veritable quicksand of peril, liable at any time to overpower the careless and even the careful operator in its treacherous soil. The anatomic features of the external auditory meatus (Fig 1.4) are too well understood to warrant extended notice. Suffice it to say that in all mastoid operations its outlines and location should be kept constantly under observation, remembering it as an important landmark to guide the operator to the location of the sinus, cerebrum, cerebellum, facial nerve, antrum, cells, tympanum, etc.

THE MASTOID PROCESS IN YOUNG CHILDREN.

It will be remembered that the foregoing fragmentary observations concerning the external appearances of the mastoid bone relate to the average adult skull, but it must not be forgotten that from infancy to puberty varying changes occur which must be borne in mind by the practical operator, especially as mastoid operations are frequently performed even on very young infants, during which the anatomic features of the immature temporal bone should be kept well in mind. For instance, at birth the osseous portion of the external auditory meatus consists of the tympanic ring, which is essentially a part of the tympanum; in other words, there is no osseous external canal in a newborn babe, although the meatus at that early period of life is relatively as long as in the adult, but it is cartilaginous in structure and gradually acquires osseous characteristics as age progresses. It will thus be seen that the middle ear and antrum lie much nearer the surface of the skull in the child than in the adult; indeed, not more than a millimeter of bone cortex may be present to protect the antrum, and a single blow of the mallet on the chisel may often be sufficient to expose the antrum to view. Neither must it be forgotten that the membrana tympanum does not attain its nearly upright position until adult years are accomplished.

While the mastoid process is present as a small tuberosity at birth, it does not present those prominent and well-marked features so characteristically exemplified in later years, and its surface is traversed by the clearly defined outlines of the mastosquamosal suture (Fig. 3), which, while open at birth, becomes gradually, though not always, closed by ossification at about the age of puberty. The suture communicates with the tympanum, thus explaining the rapidity with which acute purulent otorrhea in young children is often followed by an abscess over the mastoid process. Under these conditions infection may spread from the tympanum to the outer surface of the bone, and present as a fluctuating protuberance easily opened, drained and cured by a Wilde's incision, and it may be that the fortunate termination of such rapidly developing conditions has largely given this classical incision its reputation. These abscesses are sometimes complicated by a coincident fistula extending through the naturally thin cortex over the antrum and connecting the latter with the principal purulent focus.

This, however, is not the only avenue of rapidly forming pus deposits external to the bone of tympanic origin, frequently observed in young children, for in those early periods of life when the bone is soft and porous, and when openings and unossified sutures, either normal or abnormal, may be observed, venous communications from the tympanum to the outside of the temporal bone are the not infrequent carriers of pathogenic organisms that lodge and develop external abscesses, readily cured by a simple incision. In fact, it may be said in a general way that, inasmuch as the young child possesses no distinct mastoid cells except the antrum, most so-called mastoid abscesses in the very young are of the character to which reference has recently been made, and that most operations for relief are often of the simple nature just described.

THE SO-CALLED MASTOID CELLS.

Of all the anatomic features of the adult temporal bone, none is perhaps more interesting to the operator than the so-called mastoid cells. The expression "so-called" is utilized, for, while most of the cells are, in truth, located in the mastoid protuberance, yet the antrum and other cells in the vicinity of the tympanum are imbedded in the denser petrous portion, notwithstanding which fact the expression "mastoid cells" is generally understood to cover them all.

Reference has already been made to the fact that the mastoid cortex differs in density, both in health and disease, varying from a mere shell, easily perforated, to a thick, sclerosed wall, difficult to open. These variations are, to be sure, more prevalent as pathologic than physiologic types, the former usually occurring in acute and the latter in chronic mastoiditis; nevertheless, both conditions may be found in dissections on aurally healthy subjects.

These characteristics of structure observed in the cortex occur as the latter is removed and the underlying cells are exposed, and for purposes of convenience the structure of the bone is referred to as pneumatic, diploic and sclerotic, terms which, although sufficiently comprehensive, are yet sometimes difficult to locate, as the dividing line between the varying characteristics is necessarily vague and uncertain. Nevertheless, an ample mastoid bone, in which the antrum and other air cells are sizeable and well outlined, may with safety be referred to as possessing a pneumatic character. Where the antrum remains of normal dimensions, but the cells are numerically few, and the mastoid cortex and osseous partitions between the air spaces assume appearances of thickness and hardness, the bone is referred to as diploic, and where the antral area is diminished, the cells almost obliterated and the entire process has become of ivory-like hardness and density, the term sclerotic is most appropriately utilized. Some authors possess extreme views of the possibilities of sclerosed mastoids, describing them as containing neither antrums nor other cells, but if such cases are ever seen they must be of exceeding rarity.

The most important cell is, of course, the antrum, situated a little behind and above the middle ear and connected with it by an elongated air cell called the aditus ad antrum (entrance to the antrum). The aditus ad antrum enters the tympanum at its upper posterior portion and is the connecting link between the middle ear, antrum and mastoid cells; indeed, it is impossible to form intelligent views on the physiology and pathology of the hearing apparatus without regarding the tympanum, aditus ad antrum, antrum and mastoid cells as an anatomic unit, and he who does not remember that most prolonged cases of tympanic suppuration maintain their existence by pathogenic contributions from the antrum and aditus ad antrum will certainly fail of achieving the best possible results. The aditus ad antrum not only enters the middle ear at its upper posterior portion, but also enters the antrum at its upper anterior portion, thus connecting the two chambers at their superior extremities, their pendant and fundal ends dropping perhaps 10 mm. below the connecting aditus, one on the anterior side of the posterior tympanic wall and the other on the posterior side.

The fact that the floor of the antrum lies considerably below the aditus, or connecting space between the antrum and tympanum, shows how difficult it is for purulent antral accumulations to drain into the tympanum from the antrum, and how easy it is for fungating antral granulations to form, which add to the difficulties and complexities of suitable drainage. It is only when the antrum overflows that this occurs, and this circumstance explains why chronic otorrheas fed by antrum disease (as they almost always are) prove so intractable to ordinary treatment. The Eustachian tube, opening, as it does, at the upper anterior portion of the tympanum, can not drain this space of liquid deposits except in case of overflow than the latter, which fact has doubtless much Eustachian tube, therefore, leave the middle ear practically undrained of liquid deposits, which largely accounts for the frequency of drumhead ruptures during tympanic abscesses. Fortunately, however, the Eustachian tube opening is lower than that of the aditus, so that the former drainage canal is more apt to receive the overflow than the latter, which fact has doubtless much to do with the comparative infrequency of mastoid abscesses after purulent tympanic disease.

A thin and continuous plate of bone separates the temporal lobe of the brain from the tympanum, aditus and antrum, called, according to its location, the tegmen tympani, tegmen aditi and tegmen antri, and it should not be forgotten that this fragile osseous barrier may be easily destroyed by necrosis or force, thus opening a direct avenue of pathogenic invasion to the interior of the cranial cavity. The antrum is the only well-recognized air cell present in the newborn babe, and at this early period of life has almost attained its maximum size. Contrary to the statements of some authors, a few poorly defined mastoid cells may also be found at birth, although their full development does not occur until about the age of puberty. Although the nearly developed antrum is present at birth, its permanent and adult position is not occupied until some years later. In the newborn babe the antrum lies above and somewhat behind the roof of the osseous canal, from whence it gradually drops downward until its permanent position is attained.

The depth of the antrum from the mastoid cortex has proven a fruitful source of discussion for anatomists and surgeons for years, some contending for one depth and some for others. It appears to depend largely on the point of view, or at least on the point on the cortex from which measurements are begun, some operators preferring to commence operative procedures at one point and others at other points. Most operators begin chiseling at a point as close to the meatal spine as possible, the bone at this situation being comparatively thin and somewhat concaved in outline, is nearer to the antrum than at other locations, and consequently this class of observers consider the antrum to be less than one inch from the surface. Broca, on the contrary, operates at a point further back, where the cortex is thicker and somewhat convexed, and he considers the antrum to lie at a depth of about one and one-sixth inches. Dr. Philip D. Kerrison[1] comes to the conclusion that the antrum can be best reached at a point just back of Henle's spine; that the depth of the antrum is here always less than the length of the postero-superior wall of the meatus, and that the antrum practically never lies further from this portion of the cortex than five-eighths of an inch, in all of which opinions he will probably be sustained by a large majority of operators.

The mastoid cells are of all conceivable sizes and shapes and separated from each other by thin bony partitions. A few large cells may usually be seen near the mastoid tip and at the end of the zygoma, and it sometimes happens that pus deposits find lodgment here when none can be discovered in the cells intermediate between the antrum and mastoid apex, thus justifying those advocating the exposure of all cells during operative procedures. Normal cell appearances are, of course, not frequently observed in operative experiences, as under those circumstances pathologic conditions exist, and necrosed, disorganized cell walls, granulations and cholesteatomatous masses, purulent deposits, eburnations and scleroses are seen, presenting views widely different from the healthy temporal bone of the dissecting room.

THE SIGMOID SINUS.

The convexity of the bend of the knee of the sigmoid portion of the lateral sinus forms one of the most important landmarks within the mastoid shell. It usually lies a little less than one inch posterior to the center of the meatus, but may fall further back, or so far forward as to impinge on the meatal wall or lie even further forward than this limit. Vascular connections exist between the sinus and cells, thus offering at least one explanation as to the frequency of sinus infections. The outer osseous covering (Fig. 5) of the sinus is easily broken, and care should be exercised to prevent this accident during operative procedures; still no especial anxiety need be felt if this occurs, although the subsequent operative steps are always thereby considerably embarrassed through constant vigilance lest the dural covering of the sinus be also ruptured.

THE MIDDLE EAR.

The middle ear or tympanum is of great interest to the mastoid operator, and while no exact description of this complicated chamber will be here attempted, yet an effort will be made to dwell on some anatomic features which seem essential to those undertaking to perform surgical operations on these important structures. There is, perhaps, no space of similar size in the body in close contact with so many important anatomic elements as the middle ear, its inner wall being, perhaps, the most interesting.

Passing from before backward, a bony elevation is seen called the promontory (Fig. 6.1), rounded into its convexity by the first turn of the cochlea lying directly underneath; backward and upward is the foramen ovale (Fig. 6.2), communicating with the vestibule, in which the stapes is nestled; nearly underneath the foramen ovale is the foramen rotunda (Fig. 6.3), communicating with the cochlea, from which it is separated by a membranous curtain; between the foramen ovale and the foramen rotunda is the convexity called the pyramid (Fig. 6.4).

Above the foramen ovale and at the angle of the inner tympanic wall and the roof or tegmen (Fig. 6.7) runs forward the bony portion of the Eustachian tube (Fig. 6.5), its roof being continuous with that of the tympanum, aditus ad antrum (Fig. 6.10) and antrum (Fig. 6.8), and being formed of the superior surface of the petrous portion of the temporal bone. An interesting feature of this portion of the petrous bone officiating as a roof for all these spaces is the fact that just over the antrum its surface takes rather an abrupt turn downward and forward, so that the roof of the Eustachian tube is about 11 or 12 mm. lower than the roof of the antrum, a fact which should not be forgotten in probing and chiseling in this vicinity, as an instrument passing into the upper portion of the aditus or tympanum in a too horizontal direction might easily pass through the roof and into the brain.

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[1] Kerrison: "The Variations in Depth of the Mastoid Antrum." Archives of Otology, June, 1903.

The facial nerve (Fig. 6.11) enters the petrous bone at the internal auditory meatus, which also affords entrance to the auditory nerve on its way to the labyrinth and enters the tympanic cavity at about the middle of its inner wall, close under the tegmen tympani. It passes gently downward and backward between the convexity of bone covering the horizontal semicircular canal and the foramen ovale and stapes, forming a boundary line between the tympanum and antrum, passes out of the middle ear at its extreme posterior end and then pursues a downward course through the hard petrous structure to the stylomastoid foramen. It will thus be seen that in its bony course it never leaves the petrous bone and does not enter the mastoid protuberance, although on chiseling away the mastoid cells the hard petrous covering of the nerve may be clearly seen at the anterior portion of the cell structure, just back of the bony meatus and below the floor of the antrum, and should be carefully avoided. Its sclerotic casing affords considerable protection.

The shell of bone protecting the nerve as it passes through the tympanum is, on the contrary, very thin, and sometimes entirely absent in spaces, thus accounting for the occurrence of facial paralysis during middle-ear suppurations. Most cases of facial paralysis following mastoid operations are due, not to injury of the nerve after it leaves the tympanum on its way to the stylomastoid foramen, where it is protected by its petrous covering, but to the breaking of the walls of the tympanic Fallopian canal by probing, chiseling or curetting, an accident which may occur to the most painstaking operators, especially when openings of the canal, either of a necrotic or congenital nature, are present.

Indeed, facial paralysis is said to occur from mere jarring of the nerve during chiseling proceedings, an opinion which should argue in favor of gentle manipulations and a soft cushion for the patient's head during all mastoid operations. The Fallopian canal and facial nerve may also be easily injured during the tympanic curettement of an ossiculectomy, and care should be observed during this operation not to curette harshly when in the neighborhood of the canal, and also to keep in mind the possibility of rupturing the thin tympanic roof by too forceful manipulations. The facial nerve is not often completely severed; it is wounded, cut or contused, for the facial paralysis usually disappears in a few weeks or months, which, of course, probably would not occur if the nerve was thoroughly divided. When paralysis develops in from one to three days after the operation it is not due to direct operative violence, but to secondary inflammation of the neurilemma, from which recovery is almost invariable.

In facial paralysis following the operation I have found the most benefit to proceed from the use of electricity, massage, strychnia and measures calculated to improve the general health. At the extreme upper and posterior portion of the inner wall of the tympanic air spaces, between the facial nerve and foramen ovale, anteriorly, and the mastoid antrum, posteriorly, can be seen during operation the hard bony convexity covering the horizontal semicircular canal. Being situated just at the floor of the angle, where the antrum merges into the aditus ad antrum, injury to this portion of the internal ear may be easily inflicted by a blow of the chisel, especially after the posterior wall of the bony meatus has been cut away in the performance of the radical operation. Nevertheless, it would seem that this accident rarely occurs, as not many instances of disturbances of equilibrium and dizziness are recorded after such surgical procedures, symptoms which assuredly would be expected after injury to these centers of equilibrium, and symptoms, which, fortunately, as a rule, pass away in a few days. A partial explanation of the infrequency of injury of the facial nerve on its downward course, and of a similar infrequency of injury to the horizontal semicircular canal during the radical operation, is found not only in their hard and compact coverings (Fig. 6.13) which protect them from accidents, and, to the eye of the operator, distinguishes them from their bony surroundings, but also in the fact that they lie below the plane of proper chiseling procedures, as in cutting away the posterior meatal wall, while the initial space should be wide, the opening should gradually diminish in size as the inner wall of the tympanum is approached. Thus the space produced should be triangular in shape, with the apex at the inner wall of the tympanum, and the base at the opening of the bony meatus. By careful chiseling, both the descending portion of the facial nerve and the convexity of the horizontal semicircular canal will lie outside the line of incision and escape injury.

The Roof of the Tympanum.—The roof of the tympanum (Fig. 6.7), or tegmen tympani, as it is called, is a thin plate of bone, belonging to the superior plate of the petrous portion of the temporal bone, on which rests the temperosphenoidal lobe of the brain (Fig. 7.1). It is thin and almost translucent in structure, and sometimes is perforated by congenital openings, or necrotic apertures after tympanic suppurations. Spaces of the latter character are sometimes closed by excessive tympanic granulations, which, pathologically or mechanically, protect the brain from infection, and whose removal, by curettement or otherwise, may be quickly followed by meningitis, brain abscess, etc. The tegmen tympani extends as far outward as the petrosquamosal suture, which is open in early life, before suture ossification occurs, and sometimes remains open in adult years, thus affording an excellent channel for the transmission of infection from the tympanum to the cerebral cavity. Small veins pass through the posterior portion of the tegmen tympani to the superior petrosal and sigmoid sinuses, a fact which must not be forgotten in searching for the etiology of phlebitis. In front and beneath the middle ear lies the carotid artery, separated from the former by a thin osseous partition, perforated for the passage of blood vessels. Running between the middle ear and carotid artery, and directly underneath the floor of the tympanum, may be found the jugular fossa for the transmission of the bulbous portion of the internal jugular vein, and connected with the middle ear by minute perforations for the transmission of small veins and nerve filaments.

The Attic.—Perhaps the most interesting portion of the middle ear is the attic (Fig. 8.8), or epitympanic space, located above the superior wall of the meatus, invisible on inspection by the speculum, and containing the major portion of the ossicles (which are almost fully developed at birth), the chorda tympani nerve (Fig. 8.5) after it passes from the facial and glides between the malleus (Fig. 8.7) and incus (Fig. 8.4) and several spaces or pockets produced by the muscles, bones, tendons and fasciæ of this small but important cavity. Owing to this complexity and network of tissue, both bony and soft, drainage from the attic to the main portion of the tympanum is sometimes materially diminished, especially in case of considerable swelling incident to inflammatory conditions. Infectious products may remain in the attic, perhaps obtaining lodgment in one or more of the spaces formed by the ossicles and soft tissue, and finally pass back into the antrum and explode as a mastoid abscess. The ossicles themselves, encased in soft tissue, lying as they do directly in the pathway between the aditus ad antrum and the tympanum, may by their very position restrict drainage from the aditus and mastoid antrum, and thereby perpetuate a chronic otorrhea or precipitate a mastoid abscess. The former condition is often promptly relieved by the removal of the malleus and incus, the stapes (Fig. 8.3) never being removed intentionally in purulent conditions for fear of opening an avenue of infection from the tympanum to the labyrinth by way of the foramen ovale.

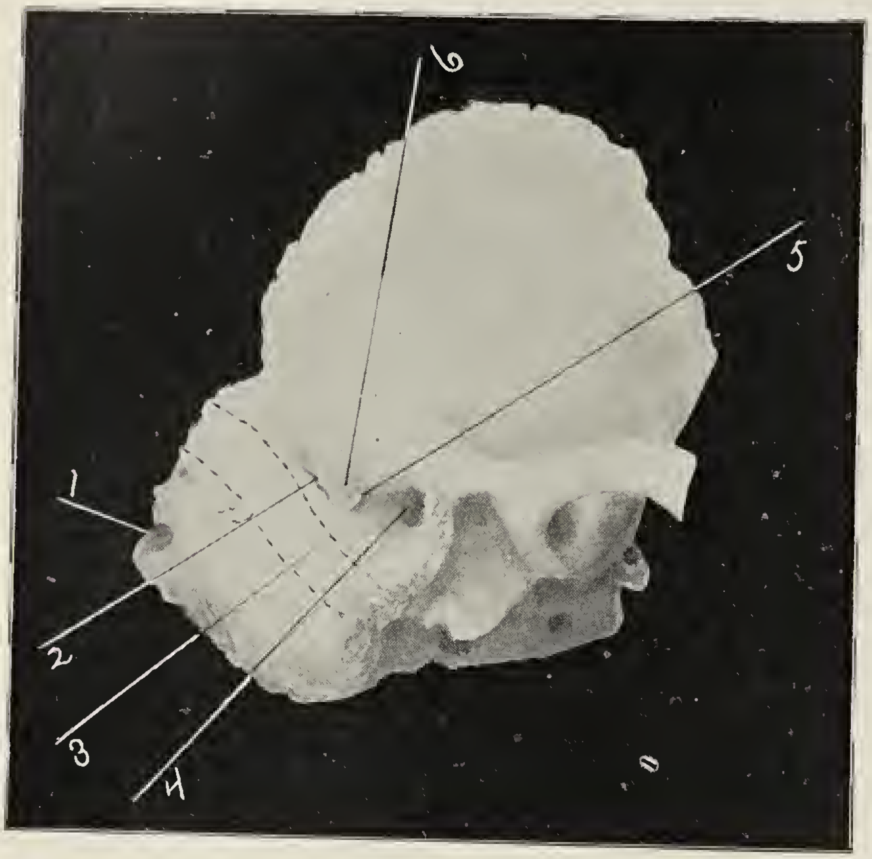

Fig. 1.—1, Mastoid foramen; 2, remains of mastosquamosal suture; 3, location of sigmoid sinus; 4, external auditory meatus; 5, Henle's spine; 6, bony porosities, and site at which operative mastoid procedures should be commenced.

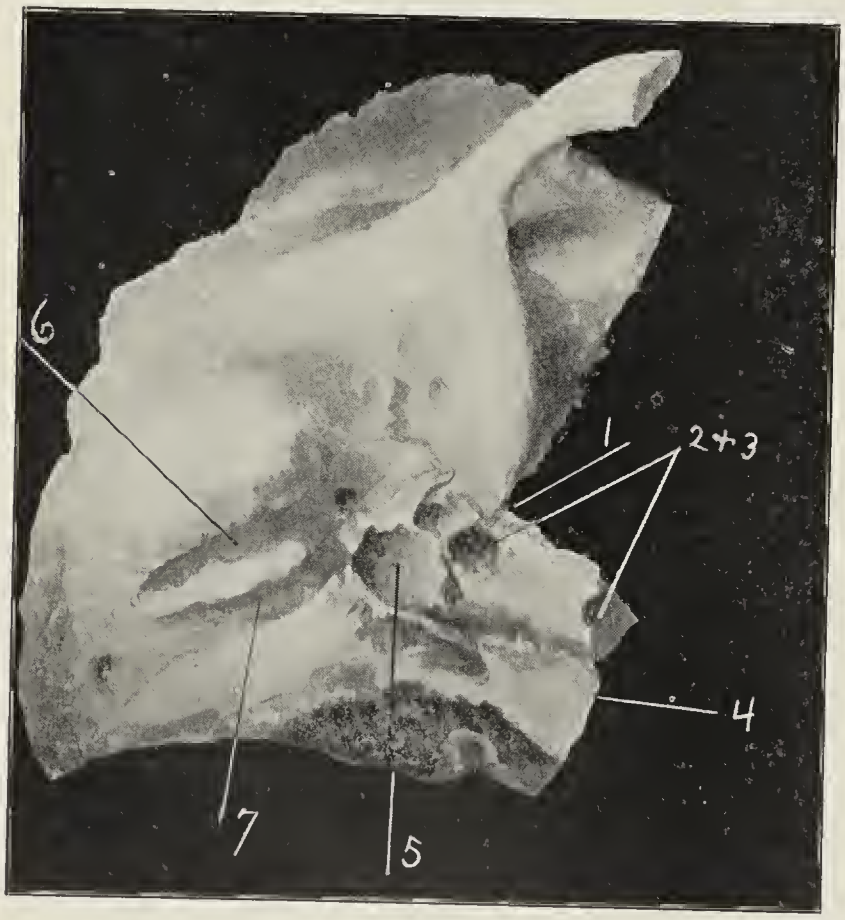

Fig. 2.—1, Location of Eustachian canal (underneath); 2, carotid canal; 3, carotid canal; 4, location of groove for inferior petrosal sinus (underneath); 5, jugular fossa; 6, digastric groove; 7, groove for occipital artery.

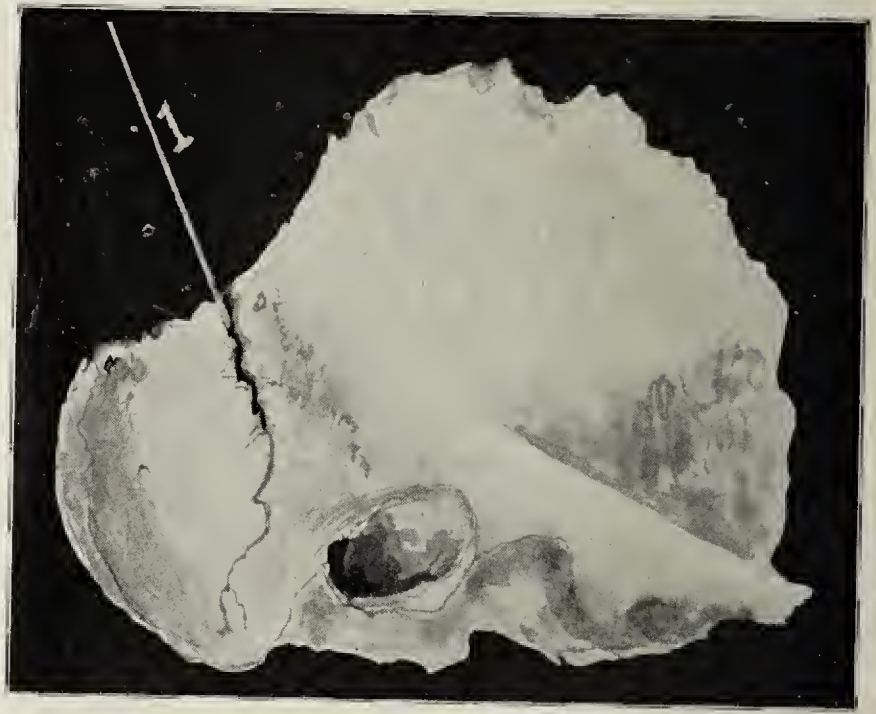

Fig. 3.—Mastosquamosal suture.

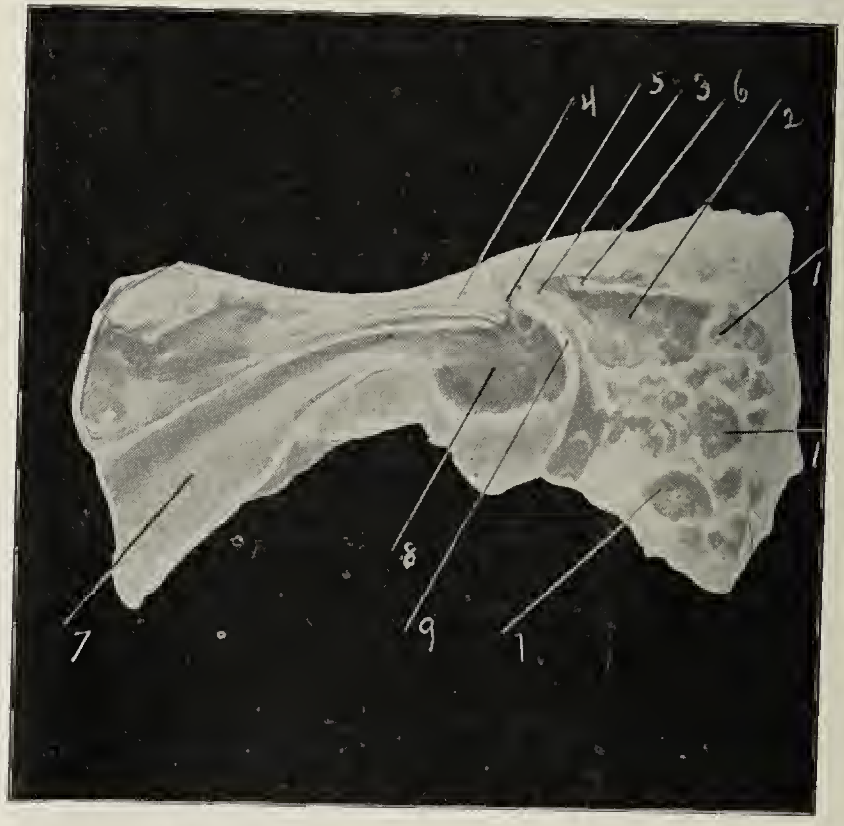

Fig. 4.—1, Mastoid cells; 2, mastoid antrum; 3, posterior wall of middle ear; 4 and 5, tegmen tympani; 6, tegmen antri; 7, Eustachian tube; 8, middle ear; 9, course of facial nerve.

Avenues of Infection.—One of the interesting features of the middle ear space is the number of avenues by which infection may spread from that cavity to the contiguous parts. This can not be better described than by using Macewen's list, as follows:

1. The external auditory canal:

2. The eustachian tube and canal for the tensor tympani muscle.
3. The mastoid antrum and cells.
4. The petrosquamosal fissure.
5. The mastosquamosal fissure.
6. The fenestræ ovale and rotunda.
7. The Fallopian canal.

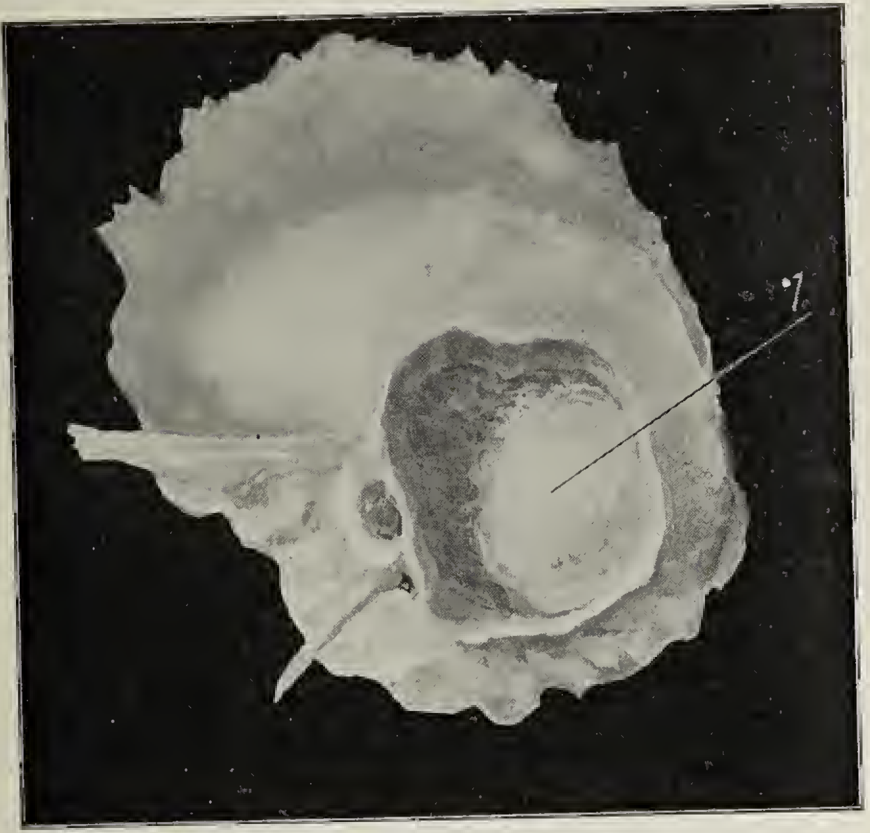

Fig. 5.—Bony covering of sigmoid sinus.

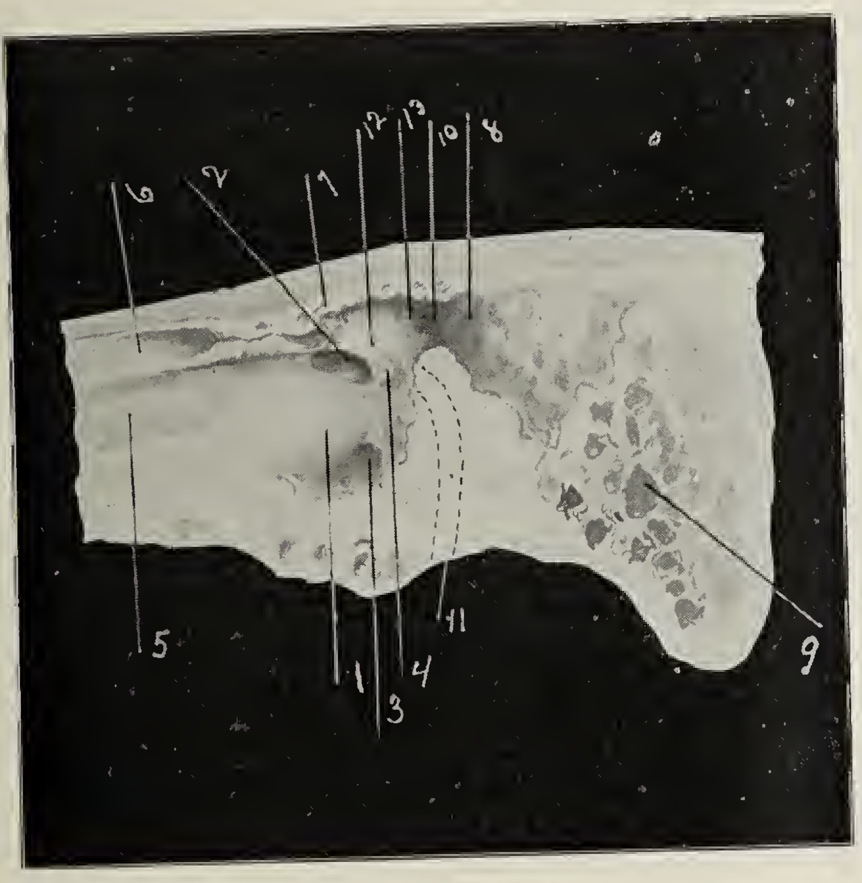

Fig. 6.—1. Promontory; 2, foramen ovale; 3, foramen rotunda; 4, pyramid; 5, Eustachian tube; 6, canal for tensor tympani muscle; 7, tegmen tympani; 8, mastoid antrum; 9, mastoid cells; 10, aditus ad antrum; 11, course of facial nerve; 12, facial canal; 13, covering of horizontal semicircular canal.

8. A foramen for the passage of Jacobson's nerve.
9. The fossa subarcuata.
10. The lateral and sigmoid sinus (by small connecting veins).
11. The superior petrosal sinus (by small connecting veins).
12. The inferior petrosal sinus (by small connecting veins).
13. The temporomaxillary vein (by small connecting veins).
14. Communicating veins between the tympanum and dura mater.
15. The carotid canal (by small connecting arteries, veins and nerves).
16. The jugular fossa (by small connecting veins and nerves).
17. The tympanic branch of the internal maxillary artery.

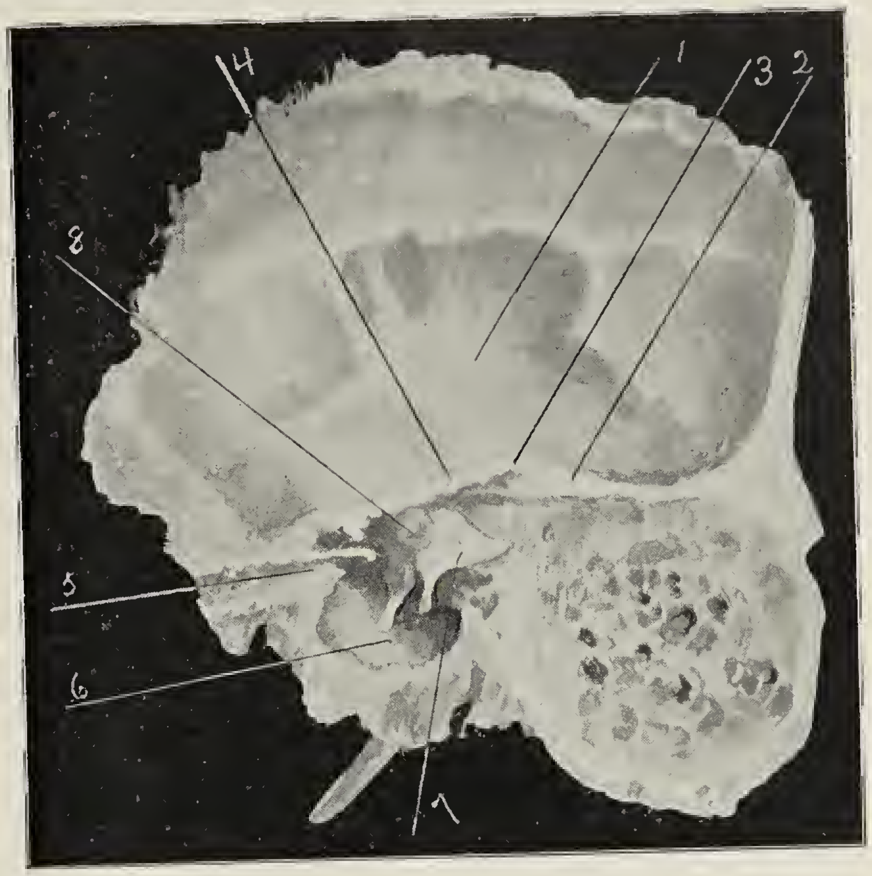

Fig. 7.—1, Situation of temperosphenoidal lobe; 2, tegmen antri; 3, tegmen aditi; 4, tegmen tympani; 5, Eustachian tube; 6, middle ear and drumhead; 7, incus; 8, malleus.

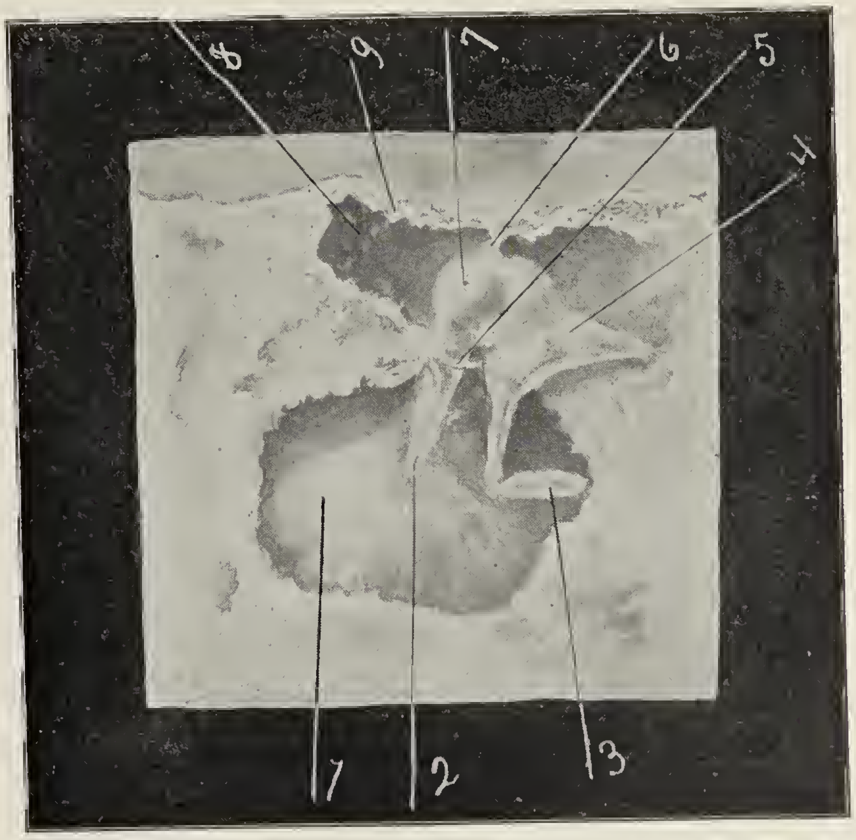

Fig. 8.—1, Drumhead; 2, malleus; 3, stapes; 4, incus; 5, chorda tympani nerve; 6, suspensory ligament of malleus; 7, malleus; 8, attic; 9, tegmen tympani.

Other Points of Interest.—Searching the inner aspect of the temporal bone for areas of interest to the mastoid operator, attention will be arrested by the concavity or fossa for the lodgment of the temporal lobe of the brain, formed (so far as the temporal bone is concerned) by the inner plate of the squamous and the superior plane of the petrous portions of the temporal bone. Of equal interest is the concavity (Fig. 12.2) or fossa formed by the inner plate of the mastoid and inner posterior angle of the petrous, in which rests the cerebellar hemisphere, and on which lies the sigmoid portion of the lateral sinus. The various sides of the petrous bone may also be studied with interest and profit by the mastoid operator. The temporosphenoidal lobe (Fig. 11.1) of the brain lies about as low in the temporal fossa as the superior border of the zygomatic process, its lateral wall resting against the squamous, and its base on the superior side of the petrous bone.

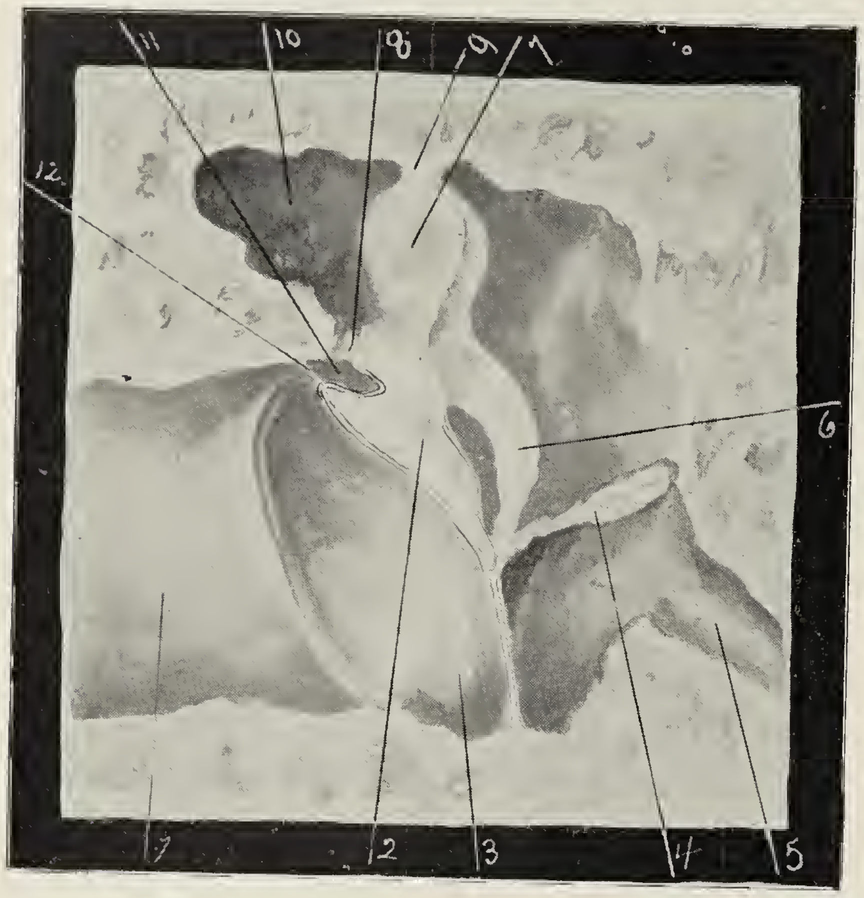

Fig. 9.—1, External auditory canal; 2, malleus; 3, drumhead; 4, stapes; 5, Eustachian tube; 6, incus; 7, malleus; 8, external ligament of malleus; 9, suspensory ligament of malleus; 10, attic; 11, Prussaks chamber; 12, membrana flaccida.

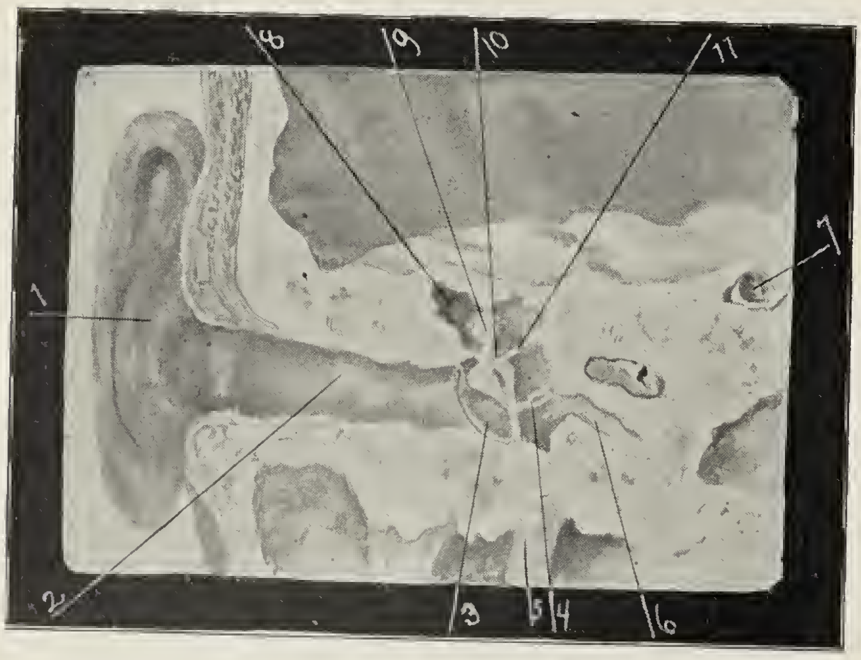

Fig. 10.—1, Auricle; 2, external auditory canal; 3, drumhead; 4 stapes; 5, internal carotid artery; 6, Eustachian tube; 7, internal carotid artery; 8, attic; 9, malleus; 10, incus.

Just above the zygomatic process and external meatus the squamous is very thin, and it is at this point that the bone can be most advantageously opened by trephine or chisel, in search of a temporosphenoidal abscess, unless it is deemed best to enter the cranium through the tegmen of the tympanum, aditus ad antrum, or antrum, or all together, an avenue preferred by most operators on account of convenience and better drainage. It should not be forgotten that the dura is closely attached to the petrous bone at the floor of the fossa, and that the middle and posterior cerebral arteries may be ruptured in operating on the temporal lobe.

To the mastoid operator the posterior cranial fossa, and especially that portion of the fossa formed by the mastoid and petrous portions of the temporal bone, is of especial interest, for it is here that sigmoid and cerebellar complications to aural diseases occur, which together constitute a large majority of the unfortunate sequelæ of purulent otorrhea. The sigmoid portion of the lateral sinus (Fig. 12.3) assumes its most prominent convexity forward at this point, the venous blood having

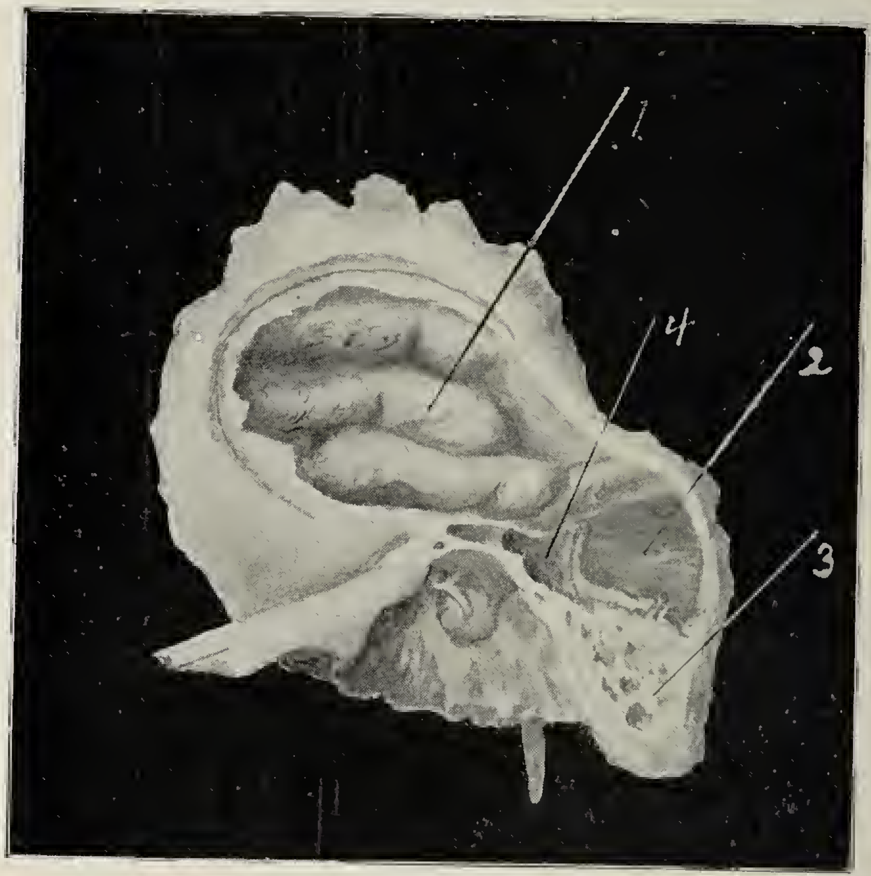

Fig. 11.—1, Temperosphenoidal lobe; 2, cerebellum; 3, mastoid cells; 4, antrum.

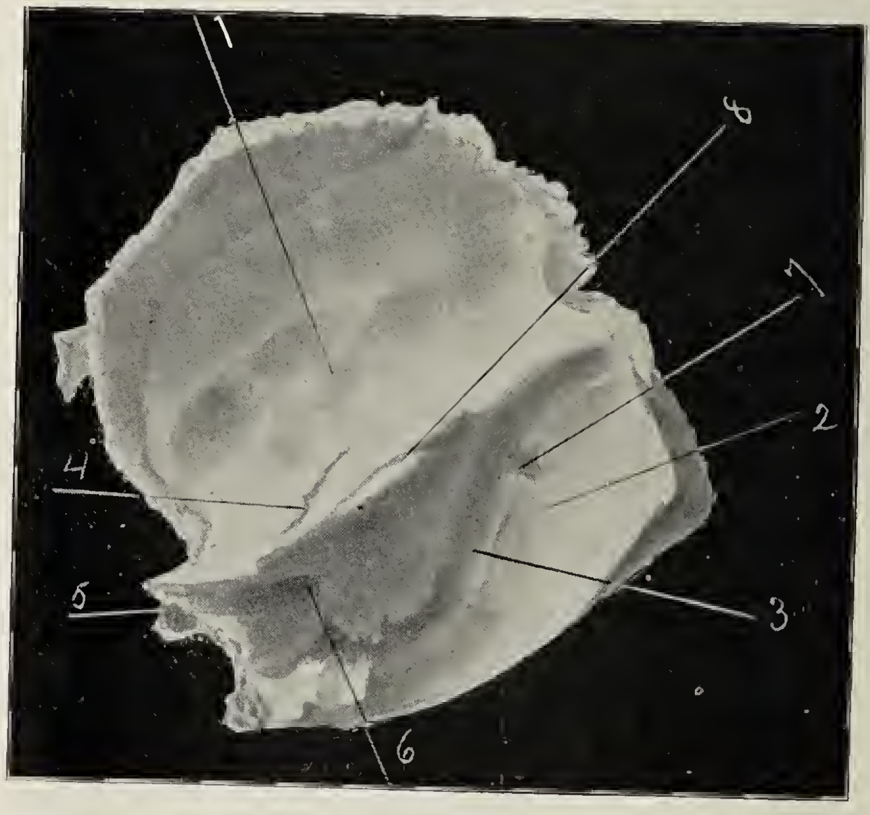

Fig. 12.—1, Concavity for temperosphenoidal lobe; 2, concavity for cerebellum; 3, groove for sigmoid sinus; 4, remains of petrosquamosal suture; 5, carotid canal; 6, internal auditory meatus; 7, mastoid foramen; 8, groove for superior petrosal sinus.

traveled from the torcular herophili, in the lateral sinus, until the sinus becomes known as the sigmoid, on account of its supposed resemblance to the letter S. From here the blood passes downward to the jugular bulb, and from there out of the head by way of the internal jugular vein. It must be remembered that the venous sinuses of the cranium are merely spaces between the separated layers of the dura mater, and that when the osseous side of the sigmoid sinus is removed it is the external layer of the dura mater which is seen to constitute the outer wall of the soft sinus, the inner surface of the sinus being lined by endothelium. At about the middle of the sigmoid sinus the mastoid vein is given off, which passes through the mastoid bone in the mastoid foramen (Fig. 12.7) to join the occipital cutaneous vein on the outside of the head. The sigmoid sinus bends sharply forward in the inner plate of the mastoid bone, so that its most marked convexity, or knee, as it is called, lies just above and on a horizontal line with the most dependent portion of the mastoid antrum. In other words, the most prominent portion of the sinus lies very close to the field of active work in all mastoid operations.

The exact relative position of the sinus is, therefore, of great importance to mastoid operators and should be carefully studied. Ballance places the bend of the sinus as one inch posterior to, and a quarter of an inch above, the center of the meatus, and this estimate is probably nearly correct for a large majority of cases. It is seldom further back than this, but is often found further forward. Hessler finds twelve cases in the aural reports of the world where the sinus lay even in front of the mastoid antrum. Fortunately, such extreme malpositions are very rare, as seen by Hessler's report, but as annoying anterior malpositions of the sinus may be frequently seen, the operator should be always on the alert to detect them and should always chisel slowly and carefully, brushing away the débris as progress is made, that careful inspection of the operative field may be obtained. The thickness of the osseous wall separating the mastoid cells from the sigmoid sinus is only a few millimeters in extent, under normal conditions, and when necrosis and exuberant granulations are present the intervening wall may be extremely thin, or even absent altogether, and the sinus will be reached with little or no effort, beyond a cleansing curettement, and be seen as a whitish-blue channel as the venous blood shows through the gray dural covering. The closer the proximity of the sinus to the meatus the more perplexing becomes the operative procedure, and as the bend of the sinus sometimes lies close to the posterior meatal wall, and therefore exactly in the area of the ordinary mastoid operations, extreme care must always be taken until a malposition of the sinus can be excluded.

In case, however, a malposition is present the operator should, in chiseling, keep close to the meatal wall and endeavor to chisel around the prominence of the sinus, dissecting it out, as it were, or it may even be necessary in reaching the antrum to pursue the method of Stacke and arrive at the antrum by first breaking down the posterior superior wall of the meatus and then working backward and upward until the antrum is reached, which may be at a point directly underneath the sigmoid sinus. The ordinary depth of the sinus, from the outer surface of the mastoid cortex, varies very much, as may be imagined, but it may be said that about ten millimeters is a fair average, and Koerner's investigations show that the right sinus usually lies deeper from the surface than the left, a fact which should not be forgotten in operative work.

Besides those features already enumerated, the petrous portion of the temporal bone presents other points of interest to the mastoid operator, such, for instance, as the osseous Eustachian canal, opening on the jagged anterior surface of the bone, which is divided into two passages, the upper for the tensor tympani muscle (Fig. 6.6), and the other and larger for the Eustachian tube, lined with ciliated epithelium, whose wavy motions away from the tympanum tend to aid in the drainage of the tympanum and prevent the entrance of pathogenic organisms to the middle ear. The large opening for the carotid artery having one aperture in the under surface of the petrous, as the artery enters the bone, and another in the anterior surface, as it leaves it, after having made an abrupt curve, is also of interest, and as necrosis of the tympanum may in rare cases erode so deeply as to open the carotid and produce most alarming hemorrhage, uncheckable save by the prompt ligation of the carotid artery, these important anatomic points should be kept well in mind.

On the posterior surface of the petrous bone will be found the internal auditory canal leading into the interior of the bone and giving passage to the auditory and facial nerves, and as this channel sometimes is the avenue for migration for pathogenic organisms from the labyrinth and tympanum to the brain and the means, therefore, of producing brain abscesses, etc., it is of importance to the surgeon.

Running along the superior border of the petrous bone is a well-marked groove for the passage of the superior petrosal sinus (Fig. 12.8) emptying into the sigmoid sinus, having proceeded from the cavernous sinus. On the under surface of the bone is another groove lodging the inferior petrosal sinus, carrying blood from the cavernous sinus to the jugular bulb.

72 Madison Street.

REPORT OF A CASE OF BRAIN TUMOR.*

F. C. NEU, M.D.
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AND
J. A. MACDONALD, M.D.
Assistant Physician Central Indiana Hospital for the Insane.
INDIANAPOLIS.

The following case is considered of sufficient interest to report: 1. Because of the extreme rarity of this form of growth. 2. Because of the extreme size to which it grew. 3. Because it offers a typical illustration of nearly all, if not all of the effects of a slowly developing intracranial growth. 4. Because of the clinical manifestations shown.

CLINICAL REPORT BY DR. MACDONALD.

Patient.—H. B., aged 36, was admitted to the Central Indiana Hospital for the Insane, October, 1898, was discharged September, 1902, as improved. Re-admitted Dec. 30, 1904.

Family History.—Parents living and in fair health. One maternal uncle epileptic, one cousin insane.

Personal History.—There was no report of severe illness or injury in childhood. At the age of 16 he developed major epilepsy, which was attributed to a sun stroke. Ten years later his left eyeball became abnormally prominent, but observation is faulty as to its first appearance. Four years later a right hemiplegia developed. On admission his mental state was found to be one of arrested development. He was amiable during the interval, but became very irritable before the convulsions, and often had outbreaks of fury following them.

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* Read before the Marion County Medical Society, Indianapolis.

Physical Examination.—Patient is of medium height, and of powerful muscular development. The cranium is apparently symmetrical, except that just behind the left external orbital process an abnormal prominence, smooth, not abrupt in outline, rises 1 cm. above the general surface, and is about 10 cm. antero-posteriorly and 5 cm. vertically. The percussion note over the prominence is flat and the finger receives the impression of greatly increased resistance, and apparently is not sensitive to pressure. The eyes are prominent, the left excessively so. The pupils are unequally dilated, the left being the larger, and both react slowly to light. There is an extreme degree of optic atrophy. The mouth is drawn slightly to the left. Speech is confined to some half-dozen words. There is a partially-recovered right hemiplegia with some contracture of the hand and foot. Both knee-jerks are exaggerated, the right more marked. There is right ankle-clonus and Babinski's sign on the right side. The mental condition made other examinations futile. On Dec. 19, 1905, the patient fell during a convulsion and fractured the right inferior maxilla. The shock was rather extreme and three days later he developed serial convulsions, then pneumonia supervened and caused death.

Autopsy.—Head enlarged and brachycephalic in type. Bulging of the left frontal area, of both eyeballs, the left excessively so. Thickness of the skull is very unequal and irregular, varying from that of an egg shell to 1 cm, thinning being particularly marked in the floor of the left anterior and middle fossæ and of the left frontal, squamous, and parietal bones. There is also atrophy of the petrous portion of the temporal, of the body of the sphenoid, and of the sphenoidal ridge on the left side, enlarging the anterior and middle fossæ, and making them practically continuous with each other. At the lower and anterior part of the left squamous just above the floor of the middle fossæ, are two cone-shaped projections, projecting inward about 1 cm., their bases gradually spreading, becoming continuous with each other at their adjoining surfaces.

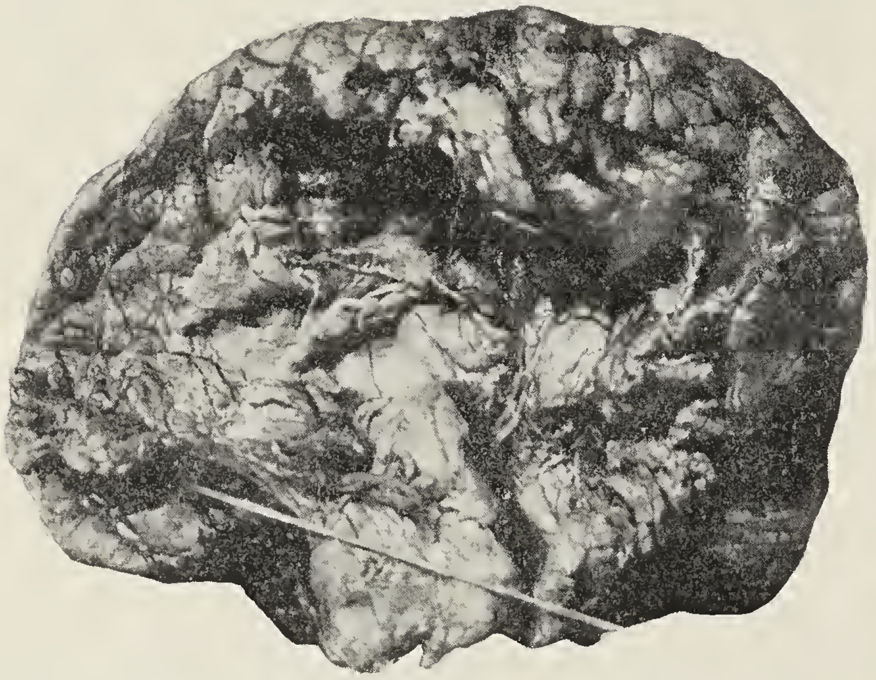

Fig. 1.—Anterio-lateral view of left hemisphere. (*a*) Tip of temp. sphen., lobe turned down.

There are moderate dural adhesions, most marked on the left side, with thinning of it over the anterior part. There is no subdural or arachnoidean fluid.

Attached by a base 6 to 3 cm. to the inner surface of the vertical portion of the left frontal bone at its outer part is a hard, whitish, nodular growth, of cartilaginous consistency, with small areas of slight calcareous infiltration. Its weight is 575 gm., its size 16x12x9 cm., and extends backward and inward, taking the place of the greater part of the outer portion of the left frontal, left parietal and left temporo-sphenoidal lobes. On its outer surface are two depressions corresponding to the cone-shaped projections from the skull above described.

There is a second smaller growth, 3x2x5.5 cm. in size, springing from the inner surface of the left squamous just above and anterior to the base of the petrous portion, attached by a small pedicle-like base, and of the same structure as the large tumor.

There is an oblique fracture of the right inferior maxilla at the point of junction of the horizontal and vertical portions extending back, in and upward. A moderate amount of callous, easily broken down, surrounds the seat of fracture.

The brain weighs 1,680 gms. There is complete displacement by atrophy of the left frontal lobe, except a layer averaging about 2 cm. in thickness on its mesial and internal-inferior surface, also of the outer portion of the left parietal lobe, and of the central three-fifths of the left temporo-sphenoidal lobe. The corpus striatum and optic thalamus with the intervening internal capsule are very much decreased in size and displaced inward and downward. The left lateral ventricle is almost closed, the right lateral and the third are much dilated. The first, third, fourth, fifth, sixth, seventh and eighth cranial nerves on the left side are smaller than on the right side and somewhat gray in color. The optic nerves, commissure and tracts are similarly affected, the left more so than the right. The spinal cord is apparently normal.

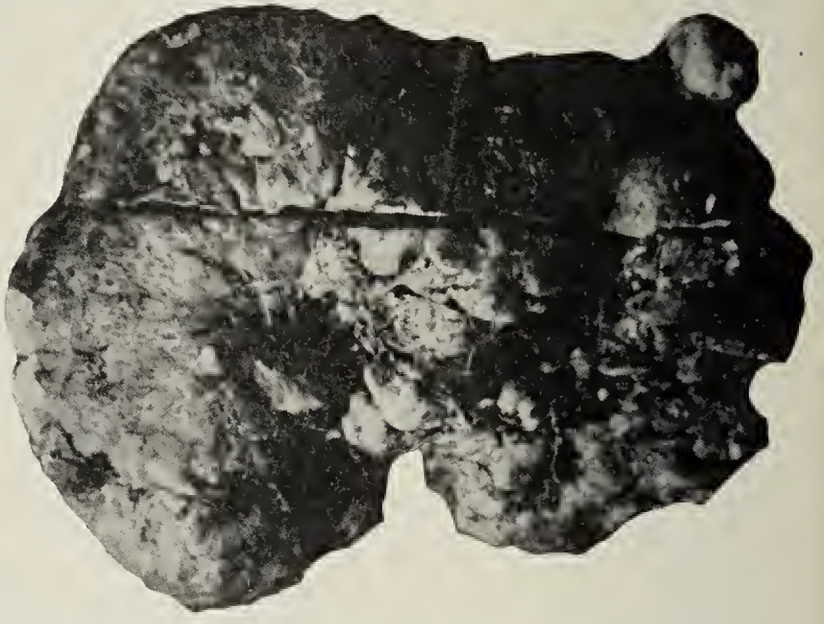

Fig. 2.—External surface view of part lying next to bone. (*a*) Anterio-external and point of attachment.

Thorax.—There is slight, fatty infiltration of the right ventricle of the heart, slight arteriosclerosis of the aorta, most marked about the coronary orifices and involving the coronary vessels. There are extensive, diffuse, fibrous, band-like adhesions in both pleural cavities plus an acute fibrinous exudate over the base of the right lower lobe. The lower lobe and base of the upper lobe of the right lung are in a condition of mixed red and grey hepatization. There is also slight hypostasis of posterior and lower portion of the lower left lobe. The thyroid gland is moderately enlarged, tending to cystic formation. There is some hyperplasia of the bronchial glands and congestion of the bronchial mucosa. The remaining cervical and thoracic structures are apparently normal.

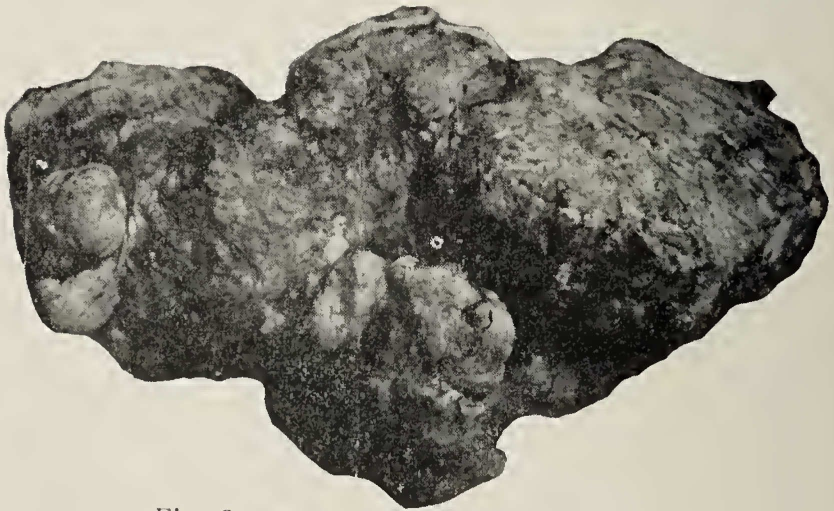

Fig. 3.—Marginal view, inner surface.

Abdomen.—Apart from the kidneys, the abdominal organs do not show any gross pathologic changes. The kidneys are in a condition of chronic parenchymatous-nephritis. The right renal pelvis is dilated and pouch-like, the mucost thickened and covered with a somewhat yellowish exudate, and the cavity contains a mulberry-like calculus 15 mm. in diameter. The right ureter is slightly dilated.

Microscopic Examination.—The brain tumor consists of practically normal hyalin cartilage throughout. The renal calculus is somewhat stratified and chemically consists mainly of phosphates, some oxalates, traces of xanthin and some organic material.

Osseous deposits in the dura, or small osseous projections from the inner surface of the skull are not infrequent, but the development of a definite tumor, benign in character, is a rare condition, especially chondroma. Gowers does not mention them. Mills refers to them as usually springing from the base of the skull in the form of flattened masses arising either from the bones, or from the dura, and lying like plates on the brain. Starr also refers to their extreme infrequency. No report has been discovered of any intracranial growth of the size of this one. Various authors refer to some the size of oranges, a closed fist, etc., so that this evidently is of an extraordinary size.

The effects produced by a slowly growing intracranial tumor are well shown in this case, involving, as it does, all the structures entering into the formation of the cranial cavity, as well as the contents thereof.

The case is illustrative of a group whose clinical manifestations are similar to and not always differentiable from those constituting the symptom-complex of true, idiopathic epilepsy. Judging from the clinical report one may safely assume that the growth was present at the time of the first so-called epileptic seizure. To what extent it had developed at that time, or to what degree it had involved the brain substance is impossible to say. It is possible, of course, that the epileptic seizures were primary, and the development of the tumor a secondary phenomenon, which may have been the result, directly or indirectly, of those seizures or the conditions producing them, or it may have had no connection with them at first.

The probabilities are, however, that the growth was the direct and exciting cause of the epileptiform seizures, and it does seem that there should be some means rendering possible a diagnosis between the two conditions at a time when operative procedures would be beneficial. But, as yet, we must confess to an inability to do so, since, on the one hand, one often meets with cases which, during life, are looked on as true idiopathic epilepsy, and the autopsy reveals the presence of some organic lesion, while, on the other hand, cases are also met with regarded as epileptoid, due to some organic lesion, but operation and autopsy fail to discover existence of any such trouble.

CALCIFICATION OF THE VAS DEFERENS AND THE SEMINAL VESICLES.*

S. GEORGE, M.D.
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During my stay in the Pathologic Institute of the German University in Prague, I had the opportunity of examining some cases of pathologic changes in the ampulla of the vas deferens and the seminal vesicles. Two of these seemed to be more than ordinarily interesting and, as little is to be found in the literature concerning calcification, particularly in this region, they appear to justify publication.

CASE 1.—From Professor Pribram's clinic.

Patient.—Man, aged 63, died at 5 a. m., Feb. 4, 1906. The body was brought to the pathologic institute with the clinical diagnosis of *endarteritis obliterans, gangraena digiti I. et II. pedis sin, tetanus traumaticus.*

AUTOPSY.

Anatomic Diagnosis.—This was briefly as follows: Traumatic tetanus. Old endocarditis involving the bicuspid valve, with stenosis of the opening of the left vein and thrombosis of the valves. Embolism of left popliteal artery, with consequent necrosis obliteration of first and second toes of the left foot and ulceration of the skin of the left heel. Cicatrices of the kidney due to infarcts. Hemorrhage into the left rectus abdominis muscle. Suppurative bronchitis.

Macroscopic Findings.—The genital organs were without pathologic changes, except that in the wall of the mesial part of the inferior third of the right seminal vesicle near the right vas deferens a mass of bone-like consistency was found, egg-shaped of the size of 0.25 c.cm. (Fig. 1). This condition of the seminal gland could be caused by only two pathologic processes: (a), a partial calcification of the seminal gland, not unlike a case described by Chiari in 1903; or, (b), by a phlebolith. When strong sulphuric acid is applied to a small piece of calcified mass characteristic crystals of calcium sulphate are produced. This chemical test was not applied here.

Microscopic Findings.—A microscopic examination of the seminal gland was undertaken in order to decide the true nature of the pathologic findings. A horizontal lamella was taken from the place of the seminal vesicle, which apparently seemed to be bone-like in consistency; it was put in Perényi's solution (10 per cent. nitric acid, 40 c.cm.; absolute alcohol, 30 c.cm.; 0.5 per cent. watery solution of chromic acid, 30 c.cm., and washed in 70 per cent. alcohol). After this process the bone-like consistency disappeared, and one could now conclude that this appearance was undoubtedly due to lime-salts. It was then embedded in celloidin, and the microscopic sections were stained with hematoxylin-eosin and Van Gieson's stain.

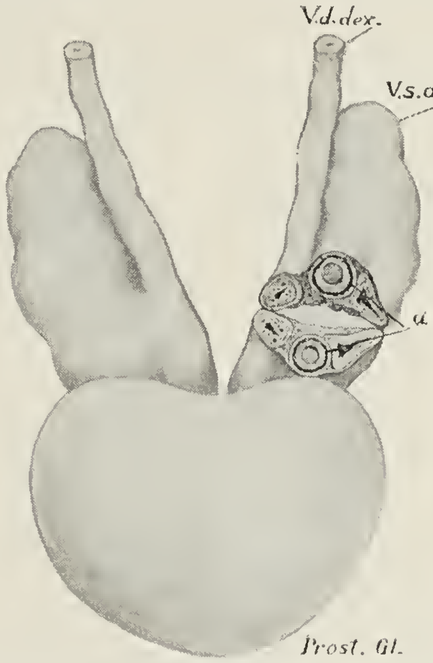

Fig. 1.—Calcification of the right seminal vesicle. a, Section of the calcified mass in the seminal vesicle. V. d. dex., Vas deferens right side. Normal. V. s. dex., The right seminal vesicle showing the calcified mass. Prost. Gl., Prostate gland. Normal.

The epithelium was everywhere well preserved, and presented one layer only. The mucosa was without any pathologic changes, but, in the intercellular substance of the two outer layers of the tunica muscularis, a network-like mass, deeply stained by hematoxylin. It was homogeneous, and in places fine globular granules, with some concentric bodies here and there within the network, could be seen. The mass was circular in outline, following the circular and the outer muscular layers especially. (Fig. 2.) There was no tendency of the mass to enter in proper union with the tissue; it seemed to be undoubtedly only a lime-salt infiltration in the intercellular substance. The adjacent connective tissue in some places was found to be sclerotic.

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* From Professor Chiari's Pathologic Institute in Prague.

COMPARISON WITH CASES REPORTED BY CHIARI.

In 1903 Chiari[1] reported two cases of calcification of the vas deferens, and one case of calcification of the vas deferens and of the seminal vesicle. It may not be out of place, therefore, to summarize briefly some of Chiari's findings and conclusions. He found in one of his cases the ampulla with the seminal gland altered into a hard mass impossible to cut with a knife. Externally the ampulla and the seminal vesicle were about normal in size, as well as the lumen in which the mucosa was also found the form of small white spots in the tunica muscularis, and the latter could be seen with the naked eye. The ejaculatory ducts were free from the calcification. In fresh sections from the wall of the ampulla and the seminal vesicle under the microscope were found amorphous opaque bodies lying in the muscularis in numerous places. When a little sulphuric acid was added to these bodies on the slide, the masses became loose, evolution of gas followed and finally deposits were left behind which appeared to represent crystals of calcium sulphate.

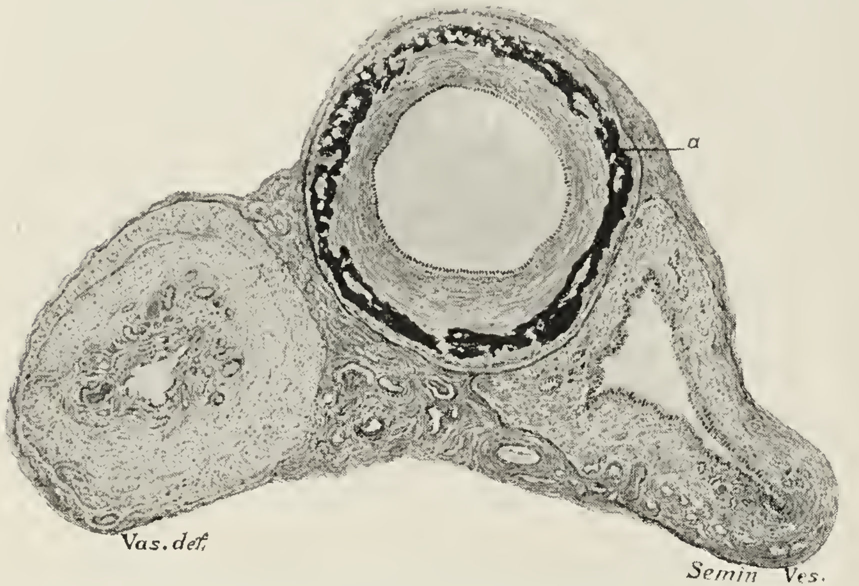

Fig. 2.—Cut section of the right seminal vesicle. Low power. a, Represents the calcified mass in the muscularis. Other structures normal.

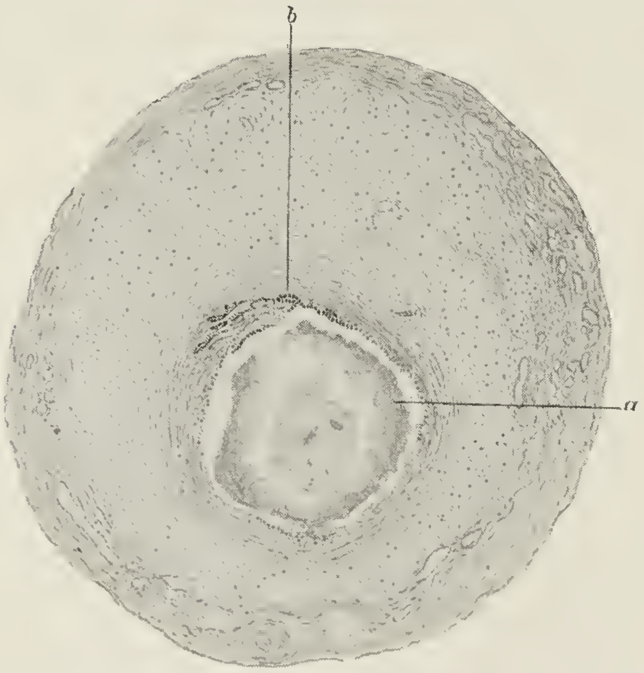

Fig. 3.—Obturation with calcification of the left vas deferens. a, Obturated lumen with calcified mass. b, The epithelial layer. Other parts normal.

Other parts were decalcified, prepared and devoted to the ordinary microscopic examination. The results obtained were the following: Spermatozoa were found in the ampulla and in the seminal gland. The epithelium was well-preserved and presented one layer only; the mucosa was found to be intact. In addition, Chiari describes a brownish granular pigment at the base of the cylindrical epithelial layer; this was negative in my case. He also mentions a sclerosis of the connective tissue in the areas of calcification. The infiltration of lime salts was found to be situated exclusively in the tunica muscularis.

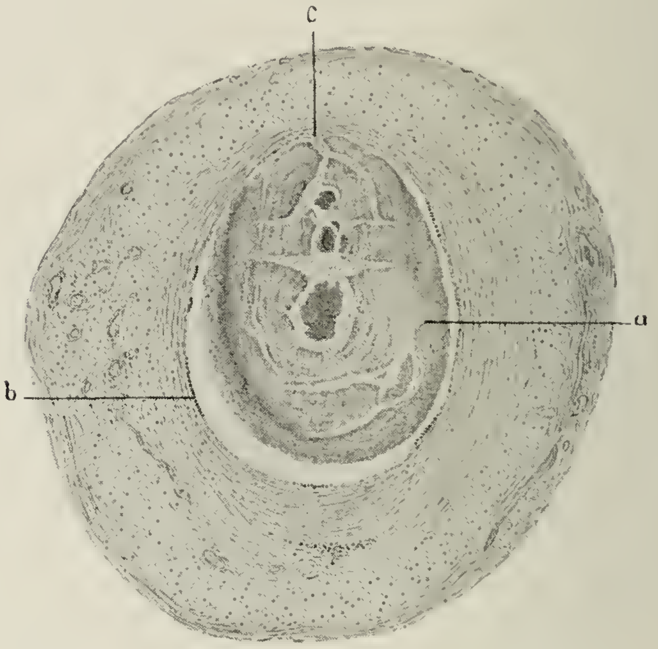

Fig. 4.—Same as Figure 3. c, Shows connective tissue penetrating the calcified mass within the lumen.

These findings excellently verify the microscopic picture of my first case. Finally, we reach the following conclusions: (1) My case presents a complete analogy with the cases of Chiari. (2) The calcification in all the cases occurs in elderly men. (3) In Chiari's cases and also in my case, a pure regressive metamorphosis of the tunica muscularis without any pathologic changes in the mucosa, and without any inflammatory process of the ampulla of the vas deferens and the seminal vesicle respectively, was apparent.

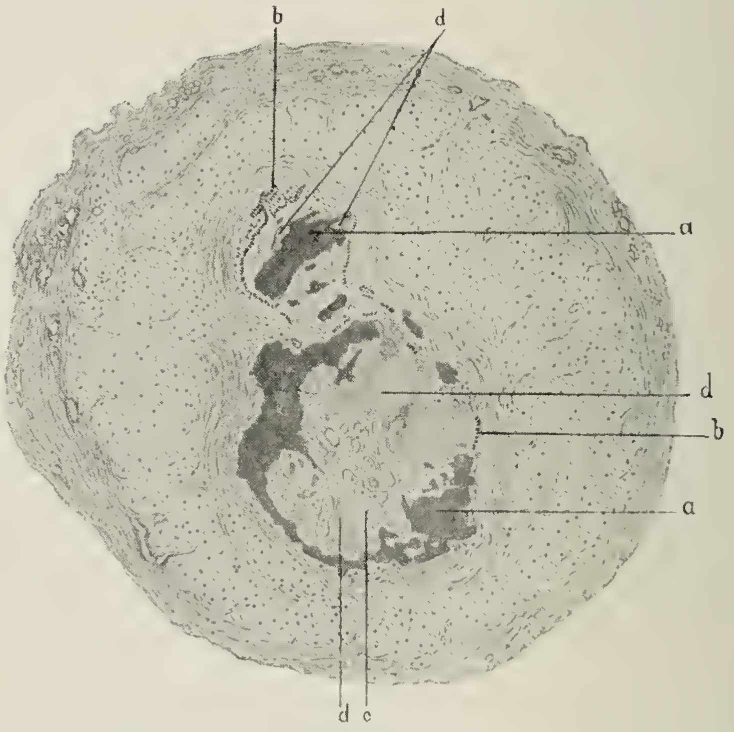

Fig. 5.—Same as Figures 3 and 4, but in addition this shows the ossification or bone-like structures, d.

With regard to the etiology of the sclerosis of the connective tissue. it is well said by Chiari, that: "this may be an expression of a senile change of the muscularis." Furthermore, he found by a comparative examination of the ampulla of the vas deferens and the seminal vesicles of several old men, that a sclerosis of the connective tissue is not seldom found and that calcification may follow sclerosis. A slight senile osteoporosis may cooperate, or an affection of the kidneys, which is common in old age, may also be responsible for these processes, perhaps hindering the excretions of the lime salts.

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[1] Chiari: "Ueber senile Verkalkung der Ampullen der Vasa deferentia und der Samenblasen." Zeits. f. Heilkunde. Abteilung für path. Anatomie, 1903.

This form of calcification, as suggested by Chiari, should be distinctly separated from the calcification of these same organs by chronic inflammations, which changes have been described by different authors under the name of ossification. Lallemand[2] has reported a case of suppuration, induration, and ossification of the seminal glands, due to chronic inflammation. Rokitansky[3] declares, that in the thickened wall of the seminal vesicles "small bone formation" is sometimes found. Klebs[4] speaks of calcification in the chronically inflamed seminal vesicles. Guelliot[5] describes a case of induration of the walls of the vas deferens and the seminal vesicles after repeated attacks of blennorrhea in a tuberculous patient. Orth[6] speaks of chronic deferentitis and *vesiculitis seminalis,* in which a gradual thickening of the walls can appear and in which an infiltration of lime salts can take place.

Since the publication of the reports by Chiari, a careful search of the literature for the report of such cases of calcification of the genital organs proved fruitless. Posorisky[7] recently published an extensive article on heteroplastic bone formation in the tissues and organs in general. In connection with the genital organs, he states that in the genitourinary system in males as well as in females, bone formation occurs very seldom, and does not mention at all the calcification of the vas deferens and the seminal glands.

Case 2.—The patient, a man aged 53, died Nov. 9, 1904. The body was sent to the autopsy room from Professor von Jaksch's clinic, with this diagnosis: Moribund when received. Left hemiplegia, probably from apoplexy. Pulmonary tuberculosis. Circumscribed peritonitis. Icterus of unknown origin, perhaps from cirrhosis of the liver. Anal fistula.

Anatomic Findings.—Anal fistula, probably tuberculous. Ichorous pus in the cellular tissue, in the preperitoneal cavity, and around the rectum. Bloody, fibrinous peritonitis. General icterus. Softening of brain of long standing in right hemisphere, from embolus in artery in right fissure of Sylvius. Former tuberculosis of apex of lungs and peribronchial lymph glands. Tuberculous ulcer of small intestine.

Genital Organs.—The left vas deferens for nearly 2 cm. just a little above the point where it joins with the seminal vesicle was found to be hard and bone-like in consistency. On cut surface across, one could find within the lumen a "calcified clot." The left seminal vesicle was found to be normal.

The right vas deferens and seminal gland were apparently normal, not only externally but internally.

Microscopic Examination.—After decalcification cross sections from the left vas deferens showed above and below the part which was hard in consistency quite normal structures. In the hard portion (Figs. 3 to 5), one could find a partial thrombosis of the vas deferens by a calcified and coagulated mass, with a partial obliteration of the lumen by connective tissue, which contained the calcified masses with small pieces of bone-like structures (Fig. 5, d). This connective tissue was growing inward from the wall of the vas. In this connection may be mentioned the color display which the sections showed under the microscope when stained with methyl-violet. The bone-like structures were violet-red, the calcified masses took dark-brown color, while the connective tissue was light red. The epithelium in places was intact, while in some parts of the sections it was either displaced or entirely disappeared.

CONCLUSIONS.

Here is a quite different form of calcification, not merely a retrogressive metamorphosis, but a calcification in connection with chronic inflammation. This case is related to the cases by different authors mentioned above. It is very likely that here was the effect of gonorrheal deferentitis. Simmonds[8] in his article on etiology of sterility mentions strictures of the vas deferens with a complete obliteration of the lumen. In my case there was no doubt the process of obliteration, which is analogous with so-called organization of the thrombi of the arteries. Here, also, the bone-like masses may not be considered a strange condition because everyone knows that ossification, relatively speaking, is a common consequence of calcification.

From a clinical standpoint calcification of these organs has no special significance, yet in some cases rectal examination may reveal presence of such a mass, which may easily be mistaken for stones or neoplasms in the bladder. From the theoretical point of view it is interesting.

RELATIONS OF THE SUPERIOR AND INFERIOR RECTI MUSCLES TO CONVERGENT SQUINT.*

EDWARD JACKSON, M.D.
DENVER, COLO.

Since the last meeting of the Section on Ophthalmology of the American Medical Association I have had the opportunity of studying another case in which extended tenotomy for convergent strabismus was done five years ago. This case, which illustrates some of the points to which I wish to call attention at this time, is briefly as follows:

Patient.—Mrs. C., aged 51, has suffered from alternating convergent strabismus for many years, probably from childhood. She has irregular astigmia with low myopia.

R. 4/12 with — 1 = —0.25 cy. ax. 90° = 4/9, mostly.
L. 4/15 with — 1 = — 0.75 cy. ax. 165° = 4/9.

The squint amounts to 35 or 40 centrads, and with prisms of this strength, base out, she obtains binocular single vision. Stronger prisms give crossed diplopia.

Operation.—June 17, 1901, under cocain, I stretched the right internus and nasal margins of the right superior and inferior recti; then divided the insertion of the internus and the nasal half of the insertions of the superior and inferior recti, in the manner described last year.[1] A good deal of convergence remained until the inferior tendon was cut. Then the eye became quite straight. The next day all dressings were omitted. This caused some dizziness and confusion so that she "wished to keep quiet." The eye seemed quite straight. There was no deviation or recovery under cover, when looking straight ahead, but movement of the right eye toward the left was markedly limited, and diplopia appeared when the object of fixation was carried from the right to the left field, or brought close to the eyes. Two days after the operation there was less confusion about walking and using both eyes, and few mistakes as to the position of objects. At the end of one week:

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[2] Lallemand: "Des pertes séminales Involontaires," Paris, 1836-1841 citiert nach Guelliot.

[3] Rokitansky: "Lehrbuch der pathologischen Anatomie," 1861, vol. iii.

[4] Klebs: "Handbuch der pathologischen Anatomie," 1876.

[5] Guelliot: "Des Vesicules séminales." Anatomie et pathologie, Paris, 1883.

[6] Orth: "Lehrbuch der speziellen pathologischen Anatomie," 1893, vol. ii.

[7] Posorisky: "Ueber heteroplastische Knochenbildung," Beit. z. path. Anat. und zur allg. Path. von Ziegler, vol. xxxvi.

[8] Simmonds: "Die Ursachen der Azoospermie:" Deuts. Archiv. f. klin. Med., vol. lxi.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] The Journal A. M. A., Aug. 19, 1905, p. 522.

"Eyes feel more comfortable than before the operation; free from a strained feeling." There was now exophoria of 3 or 4 centrads, and inward movement of the right eye was still much impaired.

Result.—Feb. 10, 1905. She has not been wearing any glasses for nine months. Vision is: R. 4/12 mostly, L. 4/12, neither improved by glasses. The muscle tests show complete orthophoria at distance with exophoria, 8 centrads, at 12 inches. She is given R. and L. + 0.75 sph., with prism 1.5 centrads, base in, for near work.

The failures of ordinary tenotomy to cure strabismus have been sufficiently set forth and enlarged on, of late years, by a considerable number of ophthalmologists; but it may be mentioned that advancement also has its failures, which have not been so much exploited. No one speaks of advancement as a discarded operation. We do not hasten to report failures when others are putting on record only successes; but it is not a sufficient recommendation for an operation that it does not leave the patient any worse off than he was before, however much of an improvement that may be over the earlier record of tenotomy. A careful consideration of the relative shares which the primary and secondary adductors and abductors of the eye take in its lateral movements will show some of the reasons for our failures and some of the special dangers of tenotomy.

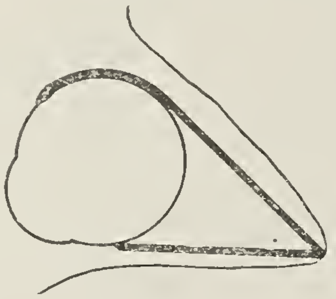
Figure 1.

With the eye in the primary position, contraction of the internus tends to adduct it. As this contraction increases, its influence over the position of the eye progressively diminishes. The shortening of the muscle renders its pull less powerful; the unrolling of its tendon, so that it no longer acts in a tangent to the globe, renders it less effective, and the elongation of its antagonist, bringing into play its elastic tension, and wrapping it around the globe, enables it to render more effective resistance. These conditions are represented in Figure 1, which shows the relations of the internus and externus to the globe during extreme adduction.

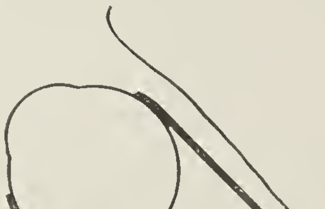
Figure 2.

In like manner, the contraction of the externus tends to abduct the eyeball with a power that progressively diminishes. The shortening of the muscle diminishes its tractive power, while the lengthening of the internus brings into action its elastic contractility and progressively increases the resistance that it offers to the externus. This may be understood by glancing at Figure 2, which represents the relations of the parts during extreme abduction of the eyeball. As either the externus or the internus draws the eye away from the primary position, its relative power over the position of the eye diminishes, while that of the opposing muscle increases. These muscles tend to a stable balance, with the eye near the primary position. So far as these two muscles are concerned, the eye drawn away from the primary position tends to return to it.

The reverse of this is true with the secondary adductors and abductors of the eyeball. These adductors, the superior rectus and inferior rectus acting together, apply their force to the eyeball in front of the center of rotation. When the eye is in the primary position, their power to rotate the eyeball inward is comparatively slight. When the eye is turned out so that the direction of the action of these muscles passes through the center of rotation of the eyeball, they have no tendency to turn it inward. Or, rather, the nasal portion of the muscle, tending to turn the eye in, is balanced by the temporal part of the muscle, tending to turn it out. This will be understood by Figure 3, in which the eye is represented as looked on from above, the position of the center of rotation being shown lying under the center of the superior rectus muscle. The muscle is on a "dead center" as regards lateral rotations.

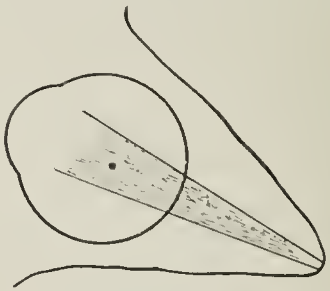
Figure 3.

When, however, the eye is strongly converged, the influence of the superior and inferior recti in turning the eye inward is as great or greater than that of the internus. This is shown in Figure 4, in which the muscles are represented by the single heavy line. With the rotation inward the insertions of the superior and inferior recti tendons are carried inward, the muscles depart farther and farther from the line of the "dead center," and at the maximum of convergence they exert their maximum influence toward turning the eye in or holding it there.

The physiologic purpose of this arrangement seems to be to render the eye movements easy and steady, up to near the limits of the field of fixation. The primary adductor, the internus, initiates the convergence movement. As this goes on and becomes more difficult, however, and the internus is placed more and more at a disadvantage, the secondary adductors come to its assistance and take up the greater part of the work. The more the eye converges, the more do the secondary or accessory adductors tend to make it converge and the more is the externus placed at a disadvantage in its efforts to overcome the convergence.

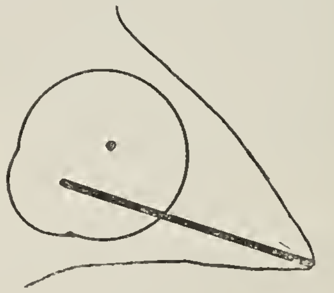
Figure 4.

It should be noted, also, that in overcoming extreme convergence the externus works alone. Of the secondary abductors, the obliques, it is true as of the secondary adductors that the more the eye is turned in the direction that they act the more power they have to pull in that direction. But should the eye be converged so strongly as to place the secondary abductors on a "dead center," they have no power whatever of aiding abduction. In the mode of action of the secondary adductors and abductors we have the cause for the tendencies for squint to become constant, and for constant squint to become extreme.

In convergent squint, the abnormal contraction is quite as much in the nasal fibers of the superior and inferior recti as it is in the internus. No operative treatment of convergent squint can be regarded as rational which does not attempt to correct this essential abnormality. Simple tenotomy and advancement are radical only as concerns the internus and externus. As regards the more important factor, the contraction of the nasal portion of the superior and inferior recti, they have only a secondary influence through change of function.

From the early days of tenotomy the uncertainty of the result in any given case has been noted. In a large proportion of cases the squint, apparently corrected at the time, would recur; or later divergence would replace the convergence. It looked as if Nature, instead of helping to bring about the normal direction of the eyes, was determined to prevent it. This is explained by the tendency of the secondary adductors and abductors to turn the eyes even farther outward or inward. Simple tenotomy lessens the influence of the primary adductors and abductors; and to that extent abandons the eye to the influence of the secondary (or normally accessory) adductors and abductors. It lessens the influence of those forces which tend to come to equilibrium with the eyes in or near the primary position; and it increases the relative influence of those forces which tend to turn the eye away from the primary position. As compared with such an operation, advancement, which tends to increase the influence of the primary abductors and adductors, is decidedly more rational. If convergent strabismus is to be regarded as organic and attacked by operative procedures, it is proper to direct these procedures to the most serious alteration of structure, the contraction of the nasal margins of the superior and inferior recti. It would seem reasonable to divide these, even though the internus be left untouched, or only well stretched.

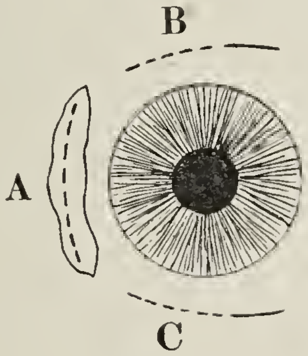

Figure 5.

The operation which undertakes to do this I described last year.[1] It may be understood from an inspection of Figure 5, in which the opening of the conjunctiva and the insertions of the internus are shown at A and the insertions of the inferior and superior recti at B and C. The portion of the tendon insertions to be divided are indicated by broken lines; the part of the insertions to be left standing, by solid lines. This operation is to be done only for high degrees of squint. For lower degrees the internus should be left uncut, or simply an advancement practiced. In very high degrees, as mentioned last year, the extended tenotomy may be combined with advancement.

In the case reported above, there was the very unusual combination of high comitant convergent squint of long standing, with capacity for full binocular vision. This capacity contributed to the perfection of the result. It may be noted, however, that there remains, with orthophoria for distance, exophoria of 8 centrads for near work. This is a condition found in many people who have reached this patient's period in life. But it is one that would be naturally connected with the conditions established by tenotomy of the accessory adductors. It is a lessened power to execute and sustain a high degree of convergence. The possibility of establishing this condition should be considered in planning such an operation; but such exophoria would be of no practical importance except in a patient gaining good binocular vision.

SUMMARY.

The case here reported illustrates the permanence of the results obtained by extended tenotomy. The primary adductor and abductor, the internus and externus tend to equilibrium with the eye directed forward. The secondary adductors (the superior and inferior recti) and the secondary abductors (the obliques) tend to turn the eye ever more strongly in or out. A rational operation to correct excessive convergence must tend to lessen the relative influence of the secondary adductors.

DISCUSSION.

Dr. Francis Valk, New York, said that the question some one has asked as to whether or not we operate on the muscles of the eye unless the muscles cause the squint, leads us to the supposition that in these patients operated on the muscles of the eye cause the squint. He thinks that if the physician had examined the cases, not as ones of squint, but according to the rotation of the eyes in the sockets, he would have found that the outward rotation was much less than the inward. If that is true, then the essential cause of the squint is that the external rectus is too weak. Dr. Valk thinks that attention should first be given to the weaker muscles, and that statistics will prove that thousands of eyes have been operated on without regard to the power of the superior and inferior recti muscles to turn the eye in. He does not believe that Nature ever placed a muscle in the human economy to perform two or three different functions. He believes that the superior muscle is to turn the eye upward and not to have part of the muscle turn the eye one way and part another, and he thinks that the same thing applies to the oblique. He does not believe that these muscles have anything to do with turning the eye around its center of rotation. If the cases of squint be studied on that simple principle he thinks that the operations will be very much better than when a strong muscle is cut and its power destroyed before the weaker one is strengthened. One should strengthen the externus in cases of squint and give it the power of turning the eye. What, he asked, is going to be the future of these cases of squint on which we are so freely operating by tenotomy? When these children grow up and begin to take up their lessons in school, will they not suffer from exophoria? He mentioned a case he saw recently of a young girl at school; she had had an operation in just that way and it had so weakened the muscle that when she came to study she could not use it and another operation had to be done to give her sufficient power of convergence.

Dr. G. C. Savage, Nashville, said that we should never forget that there are two purposes in view in operations on the muscles: one to increase or lessen the tonicity of the muscle and the other to change the plans of its action. The latter purpose is intended only when there is torsioning tendency of the eyes. If the vertical axes are parallel with the median plane of the head, the marginal fibers should not be cut, because this would change the plane of rotation. Of course, the operation for altering the tension is a very different thing and a very simple thing compared with changing the plane of rotation. Dr. Jackson has not gotten into serious trouble in his marginal tenotomies, for the reason that he has operated on the nasal fibers of both superior and inferior recti. Cutting the nasal fibers of the superior rectus allows the eye to be turned in; cutting those of the inferior rectus turns the eye out. If the vertical axes are parallel with the median plane of the head in the beginning, the two new forces acting in opposite directions, if equal, do not cause any torsion. Dr. Jackson may have erred in dividing the nasal fibers in this case, but if he did it was not in that he produced torsioning, because he had operated in the same direction equally on both muscles; but Dr. Jackson and every one, he said, should take into consideration the tonicity of a muscle before operating on it. If a muscle has its normal tonicity, then it should not be weakened nor strengthened. If it is subnormal it should not be weakened, if supernormal it should be. Dr. Jackson has placed before us a dangerous precedent. All men can not divide the nasal fibers of these muscles equally, nor should they always be so divided. Dr. Savage has often operated in this way, but with the view of lessening tonicity and of overcoming cyclophoria. Whenever he has operated on the inferior rectus in this way it was to divide the temporal fibers with the purpose of correcting a plus cyclophoria, and whenever he has operated on the superior rectus muscle he has divided the nasal fibers and not the temporal, to correct a plus cyclophoria. In the one instance there was a complicating cataphoria, while in the other there was a complicating hyperphoria.

Dr. Mark D. Stevenson, Akron, Ohio, said that the internal rectus is wisely attached further forward on the globe than any of the other muscles. The obliques also take some part in slowing off the movement of the eye in adduction. Probably these provisions are chiefly to protect the delicate contents of the globe and not so much simply to call the secondary ductors into use. Every one of the recti muscles in different positions of the globe may assist in turning the eyeball in a vertical and lateral direction as well as in torting it. In forced convergence the temporal side of the superior and inferior recti, being furthest forward, in strong adduction will be in the best position to adduct the eye, and will be on a greater tension than the nasal side, although the temporal side is nearer the center of rotation. If the temporal side of the muscle is undisturbed and the nasal cut, the muscle would be on as great tension in forced adduction as before. If the whole muscle were cut it would require advancement to prevent vertical trouble. It seems unlikely that the nasal side of the muscle should contract without a corresponding contraction of its temporal side. He asked: In muscles that are not too strong, is it wise to divide not only the primary adductors but also the secondary ones? In any complete tenotomy the following changes take place: 1. The tendinous insertion of the muscle is set back. 2. This lessens the degree in which the muscle wraps around the globe, so that the posterior portion of the muscle can not be a tangent to the surface of the eyeball after as free rotation as formerly. 3. The length of the muscle which has to do with speed and power is diminished. 4. The outer limb of the Y-shaped check ligament comes more quickly into action to prevent further rotation. 5. The eyeball is permitted to roll slightly toward its weak antagonist, further weakening it. 6. Proportional torsion may be interfered with.

Dr. Frank Todd, Minneapolis, said that there might be certain cases in which this operation would be justified: for example, those cases in which measurements showed an excess of rotation inward and no defective rotation outward. If you found defective rotation outward and excessive rotation inward, then you would require not only tenotomy, but also advancement. In his experience, when he has found that sufficient effect could not be secured by doing a tenotomy of the strong muscle it is because the opposing muscle is too weak, and, therefore, a shortening operation is necessary. The only cases, therefore, in which this would be indicated would be those in which tenotomy of a too strong internus did not secure enough effect, and the external rectus had its full strength. He asked Dr. Jackson what he considers the indication for performing this operation.

Dr. John E. Weeks, New York, declared that he had no fault to find with the theory of the action of these muscles, as Dr. Jackson expresses it, but he protested against the operative procedure Dr. Jackson employed in correcting the defect. It not only weakens the internus and the secondary adductors, but also the externus, and there is bound to be an insufficiency of adduction. Dr. Weeks said that we should not only determine the actual strength of the internus, but the actual strength of the externus, and that can not be done by prisms. We must use the perimeter or some such instrument. He thinks that it is a dangerous thing to advocate, from such an authority, an operation that is so potent for evil. An advancement of the externus with modified weakening of the adductor, in his opinion, would give good and safe results. If we make such a very extensive weakening of the adductors we are bound to get the patient into trouble.

Dr. F. S. de Lue, Boston, agreed with Dr. Jackson that the more the internus contracts the more its influence over the position of the eye diminishes, and we find that its action is limited by its contraction and by the tissues limiting its motion. It seems to Dr. de Lue that there has been altogether too much cutting of these muscles. He believes that if we would examine the cases more with instruments and depend less on prisms we would determine more accurately the degree of improvement by treatment and would find as we progressively strengthened the muscles that we would have to do less cutting. When we find one muscle pulling more strongly than it should, there is a cause of stimulation which we have not discovered. There are reasons why weak muscles should be strengthened, and there is a way to strengthen them. Stretching of these ligaments may be a causative factor. If we have a patient with pain in the back we do not think of cutting the muscles, but endeavor to produce rest of the muscles by certain adjustments. Relief from overstimulation is needed; temporary support of the muscles. At first Dr. de Lue was inclined to operate extensively, but his first cases set him right. One may, of course, carry this too far and refuse to operate in cases in which it is absolutely necessary.

Dr. Myles Standish, Boston, said that as a practical method of correcting this condition he thinks Dr. Jackson's is entirely correct. Dr. Standish has done similar operations with entire success, and in analogous conditions he has done so-called graduated tenotomy, in which he has cut the tendon of the internus, for instance, completely at one edge and left the other edge intact. He has done this with great satisfaction to himself and with subsequent comfort to his patient. He believes that when they have learned the proper technic, many ophthalmologists will use this operation in certain cases as are found by experience to be suitable for the operation.

Dr. Edward Jackson, Denver, said that it is obviously impossible to discuss all the points that have been raised in the short time allotted. When he places his arm horizontally forward it is kept so by the deltoid; when he puts it horizontally backward it is kept there by the deltoid. Some of the fibers of the deltoid pull it back, some forward; many of them, as the position changes, change their function. The muscles around the hip act in the same way. Any change of the relations of origin and insertion changes the function of a muscle. There can be no doubt of this, and the better discussions of late years regarding the ocular muscles recognize it. The coördination of muscular action by which any movement of the eye is brought about is more complex than pulling a string and setting a single muscle in operation. Dr. Jackson can not conceive how any ophthalmologist can analyze a case of paralytic squint and not recognize that muscles can change their function, and how in many cases comfort is obtained by the taking up of the function of one muscle by another. In an old case of paralytic squint it is often very difficult to determine which muscle was originally affected.

He operates in very few cases of squint. He believes that 60 or 70 per cent. of patients can be cured without operation. If one uses persistent efforts toward a cure without operation there are very few patients left to operate on. This particular operation he never thinks of doing except in extreme cases of squint. He does advancement more frequently than this operation, but advancement is not satisfactory in all cases. This operation is one that is not necessarily followed by lessened power of adduction. He has seen the power to change laterally the position of the eyeball doubled. Not only was the eye turned out, but the power of turning it in from that new position was increased. Theory leaves something out when it assumes that a tenotomy necessarily leaves the affected muscle with less effective power over the movements of the eyeball.

DEVELOPMENT OF THE URACHUS.*

J. F. BINNIE, M.D.

KANSAS CITY.

Early in intrauterine life, the allantois is given off from the posterior end of the primitive intestine; its walls are composed of entoderm and mesoderm provided by the hind end of the primitive groove posterior to the anal membrane. The anal membrane consists of ectoderm and entoderm, i. e., it has no mesodermic tissue. As the anal membrane becomes curled forward to form in conjunction with the lateral infoldings of the embryo the hypogastrium and to contract the umbilical opening, the junction of the intra-embryonal and extra-embryonal portions of the allantois is contracted. A spur of tissue exists between the allantois and the yolk sac or umbilical vesicle. This spur increases and grows backwards through the primitive intestine until it divides the primitive gut into an upper part (intestine) and a lower part, continuous with the allantois, which forms the urinary bladder. Thus the walls of the bladder are formed, dorsally by the above mentioned spur, ventrally by the anal membrane which also aids in forming the hypogastrium. As the anal membrane is the extreme posterior part of the primitive line (Keibel) and as fissures are common in this line, it is not surprising that occasionally a permanent fissure persists and gives rise to exstrophy.

About the second month of life, the urinary bladder becomes distinct, the remnant of the allantois between the bladder and the umbilicus contracts, but is still tubular and is now known as the urachus. Between the fourth and fifth months, the urachus normally loses its lumen and becomes a solid cord.

Early in their development, the urinary bladder and the urachus are completely surrounded by peritoneum, except on their ventral surface where a meson (mesocyst) exists. This disposition usually disappears and the urachus becomes extraperitoneal. That the mesocyst sometimes persists was well exemplified in an adult cadaver examined for me in which the urachus did not lie close to the abdominal wall, but lay between loops of small intestine. The persistence of the meson explains the occurrence of some otherwise puzzling intra-abdominal cysts. Mr. Clendening recently examined for me sixteen adult cadavers and seven fetuses, with the following results:

1. In seven adults and six fetuses, the bladder showed a distinct diverticulum from 1 to 2 cm. deep, at the fundus, where the urachus is attached.
2. In one adult there was a slight projection instead of a diverticulum.
3. In eight adults and in one fetus, the dome of the bladder was smooth.
4. In none of the cases were there found lacunæ lined with epithelium in the urachus.
5. The average adult urachus was 12 cm. long by 1.5 cm. wide.
6. The urachus was usually adherent to the belly wall but in one case (diabetic with frequent retention of urine) it was not close to the parietes but lay between loops of small intestines.
7. In all the cases the urachus was well supplied with vessels.

The urachus is like the thyroglossal duct and the branchial clefts in that it may remain patent, in whole or in part, and it may be subject to various diseases. The fistula resulting from urachal patency may be complete, blind internal, blind external or blind, i. e., closed both at its vesicular and umbilical ends. As in the case in the neck, a blind urachal fistula may become complete through the bursting open of the closed end of one of the blind varieties.

CASES REPORTED.

Tully Vaughan[1] collected reports of forty-six complete, four blind internal and three blind external fistulæ. To these may be added the following cases: J. D. Griffith, in a girl of fifteen years (whose brother was the subject of cleft palate) split, cauterized and packed the fistula with a perfect result. In this case, the mother reported that there had been more or less umbilical discharge from the time the cord separated.

E. G. Marks observed a urachal fistula in a man of about 28 years. The fistula is sometimes open and sometimes closed; it never causes any particular suffering and is only occasionally annoying.

In 1905, I saw a woman of 29, who for six years suffered from cystitis of unknown origin. All her life she had been subject to pain and tenderness in the hypogastrium. There was a line of induration between the bladder and the umbilicus, and pus escaped from the umbilicus. On examination I found a little mass of granulative tissue at the umbilicus and through this could pass a probe into the bladder. I excised the fistula which was so closely attached to the peritoneum that the belly had to be opened. The fistula led into a small diverticulum at the fundus of the bladder. Histologically, the walls of the passage consisted of very vascular granulation tissue and sclerosed tissue. The lumen was lined by necrotic material. There was no epithelial lining to the sinus.

In Tully Vaughan's list, a number of more or less similar cases are reported where after cystitis, or after some obstruction of the ureter, an abscess formed and discharged through the umbilicus, thus transforming a blind internal into a complete fistula. In my case, there was a distinct vesical diverticulum penetrating the urachus for a short distance. Another case which I treated in a boy of nine years, may possibly have been dependent on an infection of the urachus. There was a tender, hard tumor, five inches in width, extending in the middle line from the umbilicus to the pubis. Pus escaped from the umbilicus. A probe introduced at the umbilicus passed toward the fundus of the bladder for a distance of four inches. This sinus was situated between the peritoneum and the muscular wall of the belly. An abscess was present, superficial to the musculature, with an opening through which it communicated with the deep sinus. Free drainage and curettement led to a cure.

In a number of reported cases, urine was voided by the umbilicus and urinary calculi have formed in the patent urachus. Treves removed a stone from the urinary bladder through an umbilical (urachal) fistula.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Trans. Amer. Surg. Assoc., 1905.

CYSTS OF THE URACHUS.

Delore and Cotte[2] write: "Small cysts of the urachus are sufficiently common. First noted by Luschka, in 1862, they were minutely described by Wutz, in 1883; in seventy-four cadavers examined, this author found them twenty-four times. Numerous operators have remarked their presence in the course of laparotomies and Morestin has recently shown some fine samples to the anatomic society of Paris. Large cysts, on the contrary, are so rare that until recently their existence was doubted." Wutz only knew of one certain case in man.

Poncet, in 1905, (Delore and Cotte) operated on a woman of 20, who was supposed to have tuberculous peritonitis. He found an enormous cyst containing from 8 to 10 liters of a brown, blood-stained fluid with much clotted fibrin. The cyst filled the abdominal cavity and was not connected with the intra-abdominal organs except that it was inserted into the summit of the bladder, subperitoneally, at the point of origin of the urachus. It was also attached to the umbilicus. Subsequent examination showed the cyst completely invested by peritoneum (see anatomic remarks at beginning of paper) except at its pedicle. "From the pedicle of the tumor a hard cord passed up on its anterior surface to the level of the umbilicus, where it lost itself in the tumor and in the abdominal wall. This cord, probably a remnant of the urachus, was in the middle portion completely intraperitoneal."

In Poncet's case there was no epithelium lining the cyst, the walls of which consisted principally of mucoid tissue and non-striated muscle fiber.

Kronlein operated on a woman with a large epithelial-lined cyst situated between the peritoneum and the parietes, which had evidently originated from the urachus.

A patient operated on by Roser presented a cyst-like tumor, which at first glance seems to resemble Kronlein's; but a communication existed between the cyst and the bladder, so that the lesion must be considered a dilated, blind internal fistula. Patel observed an almost identical case in a child of five years of age.

Trendelenburg's case, as reported by Delore and Cotte, is difficult to classify. These authors seem to consider it one of urachal cyst. The patient was a polyuric, aged 66, with an enlarged prostate. Six months before, there had appeared a suprapubic tumor which was painful for three or four days and then opened spontaneously and discharged purulent liquid. On admission to hospital, there was noted a hypogastric tumor the size of an adult head, reaching from the pubis to the umbilicus. A fine probe could be passed into a fistula at the umbilicus from which a cloudy, purulent fluid constantly escaped. When the bladder was emptied by the catheter, the tumor diminished in size. On incision, the tumor was found to contain a mixture of pus and urine. The cavity of the tumor was lined with stratified, flat epithelium like that of the bladder. Was this case a true cyst of the urachus which became inflamed and opened into the bladder; or, was it a dilated, blind, internal fistula?

Freer,[3] and a number of other surgeons, have reported cases which are evidently examples of true urachal cysts.

The following is an example of another class of cases sometimes regarded as urachal in origin. A woman of 24, presented a hard inflammatory mass completely filling the pelvis and the lower segment of the abdomen. The symptoms were so pressing that I was compelled to operate under most unfavorable circumstances in the country—median, hypogastric incision. The peritoneum was not distinguished. I penetrated an abscess whose walls were at least one inch thick and necrotic and which contained much pus. The finger in the cavity reached nearly to the vagina on the right side and to the brim of the true pelvis on the left. Uterus, intestines, etc., could neither be seen nor felt. The patient recovered after long continued drainage. No histologic examination was made of the abscess wall.

F. B. Robinson[4] reports a number of cases operated on by Lawson Tait and pronounced to be cysts of the urachus. On median incision, no peritoneum was seen; but in its place there was a dark red tissue having an inflammatory appearance. This tissue (cyst wall) was as thick as sole leather, brittle, gelatinous and could not be separated from its bed. The cyst cavity contained a thick pultaceous substance with much flaky flocculent lymph shreds and jelly-like masses. The cyst walls did not collapse but lined the abdominal and pelvic walls. The intestines were invisible. The uterus was fixed against the pubes. The tubes, as large as a thumb, stretched like guy ropes outward to the pelvic wall. The cyst wall was wrapped around the tubes like a mesosalpinx and covered the tubercles.

This brief synopsis of one of the Tait and Robinson cases is characteristic of the others reported and corresponds fairly closely to the one I have described. It seems to me that there is no good ground for considering them other than samples of encysted peritonitis, some of them at least, being of tuberculous origin.

Clinical Notes, New Instruments, Etc.

A CONTRIBUTION TO THE STUDY OF QUININ AND IRON IN PNEUMONIA.

E. L. MOODIE, M.D.

CHATHAM, OHIO.

History.—Miss C., aged 54, rather a frail little woman of about five feet four inches in height and ninety pounds weight, gave a history of an attack of pneumonia four years previously. Otherwise her family and personal history were good. I was called early in the morning of April 6 and found her suffering from pain in the left axillary line, low down, dyspnea and general soreness, with headache and vomiting. Temperature 104 F., pulse 108 (very full), respirations 30. Over the whole lower lobe of the left lung harsh tubular breathing was heard, with fine crepitant râles, and there was marked dullness on percussion with increased tactile fremitus.

Diagnosis.—Lobar pneumonia of left lower lobe.

Treatment.—I commenced with the usual expectant remedies (not having quinin in sufficient quantities with me), and, on returning about 4 p. m., found absolutely no change except in the respiration, which was 32 per minute, and bloody expectoration. Quinin sulph., gr. xl, were given, and gr. x ordered every three hours, with tr. ferri chlor., m. x. every three hours. Next morning I found the temperature normal, pulse 88, respiration 18. Quinin was discontinued, iron continued.

That evening the temperature again rose to 104 F., pulse 100, respiration 28. Quinin was again given in gr. x doses every three hours, as she seemed unable to retain a larger dose.

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[2] Rev. de Chir., 1906, No. 3.

[3] Annals of Surgery, 1887.

[4] Annals of Surgery, 1891, p. 337.

The morning and evening record may be stated as follows:

Day.	T. (F.)	P.	R.	
3 a. m.	101.4	92	24	Quinin and iron given.
p. m.	101.8	98	25	Quinin and iron continued. Complaint of nausea.
4 a. m.	101.4	100	24	Expectoration less. Quinin withdrawn. Iron continued.
p. m.	162	108	26	Quinin repeated, gr. xl, followed by gr. xxx in one hour. Iron continued, M. x every three hours.
5 a. m.	99	100	27	Quinin and iron both discontinued, owing to irritability of the stomach. Patient was not seen in the evening.
6 a. m.	100	96	17	Feeling better. No medicine given.
p. m.	99.4	100	16	Strych. gr. 1/60 every three hours while awake. Practically no expectoration.
7 a. m.	98.6	98	17	Strych. gr. 1/60 t. i. d. with tr. nux et gent, āā M. v. before each meal. Breathing regular and painless. No adventitious sounds and only slight mucous expectoration. No dullness on percussion.

The temperature, pulse and respiration have remained normal, and the patient feels well, though weak. (Eighth day.)

I might add that I did not give such large doses as suggested by Dr. Galbraith, owing to a very irritable stomach. She complained a good deal of tinnitus, but not after quinin was withdrawn.

I would like to ask if people in the southern states are more tolerant of quinin, or if this patient would probably have retained a larger initial dose better than the smaller, and if the effect would have been more permanent.

AN IMPROVED RECTAL OPERATING TABLE.

W. I. LeFEVRE, M.D.

CLEVELAND, OHIO.

Since publishing a description of my table in the *Medical Record* several years ago the table has been remodeled and improved as shown in the following illustrations: Figure 1 shows a front view of the table. Figure 2 shows a back view with the side shelf folded down and the leg rests up in position. The leg rests are adjustable as to height, the padded pieces being hinged on the round supports so that they automatically adjust themselves to the leg, thus assuring a comfortable position. At the same time the buttocks are brought to the end of the table, making the parts easy of access for the operator. When the side shelf is adjusted and locked in position, as shown in Figure 3, and the top tipped to an angle of 90 degrees, the patient is then in position for a proctoscopic examination. With the patient in the Sims position the side shelf can be adjusted and a practically knee-chest position secured, with little or no discomfort to the patient. This is particularly desirable when examining a woman.

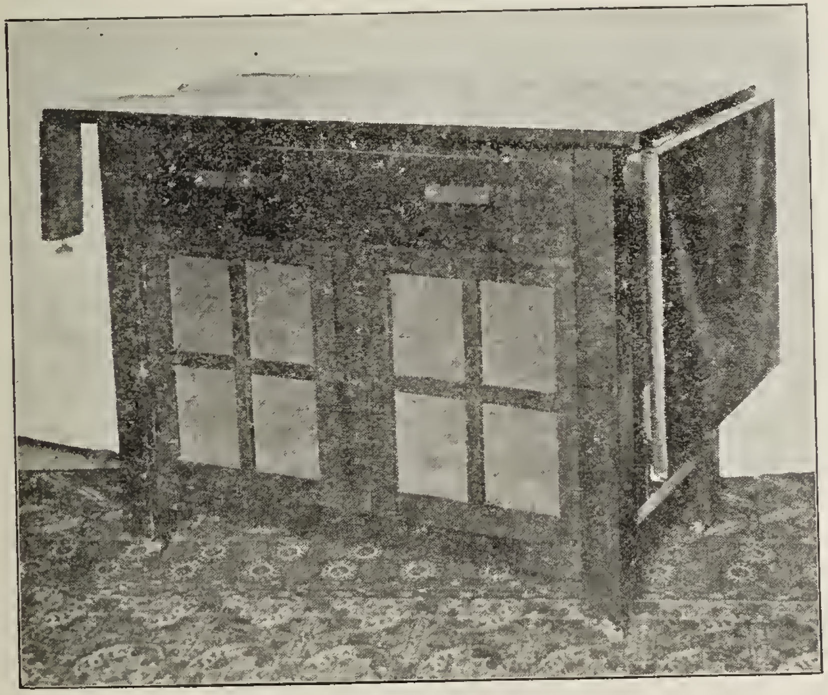

Figure 1.

While the table is designed especially for rectal work, it is suitable for all ordinary office examinations.

708-712 Rose Building.

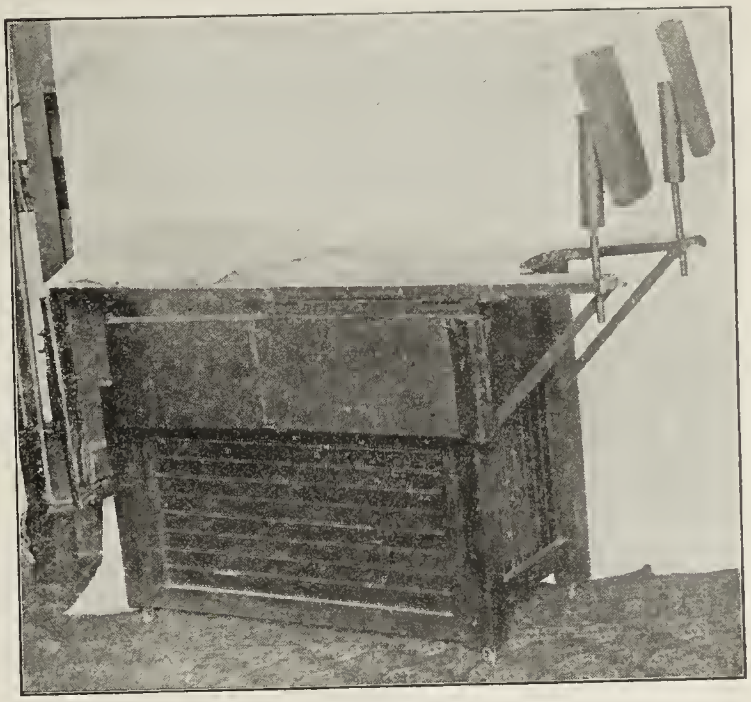

Figure 2.

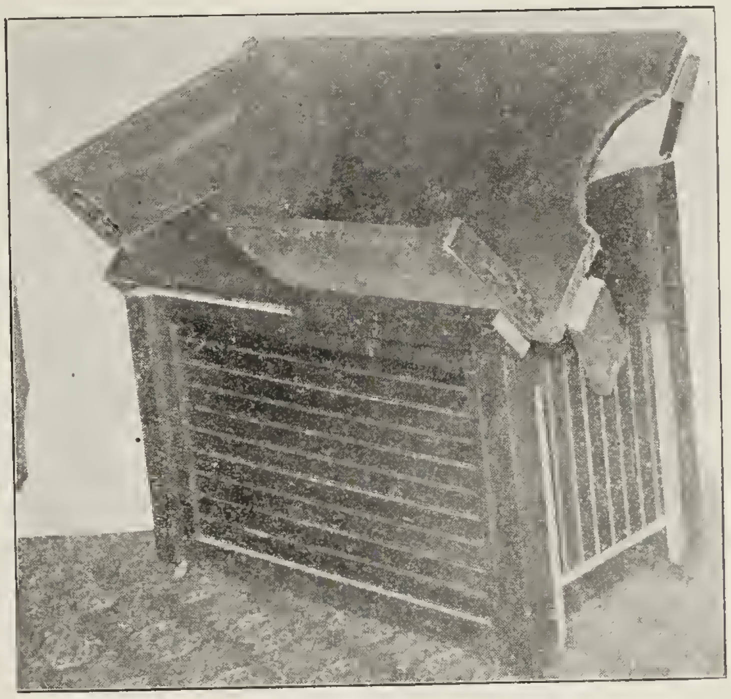

Figure 3.

LOCATING FISTULÆ IN THE LOWER INTESTINAL TRACT BY INJECTING HYDROGEN DIOXID THROUGH THE ANUS.*

H. A. ROYSTER, A.B., M.D.

Professor of Gynecology and Dean of the Faculty, Medical Department of the University of North Carolina; Gynecologist to Rex Hospital; Surgeon-in-Chief to St. Agnes' Hospital; Surgeon to the Southern Railway.

RALEIGH, N. C.

It occasionally happens that in operating for the closure of a fecal fistula the surgeon encounters much difficulty, or even failure, in finding the aperture in the bowel. Especially is this likely to occur when the field of operation is a network of adhesions and the intestinal opening is obscured by blood. To illustrate such a difficulty and to suggest, if possible, a way out of it, I report the following case, in which the technic, so far as known, was original.

Patient.—In 1903, Miss J., aged 22, had a hysterectomy performed. During this operation the sigmoid flexure was injured, and, though the abdominal wound apparently healed, after a year there appeared a small opening in the lower end through which was discharged pus and fecal matter. This persisted for several months, with no tendency to close under the usual methods of treatment. In the latter part of 1904, I was called to see patient in consultation. At this time she was bed-ridden, emaciated, anemic and required rather large doses of morphin to relieve what seemed to be severe pain. A fistulous tract led from the lowest part of the abdominal incision backward, downward and toward the left to a depth of six or seven inches, and according to the patient and her attendants, pus was now and then discharged through the rectum.

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* Read by invitation before the South Carolina Medical Association, Columbia, April 18, 1906.

Operation.—Jan. 28, 1905, I opened her abdomen in the median line and followed the sinus down to a dense mass of adhesions, which it was impossible to separate without doing damage to the local parts or perilously prolonging an operation on a patient already exhausted. A cigarette drain was introduced and the wound closed around it.

Postoperative History.—At first some hope was entertained that this procedure would have favorable result; but after some weeks the sinus broke down and the fistula again began to discharge. For the next few months the patient was given most careful attention. Her wound was dressed frequently, the diet regulated, tonics administered; in short, everything was done to bring up her nutrition to the standard, with the result that after six months she was in first-rate condition, ready and willing to undergo another operation.

Second Operation.—Accordingly, on Aug. 16, 1905, she was etherized and the abdomen opened. This time I made an incision, much longer than the former one, at the outer border of the left rectus, instead of through the linea alba, thereby obtaining a better view of the structures to be operated on. Disregarding the old sinus, a line of cleavage was made through the adhesions down on the sigmoid flexure, exposing it clearly for some distance above and below the point where the fistula was supposed to be. Oozing from the torn tissues was annoying, but not excessive. All attempts to find the hole in the bowel were at first futile. There was reason to believe it was present; gas could be heard to escape through it and the fecal odor was unmistakable, but it could not be seen. Finally, with the abdomen still open and the affected area in sight, I suddenly thought of the following plan, which was successfully accomplished: I had the nurse pass a long soft rubber catheter into the rectum from below and inject through it one ounce of hydrogen dioxid. As soon as this substance came to the opening in the sigmoid there was an effervescence, plainly discernible, definitely indicating the fistula, the edges of which were immediately grasped with forceps. A purse-string suture of fine silk was placed around the opening, and over this two rows of Lembert sutures, also silk, were applied, the first interrupted and the second continuous. The external incision was closed except for a very thin gauze tape about its middle. The patient's recovery, otherwise uneventful, was complicated by an acute pyelitis on the twelfth day, which threatened to become of serious import. Discussion of the cause of this infection would be interesting, but out of place.

Result.—The patient is now entirely well, having gained steadily in weight since two months after the operation.

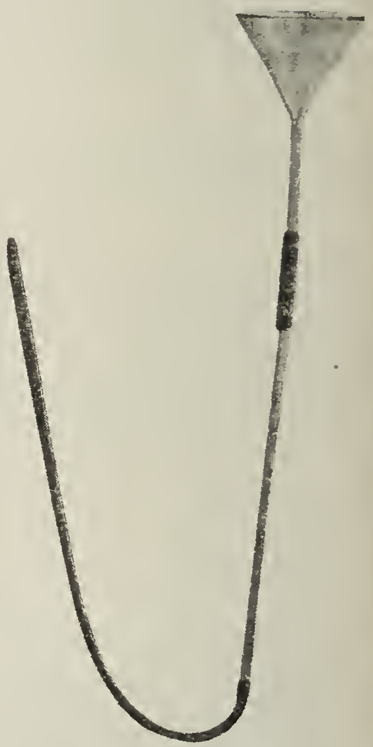
From the evidence at hand, there is no recorded case in which the exact method employed by me has been used. A painstaking search of the literature on the subject of fecal fistula in the lower bowel reveals but one instance of even a like character. In 1894, Nicholas Senn[1] described a very similar operation. His patient was a young woman, 25 years old, who dated her trouble from childbirth, five years and a half before. An abscess had formed in the left ischiorectal space three years afterward.

There was an opening in the gluteal region two inches from the anus and a second opening, which appeared six months later than the first, in the left inguinal region. The patient was brought into Senn's clinic as a case of intestinal fistula. Before the operation, dioxid of hydrogen was injected through the inguinal fistula and was followed immediately by the escape of white foam from an opening in the rectum, which could be plainly seen through a rectal speculum. The same phenomenon was observed after a similar injection into the gluteal opening, showing that both abscess cavities communicated with the same intestinal fistula. A satisfactory operation was performed through the abdomen.

THE SIMPLEST, EASIEST AND BEST METHOD OF IRRIGATING THE BLADDER.

J. D. SOUTHARD, M.D.
Surgeon to Belle Point Hospital.
FORT SMITH, ARK.

Insert one end of a glass pipette into the open end of a soft rubber catheter, over the other end of the pipette slip a piece of rubber tubing. Prepare the irrigating solution in a graduate of proper size. Introduce the catheter and allow the bladder contents to flow out into a convenient vessel; grasp the rubber tubing with left thumb and index finger just as the flow ceases and press it firmly together, thus preventing the entrance of air into the bladder. While thus holding the tube insert into it the stem of a glass funnel and elevate it over the abdomen; at the same time, with the right hand, begin pouring the solution into the funnel, being careful to keep enough in the funnel to prevent the entrance of air. When the desired quantity has been introduced, press the rubber tube again, lower the funnel and allow the bladder contents again to pass into the vessel. Repeat the operation as often as desired, finally withdrawing the catheter and permitting the last portion to be passed by the patient through the urethra, if desirable.



The graduate affords a simple and accurate means of preparing the solution to be used, and at a glance at any time tells just how much has been introduced.

The solution flows into the bladder in a gentle continuous stream. The apparatus is simplicity itself, easily sterilized and always ready. I believe a trial of it and comparison with other methods will sustain my claim, that it is the simplest, easiest and best.

101 North Sixth Street.

ATTACKS OF HYSTERICAL APHONIA OCCURRING IN A PATIENT SUBJECT TO TYPICAL EPILEPTIC SEIZURES.

THEODORE DILLER, M.D.
PITTSBURG.

Patient.—An unmarried woman, aged 26, clerk in postoffice, family history negative.

History.—Since August, 1901, she has been subject to attacks of epilepsy of the ordinary type which at first occurred about once in three months but which have occurred once or twice a month during the past year.

Besides these epileptic fits, the patient has been subject for 3 or 4 years past to frequent attacks of mutism and to attacks consisting of confusion of speech. The last named are often preceded by the first named, i. e., an attack of mutism is often preceded by a period of confused speech. These attacks are of much more frequent occurrence than are the epileptic fits. They are the cause of great embarrassment to the patient since she may in a street car or a store or in company suddenly find herself mute and unable to reply to questions. These attacks last from a few minutes to several hours, and are never associated with convulsive movements or loss of consciousness. The power of speech is always restored suddenly. On the occasion of one of her visits to my office while questioning her regarding these attacks of mutism, the patient suddenly began to talk in a jargon in a low tone of voice; and a minute later was mute. I afterward learned that she so continued for eight hours when speech returned suddenly. There was no loss of consciousness. The patient evidently understood what was said to her as she obeyed commands of various sorts. In response to my request to set down on paper her state of feeling, she wrote as follows:

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[1] Amer. Jour. of Obstetrics, vol. xxx, p. 335.

"I feel all right. My tongue is thick. I understand everything you say to me. I don't know why I can't talk."

She protruded her tongue only partially in response to my request. It rolled in her mouth as though helpless and partially paralyzed. The muscles of the soft palate moved very sluggishly in an attempt to say, "Ah." Dr. Robert Millikin examined the larynx, but could discover nothing abnormal. The patient's mother who was present at the time informed me that the attack I was witnessing was a typical one.

The patient had been subject to headaches nearly all her life and since the age of eight had worn glasses.

Examination.—Sept. 9, 1904; weight, 122; general appearance good. The patient is intelligent and of cheerful disposition. Pupils measured 5 mm. each, and react to light and to accommodation promptly; the eye-grounds were normal; knee-jerks were normal. An examination of the pelvic organs by a well-known gynecologist showed them to be normal. No sensory changes were discovered. Urine was normal.

Eyes.—Dr. Lippincott examined the patient's eyes and on November 15, reported the following:

"She had some hypermetropia and also some hyperphoria for distance. The ophthalmoscope examination revealed nothing abnormal. The vision, however, is not quite up to the standard but this might be a congenital defect. In prescribing glasses we took note of the hyperphoria and we think that whatever benefit she will receive from the glasses can be furnished her in that way. The glasses we prescribed were as follows: R. E. + .62; L. E. + .62. The right lens decentered upward 2 mm. and the left downward 2 mm. The decentering gives the necessary prismatic help."

Remarks.—The only point of significance in the history is that the patient has had a love affair for several years past, and has hesitated to get married because of the fits from which she suffers.

Although the sensory stigmata of the disease are absent, the character of the mute spells is such that I believe they must be regarded as hysterical in character.

If this be true, then the patient presents manifestations of epilepsy and hysteria quite distinct and apart from each other. The case could not be called one of hysteroepilepsy in the sense in which it was used many years ago to indicate that attacks partook both of the nature of the epilepsy and of hysteria.

Cases such as I have described are, if one may judge by the literature, of rare occurrence.

In the last two numbers of the *Jahresbericht uber Neurolog. und Psychiat.* I note only a few instances recorded:

Nonne[1] records the case of a man who, after a severe trauma to the head, suffered from epileptic attacks, and later from left hemiplegia, which was cured by a trephine operation, although nothing was found at the operation; the symptoms returned. A second trephine operation was performed. Hysterical convulsions then appeared with hemianesthesia. A third trephining operation was performed, which cured the hysterical manifestations. The patient then worked three months, after which he again exhibited hysterical convulsions and anesthesia, together with the epileptic manifestations.

Mutterer[2] mentions a case in which epileptic and hysterical symptoms were manifested in a typical manner.

Herman[3] reports two cases of epilepsy, in which hysterical phenomena appeared late in the course of the disease—after twenty and eighteen years, respectively. In the first case the hysterical symptoms were contractures, aphasia and analgesia, and in the second case mutism, globus, claustrophobia, etc.

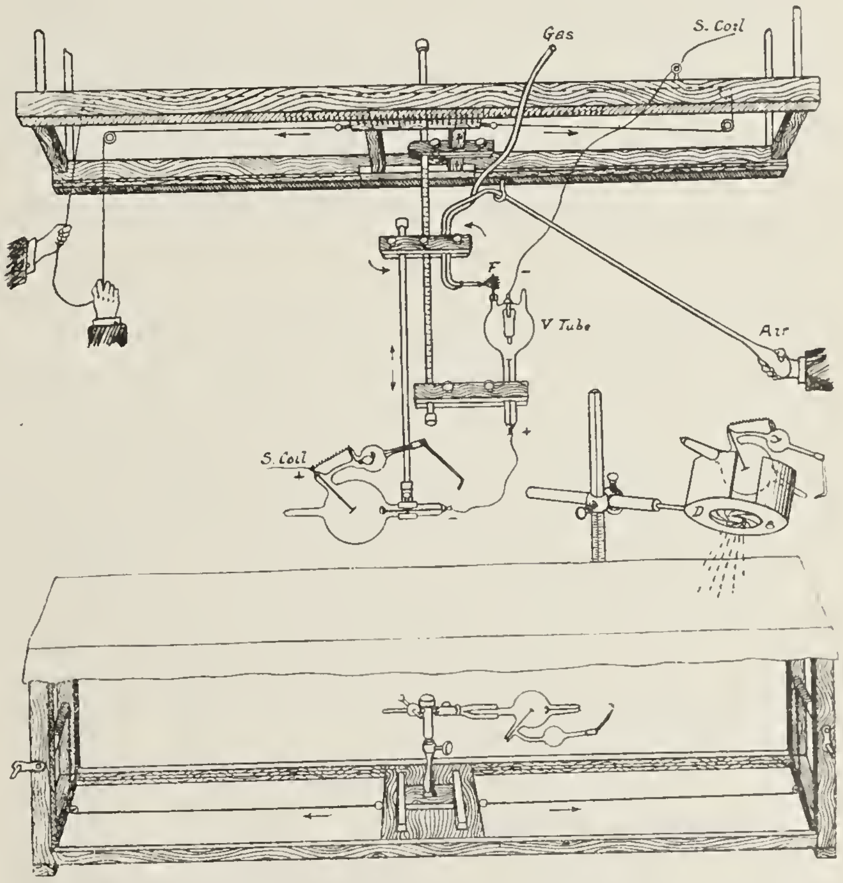
In the latest complete work on epilepsy — that of Spratling—I can find no reference to the subject of epilepsy as a complication of hysteria.

A NEW SKIAGRAPHIC TABLE AND TUBE HOLDER.

M. K. KASSABIAN, M.D.

PHILADELPHIA.

This tube holder consists of a frame suspended from the ceiling. By this arrangement the undesirable vibrations caused either by the patient or the operator are prevented. The patient can get on the table easily. The tube holder slides to and fro to any part of the table, and also is capable of lateral movements, this being accomplished by the operator pulling on a cord as is seen in the illustration. Likewise the tube holder can be made to approach or to recede from the operator, and at the same time is capable of up and down and a rotary movement. The tube holder is scaled in centimeters and inches, as is also the frame. A ventral tube is attached in series with the Crookes' tube. When the skiagrapher desires to lower the vacuum in the ventral tube he compresses a bulb at a distance from the tube, which forces a flame into the platinum osmoregulator.



The table is so constructed that it allows of the placing of the tube under the table and by working a crank the operator permits the tube to move to and fro. On the left of the illustration is seen the opaque glass shield encasing the Crookes' tube, which allows the passage of the rays through the iris-diaphragm for therapeutic uses. This table has been successfully employed by me for several years in the Philadelphia Hospital.

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[1] Abst. in Jahresbericht Neurol. u. Psychiat., vol. vii, p. 699.

[2] Archiv de Neurol., vol. xiii, p. 353.

[3] Jahresbericht Neurol. u. Psychiat., vol. v, p. 596.

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SATURDAY, JULY 14, 1906.

MENINGOCOCCUS INFECTIONS.

By the application of cultural methods to the study of various infectious diseases it has been shown that, instead of being more or less localized infectious processes, certain such diseases are in reality bacteriemias associated with localized lesions. Whether the visceral lesions are primary with invasion of the blood as a secondary process or whether the visceral lesions are secondary to a primary blood infection is not an easy problem to decide; but both of these conditions seem possible. Pneumonia and typhoid fever have been studied from this point of view and may be cited as typical examples of what is in mind.

As cerebrospinal meningitis is subjected to more careful analysis bacteriologically, it appears that this disease also may be found to correspond to typhoid fever and pneumonia in respect to localization and blood invasion. Recent work indicates that the meningococcus invades the blood in a considerable portion of cases. Elsner obtained it in about 25 per cent. of the cases during life, and probably with more frequent examinations it may be found in a still higher percentage. Other evidence of the general invasion of the body by this organism is the frequent localization of meningococci in such localities as the pericardium and the serous surfaces of various joints. There is, therefore, abundant evidence to indicate that meningococcus septicemia accompanies meningitis in a considerable number of cases. On the other hand, pure meningococcus septicemia with no definite localization or localization in parts of the body other than the meninges is apparently very rare. Such cases have been reported, however, by Warfield and Walker, Salomon, Schottmüller and others. The criticism has been, justly perhaps in some instances, that the meningococcus has been confused with other closely related cocci, especially those of the *Micrococcus catarrhalis* group, which are frequently found on the normal and infected respiratory mucosa. While this may apply in some cases, the evidence in others can hardly be questioned.

There are certain facts which indicate also that, at times at least, a meningococcemia precedes the meningeal localization as we might expect in view of the facts mentioned. Cases have been described in which the organism has been recovered from the blood and also from joint lesions some time before the appearance of meningeal symptoms. Later, the organism was obtained from the spinal fluid. Observations of this kind naturally bring up the question as to the mode of entry into the system of the meningococcus.

In view of the relatively frequent occurrence of this organism on the nasal mucosa, there is probably little doubt that invasion occurs through the cribriform plate and the ethmoidal sinuses, as Weichselbaum first suggested. The acute rhinitis which frequently precedes and accompanies meningitis makes this view very probable. That it occurs in other ways is also probable. Westenhoeffer considers the tonsils a possible portal of entry, as they are not infrequently involved early in the disease and the meningococcus is often found in the throats of the patients. Pflaunder and Marx consider the possibility of the palatine tonsils as the point of entrance. The whole respiratory tract, in fact, might be looked on as affording a suitable point of entrance at times for these cocci.

After passing through the mucosa it is commonly supposed that they enter the lymphatics and perhaps the blood stream and localize on the meningeal surfaces. In order to explain this predilection for localization on the meninges, we may consider this process analogous to that which has been shown to occur in other infections. Intravenous injections of cholera bacilli into animals is followed by a localization of the infection in the small intestine. Similarly, dysentery becomes localized in the large intestine. Gonococci show a marked tendency to become localized on serous surfaces, especially those of joints. So meningococci when once in the blood or in the lymph show a strong affinity for the meningeal structures. Occasionally as in other diseases an anomalous localization occurs, and hence there arise the unusual findings referred to above, such as joint involvement; or localization may fail to take place altogether, thus explaining the origin of the pure meningococcus septicemia.

Assuming the idea to be correct that the meningococcus enters the system through the upper respiratory mucosa, the localization of these organisms on the meninges can not be explained by the nearness of these structures to the nasal mucosa. For the pneumococcus and streptococcus, organisms much more virulent, as a rule, than the meningococcus, at least so far as animals are concerned, are very often found on these mucous surfaces, and yet localization of them on the meninges is relatively rare compared with their localization in the viscera. It would seem that while the anatomic relationship of the mucosa and the meninges may play some part in determining the site of the lesion, a more important factor lies in a peculiar affinity of this organism for these structures. Just what this affinity is is not known, but it conforms to a general principle common in infectious diseases and emphasizes the fact that the chemistry of the structures is often of greater importance than their anatomic relationships in determining the location of infective processes.

TUBERCULOSIS OF THE THORACIC DUCT.

It is probable that if the thoracic duct were more systematically examined at autopsy it would be found to be the seat of tuberculosis more commonly than it appears to be. It is difficult to explain some cases of acute miliary tuberculosis, but the fact that an adjacent tuberculous lymphatic gland may undergo softening and break into the thoracic duct, or that the tubercle bacilli may enter the duct through the lymphatic channels from the intestinal tract without necessarily involving other structures, or even that a tuberculous lesion of the wall of the duct may undergo softening and rupture, will aid in the comprehension of the intensity and extent of the morbid process in some instances. The importance of this mode of invasion is perhaps not generally recognized nor sufficiently appreciated.

In a recent communication dealing with this subject Dr. Warfield T. Longcope[1] reports the result of a study of 30 cases of generalized tuberculosis, devoting especial attention to the thoracic duct as a point of origin for the spread of the disease. Nineteen of the cases were typical instances of generalized acute miliary tuberculosis, minute tubercles being scattered in enormous numbers through most of the organs of the body, and clinically pursuing a course of from two to twelve weeks. In 14 of these the thoracic duct was the seat of a more or less extensive tuberculosis, usually with caseating nodules, while in one instance many tubercle bacilli were found in smears from the duct-lymph, although no lesion of the wall of the vessel was discoverable. In eight instances the generalized process was subacute or chronic, lasting from three to nine months; large tubercles or caseous masses were scattered in small numbers through the various organs. The thoracic duct was involved in only two of these cases, the tubercles being small and few in number, while in one instance a few tubercle bacilli were found in smears from the fluid of the duct. In the remaining three cases the tuberculosis was chronic and confined to the lungs and the peritoneum, and in all of these the thoracic duct was free from involvement.

The lesion in the duct varied considerably. Sometimes there was a single large caseous nodule near the receptaculum or about the arch of the aorta, with small tubercles over the intima of the vessel above and below it. At other times several caseous nodules were scattered through the duct, while occasionally the walls of the duct were studded with small tubercles. In every instance the mesenteric, peritoneal, posterior mediastinal and bronchial lymphnodes were the seat of chronic tuberculosis. In some instances several groups of glands were affected, but more often a single group and rarely only one or two glands. Often the lesion in the duct appeared almost as old as that in the adjacent lymphnodes and the two were in close association, though direct extension of the process from the gland to the duct was never observed. In at least two instances the caseation of a small group of lymphnodes and of the wall of the thoracic duct constituted the only focus of chronic disease to be found in the body. From the evidence it may be inferred that the infection travels from the lymphnodes through the lymphatics to the thoracic duct. Tubercle bacilli, in the absence of demonstrable lesions, have been followed experimentally from the intestinal tract through the thoracic duct, into the mesenteric lymphnodes, in the walls of which they may find lodgment or whence they may be carried into the general circulation.

A GREAT MEDICAL DRAMATIST.

The recent death of Henrik Ibsen, the Norwegian dramatist, recalls to mind the fact that as a young man he studied medicine and that his interest in the progress of medical science never ceased during his long life. There is no doubt that his medical studies enabled him to see deeper below the surface of modern manners and morals than is usually the case, and thus enabled him to present the significance of life more fully than any of his contemporary dramatists. There is scarcely a play of Ibsen's written after his genius had reached his maturity which does not contain distinct pathologic elements, sometimes making it a very interesting presentation of a nosologic type easily recognized by the attentive physician. This is especially true with regard to the Ibsen plays that are most characteristic and popular. The fact is coming to be much more recognized than used to be the case.

For instance, there is little doubt that Ibsen's "Ghosts" is simply a putting on the stage of a case of paresis in all its hideous details. Oswald, the son, partly as a result of heredity, partly, as Ibsen makes it rather clear also, because of his own vicious freedom of life, has begun to have the preliminary symptoms of this dread disease. The development of it in all its unrelenting progress is dramatically represented in a wonderfully realistic manner. Oswald, because of some medical studies of his own, realizes the awful condition into which he is lapsing, and his sad exclamation to his mother, "Never to be able to work any more, never—never! to be living dead! Mother, can you imagine anything so dreadful"? shows how poignantly the realization came home to him, and is a lesson even to the physician of what constitutes the most serious torment in the advancing disease for the intelligent man who finds out what inevitably lies before him. We venture to say that no better clinical description of a case of paresis has ever been written than that which Ibsen thus presents in "Ghosts".

"Hedda Gabbler" is another one of the most popular of Ibsen's tragedies and at the same time characteristically pathologic in the basic idea and in the evolution of the plot. Poor Hedda is not of very strong intellect and has certain neurotic tendencies that manifest themselves mainly in an overweening conceit. She marries and becomes pregnant and gradually develops all of the characteristic symptoms of a psychosis of pregnancy. The story is supremely pathetic, and it almost seems too bad that the unfortunate condition which will sometimes develop under these circumstances should thus be made the subject of dramatic representation. The picture unrolls itself, however, with consummate dramatic genius and with wonderful richness of detail. It only requires a few words here and there in the midst of the action of the play to make the whole condition clear. Most of the audience probably do not suspect that it is a pathologic condition in which their interest is involved. In this respect the play reminds a physician of the corresponding state of affairs in real life in which often the nearest and dearest friends are the last to recognize the possibility that the affection is mental disease rather than merely an exaggeration of personal peculiarities.

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[1] Bulletin of the Ayer Clinical Laboratory, No. 3, June, 1906, p. 1.

In spite of the fact that the character of Nora in "The Doll's House" has been looked on by many of the new women as an exponent of the results that are almost sure to follow the development of the feministic movement and that are quite defensible, there is no doubt that here, too, is a question of pathologic condition rather than of any supposed strength of mind. Nora is the type of a woman of family harassed by domestic cares and by financial worries into a state of neurotic irritability in which ordinary common sense becomes so distant from her frame of mind as to be quite out of the question even in ordinary actions.

The enthusiasm with which Ibsen follows out each of these types of mental disturbance to its ultimate ramifications would remind one of an old pathologist sternly seeking for the cause of a pathologic condition that he had found and bending all his energies to the task until the primary lesion is reached. The work would be entirely too deterent for most people, yet Virchow has bent over the autopsy table for hours in the effort to find the beginning of such a process in the flesh and so to unravel the mystery of what has developed. This is the picture of Ibsen that is sure to come to the physician who knows his plays.

We venture to say that there is nothing in our modern literature that will appeal quite so thoroughly to the physician as Ibsen's work. Considering its relationship to medicine, it is surprising how much influence the Norwegian dramatist has had. Many of the subjects which he has found it possible to treat on the stage are usually considered to be tabooed in social circles, and it is one of his great merits that he has broken through some of the world's prudery—which is very far from prudence in most cases—and exposed some of the ulcerous, social sores to the antiseptic action of publicity. How great his genius was can be best realized from the fact that there is scarcely a dramatist prominent in the world at the present time who does not confess to have been influenced by Ibsen. In England, Pinero and Shaw have gone to school to Ibsen; in Germany, Hauptmann and Sudermann have practically confessed to being his disciples; in France, Brieux and Hervieu, whose works are the most vital of the French school, distinctly show his influence. Physicians may well acclaim him as a worthy colleague, some of whose training and wonderful insight is due to his study of medicine.

THE PURE FOOD LAW.

We print in another column the National Pure Food Bill, which, after nearly twenty years of struggle, is now a law. The ethical principles which underlie it are of the utmost importance and are now firmly established in national legislation. The law is far better in every respect than its most ardent supporters could reasonably have expected. When we consider the determined and able efforts which have been continuously made by the opponents of this legislation, and when we think of the wealth of expert testimony which has been advanced against it, we must confess to a feeling of grateful surprise that the measure is as strong as it is. There are doubtless many weak points in the bill, but the sentiment of Congress is such at the present time that when these weak places are discovered, as a result of experience, they will be eliminated and the bill strengthened.

The law is strong in its definition and not very weak in its concessions and, if properly supported by courts in sympathy with the measure—and all courts must be necessarily in sympathy with it—will protect our people against the evils of misbranded, adulterated and palpable frauds in foods and drugs. This law is an evidence of the fact that our national legislature can not be bought, for it is not an exaggeration to say that millions would have been forthcoming to prevent this legislation had it been possible to have prevented it with money. On the whole, the friends of purity of foods and drugs are to be congratulated on such a virile and comprehensive measure, reflecting, as it does, great credit on the wisdom and zeal of our legislators. When we further consider that this bill has become a law by a vote of 64 to 4 in the Senate and 242 to 17 in the House, we can see with what unanimity the principles of this measure were approved by the National Congress.

Unfortunately, the bill does not carry any appropriation for its enforcement, but this will be easily remedied, since Congress meets again in December and the act does not go into effect until Jan. 1, 1907. The same public spirit which secured the enactment of the measure in June will not fail to supply the funds for its enforcement in December. Meanwhile the Secretary of the Treasury, the Secretary of Agriculture and the Secretary of the Department of Commerce and Labor are to prepare the regulations for carrying the act into effect.

While giving credit to the few faithful members of the Senate and the House who year after year patiently worked for the measure, such as Senator Heyburn and Congressman Hepburn (and Congressman Mann toward the last—for his final presentation of the case with the well-worked-out "object lessons" was the most effective argument on the subject ever presented), there were certain forces outside of Congress which had much to do with its passage. Undoubtedly, the strongest and most effective of these was the medical profession. Naturally, no class of people know as well as physicians the harmfulness, the wide prevalence and the varied character of frauds in food stuffs, and naturally, therefore, they were the ones to take the lead in the movement for the suppression of these frauds. And the American Medical Association, acting for the medical profession, through its Committee on Medical Legislation, with its far-reaching state and county auxiliaries, made it possible for physicians all over the country to act in unison, and consequently with effect.

THE CAMPAIGN AGAINST TUBERCULOSIS.

Although the communicability of tuberculosis had been suspected prior to the demonstration of the tubercle bacillus as the exciting agent, it was only after the discovery of this micro-organism that the channels of conveyance were definitely made known, and consequent on this knowledge it became possible to adopt rational measures looking toward restriction of the spread of the disease. A campaign of education was inaugurated, with the result that both the morbidity and the mortality have been greatly reduced, and the promise is that this reduction will go steadily on. In a discussion of the best methods to be pursued in the attack on tuberculosis, Dr. Robert Koch,[1] in the Nobel lecture, delivered at Stockholm at the close of the last year, reiterates his view as to the non-identity of the human and bovine forms of the disease. Accordingly, he considers infection by means of the milk and flesh of tuberculous cattle as a matter of little or no consequence. The chief medium of conveyance, he holds, consists in the discharges from cases of laryngeal and pulmonary tuberculosis in human beings, but, with simple precautions, the danger from this source can be converged to a vanishing point. The important factors in prophylaxis comprise care of the sputum, personal and domestic cleanliness, an abundance of light and air and of nutritious food, and avoidance of crowding. Notification is an indispensable adjunct, for without it many cases would remain officially unknown and the institution of protective measures be neglected. To facilitate the early recognition of the disease provision should be made for gratuitous examination of sputum. Koch makes a distinction between "open" and "closed" tuberculosis; that is, patients from whom tubercle bacilli are expelled and those from whom bacilli are not expelled. For the latter he would not require notification, but, inasmuch as one can not always foresee whether and when a closed case will become an open one, it would be better to make notification and record of all cases that can be correctly diagnosticated.

THE PHYSICIAN'S BEST ASSET.

The trust idea is the dominant factor in the civilization of our day; almost every business and calling is subject to it. The one profession, however, in which the individual is not entirely lost in the combination is medicine—wherefore we have reason, as physicians, to hold ourselves especially fortunate. When people are really sick and near to death they have no use for syndicated medical advice. Their trouble is then the most serious in human experience; and they want to have with them in their sore need the doctor whom they have learned through many trials to love and trust, and whose thorax contains the heart of a man. The trained and skillful practitioner of character and stamina is, in so far as he has these qualifications, in absolute control of his own output; nor can any man or combination of men deprive him of these resources and their legitimate reward.

Medical News

ILLINOIS.

Forbids Promiscuous Distribution.—In an ordinance recently passed in Monmouth the promiscuous scattering of samples of proprietary medicines is forbidden.

Resolutions of Respect.—At the annual meeting of the Cottage Hospital Association, Peoria, June 26, resolutions were unanimously adopted regarding the untimely death of Dr. Emerson M. Sutton, a valued member of the staff of that institution.

Hospital Cornerstone Laid.—The cornerstone of the new Oak Park Hospital at Wisconsin avenue and Madison street, was laid July 5, with elaborate ceremony. The Rev. Hugh O'Gara McShane delivered the principal address. The building is expected to be ready for occupancy January 1 next.

Hospital to Be Enlarged.—The Julia F. Burnham Hospital, Champaign, is to be enlarged to nearly double its present capacity. A two-story isolation ward is to be constructed, and a new and larger operating room on the third floor. The emergency ward will be located in the basement of the addition.

Ill and Injured.—Dr. Gerhard T. Nelson, Morris, fell June 12, injuring the muscles and tendons of the left leg.——Dr. Charles C. Gordon, Highland, is seriously ill with typhoid.——Dr. Charles S. Elder, Chenoa, fell down stairs June 28 and fractured a rib.——Dr. J. C. Harmon, Rantoul, who has been ill for several weeks, was taken to the Julia F. Burnham Hospital, Champaign, June 23.

Personal.—Dr. John C. Corbus, superintendent of the Illinois Eastern Hospital for the Insane, Hospital, has resigned.——Dr. Vachel T. Lindsay and family, Springfield, sailed for Europe, June 23.——Dr. Alfred Nash, Joliet, celebrated the fiftieth anniversary of his entrance into the practice of medicine, June 20.——Dr. Lester B. Cavins, Mattoon, has been appointed demonstrator of clinical medicine in Baltimore Medical College.——Dr. Eugene Cohn, St. Jacob, has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Hospital.

Farewell to Superintendents of Asylums.—Dr. and Mrs. Frank S. Whitman were tendered a farewell reception by the employés of the Northern Illinois Hospital for the Insane, Elgin, June 29, at which a cut glass punch bowl and frappé set and a gold watch, suitably inscribed, were presented to the retiring superintendent.——The employés of the Cook County Institutions, Dunning, presented Dr. Vaclav H. Podstata, the retiring superintendent, with a diamond pin, and at the same time presented Mrs. Podstata with a cut glass vase filled with flowers. The presentation speeches were made by President Brundage of the county board.

Attendants for Insane Hospitals.—The Illinois Civil Service commission is preparing to hold examinations for positions in the charitable institutions of the state. Examinations will be held in Chicago, July 25, and Lincoln, July 26, for matrons, housekeepers, and attendants in other institutions than the hospitals for the insane. Salaries range from $20 to $75 a month, with board, lodging and laundry in addition. The commission will soon hold examinations for teachers in the school for the deaf at Jacksonville. These positions pay from $45 to $135 per month. One year's training or actual experience in teaching the deaf will be required. This examination has been opened to teachers outside of Illinois. The commission will soon hold examinations for physicians, pathologists, druggists, and nurses. These positions pay from $50 to $150 a month. All communications concerning these positions should be addressed to Joseph C. Mason, secretary, Springfield, Illinois.

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[1] Lancet, May 26, 1906, p. 1449.

Chicago.

Arrested for Spitting.—Dr. Irving Porges and seven other men were arrested June 21, for spitting on the sidewalk.

College Commencement.—The commencement exercises of Northwestern University were held June 21, when more than 500 degrees were conferred. Ten of the graduates in medicine were awarded special honors.

License for Hospital.—The Illinois Steel company which has maintained a hospital in its plant at South Chicago for a long time without compliance with the laws regarding the licensure of hospitals, has applied for and obtained a license.

Physicians' Club Election.—At the annual meeting of the Physicians' Club of Chicago, June 26, Dr. William T. Belfield was elected chairman and Drs. Charles H. Mix and Arthur M. Corwin were re-elected secretary and treasurer respectively.

Sanitarium for Sick Babies Opened.—The Lincoln Park Sanitarium for sick babies at the foot of Fullerton avenue, supported by the *Daily News* Fresh Air Fund, opened for the season June 25. During the summer of 1905 the sanitarium cared for 15,179 babies and 46,615 children.

Arrested for Selling Cocain.—Adolph C. Brendeke, a druggist, was arrested July 6 for the sixth time in one week, charged with selling cocain without prescription. The prosecutions were made at the instance of Hull House. During the last four years this man has been arrested sixty times on similar charges, and has been repeatedly fined.

Chicago's Health.—During the week ended July 7, 471 deaths were reported, 5 less than for the preceding week, and 51 more than for the corresponding week of 1905. This is equivalent to an annual death rate of 11.98 per 1,000. The principal death causes were as follows: Acute intestinal diseases, 56; consumption, 50; violence, including suicide, 43; Bright's disease, 41; heart diseases, 34; pneumonia, 32; and cancer, 27. During the week 25 deaths occurred from diphtheria, 5 from measles, 10 from scarlet fever, 3 from whooping cough, and 5 from typhoid fever.

Personal.—Dr. Svenning Dahl has gone to Europe, and during his absence Dr. Karl Doepfner will occupy his position as chief surgeon to the Norwegian Lutheran Deaconess Home and Hospital.——Dr. A. C. Girard, assistant surgeon general U. S. Army, retired, who was for a number of years on duty at Fort Sheridan, and afterward in charge of the U. S. Army General Hospital, Presidio of San Francisco, has located in Chicago.——Dr. Otto J. Stein has returned from Germany.——Dr. Thomas J. Robeson has been commissioned lieutenant colonel and assistant surgeon general I. N. G., and assigned to the third brigade.——Prof. Alexis Carrell and C. C. Guthrie of the medical department of Chicago University, have resigned.——Dr. and Mrs. Edward C. Streeter are now in Japan and will return to Chicago late in August.——Dr. Julia D. Merrill was rescued after being lost for twenty-four hours in the Adirondacks.——Dr. Julius F. Wengiersky has been appointed assistant physician at the Illinois Eastern Hospital for the Insane, Hospital, and Dr. Francis J. Sullivan, assistant at the Illinois Central Hospital for the Insane, Jacksonville.——Drs. H. John Stewart and Wellington T. Stewart ask us to announce that they have resigned all connection with the Finsen Light Institute of America.——Dr. John Guerin has been appointed a member of the Board of Education.——Dr. Antonio Lagorio has been made a member of the Chicago Public Library Board.

INDIANA.

Hospital for Muncie.—The Ball Brothers' Company, Muncie, have notified the officials of that city that they would build a $50,000 hospital this year and donate it to the city.

Do Not Want Names in Papers.—At the annual meeting of the Grant County Medical Society, held in Marion June 26, a resolution was adopted declaring it the sense of the society that members of the organization should insist on their names not appearing in any newspapers of the county in connection with the statement of any medical treatment or surgical service rendered. It was also resolved that the roll of the society be sent to all newspapers in the county.

Dr. Tighlman Hunt's Death.—At a called meeting of the Hendricks County Medical Society, resolutions were unanimously adopted regarding the death of one of the most earnest members of that society, Dr. Tighlman Hunt, Plainfield.

State Medical Board Upheld.—The Supreme Court on June 19 decided that the law giving the State Board of Medical Registration power to revoke licenses granted to physicians, is constitutional, and that such revocation, after a hearing of charges, does not involve the exercise of judicial power. The court reversed the temporary injunction forbidding the state board to revoke the license of Dr. John Milton Rhodes, Indianapolis, and the opinion was ordered certified to the Circuit Court, to become effective at once.

Personal.—Dr. Oliver P. Terry, Lafayette, will succeed Dr. Ernest G. Martin as instructor in physiology and anatomy in the medical department of Purdue University.——Dr. William T. Ferguson, Ft. Wayne, is critically ill at his home.——Dr. Joseph Bowlby, Shelbyville, was stricken with cerebral hemorrhage June 22.—Dr. S. K. Westhaver, Westport, has been commissioned lieutenant and assistant surgeon Indiana National Guard.——Dr. Albert H. Combs, health officer of Marion, has been seriously ill for several weeks.

MARYLAND.

Baltimore.

Benefit for Infirmary.—The Union Protestant Infirmary netted $991.06 by the open-air performance of "Twelfth Night."

Deaths of the Week.—The deaths rose last week to 278, which is equivalent to an annual rate of 20.91 per 1,000 for whites. There were 85 deaths under 5 years. Two were from suicide.

Personal.—Dr. Robert W. Johnson sailed for Germany July 6.——Dr. T. Morris Chaney has been appointed superintendent of the South Baltimore Eye, Ear, Nose and Throat Charity Hospital.——Dr. Harry Friedenwald has been re-elected president of the Federation of American Zionists.——Prof. John C. Hemmeter was honored with an invitation to deliver a clinic in Berlin and on June 21 was the guest of Dr. Julius Pagel, professor of the history of medicine in the University of Berlin.——Dr. Ridgely B. Warfield sailed for Europe July 3.——Dr. William N. Hill left July 7 for Alaska, where he expects to remain a year.——Dr. James J. Mills is spending the summer in Europe.

MASSACHUSETTS.

Personal.—Dr. Edward M. Hartwell, Boston, has been appointed by the governor head of the new commission to have in charge matters pertaining to the adult blind in the state, to serve for a term of five years. Dr. Joseph H. A. Matte, North Adams, has been appointed a member of the same commission for a period of two years.

The Water Supply.—With the opening of July the metropolitan reservoirs have almost 49,000,000,000 gallons of water on hand. The use of water per capita through the district is increasing steadily. The largest consumers during May, 1906, were Boston, 149 gallons per capita daily; Quincy, 114; Melrose, 113; Winthrop, 106; Medford, 104; Lexington, 97; Somerville, 90.

Add to Harvard Faculty.—Harvard Medical School faculty is to be strengthened next year by the addition of the following twelve instructors: Carl Lucas Alsberg, John Bapst Blake, Richard Clarke Cabot, Elbridge Gerry Cutler, Henry Jackson, Elliot P. Joslin, Howard Augustus Lothrop, James G. Mumford, Charles Allen Porter, Edward Wyllys Taylor, Herman Frank Vickery and James Homer Wright.

Floating Hospital.—The Boston floating hospital resumed its works for 1906 July 11. The new boat has been launched, but is not yet entirely ready for service. Hence for a few weeks the work will be carried on the barge Clifford as heretofore. The visiting staff is the same as last year, being Drs. William E. Fay and John L. Morse for July and Drs. Samuel Breck and Arthur W. Fairbanks for August. Dr. Robert W. Hastings remains resident physician and will have as house staff: Seniors, Dr. Horace K. Boutwell, Boston, and Dr. Lawrence D. Chapin, Springfield, Mass.; juniors, R. A. Sadler, Boston; George H. Bodley, New Haven, Conn.; Lester H. Trufant, Montreal; Samuel F. Mullens, New York City. Externes, Dr. Arthur L. Kendall and Daniel J. Levy. The medical assistants will be George A. Foster, G. W. Morse, H. F. Troutman, Solomon H. Rubin, Laurence E. Pool, F. A. Bartlett, Maude E. Warren and Jennie Segal.

NEW YORK.

New Staff for Vassar Hospital.—Dr. Henry Greenwood Bugbee has been appointed house surgeon of this hospital to succeed Dr. Guy C. Bayley, retired. Dr. Ellen Gardner Littell has been appointed assistant.

Academy Election.—At the annual meeting of the Buffalo Academy of Medicine, June 12, Dr. Charles S. Stewart was elected president, Dr. William I. Thornton treasurer, and Dr. Grover W. Wende trustee.

Injunction Granted.—Supreme Court Justice Lyon has granted a temporary injunction restraining the mayor and health officers of Binghamton from attempting to remove Health Officer Dr. I. Adelbert Hix from his position, and to instal in his place Dr. Ray R. Beardsley.

Guilty of Illegal Practice.—Horace D. Hyde, an oculist of Rochester, plead guilty to practicing medicine without a license and sentence was suspended. The prosecution was undertaken by the Monroe County Medical Society, the Monroe County Homeopathic Society, and the Rochester Optical Society.

Hospital News.—The common council of Corning, at its meeting on June 4, appropriated $1,200 toward the maintenance of the Corning Hospital.——The state is expending $342,000 in improving and enlarging the Hudson River State Hospital, Poughkeepsie. The enlarged hospital will accommodate 3,000 patients and 800 nurses.

Against Adulterated Drugs.—The State Board of Pharmacy at Niagara Falls adopted a resolution designed to prevent the sale of adulterated drugs. The resolution defined adulterated drugs as those which do not come up to the standard in purity and quality established by the United States Pharmacopeia, and includes also prescriptions in which an article is substituted for one prescribed or in which the component parts of the medicine are in greater or less degree than prescribed.

Sanatorium for Yonkers.—Alexander Smith Cochran has purchased 110 acres of land in Yonkers on which he will erect a sanatorium for the treatment of tuberculosis. The entire cost of land, buildings and equipments will be more than $500,000. The establishment will be turned over to the city, together with an endowment sufficient to pay all expenses for the first five years. The main building will have 25 beds, and provision will be made for the treatment of many other patients in tents. It is hoped that the institution may be opened late in the fall.

Personal.—Dr. Raymond E. Turnbull, Elmira, has been commissioned surgeon N. G. N. Y., and assigned to the thirtieth separate company, Elmira, succeeding Dr. Reeve B. Howland, who has been made battalion surgeon, with the rank of captain.——Dr. John Van Dyne has resigned as professor of surgery in the College of Medicine of Syracuse University, and Drs. Nathan Jacobson and David M. Totman have been appointed professors of surgery. Dr. Van Dyne remains in the faculty as professor of the history of medicine.——Dr. Thomas Jamieson, Rochester, sailed on the *Umbria* for Liverpool, June 16.——Drs. Charles L. Witbeck, Cohoes, and Willis G. Macdonald, Albany, have sailed for Europe.——Dr. Nelson G. Russell, Buffalo, has gone to Europe.——Dr. Charles E. McClary, assistant health officer of Syracuse, has resigned.——Dr. Daniel R. Gratton, health officer of Depew, has resigned, and Dr. George N. Jack has been appointed in his stead.——Dr. George Graves, Herkimer, sustained serious contusions in a collision between a locomotive and his automobile, June 14.

New York City.

Breathing Specialist Not Guilty.—In the case of the Medical Society of the County of New York against Miss Melje Van Dusen Cavalier, charged with violation of the medical laws, the judge declared the defendant not guilty.

Election of Officers.—The Harlem Medical Association, at its meeting June 6, elected the following officers and trustees: Dr. William H. Stewart, president; Dr. Charles Clinton, vice-president; Dr. Martin Cohen, secretary; Dr. John Remer, treasurer; and Drs. Henry Heiman, Edward L. Cocks, and Percy H. Fridenberg, trustees.

Physicians Convicted.—Dr. Oscar A. Spier was sentenced to three months' imprisonment May 31 for furnishing illegal prescriptions to women.——Joseph Sohmer, John Frach and Mary E. B. Frank, against whom charges were made by the county medical society for violating the medical laws of the state, were convicted in special session, June 23.

Commencement.—Degrees were conferred on a class of 158 at the commencement exercises of Cornell University Medical College, held June 13. The dean, Dr. John D. Rushmore, administered the Hippocratic oath, Dr. John A. McCorkle, president of the collegiate department, conferred the degrees, and Dr. Cleland B. McAfee made the address to the graduating class.

New York Garbage.—The Street Cleaning Department has assured the State Board of Health of New Jersey that the garbage from the city will be taken 15 miles to sea and that in case this does not mitigate the present nuisance along the Jersey coast, the distance will be increased to 20 miles, and that a barge will be stationed to see that employés observe the rules.

New Quarantine Regulations.—The new quarantine regulations affecting Cuban ports went into effect in the port of New York June 23. Under these regulations all passengers on steamships from Havana and other Cuban ports must produce certificates showing they are immune from yellow fever. Their failure to do this will necessitate their being held under observation until five days since their departure from Cuba.

New Department for Dispensary.—The Brooklyn Central Dispensary has created a department of gastrointestinal diseases, which will be under the supervision and direction of Dr. Mark I. Knapp, New York City. Clinical lectures on gastrointestinal subjects will be given by Dr. Knapp every Wednesday afternoon at 3 instead of on Thursday, as heretofore. Regular postgraduate courses in gastrointestinal diseases will be given at the dispensary by Dr. Knapp, beginning in the autumn.

Contagious Diseases.—There were reported to the Sanitary Bureau for the week ended June 30, 440 cases of measles, with 12 deaths; 362 cases of tuberculosis, with 18 deaths; 242 cases of diphtheria, with 30 deaths; 110 cases of scarlet fever, with 9 deaths; 59 cases of varicella, with no deaths; 39 cases of typhoid fever, with 14 deaths; 39 cases of whooping cough, with 4 deaths; 29 cases of cerebrospinal meningitis, with 16 deaths, and 3 cases of smallpox, with no deaths, making a total of 1,323 cases, with 265 deaths.

Seaside Hospital Assured.—The Association for Improving the Condition of the Poor has secured the $125,000, which was necessary in order to claim the $125,000, promised by John D. Rockefeller on condition that a like amount should be raised by the association, to erect a permanent hospital for children afflicted with tuberculosis of the bones and joints. There are at present 4,500 cases of this kind in New York and thus far only 44 are being treated at the Sea Breeze Hospital. It has been suggested by the vice-president of the association that the city should provide the site for the proposed hospital.

Infirmary Asks Funds.—Additional annual donations of $10,000 are asked for by the board of directors of the New York Eye and Ear Infirmary, in their annual report for 1905. The expenses of maintaining the institution during the year were $76,074, while the receipts were nearly $1,700 less than the expenditures. During the year there were treated in the infirmary 2,102 house patients; 23,579 days' hospital care were given, with 5,811 days' free treatment, and nearly one-third of the ward patients had beds free of charge. In the out-patient department 37,606 new cases were registered, and 125,509 visits were made. The infirmary needs space for the pathologic department, and for a clinical lecture room, which will cost about $15,000, and it also needs a nurses' home.

Personal.—Dr. John Overton of the Harlem Hospital, was recently operated on for appendicitis.——Dr. Albert H. Garvin has been appointed first assistant at the State Hospital for the Treatment of Incipient Tuberculosis, Raybrook.——Dr. John A. Irwin has sailed for Glasgow on the *Columbia*.——Dr. and Mrs. John G. Curtis have sailed for Naples on the *Prinzess Irene*.——Dr. Thomas Darlington, president of the city board of health, and his son, were seriously injured in a runaway accident in Otisville, June 30.——Dr. and Mrs. Louis H. Warner, Brooklyn, sailed on the *Deutschland* for Hamburg, June 28.——Dr. Warren A. James, Brooklyn, sailed on the *Grosser Kurfuerst* June 7.——Dr. and Mrs. Frederick H. Nies have gone to Europe.——Dr. Burden Harris, house surgeon of the German Hospital, Brooklyn, was given a dinner by the staff of that institution, June 1.

Hospital News.—The Nassau Hospital endowment fund association has in its treasurer's hands $3,000 to be used to endow a bed in the Nassau Hospital. Through the generosity of Mrs. W. K. Vanderbilt, Jr., a large and costly addition is being made to the hospital.——The plans have been approved for a three-story brick wing for St. John's Hospital, Long Island City, to cost $160,000.——Plans have been filed for a summer hospital to be erected on the East River to cost

$10,000.——W. V. Lawrence has given Bronxville two and a half acres of land, on which he will erect three buildings, two of which are to be used for hospital purposes, the whole gift amounting to $100,000.——The recent garden party in Brooklyn in aid of St. Mary's Hospital netted $6,000 for the institution.

PENNSYLVANIA.

Gift to Hospital.—William McCormack, Philadelphia, has given $7,000 to the children's ward of the Williamsport Hospital. This makes up the shortage of the institution and renders it free of debt.

Tents for Consumptives.—The trustees of the State Hospital for the Insane, Norristown, at their regular meeting July 6, decided to employ tents in the treatment of patients afflicted with tuberculosis. More than thirty inmates of the institution are troubled with this malady.

Coroner Busy.—The heaviest death rate of any month in the year is shown in the report of the coroner of Allegheny County for June. Two hundred and eighteen deaths were investigated, an increase of 23 over those reported in May. Of the violent deaths 5 were from homicide, 9 from suicide, and 128 from accidental causes.

Alumni Meeting.—The Alumni Association of the Western Pennsylvania Medical College, Pittsburg, held its twentieth annual meeting and banquet June 11, at which the following officers were elected: President, Dr. Edward E. Mayer; vice-president, Dr. George C. Johnston; and secretary, Dr. Thomas Wray Grayson, all of Pittsburg.

Restrained from Practice.—By a decree handed down by Judge Doty "Dr." Edward Barnes, Monessen, is restrained from practicing medicine in Westmoreland County. Westmoreland County Medical Society investigated this case and alleged in its petition that Barnes had never been a regular practicing physician, and that he had served eight years in the Western penitentiary for arson, said to have been committed in Allegheny County.

Personal.—Dr. A. E. Newton, Sharon Hill, has gone to Europe.——Dr. Guy S. Shugert has been appointed surgeon for the Pennsylvania lines at Rochester, Pa.——Dr. Daniel H. Jenkins, Scranton, was thrown from his carriage June 25, and sustained a concussion of the brain and severe contusions of head and face.——Dr. Frank H. Fleet, Greenville, fell, June 11, fracturing his femur.——Dr. Ernest F. Nelson, Grove City, has been appointed city physician.

Pennsylvania Relief Report.—The monthly report of the employés' relief fund for the Pennsylvania Company's lines east of Pittsburg and Erie shows that the payments of benefits to its members and families of deceased members during May amounted to $116,174.44, of which $47,066.04 was on account of death and $69,109.40 on account of disablement by sickness and accident. The payments thus far are stated to have amounted in the aggregate to $15,019,499.05, of which $6,163,864.08 was on account of death of members, and $8,855,634.97 on account of disablement.

Hospital News.—The Braddock General Hospital, erected at a cost of about $40,000, with accommodations for 50 patients, was opened June 27 by a formal reception, which was attended by more than 1,000.——The distribution committee of the Hospital Saturday and Sunday Association gave $1,800 to the Allegheny General Hospital, $1,180 to West Penn Hospital, $682 to the South City Hospital, $417 to St. John's Hospital, $380 to the Pittsburg Hospital for Children, $125 to the Presbyterian Hospital, and $100 to the Pittsburg Free Dispensary.——The kirmess recently held at Erie netted $11,714.53 for the Hamot Hospital.——The Harrisburg Hospital received $2,000, the receipts of a country fair given by the Country Club of that city.——Work is about to be started on the proposed addition to the Allegheny County Hospital for the Insane, Woodville. The institution now accommodates 400, and the addition will provide room for 100 more.

Philadelphia.

Another Examination.—Owing to the failure of applicants to attain the required average of 70, the Civil Service Commission announces that another examination will be held for chief resident physician at the Philadelphia Hospital, Blockley.

Slaughter Houses Closed.—As a result of the investigation by the Board of Health into the condition of the city's slaughter houses, out of 171 inspections 37 were ordered closed on the ground of being general nuisances, inimical to public health.

Telephone Booths Condemned.—It is stated that unless the public telephone booths distributed throughout the city are kept in a more sanitary condition, warning signs will be posted by the board of health. The booths in the municipal buildings may be closed or removed. The inspection of the booths has been delegated to the medical inspectors.

Hospital Report.—The report of the Medico-Chirurgical Hospital for June shows that 5,724 patients were treated in the different departments of the hospital. The report of the Polyclinic Hospital for the same period shows that 106 patients were admitted to the wards, that 2,037 new patients were treated in the dispensaries, and that in all 8,641 patients were treated in the various clinics.

War on the Mosquito.—The work of destroying mosquito-breeding places is being undertaken by the Bureau of Health. The health officers propose to treat all pools of water and all stagnant pools on marshy ground and all mosquito-breeding areas with kerosene. The Health Bureau directs that all householders shall be diligent in seeing that no water be allowed to collect in back yards or other places.

Oncologic Hospital Report.—The first annual report of the American Oncologic Hospital indicates that 45 patients out of 106 were discharged "without manifest evidence of return of the disease," and 12 others in improved condition. The report of the treasurer shows that the total receipts of the hospital from all sources were $14,133.87, or within about $65 of the total expenditures. A net indebtedness of $996.01 is left.

Free Ice for Poor Sick.—$5,000 has been appropriated by the City Council for the purchase and distribution of free ice for the deserving poor sick. Director Coplin of the health department will distribute the ice through the corps of district physicians. The health department will have printed a number of checks, each of the denomination of five cents. These checks will be placed in the hands of the district physicians in every ward of the city, who will issue the checks, giving preference to the deserving poor sick.

Fire Apparatus for Hospital.—The Jewish Hospital will soon be equipped with its own fire-protection apparatus by the presentation of a special pump by Howard A. Loeb. The plans as outlined and executed will give the hospital one of the finest if not the best fire-fighting apparatus in any institution of the character in this country. The pump will have the capacity of about 200 gallons a minute. A chemical engine has also been provided by the hospital authorities, and the employés of the institution have been organized into a drilled fire brigade.

Health Report.—The total number of deaths reported for the week ended July 7, reached 651, the largest number reported in any one week since the corresponding week of 1901, when 800 deaths were recorded. Included in the death list were 277 infants. The principal causes of death were: Typhoid fever, 12; measles, 4; pertussis, 24; consumption, 54; cancer, 31; apoplexy, 26; heart disease, 31; acute respiratory disease, 32; enteritis, 157; appedicitis, 5; Bright's disease, 49; suicide, 10; heat stroke, 17; accidents, 18, and marasmus, 14. There were 129 cases of contagious disease reported, with 15 deaths, as compared with 175 cases and 14 deaths reported in the preceding week.

Personal.—Dr. James P. Coll was thrown from his carriage in a runaway July 2 and painfully injured.——Dr. Harrison A. Dunn, while on emergency duty in Fairmount Park, July 4, was attacked with acute appendicitis and operated on in the German Hospital.——Drs. S. Lewis Zeigler, Charles C. Grayson, Ralph W. Seiss, and William Krause sailed for Europe July 5.——Dr. Joseph S. Gibb will sail for Europe July 19.——Dr. and Mrs. Lewis H. Adler, Jr., are making an extended tour through California and Alaska.——Dr. and Mrs. James A. Irwin sailed for Europe June 16.——Dr. James R. F. Bell has resigned from the state commission appointed to award the contract for an institution for the feeble minded at Spring City.

Money for Charity.—The German Hospital has received $5,000 from an unknown donor for the establishment of a free bed in that institution to be known as the "Herman Hassenbruch Free Bed."——By the will of the late Mrs. Sarah B. Nixon-Nirdlinger, the Jewish Seaside Home, Atlantic City; Jewish Foster Home and Orphan Asylum; New York Hospital for Diseased Crippled Children, New York City; and St. Anthony's Poor, each receives $500.——A block party recently held in behalf of the Roosevelt Hospital, netted $105 for that institution.——By the will of the late Joseph Sinnott, the hospital of the University of Pennsylvania is bequeathed $10,000 for the endowment of a room for one sick person at a time who shall have been a newspaper writer in preference to any other employment. The endowment is in commemoration of the testator's dead son, Joseph B. Sinnott. Other charities benefited by the will are: St. Joseph's Hospital for a free bed in commemoration of a deceased son, Henry G. Sinnott, $5,000; Sisters of Mercy Sanitarium of Gabriel's, New York, $5,000; Conference of St. Vincent de Paul and Philadelphia Home for Incurables, each $1,000.

Aftermath of Fourth of July.—The celebration of Independence Day caused an unusual number of accidents from the use of explosives, although there was a singular absence of any very serious mishaps. Several persons were injured by stray bullets, carelessly handled pistols, and others lost fingers or sustained injuries to their eyes, but no deaths were recorded to mar the day. In 1904 four persons died as a result of the celebration. A table of injuries as reported by the police and hospital authorities is given below, and with it last year's report for comparison:

	1906.	1905.
Fireworks	291	108
Cannons	33	7
Firearms	81	36
Gunpowder	314	289
Toy pistols	62	90
Runaways	1	4

Phipps Institute Report.—The second annual report of the Henry Phipps Institute shows that the work of the institute is on the increase, as all the beds have been full at all times. During the year 1,561 patients were admitted, 1,382 of whom were admitted into the dispensary and 294 into the hospital proper. Of the total number admitted, 115 were admitted both to the dispensary and hospital. Of the patients admitted, 440 had been treated in the dispensary during the previous year; 62 had been treated in the hospital, and 8 had been treated in both. Of the patients admitted to the dispensary 942, and of those admitted to the hospital, 198 were new cases. Of these, 73 were treated in both the hospital and in the dispensary. There were, therefore, 1,067 new cases admitted for treatment during the year. Of the dispensary cases, 179, and of the hospital cases, 3 were either non-tuberculous or unsuitable, leaving 763 proper cases of true tuberculosis in the dispensary and 195 in the hospital for the year. Adding these together and substracting from them 73 cases which were treated in both hospital and dispensary, there are left 885 new cases to report. As in the previous year nearly one-half of the patients were foreign born, many of them having been in this country a comparatively short time before coming under observation. The report shows that the majority of people who applied for treatment were above the height which is laid down as the average height for men and women. The report shows that this in a measure supports the prevalent idea that tallness is conducive to tuberculosis.

GENERAL.

Malaria on the Isthmus.—It is stated in *Public Health Reports* that, since the rainy season has set in and anopheles are abundant, malarial fever has increased among the negroes and the hospitals are crowded to their full capacity. The recently arrived West Indian negroes, especially those from cholera among the soldiers. The health bureau is taking to the Isthmus by the Canal Commission, are the greatest sufferers.

Cholera Epidemic in the Philippines.—Cable reports from Manila state that cholera is again epidemic in the islands. Twenty-one cases and sixteen deaths were reported in Manila on July 4. Four Americans are said to have been stricken and one American died from the disease. The suburbs near Fort McKinley have been quarantined. There has been one death from cholera among the soldiers. The health bureau is taking every precaution to prevent the spread of the disease. A circular has been distributed among citizens warning them of the danger and requiring that precautions be taken. While the situation is serious, the health officials do not fear an epidemic of great proportions. The greatest difficulty is experienced in getting natives to report cases of sickness, as the Filipinos fear the health officials and are concealing cases from them.

Yellow Fever and Dengue in Cuba.—Passed Assistant Surgeon von Ezdorf states, in *Public Health Reports*, that two cases of yellow fever were reported in Havana June 18 and 20, respectively. Four suspect cases were reported under observation during the same week. Dr. von Ezdorf states that on account of the quarantine declared by New York against Cuba by which passengers will be required to remain in detention at New York to complete five days, certificates of immunity will be issued by the Public Health and Marine-Hospital officials to passengers presenting proper evidence. The evidence accepted is proof of having had yellow fever or of ten years' residence in an endemic focus. For Cubans, the proof of evidence must be ten years prior to December, 1901, the date when Cuba ceased to be an endemic focus; ten years' residence in Key West prior to 1887 is also accepted, but such evidence must have the visé of the representatives of the service at Key West. In order that the records may be complete for the future identification of the individual, two small photographs are required to complete the registration. These can be obtained by the individual at a very small expense. Cuba will raise quarantine against southern ports of the United States on July 8. Sixteen cases of dengue were reported in Havana during the week ending June 23; 14 of the patients have recovered. Taken with the 14 cases occurring during the previous week, this disease seems to be on the increase.

Public Health Service Wants Physicians.—At the Bureau of Public-Health and Marine-Hospital Service, 3 B street, SE., Washington, D. C., August 6, at 10 a. m., there will be an examination of candidates for assistant surgeonships. Candidates must be between 22 and 30 years of age, graduates of reputable medical colleges, and must furnish testimonials from responsible persons as to their professional and moral character. Candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing on the various branches of medicine, surgery and hygiene. The oral examination includes subjects of preliminary education, history, literature and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. On appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York New Orleans, Chicago or San Francisco. Assistant surgeons receive $1,600 a year; passed assistant surgeons, $2,000, and surgeons, $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40 and $50 a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, 10 per cent. in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.	
Allen, Justin, Topsfield, Mass.	$ 3.00
Physicians of Union County, Pa.	19.00
Stevenson, G. E., Gorham, N. Y.	2.00
Vaughan, Z. E., Waskam, Texas	2.00
SOCIETY CONTRIBUTIONS.	
Academy of Medicine, Cincinnati, Ohio	170.00
Denton County Medical Society (Iowa)	10.00
Chickasaw County Medical Society (Iowa)	1.00
Drew County Medical Society (Ark.)	10.00
Medical Society of New Jersey	410.70
Mills County Medical Society (Iowa)	10.00
Newport County Medical Society (R. I.)	36.00
Vigo County Medical Association (Ind.)	66.25
Waterbury Medical Association (Conn.)	25.00
Total	$764.95
Previously acknowledged	$11,826.05
Grand total	$12,591.00

The Philadelphia Total.

The total Red Cross fund, which has been raised at Philadelphia for the relief of the San Francisco sufferers, amounts to over $210,000.

Contribution of Books.

The W. B. Saunders Company, Philadelphia, has donated to the Physicians' Relief Committee of San Francisco, $1,000 worth of their publications.

CANADA.

Antituberculosis Association.—The Antituberculosis Association of British Columbia has issued a letter to the residents of that province soliciting funds for the erection of a sanatorium at a cost of $100,000.

Tuberculosis Exhibition in Toronto.—A tuberculosis exhibition is to be held in Toronto August 21-25 during the meeting of the British Medical Association.

"Patent-Medicine" Bill.—A "patent-medicine" bill, requiring all manufacturers to submit samples to the government, has been prepared by the Dominion chief analyst and has been presented to the House of Commons for consideration. It is feared that it will be difficult to pass it this year.

Extension of University Course.—The corporation of McGill University, Montreal, has approved of a resolution submitted by the medical faculty thereof, advising the extension of the present course of medicine to one of five years. It is likely that the change will go into effect in the session of 1907-08.

Fire at Queen's Medical College.—Queen's Medical College building at Kingston, Ont., was destroyed by fire July 4. Only the secretary-treasurer's books were saved. Valuable medical and scientific apparatus and pathologic specimens were burned. The loss will be about $70,000, on which there was an insurance of $22,000. The bacteriologic and public health laboratories were completely destroyed. Repairs will be started at once and a new building prepared as soon as possible.

Personal.—Dr. T. A. Starkey, professor of hygiene in the University of McGill, has been elected a fellow of the Royal Sanitary Institute. This is the first time that this honor has come to this side of the Atlantic.——Dr. William Oldright, professor of sanitary science in the University of Toronto, has returned from the International Medical Congress at Lisbon and the International Hygienic Convention at Milan, having attended both as the representative of the Ontario Board of Health.——Dr. Francis J. Shepherd, Montreal, professor of anatomy in the University of McGill, has just been elected president of the Montreal Art Association in succession to Sir George A. Drummond.——Dr. A. McPhedran, Toronto, president of the Canadian Medical Association, has returned from the meeting of the International Medical Congress.

Hospital News.—The district labor council of Toronto is endeavoring to prevail on the Toronto General Hospital Trust to allow all public ward patients the privilege of choosing their own physicians.——The Toronto General Hospital has adopted the new principle of choosing its house surgeons by competitive examination. Seven vacancies have recently been filled in this manner. The term of service has also been extended from one year to one and a half years.——The Hospital for Sick Children, Toronto, has just reorganized its staff and appointments are made for one year dating from July 1. ——By the will of the late Miss Elizabeth Orkney, Montreal, charitable institutions of that city will receive nearly half a million of dollars. The Montreal General Hospital will receive $50.000; the Protestant Hospital for the Insane at Verdun, Quebec, $50,000, and McGill University, to found a scholarship, $50,000. The late Miss Orkney was a generous benefactor of charitable institutions in Montreal all her life. scholarship, $50,000. Miss Orkney was a generous benefactor of Montreal institutions all her life.——Toronto General Hospital graduates will hold a convention in Toronto during the meeting of the British Medical Association. About 200 are eligible for membership in the association recently formed by the house surgeons, and a big reunion is expected. Dr: L. F. Barker will deliver an address.——The new board of trustees of the Toronto General Hospital will meet in a few days for organization, all the twenty-five members which will constitute the board hereafter having been appointed. There are three medical men on this board, namely, Prof. A. B. MacCallum, F.R.S., Dr. J. O. Orr, manager of the national exhibition, and Dr. John Noble, an alderman for the city of Toronto.

Ontario Medical Council Annual Meeting.—The medical council of the Ontario College of Physicians and Surgeons has just finished its annual session in Toronto. The following officers were elected: President, Dr. W. H. Moorhouse, London; vice-president, Dr. Spankie, Wolfe Island; treasurer, Dr. H. Wilberforce Aikins, Toronto; registrar, Dr. R. A. Pyne, Toronto. Dr. William Osler was licensed to practice in Ontario, "as a slight recognition of his great ability and the high standard he has obtained in his profession." The discipline committee presented charges of unprofessional conduct against four practitioners, and the name of one of these was struck from the register, only one councilor voting to retain it. Sir James Grant, Ottawa, presented a resolution, which was carried unanimously, to ask the Ontario government to provide better inspection of schools, in order more effectually to combat the spread of tuberculosis. The former building of the council having been sold, the property committee reported that owing to the high values prevailing, a suitable site had not yet been secured for the proposed new building. The annual meeting will be held next year at Kingston. It is many years since the council met outside of Toronto.

Ontario Board of Health.—At the quarterly meeting of the Ontario Board of Health in Toronto in June, the chief item of interest discussed was the increase in infant mortality. On this subject, the secretary, Dr. Charles A. Hodgetts, presented a strong report. According to this, the population of Ontario in 1904 was 2,203,768. The births in that year numbered 50,265, including 1,690 stillbirths. The birth rate was, therefore, 22.8 per 1,000, an increase of 0.7 over 1903. There were 798 children born out of wedlock. The marriages numbered 19,789 in all. The death rate was 14.1 per thousand, there having been 30,920 deaths. Special mention was made of stillbirths, which have been steadily increasing year by year, as the following figures show: 1897, 435; 1898, 532; 1899, 419; 1900, 578; 1901, 780; 1902, 823; 1903, 933; 1904, 1,690. It is expected that a reorganization of the Ontario Board of Health will soon be made by the government. One report says that the present secretary will become chairman, and have associated with him the bacteriologist, the medical inspector, the provincial chemist and the provincial analyst. These would do the work now performed by the present board, which is not fully manned, owing to the recent deaths of two members. In addition, an advisory council would be appointed from various sections of the province to meet the board from time to time as required.

FOREIGN.

Australasian Medical Congress.—The eighth session of the Australasian Medical Congress will be held at Melbourne, October, 1908.

Prizes of Vienna Academy of Sciences.—Prof. A. Durig of Vienna has been given the Lieben prize for his research on the dependence of the organism on its proportion of water for the functioning of the muscular and nervous systems. The Seegen prize was given to A. Krogh of Copenhagen for his works on the elimination of nitrogen.

Yellow Fever in Mexico.—It is reported that several cases of yellow fever have occurred in Merida and that a number of suspicious cases are under observation. From June 1 to 17, seventeen cases of yellow fever occurred in this city, with four or five deaths. Some of the cases were imported, but many originated in the city of Merida.

Prizes for Research on Sleeping Sickness.—The King of Belgium, as sovereign of the Congo Free State, has appropriated $40,000 to be awarded as a prize to the person who discovers a remedy for sleeping sickness. Competition is open to all nationalities. In addition, about $60,000 will be given as a special grant to further research on the prophylaxis and treatment of the disease.

Naming Streets After Living Physicians.—The *Semaine Méd.*, in a recent issue, states that the town of Hagen in Prussia has been contemplating changing the names of some of its streets to do honor to living celebrities. Two of the names proposed are those of physicians, von Behring and Koch, and Roentgen's name was also suggested. In advocating the measure, one of the speakers remarked that it would please the medical profession to have its members thus honored, but another speaker expressed some doubt on this point, as the three streets in question all lead to the cemetery.

Physicians in Public Life in Spain.—Again our Madrid exchange, the *Siglo Medico*, appears in gala dress to celebrate the nomination of one of its former editors to the national cabinet. Dr. Cortezo, one of the three proprietors and editors of the journal, was made minister of the interior last year, and now Dr. A. San Martin, who was one of the editors several years ago, has been appointed minister of public instruction. These appointments are the first for many years raising a member of the medical profession to the cabinet. It is certainly a curious coincidence that both of the appointees should have been connected with our Madrid contemporary. Both physicians had long been members of the senate.

Completion of the Pathologic Institute at Berlin.—The new Pathologic Institute was formally dedicated June 10, and it is said to represent the realization of Virchow's highest ideal of an institute for research in this line. The historic building in which he worked and taught is to be demolished. His plans for the new institute have been amplified, much space having been given for photographic purposes and lantern demonstrations, especially in the dissecting building. The group of buildings comprise the museum which was finished in Virchow's day, the main building, the "Obductionshaus" and the animal building. The institute is in charge of Orth, who has continued Virchow's work as professor and also as editor of *Virchow's Archiv.*

Demonstration of the Importance of Sunshine in Prevention of Tuberculosis.—For 12 years a "health register" has been kept of every house in Paris, as recently mentioned in these columns. Comparison of the records has shown that ordinary insanitary conditions and overcrowding do not favor the development of tuberculosis so much as the absence of sunshine. Old, dirty and wretched houses in the outlying districts, with plenty of light and sunshine, do not show so many cases of tuberculosis as new and luxurious houses in the wealthier quarters without free access of light and air, especially if the inner courts are narrow and the number of servants large. Many of these expensive new buildings were found to be hotbeds for tuberculosis, according to Graux's article on the subject published in the May number of *Tuberculosis.*

French Medical Study Trip.—The eighth annual trip of medical men and their ladies to various watering places commences this year at Lyons September 1. The watering places visited will be those in Savoie and Dauphiné, in the southeastern part of France. The party will disband September 12. Dr. Carron de la Carrière, 2 rue de Lincoln, Paris, is in charge of the details. The total expense of the trip is 320 francs, or about $64. The expenses of thirteen members of the party are paid by endowments founded by some of the watering places or by physicians. One of the endowments requires its four beneficiaries to be an English, an Italian and a Danish physician, and a medical student from Lyons. The scientific features of the trip are in the hands of Professor Landouzy of Paris. The V. E. M. (voyage des études médicales) has become a very popular annual institution.

Bad English Meat.—The agitation concerning the meat packing industry in America has led to careful examination of food conditions in Great Britain, and the results promise to be the starting point for many reforms. One health officer, Dr. Thresh, went so far as to state that less attention is paid to food inspection in Great Britain than in any civilized country. He said that Great Britain should remove the beam from her own eye before attempting to remove the mote from her brother's eye, and declared that the worst food found in England is prepared in England itself. Dr. Thomas, the medical officer of the borough of Stepney, is said to have stated that during the past five years his department has destroyed over a ton of rotten tinned food daily, consisting not of American goods, but of colonial meats, fish and fruits. Dr. Cooper, M. P., chairman of the public health committee, says that there is a large traffic in dying and diseased cattle which are slaughtered and sold for food, many dealers being solely engaged in buying for slaughter animals which are about to die and which are hurried to the market without hindrance from inspectors.

The Vivisection Question in Great Britain.—Once again the battle rages around the question of vivisection in Great Britain, and the leaders of the opposing sides are engaged in heated discussion. Undoubtedly, the leaders of the antivivisection movement are faddists, writes an occasional correspondent of The Journal, some of whom are well-meaning, but ignorant, while others are of the notoriety-seeking type. Unfortunately, the present government, composed as it is of advanced radicals and swayed by the labor party, who know little and care less about science, are only too ready to lend a willing ear to the opponents of vivisection. It is announced that it is the intention of the government to recommend the appointment of a royal commission "to examine the work of the 'Cruelty to Animals' act in the light of present scientific knowledge." Sir Victor Horsley, in some comments made recently on the proposed action of the government, welcomed its decision. He pointed out that the previous royal commission which investigated the subject reported in 1876 that there had been no cases of unnecessary cruelty, but in view of the possibility of such cases arising, recommended legislation, which was subsequently enacted.

Occupation Affections.—The congress for study of industrial diseases and occupation affections, recently held at Milan, was mentioned in these columns on page 1940 of the last volume. The advantages of international discussion of the topics involved were realized to such an extent that before the congress adjourned a permanent international committee was appointed to study ways and means for prevention of disease and of disability from the conditions of labor. The central office of the committee will be at Milan for the present. Each of the nations participating in the congress has a representative on the committee, and the other nations will be urged to appoint representatives. This committee will have in charge the organization of the next congress, which will be held in 1908 at some place yet to be determined. An article on the subject in the *Lancet* for June 23, takes as its text Ruskin's words, "There is no joy in modern labor," and concludes by quoting an Italian correspondent to the effect that in this congress "state medicine has made a notable and most promising start, in an international sense, with every prospect of revolutionizing the conditions of labor in the best interests of employers as well as of the employed."

Successful Immunization by the Mouth Against Tuberculosis.—The meeting of the French Académie des Sciences on June 11 was marked by an interesting communication from Calmette and Guérin on effectual immunization against tuberculosis. Their researches have established that bovine tubercle bacilli killed by being boiled for five minutes or heated for five minutes to 70 C. and fed to calves in the dose of 0.05 gm. and 0.25 gm., with an interval of forty-five days, immunized the animals to such an extent that they could bear without infection the ingestion of 0.05 gm. of fresh bovine tubercle bacilli—an amount certain to cause infection in the controls. Their experiments amply confirmed the fact that this method was effectual and induced complete immunity after four months, although the duration of the immunity conferred is not yet known. This method is far more convenient than von Behring's technic of intravenous injection of human tubercle bacilli. They further affirmed that they believe it to be possible to confer immunity on infants by having the infants ingest a small quantity of mixed human and bovine tubercle bacilli, killed or modified, the interval between the doses and other conditions approximately the same as in their animal experiments. It would be necessary, however, to protect the infants absolutely against tuberculous infection for four months at least afterward. This would necessitate the creation of special "nurseries" for such infants, particularly for the newly born children of tuberculous parents. By this means it may prove possible to rear a race refractory to tuberculosis. Roux supplemented this communication with a report of work along similar lines at Alfort, which confirms most strikingly Calmette's conclusions. All these investigators found that tubercle bacilli killed by heat or otherwise modified seem to pass through the intestinal walls as readily as living bacilli, and are found later in the mesenteric glands and even in the lungs. Calmette's previous research has shown that living bacilli ingested can make their way to the lungs through the mesenteric glands without leaving traces of their passage in the latter.

Hospital and Dispensary Abuse by the Well-to-Do.—This subject is the first one that is to be discussed at the Second Belgian Congress of Professional Medicine, which meets at Ghent July 15. In connection with its appeal to physicians in general to come to the congress, the *Gazette Méd. Belge* reproduces a stirring article on hospital abuse from one of the Paris dailies. The lay press has hitherto avoided this subject or has merely touched on it with some sarcastic fling at the doctors, who thus lose patients. But the article in question deals some telling blows in the right quarter. It is entitled "Stealing from the Poor," and relates how the poor have to be turned away from the overcrowded hospitals because the beds are occupied by well-to-do persons who could well afford to pay for medical attendance and care, but who are willing to sponge on the taxpayers and steal away from the poor the right to treatment, attention and care in the public hospitals. The article gives particulars, a detective having evidently been set to work in certain hospitals and clinics. In the service of Professor Lermoyez, for instance, applicant No. 17,127 was found to be the proprietor of a large hotel in a northern county. He had come to Paris with his wife to do shopping and attend the theaters, and had seized the opportunity to have a mild, chronic affection of the throat treated free by the Paris specialist. No. 16,780 was a fashionable hairdresser, who had come for treatment, as he had broken his nose playing polo. Another applicant complained because Professor Lermoyez happened to be substituted by his assistant. He had been under treatment for deafness before he went to a watering place for the summer, and now on his return he wanted the treatment continued. He sought out the professor at his home to complain of his substitute, when the above particulars were learned. Two instances in the same hospital were discovered in which retired merchants, living on their incomes, were occupying beds, dressed as workingmen. In another instance a well-to-do woman from a country town had come up to Paris to have her daughter treated in the public hospital. The couple were visiting a relative and the daughter applied to the hospital dressed in the clothes of the relative's housemaid. The article closes with an eloquent plea that the public hospitals are for the poor and for the poor alone. If persons able to pay are admitted to the public hospitals it is treason all around, treason to the taxpayers, treason to physicians in general and to the local physicians in particular. "Stealing from the poor," it adds, "is the worst of all ignominies, *c'est un crime de lèse-pitié!*"

Contaminated Milk Supply in Great Britain.—Throughout Great Britain the utmost indignation has been manifested at the so-called revelations of the methods employed in the Chicago canning establishments. Perhaps the British people are somewhat too ready to observe the mote in the eye of their neighbor and too apt to disregard the beam in their own eye. Certain it is that the conditions ruling the milk supply of the United Kingdom are, to put the situation as mildly as possible, susceptible of considerable improvement. The entire system in regard to milk is at fault, and Great Britain has much to learn from the United States in this respect. The contention is not advanced that the methods governing the milk supply with us are perfect; but there is little doubt that comparisons made between the methods in vogue in Great Britain and here would be greatly in favor of the former country. It is unnecessary to dwell at length on the danger to public health from an impure milk supply. Attention may be directed, however, to the obvious fact that such milk is a fertile, perhaps the most fruitful, cause ot infantile mortality, a statement emphasized by the most recent reports dealing with the death rate of infants in Great Britain. Many serious epidemics have been traced to milk. Impure milk, if not the *fons et origo* of all the physical ills to which infantile human flesh is heir, is at any rate an important factor in the causation and dissemination of such ills. It may be regarded, indeed,as an axiom that a pure milk supply is a necessity if infants, who are fed on it, are to be reared in health. In order to obtain pure milk, in the first instance the source of supply must be above suspicion, and the inhabitants of London seem to be awakening to the fact that the source of supply of much of the milk retailed to them will not bear investigation. The London *Daily Chronicle*, one of the most influential journals of the country, has taken up the matter recently, and has given details in connection with the London milk supply which afford interesting reading and which should tend to open the eyes of Londoners to the menace of impure milk. A large proportion of the milk used in London, of course, has to be sent some distance, and is subject to no control by the metropolitan authorities, while over the circumstances in which the great bulk of this milk is produced, the local authority has no control whatever. The supervision of country milk dairy farms in England seems to be notoriously lax, and in many districts non-existent. In consequence, most insanitary conditions prevail. Again, the milk is frequently conveyed by train long distances, the time taken in transit sometimes reaching ten or twelve hours; and during this time the milk is exposed to extreme variations of temperature. Milk in London is largely sold by small retailers, who take no precautions to prevent contamination of the product. According to the *Daily Chronicle*, "much of the milk retailed in the poorest quarters is kept in open pans in badly arranged and unsuitable shops where a mixed trade is done in paraffin and firewood, in dried fish and mixed groceries. The dust of the shop and the street pollutes it, flies poison it, every time the dipper is used the mixture becomes more dirty, and often it has stood for hours in this way, the residue incredibly filthy." It must not be forgotten that ice is practically unknown in the large English cities, and that only in the very largest and most up-to-date dairies is it used at all. On the whole, it would certainly seem that there is room for much improvement in the conditions regulating the milk supply of Great Britain.

LONDON LETTER.

Shrewd Precaution by a Doctor in a Case of Suspected Arsenical Poisoning: Testing the Finger Nails.

The exhumation of the body of a woman who died at Cardiff two months ago who is suspected to have been poisoned with arsenic, took place as the result of a new toxicologic method of investigation pursued by Dr. Rhys Jones. It is well known that arsenic is deposited in epidermal structures—epidermis, hair and nails. Before the burial of the woman the doctor had his suspicions aroused as to arsenical poisoning and took the precaution of paring her nails and submitted them to analysis, with the result that arsenic was found. Two months after death the body was disinterred and found in a remarkably good state of preservation, which confirms the suspicions. Traces of arsenic were found in the viscera, which have been sent to government experts for further analysis. No signs of disease sufficient to cause death were found. So far there is no evidence of foul play and the beer and spirits of the locality have been searched for arsenic without result.

The Tinned Meat Scandals.

The attention directed to food supply, and to tinned meat particularly, has caused investigation of English private slaughter houses, where conditions are far from cleanly. The health committee of the London City Council has recommended food inspection stations and public slaughter houses in London and inspection of food entering London. Though this may be an echo of the Chicago scandals, it has long been recognized by the council that the inspection of food entering the metropolis is not what it ought to be. This is mainly because the greatest city in the world has not for this purpose one area, but 29 areas, all under separate administrative control. In the provision of public slaughter houses England is far behind most continental nations. Many of the old private slaughter houses are near inhabited dwellings, and in some there is no entrance for the cattle except the shop where the meat is sold. The main object now is the abolition of the private slaughter house and the compulsory use of the abattoir to simplify inspection and to make it more effective. There are now in London 318 slaughter houses.

Poisonous Postage Stamps.

The discovery of unsuspected sources of injury and particularly of poisoning lurking in the use of all sorts of ordinary articles, has always been a specialty of the *Lancet*. The latest "find" is the discovery that the three-penny postage stamp contains a poisonous salt of lead. In sending out parcels of its special Hospital Sunday Supplement our contemporary was struck with the brilliancy of the yellow coloring used in the stamp, and was somewhat startled to find that this was due to chromate of lead (chrome yellow). Moreover, the amount was not negligible. Each stamp weighs rather more than half a grain and contains 2.53 per cent. of the chromate. Thus 70 stamps would contain one grain. Cases are recorded of fatal poisoning by very small doses of this salt. As little as one-fifth of a grain proved fatal to two children, who sucked the coloring from pastry adorned with ornaments containing chromate of lead. Thus this fatal dose would be contained in 14 stamps, and the process of licking stamps before affixing them might be attended with serious consequences. The *Lancet* commends these facts to the postmaster general, and suggests that if a yellow coloring must be used some innocent dye should be found among the numerous aniline yellows.

National Conference on Infantile Mortality.

Under the presidency of Mr. John Burns, president of the local government board, a national conference on infantile mortality has been held. Representatives of 105 municipal boroughs, 13 county authorities and 15 other bodies and 73 official members attended. Altogether the members of the congress numbered between 400 and 500. Mr. Burns welcomed the members and expressed sympathy with their aims. He expected, he said, from its discussions and the consequent education and enlightenment of the public greater results in the reduction of infantile mortality than anything which his department could immediately do or legislative help could produce. Roughly speaking, he said, 100,000 infant lives are being sacrificed every year to neglect, carelessness, thoughtlessness and ignorance. In the first year of infant life there are as many deaths as in all the other years together up to the age of 18. The part which environment plays in infantile mortality was shown by the fact that the rate in the poorer districts is sometimes as much as ten or twenty times greater than in the richer. The average expectation of life among engineers during the past fifty years has been increased by from ten to 12 years, but during the same period the infantile mortality has been practically stationary. Mr. Burns said that he thought that he saw signs that the end of the evil had been reached and that the result of the congress should be to bring down the infantile mortality in the next five or ten years by 30 per cent. or more. He said that he believed that half of the infantile deaths are preventable, and strongly deprecated married women working outside their homes.

Mr. Troutbeck and Postmortem Examinations.

Coroner Troutbeck has aroused great resentment in the profession by calling in an expert to perform postmortem examinations in most of his cases, instead of ordering the local physician to do it, as was the custom previously in his district of Southwest London and is still the practice throughout the country. As stated previously in The Journal, the subject has been taken up by the British Medical Association, which appointed a committee that condemned the course adopted by Mr. Troutbeck, and even petitioned the Lord Chancellor on the subject. The principal point was that the clinical evidence of the local physician who saw the patient during life should not be ignored. To this Mr. Troutbeck replied that he always called the physician if he could give any evidence of importance, but that in most of the cases in which an inquest was held there was no clinical evidence of any value. At the medicolegal society Mr. Troutbeck read a paper on the "Present Method of Ascertaining the Fact and Cause of Death." At one time, he said, the only postmortem examination was the viewing of the body by the jury. That useless practice has been superseded by the power conferred on the coroner to order a postmortem examination. This is usually conducted by the practitioner who attended during the last illness of the deceased. It is often perfunctorily performed and of little value. Despite a good deal of opposition, Mr. Troutbeck said, the coroner's right to call on some other person to make the postmortem examination has now been established. There are very good reasons, he stated, why the medical practitioner in attendance should not make it. In the first place, often he is not in a position of independence; there is always an inducement for him to make the results of his postmortem examination conform to his diagnosis and treatment of the case. In the second place, being a surgeon, and having other work which would be interfered with by making necropsies, he is sometimes unwilling to perform them; and sometimes he is not competent. Another reason for the independent examination by an official pathologist is indicated by the new rule now made by the local government board, that in cases of violent or unnatural death in prisons the postmortem examination must not be made by the prison physician. Finally, there is a great advantage to science and to the community from the appointment of a body of men whose duties would be definite and specific, and whose work would, in time, result in the establishment of a new and invaluable school of forensic medicine.

VIENNA LETTER.

Removal of Half of the Intestine for a Neoplasm.

A case which is probably unique on account of the length of the resected gut was demonstrated recently by Dr. Lorenz at the Vienna clinical society. A man in the prime of age complained of a swelling in the abdomen and a movable tumor was palpated. The tumor proved to be a mass of mesenteric carcinomatous glands. The primary seat of the neoplasm was the cecum. The metastatic growths had bound the omentum and the parietal membranes to two distant loops of the jejunum, so that extensive resection was deemed necessary, as the mesentery affected could not be freed from the growth. Before resecting the intestine the length of the affected part was measured, to see whether operation was possible. It was found that about 3 meters of the small intestine would remain in the abdomen, while 3 inches of the jejunum and ileum and 1.5 meters of the colon and cecum to the hepatic flexure would have to be removed. After consultation, it was decided to proceed with the operation. The two stumps were united as usual, and Mikulicz tampon inserted. The patient sustained the shock very well and made a good recovery. At first he was troubled by hematemesis, which was soon controlled by ice and adrenalin; later, a slight attack of erysipelas did not stop the favorable progress. The function of the bowels was rather impaired at the beginning, copious watery stools weakening the patient, but great care and suitable diet soon brought about complete recovery, so that he has gained flesh and is better than before. The stools are now formed, come twice daily, and the man is able to work in spite of being minus half his bowels.

Damages for X-Ray Burns: Two Actions Against Doctors.

The courts have recently passed on two different cases awarding damages claimed by patients against their doctors. The first case was that of a public official who had suffered for a long time from a very widespread psoriasis, and who consulted an eminent dermatologist. X-ray treatment was advised, and the patient submitted to it. This was in 1902, when the effects of the rays were not so well known as now. The patient sustained serious burns on the neck and back, which took over a year to heal, and incapacitated him from work. The action brought consequently against both specialists demanded $20,000 damages on the ground that the x-ray treatment was a mistake on account of the insufficiently known properties of such rays and because there are better and safer remedies known against psoriasis. As already mentioned in these columns, after a lengthy hearing, in which several experts from Germany were heard as witnesses, the judge found a verdict for the plaintiff and awarded him $6,000 damages and $800 costs, holding only the radiologist, Professor Holzknecht, responsible. The other defendant, a professor of dermatology, was acquitted because his advice was deemed justified. In the second case, a girl had been under treatment for psoriasis of the forehead, and another specialist had resorted to the x-rays, which he applied personally. Being called away urgently for a few minutes, his assisting nurse continued the exposure, but the patient developed bad sores on the face and brow, which healed very slowly and produced an ugly looking scar with the now well-known telangiectatic margin. The judge fined the physician $1,000 and decreed that he should pay an annuity of $120 until the girl married on account of the reduced "market value," the law stating that the master is responsible for the mistakes of his employés.

Pharmacology

PHENO-BROMATE.

CHARLES J. FOOTE, M.D.
NEW HAVEN, CONN.

The New Haven Medical Association is interested in the crusade against "patent medicines," and is anxious to take a hand in the exposure of the fraudulent claims of the many secret remedies placed before the physician with such alluring testimonials. Through its committee on "patent medicines" it has been investigating pheno-bromate. Inasmuch as the committee has never seen an analysis of pheno-bromate published, it sends one made by its chemist to The Journal of the American Medical Association.

Yale Medical School, New Haven, Conn., April 10, 1906.

Committee on Patent Medicines, New Haven Medical Association,
New Haven, Conn.:

Gentlemen:—As requested by you, I have made an examination of the sample of pheno-bromate submitted to me for that purpose, and report as follows:

The package was marked "Sample package, Pheno-Bromate. The Pheno-Bromate Company, New York, U. S. A."

The box contained a number of tablets and a package of powders in papers marked, "Physicians 10 grain powders, pheno-bromate."

The substance in the papers was a white crystalline powder not homogeneous. It was completely soluble in hot water. The hot water solution on cooling yielded a mass of thin crystalline plates. This material was found to melt at 113.5 C. It gave no color with ferric chlorid and a positive isonitril test. The portion insoluble in ether amounted to 49.8 per cent. of the powder and consisted of potassium bromid. Quantitative determinations of potassium and bromin in the original solution confirmed this result.

In my opinion, the powder consists of approximately equal quantities of acetanilid and potassium bromid.

Qualitative tests of the tablets indicated that they had the same composition except for a small quantity of some incipient not entirely soluble in water. Yours truly,

Herbert E. Smith,
Chemist New Haven Medical Association.

The Pheno-Bromate Chemical Company issues a circular, from which I quote:

"Pheno-bromate is a synthetic combination of derivations of the phenetidin and bromide groups, and not as is the case with many analgesics and antipyretics, a mixture of various coal tar derivatives."

"It is entirely free from depressing effects upon the heart and circulation; never produces any objectionable by-or after effects, and has attained extensive employment as the safest and most reliable agent for prompt and complete relief of pain and reduction of abnormal temperature."

"The present popularity of Pheno-Bromate with the leading scientific physicians is, in a great measure, due to the fact that it possesses the advantages of absolute freedom from depressing effects upon the heart and circulation, which so often follow the employment of narcotics and coal tar products, superlative potency and uniform activity. Under the Influence of pheno-bromate the heart acts regularly and systematically and the individual beats possess normal characteristics. Cyanosis, syncope, or collapse never follow its use."

"The remedy is by far the best and safest of all sedatives, and its routine and judicious employment will obviate the necessity of resorting to morphine and the hitherto unsafe and depressing coal tar products."

The doses recommended are as follows: As an antipyretic, 4 to 10 grains given at intervals of one to four hours; as an analgesic, the dose is from 10 to 25 grains, repeated in smaller doses two or three times during as many hours; as an antispasmodic, from 20 to 25 grains; as an hypnotic, 20 grains; as antineuralgic, 10 to 25 grains.

The dose recommended in most cases is about 20 grains, which is equivalent to 10 grains of acetanilid and 10 grains of potassium bromid. After using such a dose of acetanilid the patient is apparently free from the "depressing effects on the heart and circulation which so often follow the employment of narcotics and coal-tar products."

In the back of the circular there are testimonials purporting to be from physicians. Let me quote a few:

"Pheno-bromate is all and more than represented. In forty-three years' practice I can truthfully state that nothing I have used compares favorably with it."

Dr. E. G. B.

"In fifteen grain doses pheno-bromate promptly relieves the pain of locomotor ataxia without unpleasant effect on the heart's action."

Dr. S. D. H.

"I have had very happy results from the use of pheno-bromate in typhoid fever, where I have been able to control the temperature much better than by the cold baths. I have found it a most excellent remedy in pneumonia, neuralgia, rheumatism and la grippe, and in no case has it depressed the heart's action in the least."

Dr. F. O. Y.

Pheno-bromate is furnished in ounce cartons at the price of $1 an ounce. Potassium bromid is now selling at 35 cents a pound, and acetanilid at 30 cents a pound. A mixture practically identical with pheno-bromate can be put up at a cost of 3 cents an ounce.

I trust the above analysis and quotations will throw sufficient light on the value of pheno-bromate as a heart tonic, and on the extreme philanthropy of the manufacturers in furnishing to the public such a valuable remedy at such a marvelously low price!

Societies Take Action.

BUNCOMBE COUNTY (N. C.) MEDICAL SOCIETY.

At a meeting of the Buncombe County (N. C.) Medical Society, held May 21, 1906, the following resolutions were adopted:

Whereas, It is the duty of every physician to guard the public health and to instruct the public in matters of hygiene and sanitation:

Whereas, The unrestricted manufacture and sale of secret "patented" and proprietary medicines, with their fraudulent claims, and the devices used in advertising the same are a menace to the public health.

Whereas, The American Medical Association, through its Council on Pharmacy and Chemistry, is making a heroic fight against the indecent, unscrupulous and avaricious system of prescribing, advertising and selling nostrums; therefore, be it

Resolved, That the Buncombe County Medical Society heartlly approves of the work being done by the Committee on Pharmacy and Chemistry of the A. M. A., and the great educational campaign being carried on by the *Ladies' Home Journal*, *Collier's Weekly*, *Everybody's Magazine*, the *Druggists' Circular*, the *Farm Journal* and other lay publications, in their fight against the fraud and deception practiced in the manufacture and sale of secret remedies.

Resolved, That it condemns the slovenly, unscientific and stultifying practice of physicians prescribing or sanctioning the use of medicinal agents of whose formulæ and composition they are ignorant.

Resolved, That it deeply deplores and heartily condemns the methods employed by certain druggists in advertising, both in public places and in the press, secret remedies, for which unscientific and fraudulent claims are made, and who thus necessarily tend to encourage ignorance and deception, and that the society requests them to co-operate with the medical profession in their fight against the nostrum evil.

Resolved, That the society, in the interests of public health and common decency, recommends to the Board of Aldermen of the City of Asheville, the passage of such ordinances as will prohibit the indecent and fraudulent advertising of secret remedies on bill boards and in other public places; and also prohibit the distribution of free samples of secret and possibly poisonous preparations.

Resolved, That the proposed act to regulate the manufacture and sale of patent and proprietary medicines, as published in The Journal of the American Medical Association, Feb. 3, 1906, p. 374, meet with the hearty approval of this society, and the delegates of this society to the North Carolina State Medical Society are hereby instructed to have these resolutions read before that body, with the request that the Committee on Legislation make every effort to secure the passage of this, or some similar bill, by the State Legislature.

Resolved, That a special committee be appointed to continue in the interest of these resolutions, and to report to this Society, from time to time, as occasion may require.

Resolved, That a copy of these resolutions be sent to each member of this society; to each County Society of this State; to The Journal of the American Medical Association, and the above named lay periodicals; to each of the druggists of Buncombe County, N. C., and to the Board of Aldermen of the City of Asheville, N. C.

Gaillard S. Tennent, Secretary.

H. H. Briggs,
Laurence E. Holmes,
J. H. Williams.

NORTH CAROLINA STATE MEDICAL SOCIETY.

At its annual meeting the North Carolina State Medical Society adopted the resolutions passed by the Buncombe County Medical Society, with an amendment by Dr. Mason providing that the state society do all in its power to secure the passage of legislation at Raleigh in accordance with the provisions of the Buncombe County resolutions.

NEW MEXICO MEDICAL ASSOCIATION.

At the twenty-fifth annual meeting, held at Albuquerque, May 2-3, the following resolutions were adopted:

Whereas, Pharmacy should ever be the handmaid of medicine; and

Whereas, We realize the importance of the movement in favor of pure drugs and publicity in the composition of medicinal preparations; and,

Whereas, The great majority of nostrums now being exploited in medical journals and lay publications are sold by men who have no line of legitimate pharmaceuticals, but who confine their efforts to the manufacture of certain nostrums or the sale of such nostrums manufactured for them by the regular pharmaceutical houses; and,

Whereas, There seems to be a tendency among certain regular manufacturing pharmacists toward such exploitation in the making and placing on the market of nostrums under the head of specialties; now, therefore, be it.

Resolved, By the New Mexico Medical Association in its twenty-fifth annual session assembled, that it deplores and discountenances the exploitation and use of such nostrums as detrimental to the public health and fatal to the intimate and confidential and mutually helpful relations which should exist between the sister professions of medicine and pharmacy.

Resolved, That manufacturing pharmacists who have engaged to whatever extent in the making of nostrums are hereby requested to abandon such manufacture, either directly for their own trade, or for exploitation by others.

Resolved, That a copy of these resolutions be sent for publication to The Journal of the American Medical Association and to the *Pharmaceutical Era*.

Similar resolutions were passed by the Kansas State Medical Society at its annual meeting, held at Topeka, May 11, 1906, and by the Oklahoma State Medical Association at the annual meeting held at Guthrie. This Association also commended the work of The Journal of the A. M. A., the *Ladies' Home Journal*, *Collier's Weekly* and *Everybody's Magazine*.

VIGO COUNTY (IND.) MEDICAL SOCIETY.

At the regular meeting of this society held July 5, 1906, the following resolutions were adopted:

Whereas, It is the sense of the Vigo County Medical Society that the most efficient remedy for the growing evils of the "patent" and proprietary medicines lies in enlightening the profession and the laity as to their true nature, and,

Whereas, We believe that some reputable medical journals are still fostering the proprietaries of the nostrum type by giving them space in which to perpetrate their objectionable advertisements.

Resolved, That we commend the policy of The Journal of the American Medical Association in exposing the shams of the proprietary firms.

Resolved, That we congratulate *Collier's Weekly* and the *Ladies' Home Journal* on their successful efforts to get the intelligent people of this country to see the evils of "patent medicines."

Resolved, That as a component part of the Indiana State Medical Association we object to the use of the pages of our state journal, the *Indiana State Medical Journal*, in exploiting certain preparations which have been shown to be fraudulent and for which fraudulent claims are made.

CHURCH WANTS MEDICAL ADVERTISEMENTS BARRED.

By a large vote the United Presbyterian Assembly went on record May 25 against having medical advertisements of any kind appear in the *Christian Herald*, the official publication of the denomination.

One Newspaper Not Controlled.

Down in Louisiana there is a little town called Monroe. So far as we know there is nothing remarkable about it; it is just an ordinary town of between 5,000 and 6,000 inhabitants. It has a daily paper, called *The News*, which makes no pretensions of greatness or of any remarkable virtue, but it is evidently run by a man who has a conscience, who is independent, and who places honor and self-respect above the almighty dollar. Like many other newspapers, it derives not a little of its financial support from advertisements, but unlike many other newspapers, it does not allow its advertisers to run the paper and its editor. In its editorial department for May 26 are the following letters—it is the same old threat, of course—and the editor's comments:

Toledo, Ohio, May 22, 1906.

News, Monroe, La.

Gentlemen:—Should bills introduced by Senator Wingate and Representative Smith become laws they will force us to discontinue advertising in your state. Your prompt attention regarding these bills we believe would be of mutual benefit.

We would respectfully call attention to contract which we have with you at present. Respectfully,

Cheney Medicine Company.

Des Moines, Iowa, May 23, 1906.

Editor of News, Monroe, La.

Dear Sir:—We learn that there are two bad bills before your General Assembly, viz.: Senate Bill No. 8 by Mr. Wingate, and a bill in the House of Representatives by Mr. Smith.

Each of these bills require the full formula on every bottle of patent medicine. If the manufacturers should publish their full formulas any druggist could then make and sell their preparations, not only in Louisiana, but wherever the medicine was known and used.

You will see at once that the purpose of these bills is to kill the sale of all patent medicine in that state, as manufacturers will not publish their formulas.

These bills are the rankest class legislation and intended for the sole benefit of the medical profession. We are confident that you will object to their enactment, and if so kindly write the senator from your parish and ask him to oppose the enactment of Senate Bill No. 8, by Wingate.

You should also write to your representative to oppose the patent-medicine bill by Mr. Smith. Yours truly,

Chamberlain Medicine Company.

By L. Chamberlain, Secretary.

THE EDITORIAL COMMENT.

Nay, Pauline, not if *The News* loses every patent medicine advertising contract it now has and never gets another; not even if the loss of the business brings the sheriff and *The News* goes under the hammer.

Indeed, *The News* thinks these bills are meritorious and in the interest of the public health, and instead of asking our senator and representatives to vote against them, will ask them to vote for them. They should also vote for a pure-food law.

The News does not think that all patent medicines are impure, bad and injurious, but it is convinced by ample evidence that many are and the people should know the good from the bad—they should know what they swallow.

Many fake patent-medicine concerns are selling harmful, even poisonous nostrums, without conscience, unmindful and not caring about the fat graveyards they are making so long as the dollars pour into them, and the honest ones should welcome a law that will drive the dishonest ones out of business and safeguard and protect the lives of the people. It is the duty, the sacred duty, of the legislature to pass such a law. The value of patent medicine formulas can not be set up against the lives of the people. All of them put together is not worth the life of a single citizen of Louisiana.

Not on your lives, Messrs. Cheney Medicine Co. and Chamberlain Medicine Co.

Still Other Deaths from Kopp's Baby's Friend.

Dr. L. E. Siegelstein, Cleveland, coroner of Cuyahoga County, sends us a report of the following cases of poisoning from Kopp's Baby's Friend, which occurred in Cleveland, March 27, 1906, and April 3, 1905:

HISTORY OF RECENT CASE.

"For two nights prior to March 26, 1906, Irma, the two-months-old daughter of Mrs. Anna Vargo, an Austrian woman of average intelligence, residing at No. 35 Cumberland Street, Cleveland, had been unable to sleep. The child's mother knowing that Mrs. Leszak, a neighbor living in the same house, always kept in her apartments a preparation known as Kopp's Baby's Friend, borrowed some of it and gave the baby a teaspoonful at 7 p. m. She never dreamed that such a small quantity would harm her infant in any way, but almost immediately after being given the dose the baby shivered, sank into a deep sleep or stupor, from which she never revived. At 8 p. m. the mother became so alarmed at the long continued sleep of the baby and her looks and, being unable to rouse the child, took her to a doctor's office near by. The doctor was unable to revive the baby, which was taken back home by the mother. At 8:30 p. m., there being no change for the better in the baby's condition, the mother summoned the doctor, who came to the house at once. The doctor again departed without being able to bring the child out of the stupor. The baby's body was very cold. This condition continued until morning. The doctor called again in the morning. The baby was blue and her body was very cold. The doctor announced to the mother that the baby was dying and could not live more than an hour longer. The baby died at about 10 o'clock a. m. The doctor at once reported the case at my office, and I began my investigation.

HISTORY OF PREVIOUS CASE.

"I was greatly interested in this case because I had had an almost similar case in April, 1905:

"Mr. E. P. Swan, 1227 Lexington Avenue, Cleveland, had received a small vial of 'Kopp's Baby's Friend' by mail as a sample. Up until evening of April 3, 1905, his five-weeks-old baby had been in good health. At 8:30 p. m. on April 3 the baby was taken with colic. The father at once thought of the 'Kopp's Baby's Friend' sample, and gave the infant six drops of the preparation at that time. At 12:30 a. m. that same night he gave the baby three drops more. The baby sank into a comatose condition, with stertorous breathing, dilated pupils, and a bluish countenance or pallor. Early in the morning the alarmed parents summoned Dr. O. H. Boulee, who, after an examination, declared that the baby was evidently suffering from the effects of opium poisoning. He prescribed the usual antidote with negative result. He then left the house, and half an hour later the baby was dead.

THE CORONER'S EXPERIMENTS.

"After the death of Irma Vargo I requested the city chemis to make an analysis of 'Kopp's Baby's Friend,' but have not yet received his report.

[In The Journal, Nov. 25, 1905, we published a report of an analysis of this preparation. According to the analysis, "Kopp's Baby's Friend" contains in the 100 c.c. 0.0719 gm. morphin sulphate, approximately one-third of a grain in one fluid ounce.—Ed.]

"In addition to taking testimony and investigating the case from all angles, I did some private experimental work with 'Kopp's Baby's Friend.' First, I gave a six-days-old puppy 30 drops of the preparation. The pup never awakened from the deep sleep that overcame him at once. I gave a two-weeks-old kitten 20 drops. She promptly went to sleep and slept four hours. The next day I gave her 30 drops, which put her to sleep forever. I also tried the preparation on two kitten of six weeks old. Each slept for from four to eight hours after doses of from 15 to 20 drops."

CORONER'S VERDICT.

The State of Ohio, Cuyahoga County, ss.

Be it Remembered, That on the 27th day of March, A.D., 1906, information was given to me, L. E. Siegelstein, M.D., Coroner of said County, that the dead body of a girl, supposed to have come to her death from violence, had been found at No. 35 Cumberland Street, in the City of Cleveland, Ohio, County aforesaid, on the 27th day of March, 1906.

I visited the place and found the said dead body at No. 35 Cumberland Street. After viewing the same, and inquiring into the circumstances that caused the death of the said person, I summoned the following persons, to-wit: Irma Leszak and Anna Vargo to appear before me at my office, County Morgue, 213 Lake Street, at 9 o'clock a. m. on the 3d days of April, 1906 In obedience to said summons, the said persons appeared, and were sworn by me as witnesses.

I then proceeded to inquire in what manner, and by whom, the said person came to her death. Their testimony was taken by me and reduced to writing, and subscribed to by the several witnesses, and the same is hereto attached, and fully appears; I having heard the testimony. I also carefully examined the said dead body on the 28th day of March, 1906, find as follows, to-wit:

I. L. E. Siegelstein, M.D., Coroner of said County, having diligently inquired, do true presentment make in what manner Irma Vargo, whose dead body was found by me at above place on the 28th day of March, 1906, came to her death. The said Irma Vargo, was single, about 2 months of age, a resident of Cleveland, Ohio, and a native of U. S. A., had hazel eyes, black hair, and fair complexion, and was about 29 inches in height, and of small weight.

Upon full inquiry concerning all the facts, I find that the said Irma Vargo came to her death, on the 27th day of March, 1906, at No. 35 Cumberland Street, situated in the City of Cleveland, County and State aforesaid, from Morphin Poisoning, caused by a teaspoonful of a preparation sold under the name of "Kopp's Baby's Friend," which the mother gave the said Irma Vargo about 6 p. m. on March 26, 1906. (Seal.) L. E. Siegelstein, M.D., Coroner.

Distribution of Medicine Samples in Fort Wayne.

An ordinance has been adopted in Fort Wayne forbidding the distribution of samples of "patent medicines," pills, pellets or ointments without a license from the city controller. The ordinance was drafted at the request of many citizens whose children are daily endangered by the indiscriminate distribution of "patent medicines" on doorsteps. Children frequently find and eat these preparations and many narrow escapes from death have been reported. The ordinance provides that before any license shall be issued the drugs or samples shall be approved by the secretary of the board of health, and that the distributor shall put up a bond of $2,500 to guarantee the people against damages. A fine of $25 or imprisonment for thirty days, or both, are imposed for violation of the ordinance.

Druggists and Physicians.

In commenting on the position of the druggists in the present antinostrum campaign, the *Druggists' Circular*, July, 1906, makes the following pertinent statements:

> So long as doctors are "easy," and so long as there is money in selling nostrums, druggists seem to think that it is all right for them to conduct a "scientific" prescription department in the rear of the store for the doctors and a "commercial," "patent-medicine" bazaar out in front for the physicians' patrons. But doctors are not as "easy" now as they have been. Some of them never have been heartily in favor of sending their patients to the nostrum bazaars for their medicines, and so have quietly taken to dispensing; and others of them are now taking an active part in the crusade against fraud and deceit of a medicinal nature, and are passing resolutions at their county, state and national meetings calling on druggists to withdraw their active support of the medicine fakirs. The lines are tightening and the druggists will soon have to choose whom they will serve—the medical profession or the medical frauds. The day is coming when they can not serve both, and the indications are that the druggists' minds are made up as to whether they will keep with the respectable crowd or go over to the anything-for-the-money gang.

Correspondence

"A (Not) New Method of Mounting Museum Preparations."

Boston, July 3, 1906.

To the Editor:—So much has been said concerning the priority of originating the gelatin method for the preservation of tissues that a short note may not be inappropriate at this time. This seems particularly opportune because in The Journal, June 30, 1906, is an article by Dr. Henry Albert entitled "A New Method of Mounting Museum Preparations." In this article, as in the one that appeared nearly two years ago (Aug. 13, 1904), by Dr. W. M. L. Coplin, no attention was given to the first demonstration of this method, or to the originators of that method.

Dr. Albert says that about four years ago he conceived the idea of using gelatin as a medium. Now, if Dr. Albert, or any one else interested, will refer to The Journal during 1902, in which a pathologic exhibit is reported, he will find that at the Saratoga session of the American Medical Association, held in June, 1902, more than four years ago, Boston University School of Medicine made an exhibit of over eighty specimens prepared according to the gelatin method, and that this was the first time that such a method had ever been demonstrated or described. Or if he will refer to the *New York Medical Journal*, August, 1902, he will read a description of the method and the formulas essentially as given in his own article, as well as in the one by Dr. Coplin. In this article he will also find that the method was originated by Boston University in the spring of 1901, or more than five years ago.

As I have now had several years' experience with the gelatin method, and am assured that it is the best way yet known to preserve animal tissues (and possibly vegetable ones as well), I am desirous that the credit for its origination should go to that institution to which it is due. And as an evidence that others share this same feeling concerning the value of the method may be cited the following: At the Boston session of the American Medical Association the entire pathologic collections exhibited by Harvard, Boston University, Tufts and a large part of that exhibited by Jefferson, as well as smaller collections, were prepared according to this method.

W. H. Watters, Professor of Pathology.

Medical Legislation

THE PURE FOOD BILL.

The following is the text of the Pure Food Bill as it was finally adopted in both houses of Congress on the recommendation of the Conference Committee:

"*An Act preventing the manufacture, sale or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating the foods, drugs, medicines and liquors, and for regulating traffic therein, and for other purposes.*

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:*

[Public—No. 384.]

"That it shall be unlawful for any person to manufacture within any territory or the District of Columbia any article of food or drug which is adulterated or misbranded, within the meaning of this act; and any person who shall violate any of the provisions of this section shall be guilty of a misdemeanor, and for each offense shall, upon conviction thereof, be fined not to exceed $500 or shall be sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court, and for each subsequent offense and conviction thereof shall be fined not less than $1,000 or sentenced to one year's imprisonment, or both such fine and imprisonment, in the discretion of the court.

"Sec. 2. That the introduction into any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or from any foreign country, or shipment to any foreign country of any article of food or drugs which is adulterated or misbranded, within the meaning of this act, is hereby prohibited; and any person who shall ship or deliver for shipment from any state or territory or the District of Columbia to any other state or territory or the District of Columbia, or to a foreign country, or who shall receive in any state or territory or the District of Columbia from any other state or territory or the District of Columbia, or foreign country, and having so received, shall deliver, in original unbroken packages, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated or misbranded within the meaning of this act, or any person who shall sell or offer for sale in the District of Columbia or the territories of the United States any such adulterated or misbranded foods or drugs, or export or offer to export the same to any foreign country, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and upon conviction for each subsequent offense not exceeding three hundred dollars or be imprisoned not exceeding one year, or both, in the discretion of the court: *Provided*, That no article shall be deemed misbranded or adulterated within the provisions of this act when intended for export to any foreign country and prepared or packed according to the specifications or direction of the foreign purchaser when no substance is used in the preparation or packing thereof in conflict with the laws of the foreign country to consumption, then this proviso shall not exempt said article shall be in fact sold or offered for sale for domestic use or consumption, then this proviso shall not exempt said article from the operation of any of the other provisions of this act.

"Sec. 3. That the Secretary of the Treasury, the Secretary of Agriculture, and the Secretary of Commerce and Labor shall make uniform rules and regulations for carrying out the provisions of this act, including the collection and examination of specimens of foods and drugs manufactured or offered for sale in the District of Columbia, or in any territory of the United States, or which shall be offered for sale in unbroken packages in any state other than that in which they shall have been respectively manufactured or produced, or which shall be received from any foreign country, or intended for shipment to any foreign country, or which may be submitted for examination by the chief health, food, or drug officer of any state, territory, or the District of Columbia, or at any domestic or foreign port through which such product is offered for interstate commerce or for export or import between the United States and any foreign port or country.

"Sec. 4. That the examinations of specimens of foods and drugs shall be made in the Bureau of Chemistry of the Department of Agriculture, or under the direction and supervision of such bureau, for the purpose of determining from such examinations whether such articles are adulterated or misbranded within the meaning of this act; and if it shall appear from any such examination that any of such specimens is adulterated or misbranded within the meaning of this act, the Secretary of Agriculture shall cause notice thereof to be given to the party from whom such sample was obtained. Any party so notified shall be given an opportunity to be heard, under such rules and regulations as may be prescribed as aforesaid, and if it appears that any of the provisions of this act have been violated by such party, then the Secretary of Agriculture shall at once certify the facts to the proper United States district attorney, with a copy of the results of the analysis or the examination of such article duly authenticated by the analyst or officer making such examination, under the oath of such officer. After judgment of the court, notice shall be given by publication in such manner as may be prescribed by the rules and regulations aforesaid.

"Sec. 5. That it shall be the duty of each district attorney to whom the Secretary of Agriculture shall report any violation of this act, or to whom any health or food or drug officer or agent of any state, territory, or the District of Columbia shall present satisfactory evidence of any such violation, to cause appropriate proceedings to be commenced and prosecuted in the proper courts of the United States, without delay, for the enforcement of the penalties as in such case herein provided.

"Sec. 6. That the term 'drug,' as used in this act, shall include all medicines and preparations recognized in the United States Pharmacopeia or National Formulary for internal or external use, and any substance or mixture of substances intended to be used for the cure, mitigation, or prevention of disease of either man or other animals. The term 'food,' as used herein, shall include all articles used for food, drink, confectionery, or condiment by man or other animals, whether simple, mixed, or compound.

"Sec. 7. That for the purposes of this act an article shall be deemed to be adulterated—

"*In case of drugs:*

"First, If, when a drug is sold under or by a name recognized in the United States Pharmacopeia or National Formulary, it differs from the standard of strength, quality, or purity, as determined by the test laid down in the United States Pharmacopeia or National Formulary official at the time of investigation: *Provided*, That no drug defined in the United States Pharmacopeia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality, or purity be plainly stated upon the bottle, box, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopeia or National Formulary.

"Second. If its strength or purity fall below the professed standard or quality under which it is sold.

"*In the case of confectionery:*

"If it contains terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

"*In the case of food:*

"First. If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

"Second. If any substance has been substituted wholly or in part for the article.

"Third. If any valuable constituent of the article has been wholly or in part abstracted.

"Fourth. If it be mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

"Fifth. If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by any external application applied in such manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

"Sixth. If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

"Sec. 8. That the term 'misbranded,' as used herein, shall apply to all drugs, or articles of food, or articles which enter into the composition of food, the package or label of which shall bear any statement, design, or device regarding such article, or the ingredients or substances contained therein which shall be false or misleading in any particular, and to any food or drug product which is falsely branded as to the state, territory, or country in which it is manufactured or produced.

"That for the purposes of this act an article shall also be deemed to be misbranded:

"*In case of drugs:*

"First. If it be an imitation of or offered for sale under the name of another article.

"Second. If the contents of the package as originally put up shall have been removed, in whole or in part, and other contents shall have been placed in such package, or if the package fail to bear a statement on the label of the quantity or proportion of any alcohol, morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any such substances contained therein.

"*In the case of food:*

"First. If it be an imitation of or offered for sale under the distinctive name of another article.

"Second. If it be labeled or branded so as to deceive or mislead the purchaser, or purport to be a foreign product when not so, or if the contents of the package as originally put up shall have been removed in whole or in part and other contents shall have been placed in such package, or if it fail to bear a statement on the label of the quantity or proportion of any morphin, opium, cocain, heroin, alpha or beta eucain, chloroform, cannabis indica, chloral hydrate, or acetanilid, or any derivative or preparation of any of such substances contained therein.

"Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package.

"Fourth. If the package containing it or its label shall bear any statement, design, or device regarding the ingredients or the substances contained therein, which statement, design, or device shall be false or misleading in any particular: *Provided*, That an article of food which does not contain any added poisonous or deleterious ingredients shall not be deemed to be adulterated or misbranded in the following cases:

"First. In the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food, under their own distinctive names, and not an imitation of or offered for sale under the distinctive name of another article, if the name be accompanied on the same label or brand with a statement of the place where said article has been manufactured or produced.

"Second. In the case of articles labeled, branded, or tagged so as to plainly indicate that they are compounds, imitations, or blends, and the word 'compound,' 'imitation,' or 'blend,' as the case may be, is plainly stated on the package in which it is offered for sale: *Provided*. That the term 'blend' as used herein shall be construed to mean a mixture of like substances, not excluding harmless coloring or flavoring ingredients used for the purpose of coloring and flavoring only: *and Provided, further*, That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary foods which contain no unwholesome added ingredients to disclose their trade formulas, except in so far as the provisions of this act may require to secure freedom from adulteration or misbranding.

"Sec. 9. That no dealer shall be prosecuted under the provisions of this act when he can establish a guaranty signed by the wholesaler, jobber, manufacturer or other party residing in the United States, from whom he purchases such articles, to the effect that the same is not adulterated or misbranded within the meaning of this act, designating it. Said guaranty, to afford protection, shall contain the name and address of the party or parties making the sale of such articles to such dealer, and in such case said party or parties shall be amenable to the prosecution, fines and other penalties which would attach, in due course, to the dealer under the provisions of this act.

"Sec. 10. That any article of food, drug or liquor that is adulterated or misbranded within the meaning of this act, and is being transported from one state, territory, district or insular possession to another for sale, or, having been transported, remains unloaded, unsold or in original unbroken packages, or if it be sold or offered for sale in the District of Columbia or the territories or insular possessions of the United States, or if it be imported from a foreign country for sale, or if it is intended for export to a foreign country, shall be liable to be proceeded against in any district court of the United States within the district where the same is found, and seized for confiscation by a process of libel for condemnation. And if such article is condemned as being adulterated or misbranded, or of a poisonous or deleterious character, within the meaning of this act, the same shall be disposed of by destruction or sale, as the said court may direct, and the proceeds thereof, if sold, less the legal costs and charges, shall be paid into the treasury of the United States, but such goods shall not be sold in any jurisdiction contrary to the provisions of this act or the laws of that jurisdiction; *Provided, however*, That upon the payment of the costs of such libel proceedings and the execution and delivery of a good and sufficient bond to the effect that such articles shall not be sold or otherwise disposed of contrary to the provisions of this act or the laws of any state, territory, district or insular possession, the court may by order direct that such articles be delivered to the owner thereof. The proceedings of such libel cases shall conform, as near as may be, to the proceedings in admiralty, except that either party may demand trial by jury of any issue of fact joined in any such case, and all such proceedings shall be at the suit of and in the name of the United States.

"Sec. 11. The Secretary of the Treasury shall deliver to the Secretary of Agriculture, upon his request, from time to time, samples of foods and drugs which are being imported into the United States or offered for import, giving notice thereof to the owner or consignee, who may appear before the Secretary of Agriculture and have the right to introduce testimony, and if it appear from the examination of such samples that any article of food or drug offered to be imported into the United States is adulterated or misbranded within the meaning of this act, or is otherwise dangerous to the health of the people of the United States, or is of a kind forbidden entry into, or forbidden to be sold or restricted in sale in the country in which it is made or from which it is exported, or is otherwise falsely labeled in any respect, the said article shall be refused admission, and the Secretary of the Treasury shall refuse delivery to the consignee and shall cause the destruction of any goods refused delivery which shall not be exported by the consignee within three months from the date of notice of such refusal under such regulations as the Secretary of the Treasury may prescribe: *Provided*, That the Secretary of the Treasury may deliver to the consignee such goods pending examination and decision in the matter on execution of a penal bond for the amount of the full invoice value of such goods, together with the duty thereon, and on refusal to return such goods for any cause to the custody of the Secretary of the Treasury, when demanded, for the purpose of excluding them from the country, or for any other purpose, said consignee shall forfeit the full amount of the bond: *and Provided, further*, That all charges for storage, cartage and labor on goods which are refused admission or delivery shall be paid by the owner or consignee, and in default of such payment shall constitute a lien against any future importation made by such owner or consignee.

"Sec. 12. That the term 'territory,' as used in this act, shall include the insular possessions of the United States. The word 'person,' as used in this act, shall be construed to import both the plural and the singular, as the case demands, and shall include corporations, companies, societies and associations. When construing and enforcing the provisions of this Act, the act, omission or failure of any officer, agent or other person acting for or employed by any corporation, company, society or association, within the scope of his employment or office, shall in every case be also deemed to be the act, omission or failure of such corporation, company, society or association as well as that of the person.

"Sec. 13. That this act shall be in force and effect from and after the first day of January, 1907."

Approved June 30, 1906.

Summary of Legislative Affairs at Close of Congress.

Cincinnati, Ohio, July 1, 1906.

To the Members of the National Auxiliary Legislative Committee of the American Medical Association:

The adjournment of Congress affords a natural opportunity to thank you individually and in the aggregate for the great assistance that you have rendered in promoting national legislation of special interest to the medical profession.

THE PURE FOOD AND DRUG BILL A LAW.

The Pure Food and Drug Bill, which has been an object of solicitude by the entire medical profession for many years, is at last a law. This end has been reached largely through the influence that you have actively exerted either directly or through your neighbors, on your representatives in both branches of Congress. You will be interested to know that on the days when this bill came up for final consideration in the Senate, in February, and in the House, in June, the formal petition of the American Medical Association, accompanied by an official letter of transmittal, was delivered on the desk of each member of the respective houses. Now, however, that the long fight is ended it is incumbent on us to extend cordial recognition to those who espoused the interests of the people. You will, therefore, do a gracious act if you will write a letter of appreciation to Hon. W. B. Heyburn and to Hon. W. P. Hepburn, champions of the bill in the Senate and House, respectively, and to such of your representatives and senators as supported the measure on its passage.

STATUS OF THE ARMY MEDICAL BILL.

The Army Medical Reorganization Bill, passed the Senate early in the year, and, after considerable delay, was favorably reported from House Committee on Military Affairs, Mr. John A. T. Hull (Iowa), chairman. As the session just ended was drawing to a close many requests, some of them telegraphic, were sent by members of your committee to the Speaker, urging that the measure be given final consideration before adjournment. The Speaker stated, however, that at that late date it would be impracticable to issue a rule for its consideration, but promised to submit it to final vote early in the next session, which will begin the first of December of this year. The concession on the part of the Speaker is recognized as substantial progress. You are urged, however, to interview your representatives and to have others interview them personally during the present recess, requesting them to insist, through the committee on rules, on a prompt compliance on the part of the House with the foregoing promise of the Speaker.

THE PROPOSED DEPARTMENT OF PUBLIC HEALTH.

The representations made by you on behalf of the medical profession of your respective localities to the effect that there ought to be a department of public health at Washington, with representation in the Cabinet of the President, was formally approved by the National Legislative Council and the Committee on Medical Legislation in conference at Washington last January. The action was confirmed by the House of Delegates at Boston, in June, which directed that $1,000.00, or so much of it as might be required, be appropriated to defray the expenses of preparing a bill. The Section on Hygiene and Sanitary Science at the same session adopted the following:

> Whereas, The rapidly increasing number and the scope of the sanitary problems constantly arising are of great importance to the growth and development of this country as well as its outlying dependencies; and
>
> Whereas, Such problems require for their solution the most experienced and best trained sanitary talent, it follows that it is especially desirable that our Chief Executive have in his immediate presence a medical adviser, eminent and experienced in sanitary science, to counsel him at all times and thus lighten his responsibility in deciding on matters of far-reaching importance which so profoundly affect the lives and health of many millions of people for either good or ill: therefore, be it
>
> *Resolved*, By the Section on Hygiene and Sanitary Science of the American Medical Association that we ask the House of Delegates to take immediate and appropriate action which may bring before the Congress of the United States, as a means of materially advancing the prosperity and well-being of this nation, the importance and necessity of creating a Department of Public Health, with a regularly educated physician as secretary in the Cabinet of the President.
>
> *Resolved, further*, That the secretary of this section be authorized and directed to call the attention of all state boards and health commissioners of the larger American cities to the purport of these resolutions and to solicit their active co-operation to the end that suitable legislation may result in the furtherance of the object of the resolution.

It is expected that provisions in accordance with the foregoing action of the House of Delegates will be made so that the bill, properly prepared, can be introduced at the next session of Congress.

In the meantime, it is of the highest importance that you interview and have others interview members of the present Congress from your respective districts relative to this prospective measure and that you ascertain as definitely as possible the position on the question of all candidates for election to the next Congress, and that this be done before the nomination.

REMAINING MEDICAL LEGISLATION.

A number of other bills, all of them of importance, but all of them secondary to the measures before enumerated, were approved by the National Legislative Council and are pending in Congress. It may be said of them that they have made satisfactory progress. They have been made the subject of general referenda as occasion required. There is, however, at the present time no occasion to make them the subject of special referendum.

Again thanking the members of the National Auxiliary Legislative Committee for their cordial co-operation—a co-operation without which present results could not have been achieved, I have the honor to be, on behalf of the Committee on Medical Legislation,

Very sincerely,

Charles A. L. Reed, Chairman.

Association News

NEW MEMBERS.

List of New Members of the American Medical Association for the Month of June, 1906.

Those whose names are transferred from the subscription list are indicated by daggers, those who joined at the Boston session and who were not already subscribers are indicated by stars.

ALABAMA.

*Coley, A. J., Alexander City.
†Bradford, Kenneth, Birmingham.
†Compton, W. W., Bessemer.
†Davis, J. D. S., Birmingham.
†Gunn, J. H., Calera.
Greene, J. B., Birmingham.
†Hutchinson, W. H., Childersburg.
†Head, W. C., Johns.
*Killough, J. N., Woodlawn.
Peterson, A. J., Goodwater.
†Powell, C. B., Hartford.
*Stabler, L. V., Thorsby.
*Sanders, W. B., Troy.
†Ward, W. R., Birmingham.
†Ward, E. B., Selma.

ARIZONA.

†Adams, C. B., Seligman.

ARKANSAS.

†Barlow, E. E., Dermott.
Easterling, W. W., Lake Village.
†Grant, R. L., Texarkana.
*Meriwether, C. P., Walnut Ridge.
†Rice, W. W., Prescott.
†Warren, Eugene, Hot Springs.

CALIFORNIA.

†Bennett, Laura B., San Pedro.
†Dudley, H. W., San Rafael.

†Fine, H. M., Oakland.
†Parker, A. S., Riverside.
†Schutz, M. A., Long Beach.
*Southard, W. F., San Francisco.
†Thomas, Benj., Palo Alto.
†Wimberly, G. W., Greenville.

COLORADO.

†Cuneo, Jos., Denver.
*Delehanty, Edw., Denver.
Raymond, E. I., New Windsor.
†Taussig, A. S., Denver.

CONNECTICUT.

†Bullard, M. J., Putnam.
†Foster, Dean, Stamford.
*Ferrin, C. F., New London.
†Gordon, W. F., Danbury.
Higgins, W. L., South Coventry.
Howe, H. H., Yantic.
†Hewes, F. W., Groton.
*Hyde, Harriet B., Greenwich.
*Judson, W. H., Danielson.
†O'Connell, T. S., East Hartford.
†O'Hara, W. J. A., Bridgeport.
*Starr, R. S., Hartford.

DISTRICT OF COLUMBIA.

†Thomas, A. R., Washington.
†Taylor, L. H., Washington.

FLORIDA.

†Miller, O. J., Panama Park.

GEORGIA.

†Baird, J. M., Columbus.
†Curry, J. W., Rome.
†Hardin, L. S., Atlanta.
†Holmes, O. L., Covington.
*Pickett, F. B., Ty Ty.

ILLINOIS.

†Alrutz, L. F., Chicago.
†Allen, L. G., Litchfield.
†Barr, W. A., Chicago.
†Bley, George, Beardstown.
†Barclay, R. D., Cerra Gordo.
†Binney, R. W., Granite City.
†Converse, W. C., Chicago.
†Clemensen, P. C., Chicago.
Davis, J. H., Carlinville.
†Davis, E. E., Avon.
†Eberspacher, F. J., Pana.
†Gardner, J. L., Rochelle.
*Goodman, T. B., Cobden.
†Haughey, J. E., Rockford.
†Hawkey, W. G., Belvidere.
*Herriman, W. D., Chicago.
†Hopkins, C. W., Chicago.
Harrison, C. N., Chadwick.
†Kincaid, J. H., Chicago.
†Kimball, G. W., Steward.
†Lins, F. J., Durand.
†Lawrence, R. H., Chicago.
†Millhon, H. B., Owaneco.
Midgley, R. J., Wilmington.
†Menge, Fred'k, Chicago.
†McBride, W. O., Joliet.
†Pavlik, O. S., Chicago.
Seids, J. W., Annawan.
†Scott, W. P., Elliott.
†Sargent, Evlan, Moline.
†Tischart, P. J., Chicago.
†Wiley, F. A., Earlville.
†Whitaker, Hall, Mound City.

INDIANA.

*Butler, W. H., Columbus.
†Brodbeck, G. H., Roann.
†Fortune, J. L., Terre Haute.
†King, C. H., Wabash.
†Kirby, G. W., Millersburg.
†Lowder, Lillian C., Bloomington.
*Murphy, O. C., Scottsburg.
†McAlexander, R. O., Indianapolis.
*Newman, H. M., South Milford.
†Pulliam, J. M., Ft. Wayne.
†Rarick, J. E., Wolcottville.
†Schick, M. F., Ft. Wayne.
†Stunkard, T. C., Terre Haute.
*Turner, Harriet E., Indianapolis.
†Wilson, R. S., Berne.
Walden, C. H., New Market.

INDIAN TERRITORY.

*Whitaker, W. J., Pryor Creek.
†Webb, J. E., Tulsa.

IOWA.

†Armentrout, C. R., Keokuk.
†Croston, G. C., Lucas.
†Chatterton, A. S., Peterson.
*Donohoe, George, Independence.
†Everhart, R. E., Clinton.
†Graber, F. J., Stockport.
†Hearst, W. L., Cedar Falls.
†Howe, Lysle C., Leighton.
†Hoeve, H. H., Des Moines.
†Ingbert, C. E., Independence.
McCrea, Eppie S., Eddyville
†Patterson, W. E., Greene.
Prentice, G. L., Hinton.
†Sinning, Augustus, Bennett.
Strohbehn, E. F., Davenport.

KANSAS.

*Chase, A. B., Atchison.
†Fannon, Hubert, Bucklin.
Huffman, C. S., Columbus.
†Reding, H., Sabetha.
†Stockwell, L., Atchison.
*Trueheart, Marion, Sterling.
†Van Nuys, W. C., Topeka.

KENTUCKY.

†Anderson, D. B., Paris.
*Casper, M., Louisville.
†Guest, J. W., Louisville.
*Johnson, A. R., Henderson.
†Marshall, Ewing, Louisville.
Farris, R. C., Fredonia.
†Newcom, E. E., Repton.
*Neel, J. L., Drake.
†Perry, G. G., Richmond.
Chumbley, C. A., McGuffy.
†Petty, B. B., Cythiana.
†Reynolds, H. G., Paducah.
†Rash, O. W., Owensboro.
*Shelton, E. B., Blandville.
†Smiser, H. T., Cynthiana.
*Simmons, W. C., Smiths Grove.
†Tilton, R. J. R., Carlisle.
†Yancey, H. M., Carlisle.

LOUISIANA.

Teer, W. W., Coushatta.
†Vidrine, J. C., Ville Platte.
†Yearwood, J. G., Bayou La Chute.

MAINE.

†Cushman, B. G. W., Auburn.
Dascombe, L. A., Skowhegan.
†Fitzmaurlce, T. J., Bangor.
*Millard, L. E., Saco.
*Mann, F. W., Houlton.
†Noyes, B. L., Stonington.
*Nichols, J. W., Farmington.
*Purinton, H. H., Lewiston.
*Swasey, W. B., Cornish.
*Sawyer, Alton, Gardiner.
*Thompson, J. F., Portland.
†Vaughan, P. H. S., Bangor.
†White, V. O., East Dixfield.
†Woodman, D. N., Yarmouth.
†Wakefield, F. S., Lewiston.
*Witherle, C. B., Portland.

MARYLAND.

*Baker, C. D., Rohrersville.
Clapp, C. A., Baltimore.
†Fahrney, H. P., Frederick City.
†Haffner, S. T., Frederick City.
†Herring, J. T., Westminster.
†Johnson, W. C., Frederick.
†Laughlin, Mary A., Hagerstown.
†McCurdy, I. J., Frederick.
†Mason, A. S., Hagerstown.
†Penning, O. P., Baltimore.
*Reik, J. N., Baltimore.
†Riley, W. T., Baltimore.
†Wells, George, Annapolis.
Welsh, Lilian, Baltimore.
†Wagaman, S. M., Hagerstown.
†Woodward, L. K., Westminster.

MASSACHUSETTS.

†Adams, C. W., Cambridge.
†Austin, A. E., Medway.
Averill, J. H., Campello.
*Allen, G. S., Lawrence.
*Andrus, H. V., Boston.
*Atwood, G. M., Haverhill.
*Alexander, T. B., Scituate.
†Bruce, J. A., Everett.
†Butler, G. E., Fall River.
†Buehler, G. V., Boston:
†Brady, F. R., Lowell.
†Brooks, Edith M., Roxbury.
†Bennett, H. P., Lynn.
†Balboni, G. M., Boston.
†Bailey, G. G., Ipswich.
†Breed, N. P., Lynn.
*Bufford, J. H., Dorchester.
*Burleigh, R. F., So. Braintree.
*Blodgett, J. H., Boston.
*Bryant, C. E., Hyde Park.
†Beach, S. J., Boston.
†Brown, Percy, Boston.
†Brigham, C. S., Leominster.
†Barnes, W. L., Lexington.
†Brackett, E. G., Boston.
†Brennan, T. J., Boston.
†Barrill, C. S., Boston.
†Borden, C. R. C., Boston.
†Bowles, G. H., Boston.
†Brainerd, J. B., Boston.
†Bateman, F. E., Somerville.
†Baker, C. M., Hyannis.
†Bosworth, F. D., Jr., Tewksbury.
*Boardman, W. S., Boston.
*Bean, J. W., West Medford.
*Bartlett, W. O., Roxbury.
*Bell, R. E., Lowell.
*Boyle, J. F., Lowell.
†Bullard, J. T., New Bedford.
†Brown, M. M., No. Adams.
*Barstow, H. T., Boston.
*Bryant, L. L., Cambridge.
†Costello, J. H., Dorchester.
†Cushing, A. A., Brookline.
†Cohan, F. H., Leominster.
†Crandell, A. R., Taunton.
†Caffrey, W. F., Westfield.
†Conro, A. C., East Longmeadow.
†Currie, J. Z., Cambridge.
†Carroll, T. F., Boston.
†Coolidge, J. N., Boston.
†Crosby, L. M., Boston.
†Collins, O. W., So. Framingham.
†Callahan, J. T., Woburn.
†Carruth, S. S., Dorchester.
*Crawford, Sarah M., Boston.
*Cushman, G. T., Boston.
*Cronin, M. J., Boston.
*Coburn, Fordyce, Lowell.
*Church, C. A., Millbury.
*Cushman, A. B., So. Dartmouth.
*Chase, H. L., Brookline.
*Cogswell, G. P., Cambridge.
*Cleary, James, Cambridge.
*Carvill, Lizzie M., Somerville.
*Callanan, S. A., Boston.
†Dutcher, W. A., Boston.
†Donoghue, D. F., Holyoke.
†Dana, H. W., Boston.
†Duff, John, Charlestown.
†Drew, Fred, Boston.
†Dexter, F. F., Granby.
*Dwyer, W. J., Cambridge.
*Dow, D. C., Cambridge.
*Dreyfus, Edna W., Brookline.
*Douglass, J. A., Amesbury.
*Davidson, H. D., Springfield.
*Dubois, E. C., Cambridge.
†Elsworth, S. W., Quincy.
†Eastman, T. J., Boston.
†Eaton, W. G., Lowell.
Eagan, J. J., Gloucester.
†England, A. C., Pittsfield.
*Emerson, G. E., Boston.
*Edson, P. O. M., Boston.
†Fischbein, Louis, Boston.
†Farmer, W. F., Holden.
†Fairing, J. W., Granville.
†Freedman, L. M., Boston.
*Ferguson, E. H., Boston.
*Farrington, L. M., Brookline.
*Fernald, C. A., Boston.
†George, A. P., Haverhill.
†Gilpatrick, R. H., Boston.
†Gage, J. A., Lowell.
†Gay, F. W., Malden.
Goodman, Samuel, Boston.
†Gallivan, W. J., So. Boston.
†Galligan, E. T., Boston.
†Gerstein, Maurice, Boston.
†Gilman, C. S., Boston.
†Grimes, Loring, Swampscott.
*Gay, W. F., Boston.
*Glass, James, So. Framingham.
*Goddard, S. W., Brockton.
*Grandison, W. G., Charlestown.
*Graves, W. P., Boston.
*Gage, E. F., Winthrop.
†Heaten, T. H., Cambridge.
†Heffernan, D. A., Boston.
†Harrison, Henry, Boston.
†Hinchliffe, Fred'k, Lowell.
†Howard, J. F., Lawrence.
Hutchinson, W. P., Abington.
†Hodgdon, A. H., Dedham.
*Hayes, F. L., Brookline.
*Hopkinson, George, Boston.
*Hurley, D. B., Boston.
*Harding, W. A., Everett.
†Johnstone, W. J., Boston.
Judkins, F. L., Lynn.
*Jones, G. W., Chelsea.
*Jackson, A. A., Everett.
*Joyce, J. H., Salem.
*Johnson, O. E., Winthrop.
†Kelley, M. J., Watertown.
†Kennedy A. G., Boston.
†Kidner, F. C., Boston.
*Kittredge, Jos., Brookline.
*Kingsbury, W. W., Malden.
*Kelley, J. H., Boston.
*Knight, C. S., Westboro.
*Kelly, W. D., Boston.
†Lowney, J. F., Fall River.
Lewis, E. S., Princeton.
†Legg, A. T., Boston.
†Lockary, J. L., Boston.
†Levins, N. N., Boston.
†Long, M. A., Manchester.
*Lawrence, A. A., Natick.
*Lane, J. W., Boston.
†Middleton, W. J., Quincy.
†McMurray, F. M., Fitchburg.
†Morse, V. H. C., Cambridge.
†McEvoy, G. A., Roxbury.
†Merrlam, F. H., Holbrook.
McKenzie, J. R., Cambridge.
†Macdonald, C. W., Boston.
†Mitchell, Wm., Highlandville.
†Macdonald, W. G., Boston.
†Macdonald, A. A., Boston.
†McMichael, W. B., Boston.
†Morse, F. H., Boston.
*Miller, H. W., Taunton.
*McMann, W. H., Boston.
*Malone, Chas., Jamaica Plains.
*Miller, Vesta D., Needham.
*McKibben, W. W., Worcester.
*Mongan, C. E., Somerville.
*McLennan, Roderick, Quincy.
*McAllister, J. J. H., New Bedford.
*Mendelsohn, Louis, Dorchester.
*Meader, C. E., Lynn.
*Magee, J. A., Lawrence.
*Martln, Miles, Boston.
Marlon, O. H., Boston.
*Mangan, J. J., Lynn.
*McMillan, A. L., Hanover.
*Murphy, F. C., Boston.
*Morse, A. G., Hingham.
*Murphy, T. J., Boston.
*Myers, E. E., Boston.
*McCormick, T. J., Boston.
*Madden, Wm., Boston.
*McCarthy, T. F., E. Boston.
*Nason, O. C. B., Medway.
†Newhall, A. R., Holliston.
*Norris, Albert Lane, Cambridge.
†O'Connor, J. E., Fall River.
†O'Hearn, D. A., Lowell.
†Orton, S. T., Boston.
*Oak, C. A., Revere.
†Phippen, Hardy, Salem.
†Prescott, C. D., New Bedford.
†Pitta, Joas C. da S., New Bedford.
†Pothier, J. C., New Bedford.
Plummer, F. W., Malden.
†Piper, Frank, Boston.
†Peterson, C. S. B., New Bedford.
*Provan, Robert, Boston.
*Plimpton, L. H., Norwood.
*Parker, A. M., Boston.
*Porter, W. T., Boston.
*Parks, J. W., E. Boston.
†Robbins, W. B., Boston.
†Rushford, E. A., Salem.
Round, A. M., Norton.
†Rice, W. H., Boston.
†Rucker, W. C., Vineyard Haven.
†Rockwell, H. G., Amherst.
†Rowe, C. A., Tewksbury.
*Robinson, W. H., Boston.
*Robinson, Samuel, Boston.
*Robbins, Chandler, Boston.
*Richardson, Anna G., Boston.
*Randall, G. M., Boston.
*Rogers, F. A., Everett.
*Roach, A. J., Lowell.
*Rosa, H. A., Fall River.
†Shea, J. J., Beverly.
†Shay, T. M., Boston.
†Stratton, R. R., Melrose.
†Stubbs, F. R., Newton.
Stone, R. E., Beverly.
†Stevens, H. E., Boston.
†Spalding, Roger, Duxbury.
*Smithwick, Marsena P., Boston.
*Shoninger, L. S., Boston.
*Sanborn, G. P., Boston.
*Sever, J. W., Boston.
*Stickney, W. G., Beverly.
*Scales, R. B., Dorchester.
*Sheer, M. I., Chicopee Falls.
*Sawin, C. D., Boston.
*Stevens, Seriah, Boston.
*Stuart, F. W., So. Boston.
*Steele, A. E., Boston.
*Smith, S. B., Haverhill.
†Tallma, A. L., E. Boston.
†Tigh, F., Newburyport.
†Tolman, Henry, Jr., Boston.
†Talbot, F. B., Brookline.
†Towle, H. C., Boston.
*Tobey, G. L., Clinton.
*Trask, J. W., Lynn.
*Tingley, Louisa P., Boston.
*Tibbetts, J. T., Boston.
†Willis, C. A., Waltham.
†Walker, W. Dacre, Peabody.
†Whitcher, B. R., Boston.
†Walsh, J. E., Revere.
†Worthen, C. A., Lynn.
†Wood, H. A., Waltham.
Webber, S. G., West Newton.
Woods, G. L., Springfield.
†Walsh, C. J., Cambridge.
Winslow, F. B., Boston.
†Wilder, R. S., No. Cambridge.
†Watson, F. G., Boston.
†Washburn, G. H., Boston.
†Whitman, L. O., Boston.
Warren, B. S., Boston.
*Whitehill, G. E., Everett.
†Young, R. D., Arlington.
†Young, R. R., Boston.

MICHIGAN.

†Bostwick, W. E., Algonac.
Baruch, J. B., Detroit.
†Barrett, A. M., Ann Arbor.
Babcock, W. L., Detroit.
†Bradley, E. B., Ann Arbor.
†Clark, O. H., Kalamazoo.
Cook, H. H., Detroit.
†Edmunds, C. W., Ann Arbor.
†Forbes, E. B., Detroit.
†Freund, H. A., Ann Arbor.
†Hart, Eugene, Eureka.
Highfield, E. M., Edmore.
*Hubbard, C. D., Parma.
†Kline, G. M., Ann Arbor.
†Kuhn, C. F., Detroit.
†Lyman, W. R., Ann Arbor.
†MacNeal, W. J., Ann Arbor.
†McColl, M., Detroit.
Marshall, Joseph, Durand.
*McVeigh, J. A., Detroit.
†Noble, Kenneth, Milan.
†Presley, W. J., Allendale.
†Panzner, E. J., Detroit.
*Randall, F. H., Bay City.

MINNESOTA.

†Brown, A. H., Pipestone.
†Barrett, E. E., Glencoe.
†Baker, A. C., Fergus Falls.
†Bullen, F. W., Eveleth.
*Boyd, F. P., Northfield.
†Daigneau, F. E., Austin.
†Haynes, B. H., St. James.
†Hart, A. B., Canton.
†Hooslef, J. C., Lanesboro.
†Larsen, C. L., Buffalo.
†Litzenberg, J. C., Minneapolis.
*Lymau, Frank, Duluth.
†McLaughlin, E. M., Winona.
†McCuen, J. A., Duluth.
*Quinby, T. F., Minneapolis.
*Stinchfield, A. W., Rochester.
†Thompson, A., St. James.
†Wilkowske, C. W. Faribault.

MISSISSIPPI.

†Hightower, G. D., Webb.
†Rembert, G. W. F., Jackson.
†Sisler, G. W., Water Valley.
†Towns, S. R., Union Church.

MISSOURI.

Block, Jacob, Kansas City.
†Bradley, T. L., Warrensburg.
Bliss, M. A., St. Louis.
†Clapper, W. L., St. Louis.
*Day, W. E., Clarksville.
†Frick, W. J., Kansas City.
†Guggenheim, L. K., St. Louis.
†Higgins, R. M., Kirkwood.
†Keith, F. L., Flat River.
*Kyger, J. W., Kansas City.
†Matthew, J. C., Springfield.
*Meisenbach, A. H., St. Louis.
†Potter, T. E., St. Joseph.
*Standly, Kathryn V., Brookfield.
*Tupper, P. Y., St. Louis.
†Wyer, H. G., Kirkwood.

MONTANA.

†Kennett, G. H., Missoula.

NEBRASKA.

†Akin, H. L., Omaha.
†Earel, J. W., Wood River.
*Grothan, Georgina, St. Paul.
Gilligan, J. P., O'Neill.
Novak, C. E., Du Bois.
†Smersh, O. G., Dodge.

NEVADA.

†Merkle, A. E., Carson City.
†Smith, R. D., Yerington.

NEW HAMPSHIRE.

Allen, W. A., East Hampstead.
†Allen, Bradford, Nashua.
†Beauclerk, W. P., Concord.
†Butterfield, C. E., Suncook.
†Beaton, A. A., Franklin.
†Bakeman, F. A., Franklin.
Boynton, H. H., Lisbon.
Bancroft, C. P., Concord.
Cloggett, F. P., Newport.
*Cogswell, S. J., West Derry.
†Chesley, H. O., Dover.
Chesley, Alice M. M., Exeter.
*Dearborn, E. G., Keene.
*Fowler, I. N., Lebanon.
†Grafton, F. W., Concord.
*Greeley, G. H., Merrimack.
*Griffin, N. L., Bradford.
†Hawkins, F. L., Meredith.
†Hammond, C. B., Nashua.
Jones, F. W., New Ipswich.
*McGregor, G. W., Littleton.
†Nutter, C. F., Nashua.
Tuttle, Walter, Exeter.
*Woodman, J. B., Franklin.
*Weeks, R. W., Manchester.
†Watson, G. N., Manchester.

NEW JERSEY.

†Barwis, E., Trenton.
†Becket, G. C., East Orange.
†Bloom, D. M., Newark.
*Condict, A. W., Dover.
†Conrad, E. K., Hackensack.
†Dias, J. L., Newark.
†Edwards, S. M., Newark.
†Lane, F. B., East Orange.
†Meacham, E. A., So. Amboy.
*Morse, J. H., Bridgeton.
*Pyle, Immanuel, Jersey City.
†Welshman, G. O., Newark.

NEW YORK.

Andrews, J. A, New York.
†Allen, S. Busby, Riverhead.
Andersou, R. B., Brooklyn.
†Andrews, R. W., Poughkeepsie.
†Alleu, M. May, Rochester.
*Andrews, J. L., New York.
†Burnbam, H. D., New York.
Bliss, F. E., Warsaw.
Barker, J. F., Albany.
†Boynton, P. S., New York.
†Burleson, T. O., Bath.
†Broughton, W. R., New York.
Berg, A. A., New York.
†Bradshaw, L. L., New York.
†Buettner, J. J., Syracuse.
Browne, Valentine, Yonkers.
*Bull, W. T., New York.
*Bassett, M. I., Cooperstown.
*Braman, H. S., Homer.
*Brinkman, G. H., Sidney.
*Bailey, E. P., Oneida.
Bryan, Wm., New York.
Cronk, J. M., Hyde Park.
Cornwall, E. E., Brooklyn.
†Conboy, Philip, Rochester.
†Carroll, T. L., Albany.
†Coleman, Jos., New York.
†Craton, S. B., Syracuse.
†Crispin, A. M., New York.
†Crump, G. A., New York.
†Campbell, W. F., Brooklyn.
†Chace, W. H., Buffalo.
Champlin, Elwin, Griffin Corners.
*Crumb, C. W., Utica.
*Crane, S. Ellis, Syracuse.
*Cochrane, J. E., Valatie.
†Ditman, N. E., New York.
†Dickinson, R. L., Brooklyn.
Dunham, Carroll, Irvington.
Darrach, Wm., New York.
Doubleday, Chas. E., Penn Yan.
*Dennis, B. F., Niagara Falls.
Ewell, E. W., Lancaster.
Edwards, David, East Hampton.
Ellis, C. A., Sherman.
†Elsner, S. L., Rochester.
†Ellis, J. B., Little Falls.
†Fudge, H. W., Elmira.
*MacFarlane, T. J., Brooklyn.
Gardner, W. S., New York.
Gnichtel, A. L., New York.
†Goodsell, W. E., Medina.
†Gage, G. H., Rochester.
†Gant, S. G., New York.
*Glover, J. J., Stuyvesant Falls.
Haas, S. V., New York.
†Hazen, J. L., Brockport.
†Hunter, H. J., Ilion.
†Hallenbeck, O. J., Canandaigua.
*Hoag, D. E., New York City.
†James, W. B., New York.
†Kyle, E. H., Ithaca.
†Kittinger, F. A., Lockport.
†Knapp, Arnold, New York.
†Kenerson, V., Buffalo.
†Kivlin, C. T., Troy.
*Kosmak, G. W., New York.
†Lloyd, Samuel, New York.
†Lyle, H. H., New York.
†La Rocque, J. H., Plattsburgh.
†Lyman, H. C., Sherburne.
†Lilienthal, Howard, New York.
†Lenz, George, Gloversville.
†Lynch, J. M., New York.
†Leary, M. E., Rochester.
*Lack, C. E., Brooklyn.
*Loughran, F. W., New York.
*Lewi, M. J., New York.
†Mac Farlane, R. F., Long Island City.
Meyer, L. B., New York.
Morgan, H. J., New York.
†Murphy, J. P., Brooklyn.
†McCreary, E. R., Watertown.
†Madden, Frank, Plattsburgh.
†Manley, T. F., Norwich.
†McNaughton, George, Brooklyn.
McMarrow, Frank, Syracuse.
†McKeeby, W. C., Syracuse.
†McMullen, C. G., Schenectady.
*Munday, Bert, New York.
*Murphy, C. O., New York.
*MacArthur, Charlotte B., Willard.
†Neuman, L. H., Albany.
Potter, W. W., Buffalo.
Palmiter, L. B., Mt. Upton.
†Pfaff, Otto, Oneida.
†Pearson, L. W., Brooklyn.
†Pike, A. S., Rochester.
†Potter, M. C., Rochester.
†Peck, G. A., New Rochelle.
Page, J. R., New York.
Robertson, J. N., Wolcott.
Rogers, H. C., Brooklyn.
†Reed, J. E., Schenectady.
Scales, Jefferson, Tompkinsville, L. I.
†Smith, D. H., Bath.
†Sheridan, C. A., Oswego.
†Shaw, H. B., New York.
†Shultz, P. David, New York.
†Shields, G. F., New York.
†Scott, F. W., Medina.
†Smith, F. W., Syracuse.
†Sheehey, J. J., Brooklyn.
†Suiter, A. W., Herkimer.
†Smith, Marion R., McGraw.
†Sill, H. D., Cooperstown.
*Stephenson, F. H., Syracuse.
*Schirmer, W. C., Brooklyn.
*Stern, A. A., Rondout.
Twichell, D. C., Saranac Lake.
†Timmerman, C. F., Amsterdam.
†Towsley, W. D., Camden.
†Totman, D. M., Syracuse.
†Teller, H. J., Rome.
†Unger, I. M., Ithaca.
†Van Duyn, E. S., Syracuse.
Wallace, W. L., Syracuse.
†West, J. N., New York.
†Wilson, Benj., Rochester.
†Werfelmann, W. J., Syracuse.
†Wiencke, E. J., Schenectady.
†Weidman, C. E., Marcellus.
†Warren, R. C., Ithaca.
Wiltse, James, Benson Mines.
†Williams, J. R., Rochester.
†Welty, G. W., Brooklyn.
†Wells, E. H., New York.
†Walker, J. B., New York.
*Williamson, Stacy D., Malone.
*Whitney, C. A., New York.
†York, G. D., Newark.

NORTH CAROLINA.

†Crowell, A. J., Charlotte.
*Crowell, W. H., Wilmington.
†Brown, T. E. W., Asheville.
†Merrimon, L. A., Asheville.
*Munroe, J. P., Davidson.
†Reaves, W. P., Greensboro.
*Rankin, W. S., Wake Forest.
†Roberts, Frank, Marshall.
†Sweaney, John, Leaksville.
†Smith, Owen, Asheville.
*Templeton, J. M., Cary.
†Taylor, T. G., Leaksville.

NORTH DAKOTA.

†McDonald, A. L., Grand Forks.
†Arneson, A. O., Park River.
†Taylor, J. D., Minot.

OHIO.

†Andersou, W. V., Toledo.
†Bennitt, C. E., Wauseon.
†Brim, B. B., West Toledo.
†Conarroe, A. W. Y., West Elkton.
†Chaney, H. M., Sardinia.
†Culbertson, N. W., Massillon.
†Counts, W. L., Chillicothe.
†Covington, P. D., Bellefontaine.
†Crowell, W. S., Cleveland.
†De Courcy, W. E., Cincinnati.
*Dunham, Kennon, Cincinnati.
†Ervin, A. O., New Holland.
†Frame, A. B., Piqua.
†Gundrum, W. H., Toledo.
†Gans, D. W., Massillon.
†Glass, J. O., Springfield.
†Hamilton, G. C., Louisville.
†Ickes, E. M., Fremont.
†Johnson, G. C., Liverpool.
†Jones, Grace, Toledo.
†James, W. S., Cleveland.
†McMichael, J. C., Cleveland.
†Murray, J. E., Piqua.
†McGavran, C. W., Columbus.
†Milner, W. L., Cincinnati.
†McKemy, J. W., Dayton.
†Merriam, W. H., Cleveland.
†Parsons, W. T., Cleveland.
†Ryan, Michael, Dayton.
†Seiler, J. H., Akron.
†Solomonson, S. H., Cleveland.
†Sawyer, C. W., Marion.
†Storz, C., Toledo.
†Selby, C. D., Toledo.
†Southwick, P. F., Sandusky.
Scott, A. C., Cleveland.
†Sutton, H. T., Zanesville.
†Tuttle, Vine H., Orwell.
†Wilson, J. W., Van Wert.
†Welch, H. E., Youngstown.
†Wright, J. F., Toledo.
†Zimmermann, J. S., Youngstown.

OKLAHOMA.

†Todd, H. C., Oklahoma City.

PENNSYLVANIA.

*Asdale, Jos. W., Pittsburg.
†Bold, V. J., Philadelphia.
*Bryuer, J. H., Ickesburg.
*Beaver, D. R., Conshohocken.
†Couner, R. E., Hickory.
†Cook, C. B., Pittsburg.
*Corser, J. B., Scranton.
*Cornell, W. S., Philadelphia.
†Durham, J. R., Warren.
*Drawbaugh, J. H., Shiremanstown.
*Duncan, J. L., Pittsburg.
Dixon, S. G., Philadelphia.
†Everhart, J. K., Pittsburg.
*Furbush, C. L., Philadelphia.
†Gregory, W. E., Stroudsburg.
*Gibby, H. B., Pittston.
Gildersleeve, Nathaniel, Philadelphia.
†Hegarty, J. P., Pittsburg.
†Hill, H. K., Philadelphia.
*Hayes, C. H., Pittsburg.
*Hower, H. V., Mifflinville.
†Jones, C. R., Pittsburg.
†Johnston, J. M., Huntingdon.
†Krug, J. A., Philadelphia.
†Kerr, J. P., Pittsburg.
Kaufman, A. S., New Kensington.
Lloyd, R. J., Olyphant.
†McCool, J. L., Marcus Hook.
*Murdoch, F. H., Pittsburg.
*Malaun, M. E., Carbondale.
McConnell, T. E., Parnasus.
†O'Neal, W. H., Gettysburg.
†O'Dea, C. A. Erie.
†Reynolds, J. M. C., Washington.
*Rhodes, F. A., Pittsburg.
†Spahr, C. E., York.
†Swanton, R. V., Pittsburg.
†Shields, W. G., Jr., Philadelphia.
*Shields, S. S., Carbondale.
*Slaymaker, J. M., Philadelphia.
*Taylor, C. F., Philadelphia.
†von Cotzhausen, Louis, Philadelphia.
*Wynn, C. A., Greensburg.

RHODE ISLAND.

†Beau, F. W., Anthony.
†Brown, B. J., Jr., Providence.
*Brazill, F. H., Greenville.
*Barber, J. De Vere, Westerly.
†Corrigan, J. P., Pawtucket.
*Cook, I. S., Georgiaville.
†Coxe, D. B., Riverside.
†Hall, N. R., Warren.
*Haines, G. B., Valley Falls.
*Harvey, E. B., Providence.
*Hammond, Roland, Providence.
*Jones, A. T., Providence.
*Kimball, H. W., Providence.
†King, G. F., Providence.
Mack, J. A., Crompton.
*Munro, W. L., Providence.
†Messinger, H. C., Providence.
*Noyes, R. F., Providence.
*Savage, C. G., Westerly.
†Tefft, B. F., Jr., Anthony.

SOUTH CAROLINA.

Adams, E. C. L., Columbia.
†McKirney, J. E., Granville City.

SOUTH DAKOTA.

†Frost, W. S., Lily.
†Pinard, P. R., Geddes.
†Rider, A. S., Flandreau.

TENNESSEE.

*Cowden, C. N., Fayetteville.
*Crutcher, J. R., Memphis.
†McGhee, J. B., Chattanooga.
*Roberts, D. J., Nashville.

TEXAS.

†Armstrong, E. M., Houston.
Barrett, H. E., Mt. Calm.
†Cabble, T. H., Rusk.
†Duckett, J. D., Houston.
†Day, J. W., Stephenville.
†De Pew, E. V., San Antonio.
†Ferguson, C. D., Silsbee.
†Goeth, R. A., San Antonio.
†Gantt, A. M., Dallas.
†Gray, R. L., Chandler.
†Jones, C. C., Comfort.
†Le Grand, C. W., Hempstead.
†Miller, L. H., Stephenville.
†Mathews, R L., Winchell.
†McGowu, M. W., Yellowpine.
McMullen, W. F., Rockport.
†Rice, C. F., Sanger.
†Talbott, R. D., Ft. Worth.
†Turner, B. H., Cleburne.

†Taylor, W. C., Calvert.
†Welch, T. A., Groesbeck.
†Wallace, Bruce, Houston.
†Yancey, R. S., Dallas.

UTAH.

Joyce, R. S., Ogden.

VERMONT.

*Angell, F. C., Randolph.
*Browne, C. A., Ludlow.
Cheney. A. A., Lyndonville.
*Clough, A. F., Poultney.
Deziel, J. S., Barre.
*Edmunds, G. F., Bristol.
Fish, E. J., So. Royalton.
*Longe, B. D., Newport.
*Morgan, F. C., Felchville.
†Patton, J. R., Fairfield.
†Templeton, P. C. W., Irasburg.
†Valleau, A. J., Wolcott.

VIRGINIA.

†Cannaday, D. P., Floyd.
†Gorman, E. A., Alexandria.
Howe, H. D., Hampton.
†Myers, H. L., Norfolk.
†Miller, J. J., Norfolk.
†Tatum, B. H., Clifton Forge.

WASHINGTON.

†Bales, C. W., Kelso.
†Clough, H. B., Sultan.
†Hamley, E. C., Sprague.

WEST VIRGINIA.

Baker, F. L., Burlington.
*Charter, L. R., West Union.
†Hume, J. T., Hinton.
†Mackin, R. D., Grafton.
†Neill, Wm., Charlestown.
Robertson, H. L., Ward.

WISCONSIN.

†Coumbe, W. R., Blue River.
Dougherty, A. A., Boaz.
†Dickens, W. C., Wausau.
†Farnsworth, C. P., Madison.
†Murdock, H. D., Brodhead.
*Guagi, W. B., Monroe.
†Herb, Isabella C., Oshkosh.
†Murphy, W. T., Waukesha.
†Scheer, G. H., Sheboygan.
†Suiter, F. C., La Crosse.
†Woodard, Adelaide, Ashland.
†Werner, Nels., Barron.

HAWAII.

*Baldwin, W. D., Honolulu.

Marriages

Gerald Shelly, M.D., Mulvane Kan., to Miss Bessie Nessly, June 27.

Hildus A. Nass, M.D., to Miss Mamie Nessa, both of Mabel, Minn., June 14.

Louis P. Felch, M.D., to Carrie L. Innes, M.D., both of Boston, June 21.

N. O. Ramstad, M.D., to Miss Edna Winchester, both of Bismarck, N. D., June 20.

Charles A. Kreutzer, M.D., to Miss Helene Kramer, both of Milwaukee, June 26.

J. Almer Smith, M.D., Exmore, Va., to Miss Lois Fisher, at Baltimore, June 27.

William G. Ross, M.D., Kempton, Ill., to Miss Carrie Hays of Joliet, Ill., June 16.

Clayton T. Ralls, M.D., to Miss Blanche Carter, both of Winfield, Kan., June 14.

George Madison Maxwell, M.D., to Miss Fannie Verge Kurtz, at Birdsboro, Pa.

Elmer Ernest Southard, M.D. to Mabel Austin, M.D., both of Boston, June 25.

John E. Rarick, M.D., Wolcottville, Ind., to Miss Mable Webb of Chicago, recently.

Alden R. Hoover, M.D., Muscatine, Iowa, to Miss Estner Finger of Chicago, June 27.

Halford J. Morlan, M.D., to Miss Percy Eugene Bohrer, both of Ludlow, Ill., June 30.

Frank M. Mulvaney, M.D., to Miss Mary Maud Meyer, both of Marion, Wis., recently.

Glenn W. Stockwell, M.D., Detroit, Mich., to Miss Elizabeth Heron of Toledo, June 18.

Henry F. Mikel, M.D., Columbia, Mo., to Mrs. Eva R. Scott of Fayette, Mo., June 21.

James S. Wilson, M.D., Julian, Neb., to Miss Bessie Lorance of Auburn, Neb., June 15.

Berton J. Branton, M.D., Atwater, Mich., to Miss Alice Brown of Minneapolis, July 11.

Frederick E. Jones, M.D., Boston, to Miss Florence N. Knox, of Brookline, Mass., June 2.

Charles W. Schaubel, M.D., to Miss Marion Fuller Paterson, both of Philadelphia, June 21.

Leslie L. Willoughby, M.D., Alba, Mich., to Miss Margaret Robena of Kilsyth, Ont., June 14.

Robert French Mason, M.D., to Miss Frances Louise Fuller, both of Washington, D. C., June 25.

Albert G. Singewald, M.D., Baltimore, to Miss Jennie Morrison, at Lynchburg, Va., June 20.

John R. Minehart, M.D., to Miss Katherine Violet Cosgrove, both of Philadelphia, June 9.

John Walter Martin, M.D., Colfax, Iowa, to Miss Fannie Lenore Benson of Chicago, June 20.

Charles Edwin Sears, M.D., Wallace, Idaho, to Miss Irma Jeanette Mentz of Chicago, June 11.

William Shrontz, M.D., Martinsburg, Ohio, to Miss Pearl Rouse of Paintersville, Ohio, June 20.

Francis W. McNamara, M.D., Detroit, to Miss Isabelle Hackett of Duluth, Minn., June 20.

Edwin E. Olander, M.D., St. Paul, Minn., to Miss Thekla A. Wahlquist of Minneapolis, June 22.

Walter Hodge Sheldon, M.D., Madison, Wis., to Miss Helen Waite of Portsmouth, Ohio, June 14.

Frederick Edwards Dilley, M.D., to Miss Mary Grace French, both of Cleveland, Ohio, June 12.

Louis Talcott Waldo, M.D., Willard, N. Y., to Miss Claire Howell Forster of Ovid, N. Y., June 18.

Bert E. Thomas, M.D., St. Marys, Ohio, to Miss Harriet Hollingsworth of St. Paris, Ohio, June 19.

Edwin L. Perkins, M.D., Sioux Falls, S. D., to Miss Sena Marie Swenson of Chaska, Minn., June 21.

Charles V. Crane, M.D., Tawas City, Mich., to Miss Catherine Johnson of Portsmouth, Ohio, June 27.

Jay Byington Covert, M.D., Geneva, N. Y., to Miss Magdalene Schumacker of Boston, Pa., June 27.

Edward H. Spitzka, M.D., Philadelphia, to Miss Alice P. Eberspacher of White Plains, N. Y., June 22.

George Knapp Abbott, M.D., Loma Linda, Cal., to Cora May Richards, M.D., of Bethel, Wis., July 5.

Charles Sumner Rockhill, M.D., Cincinnati, Ohio, to Miss Margaret Hackedorn of Toledo, Ohio, June 27.

Walter Lyle Dunning, M.D., Ottumwa, Iowa, to Miss Sarah Madge Pettitt of Oskaloosa, Iowa, June 27.

Frederick Harold Nies, M.D., New York City, to Miss Abby Huntington Ware of Topeka, Kan., June 20.

Thomas McMahon, M.D., Victor, Iowa, to Miss Mabel Waller of Clear Lake, Iowa, at Iowa City, June 13.

H. Fletcher Silver, M.D., Goldsboro, Md., to Miss Anna Louise Alton, at Prince Fredericktown, Md., June 27.

Deaths

Charles Lester Spaulding, M.D. Bellevue Hospital Medical College, New York City, 1898, Harvard University Medical School, Boston, 1899; formerly professor of obstetrics in the Kansas City Medical College, instructor in orthopedic surgery in the University of Kansas School of Medicine; a member of the Boylston Medical Society, Boston; Medical Association of the State of Missouri, and Jackson County (Mo.) Medical Society; a surgeon in the Navy during the Spanish-American War, was instantly killed June 24 by falling three stories through an elevator shaft in the building in which he had his office in Kansas City, aged 37. The Jackson County Medical Society, at a special meeting June 25, adopted appropriate resolutions on the death of Dr. Spaulding, and designated members of the society to act as pallbearers.

Paul R. Brown, M.D. Berkshire Medical College, Pittsfield, Mass., 1867, some-time lecturer on medicine and obstetrics in Cornell University, Ithaca, N. Y., and president of the Tompkins County Medical Society; assistant surgeon U. S. Army, with the rank of first lieutenant from Nov. 10, 1874, to Nov. 10, 1879, when he was promoted to captain and assistant surgeon; made major and surgeon Dec. 3, 1891, and retired on account of disability in line of duty Oct. 1, 1897; a member of the Guthrie District (Okla.) Medical Association, and for several years a resident of Guthrie, died at Phillipsburg, Pa., May 31, aged 59.

John Alexander Tanner, M.D. University of Virginia, Medical Department, Charlottesville, 1875, formerly passed assistant surgeon United States navy, first surgeon of the naval battalion, N. V. M.; a member of the Massachusetts Medical Society, Boston Society for Medical Improvement, Dorchester Medical Club, and twice vice-president of the Norfolk District Medical societies; in the early eighties a professor in the Hospital College of Medicine, Louisville, and lecturer of the Polytechnic Society of that city, died at his home at Dorchester, Mass., June 21, after a short illness, aged 53.

Henry Remsen Tilton, M.D. Assistant Surgeon General U. S. Army, retired, who entered the Army as an assistant surgeon, Aug. 26, 1861, was made captain and assistant surgeon July 28, 1866, brevet major March 13, 1865, major and surgeon June 26, 1876, lieutenant colonel and deputy surgeon general August 12, 1893, was retired by operation of law Feb. 1, 1900, and was made colonel April 23, 1904; who served as surgeon general of the Department of Dakota until his retirement, died at Madison Barracks, N. Y., June 25. He will be buried in the National Cemetery, Arlington.

Joseph Kornitzer, M.D. University of Vienna, 1866, a member of the American Medical Association; in 1848 a private in the revolutionary Hungarian army under Kossuth, and surgeon-in-chief during the Austro-Prussian war of 1866, on duty at a hospital at Kloster-Neuberg; since 1868 a resident of the United States, from 1873 to 1882 in Topeka, Kas., and since that time a practitioner of Socorro, N. M.; for twenty-six years a specialist in tuberculosis, died at his home in Socorro, June 14, after a brief illness, aged 81.

Edward C. Geddings, M.D. University of Berlin, Germany, 1858; said to have been the first American to be graduated from the University of Berlin; major and surgeon in the Confederate service during the Civil War; in 1866 professor of physiology in the Medical Department of the University of Augusta, Ga., and dean of the faculty of that institution until his retirement in 1891; renowned and esteemed as a practitioner and educator, died at his country home near Augusta, June 24, aged 73.

Jeremiah Wesley Rowe, M.D. Jefferson Medical College, Philadelphia, 1871, a veteran of the Civil War, at one time burgess of Woodbury, Pa., and secretary of the Altoona Academy of Medicine and Surgery and of the Blair County Medical Society, died suddenly at his home in Altoona, June 29, from cerebral hemorrhage, aged 59. At a special meeting of the Blair County Medical Society resolutions were adopted regarding the death of Dr. Rowe.

Henry Clay Willison, M.D. New York University, New York City, a resident of Port Townsend, Wash., for 32 years, a member of the constitutional convention in 1889, superintendent of the Stellacoom State Hospital in 1874, for several terms president of the State Medical Association and a member of the State Board of Medical Examination, died at his home in Port Townsend, from nephritis, after a long illness, June 12, aged 60.

Edmund Kovats, M.D. University of Vienna, Austria, 1870, one of the most prominent citizens of Milwaukee, Wis., a member of the Wisconsin Medical Society, and of the German Medical Society, Milwaukee, for many years a member of the staff of the Milwaukee Hospital, died at his home in Milwaukee, June 19, after an illness of two weeks, from pneumonia, aged 60.

William Judkins, M.D. Miami Medical College, Cincinnati, 1873, a member of the American Medical Association, and for many years one of the most prominent physicians of Cincinnati, a member of the Cincinnati Academy of Medicine, the Loyal Legion, and the Sons of the Revolution, died suddenly at his home in Cincinnati, June 23, from cerebral hemorrhage, aged 59.

Leonard T. Cox, M.D. Louisville Medical College, 1886, a member of the American Medical Association; a practitioner at Rosine, Ohio County, Ky., and Beda, until 15 years ago,when he moved to Daviess County and settled in Stanley, and thence moved to Owensboro, in 1898, died at his home in the latter city, June 21, from appendicitis, after an illness of three weeks, aged 63.

Herbert A. Weinsberg, M.D. Marion-Sims-Beaumont Medical School, St. Louis, 1901, of St. Louis, Mo., a member of the American Medical Association, for two years an interne in the City Hospital, St. Louis; one of the most promising young physicians of that city, died in El Paso, Tex., June 23, from tuberculosis, after an illness of three months, aged 27.

George A. Thompson, M.D. New York University, New York City, 1880, of Phoenix, Md., disappeared June 21, near Ashland, Md. His body was recovered in Gunpowder river, June 29, bearing evidence of injuries supposed to have been received from being struck by a train. Dr. Thompson was 55 years old, and served as surgeon during the Spanish-American war.

West Jacobs Swartz, M.D. College of Medicine and Surgery of the University of Minnesota, Minneapolis, 1900, of Forest Lake, Minn., a member of the American Medical Association, and a prominent physician of Washington County, Minn., died at St. Luke's Hospital, St. Paul, June 16, from sarcoma of the right lung, after an illness of three weeks, aged 30.

Walter Keate, M.D. Harvard University Medical School, Boston, 1898, a member of the Salt Lake County Medical Society, and one of the best known physicians of Southern Utah, and a member of the staff of the Latter Day Saints Hospital, Salt Lake City, died from uremia at that institution, April 15, after an illness of six weeks, aged 37.

George J. Chamberlain, M.D. Pennsylvania Medical College, Philadelphia, 1850, said to have been the oldest practitioner of Lackawanna County, Pa., for many years health physician of Dunmore, Pa., died at his home in Dunmore, June 30, from cerebral hemorrhage, after an illness of two weeks, aged 82.

Henry W. Hitzrot, M.D. College of Physicians and Surgeons, Baltimore, 1880, a member of the American Medical Association, and a practitioner of McKeesport, Pa., for many years, died at his country home in Versailles Township, June 23, from heart disease, after an illness of two years, aged 58.

Charles G. Towar, M.D. Detroit College of Medicine, 1899; University of Berlin, Germany, 1903, a member of the American Medical Association, for two years a practitioner of Atlantic City, N. J., and afterward a resident of New York City, died in that city June 30 from sunstroke, aged 31.

Robert W. Hicks, M.D. Kansas City Hospital College of Medicine, 1885, a member of the Kentucky Midland Medical Association, and for several terms a member of the city council of Midway, Ky., died at his home in that city, June 23, from uremia, after a short illness.

Guiseppe Ronga, M.D. University of Naples, Italy, 1873, one of the oldest Italian physicians of Chicago, and founder and editor until 1901 of the *Tribuna*, died at the Presbyterian Hospital in that city, from cerebral hemorrhage, June 20, after a short illness, aged 62.

Thomas H. Bates, M.D. University of Nashville, Medical Department, 1871, for many years a practitioner of Brinkley, Ark., a confederate veteran, died in Cook County Hospital, Chicago, May 23, from nephritis, after an illness of five months, aged 68.

William M. Lively, M.D. Long Island College Hospital, Brooklyn, 1879; a colored physician of Brooklyn, N. Y.; one of the founders of McDonough Hospital, Manhattan, and its treasurer for three years, died suddenly in Allentown, N. J., June 18, aged 58.

Samuel Hunter Jameson, M.D. New York University, New York City, 1856, who is said to have established the first free emergency hospital in New York City, died at his home in New York from senile debility, January 5, after an illness of three months, aged 85.

Herbert J. Van Wagonen, M.D. The University and Bellevue Hospital Medical College, New York City, 1899, of Germantown, N. Y., died at the home of his father in Westernville, N. Y., from Bright's disease, June 15, after a long illness, aged 33.

Samuel Zimmerman Davis, M.D. Charity Hospital Medical College, Cleveland, Ohio, 1868, of Jeromeville, Ohio, died in the Sherick Hospital, Ashland, Ohio, April 25, from cystitis, for which an operation had been performed ten days before, aged 63.

A. H. Clayton, M.D. Hahnemann Medical College, Philadelphia, 1865, a veteran of the Civil War, for twenty-six years a member of the Northampton School Board, died at his home in Richboro, Pa., July 2, from uremia, after a long illness, aged 64.

Charles Carroll Hummell, M.D. Jefferson Medical College, Philadelphia, 1877, for many years a practitioner of Mechanicsburg, a member of the Cumberland County Medical Society, died at his home in that city, June 30, from bronchitis, aged 51.

Robert Craik, M.D. McGill University Medical Department, Montreal, 1854, dean of that institution from 1889 to 1901, who was given the honorary degree of LL.D. by his alma mater in 1895, died at his home in Montreal, June 28, aged 77.

Edward Hoehn, M.D. University of Zurich, Switzerland, 1853, for many years a practitioner of Columbus, Neb., died at the home of his daughter in Danville, Ill., June 29, after a brief illness, aged 76.

Melvin Roscoe Smith, M.D. 1862, an eclectic practitioner of Laurel, Iowa, for many years, died in the hospital at Guthrie Center, Iowa, May 1, from cancer of the liver, after an illness of six months, aged 66.

Julius R. L. Clarkson, M.D. Medical Department of the University of Missouri, St. Louis, 1851, for several years coroner of Randolph County, Mo., died at his home in Moberly, Mo., June 22, aged 76.

Jacob W. Cline, M.D. Miami Medical College, Cincinnati, 1869, for many years a practitioner of Toledo, Ohio, died June 29, at his suburban home near that city, after a long illness, aged 73.

J. Garland Haley, M.D. College of Physicians and Surgeons, Baltimore, 1889, a practitioner of Hinton, W. Va., died at the home of his parents near Frederick's Hall, Va., June 29, aged 38.

John T. Ferguson, M.D. University of Victoria College, Coburg, Ontario, 1872, of Middleville, Mich., died at the Union Benevolent Association Hospital, Grand Rapids, July 2, aged 64.

Isaiah Dever, M.D. Eclectic Medical Institute, Cincinnati, 1860; Starling Medical College, Columbus, 1866; died at his home in Clinton, N. Y., June 24, ten days after a fall, aged 72.

Thomas Francis O'Brien, M.D. Southwestern Homeopathic Medical College, Louisville, 1906, died in Louisville, June 5, from tuberculosis, aged 48, after an illness of three months.

James B. Ford, M.D. New York, 1853, for many years a practitioner of Baltimore, died at the home of his niece in that city, July 1, aged 84, after an illness of five months.

Peter J. Flanagan, M.D. New York University, New York City, 1875, formerly of Holyoke, Mass., died at his home in Hartford, Conn., June 19, after a long illness, aged 54.

James H. Ferrel, M.D. Homeopathic Hospital College, Cleveland, 1885, died at his home in Carey, Ohio, June 19, from heart disease, after an illness of eight weeks, aged 46.

Charles M. Colvin, M.D. Medical College of Ohio, Cincinnati, 1878, of Attica, Ind., died in a sanitarium in Indianapolis, June 26, after an illness of more than a year, aged 52.

Henry H. Kane, M.D. Long Island College Hospital, Brooklyn, 1877, of New York City, died at Saranac Lake, N. Y., June 28, from tuberculosis, after an illness of a year.

John Hazard Henry, M.D. Hahnemann Medical College, Philadelphia, 1851, died at his home in Montgomery, Ala., June 19, after an illness of more than a year, aged 77.

William H. Goodwin, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1870, died at his home in Eldorado, Ark., June 15, from heart disease.

George Cassel, M.D. Medical College of Fort Wayne, Ind., 1881, a retired physician of Hartford City, Ind., died at his home in that city from septicemia, July 2.

Jonathan Flagg, M.D. (Examination, Massachusetts) died at his home in Worcester, May 20, from chronic kidney disease, after an illness of several years, aged 66.

George W. Draper, M.D. Albany (N. Y.) Medical College, 1858, one of the oldest physicians in Syracuse, N. Y., died at his home in that city, June 7, aged 73.

James H. Goddard, M.D. Cincinnati College of Medicine and Surgery, 1866, a pioneer settler of Harvey County, Kan., died at his home in Sedgwick, Kan., June 5.

Thomas J. Yarrow, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1894, of Philadelphia, died at Cape May, N. J., June 27.

Howard H. Hopkins, M.D. University of Maryland School of Medicine, Baltimore, 1869, died from tuberculosis, June 26, at his home in Newmarket, Md., aged 58.

John Franklin Wright, M.D. Medical College of Ohio, Cincinnati, 1850, died at his home in Columbus, Ind., June 16, after an illness of 11 months, aged 75.

Herbert James Liddle, M.D. Long Island College Hospital, Brooklyn, 1896, died at his home in New York City, June 25, after a short illness, aged 32.

John Honsberger, M.D. College of Physicians and Surgeons of Ontario, Toronto, 1896, died from heart disease, in his office at Stayner, Ont., June 16.

David M. Cooper, M.D. Medical Department of the St. Louis University, 1847, of Hemphill, Texas, died near Brookeland, Texas, June 16, aged 83.

Isaac Gay, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1870, died at his home in Berkshire, N. Y., June 17, after a long illness.

John F. Howard, M.D. Medical Department of St. Louis University, 1862, died at his home in Patoka, Ind., June 16, after a long illness, aged 75.

William H. Beck, M.D. Baltimore Medical College, 1906, of Baltimore, was drowned in the Severn River at Annapolis, July 5, aged 23.

Rollin A. Goodell, M.D. Homeopathic College, Cleveland, 1877, died from pneumonia, at his home in Homer, N. Y., July 2, aged 65.

Walter G. MacMahon, M.D. Hahnemann Medical College, Philadelphia, 1884, died at his home in Philadelphia, July 5.

Emmett Hughes, M.D. Queen's University, Toronto, Ontario, died in Ottawa, Ont., July 1, from peritonitis, aged 32.

Wallace E. Clark, M.D. Chicago Homeopathic Medical College, 1881, died in New York City, May 19, aged 47.

Daniel E. Gay, M.D. Louisville Medical College, 1870, of Garfield, Ga., died at Glenn Springs, S. C., June 13.

Margaret Bacon, M.D. Woman's Medical College of Baltimore, 1886, died in that city, July 4, aged 63.

Deaths Abroad.

Fritz Schaudinn, M.D., until recently in charge of the protozoa laboratory of the government public health department in Germany, died June 22, aged 36. He acquired world-wide fame not long ago from his discovery in syphilitic lesions of the *Spirochæta pallida* or *Treponema pallidum* as he preferred to have it called. His untimely death from septic infection follows soon after he had accepted a call to Hamburg to take charge of the parasitologic department of the Institute for Tropical Diseases. The inducements offered him to make the change, as mentioned at the time, were exceptionally flattering. He had been under treatment for a periproctitic abscess since his return from the recent International Medical Congress at Lisbon, where he was hailed with acclaim as the discoverer of the causal agent of syphilis.

A. Josias, M.D., died at Paris recently, aged 51. He was connected with the Bretonneau Hospital and was a member of the council of hygiene for the Seine department and sanitary inspector, and has published a number of works on tuberculosis in children, typhoid fever in the aged, etc., besides collaborating with Robin in his "Traité de Thérapeutique."

P. Ovyssanikoff, M.D., professor of anatomy, histology and embryology at St. Petersburg, and author of numerous and important works on comparative anatomy, etc., died at St. Petersburg, June 11, aged 79.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

JOURNAL OF MORPHOLOGY WANTED.

Dr. C. C. Lipp, St. Anthony Park, Minn., asks where he can obtain the *Journal of Morphology*, Volume 4, 1892, and the Proceedings of the Society for Experimental Biology in Medicine, volumes 1 and 2.

PRIZE HOSPITAL PLAN AWARDED AT ST. LOUIS.

Dr. Fred Belknap, Benton Harbor, Mich., asks for particulars about a prize for the best plan for a small hospital which he thinks was awarded at the St. Louis exposition.

RECIPROCITY WITH OHIO.

To correct the statement made in answer to A. B. C. in The Journal, July 7, 1906, page 52, it should be added that with all the states mentioned, reciprocity is on the basis of an examination.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 7, 1906:

Ruffner, E. L., asst.-surgeon, leave of absence extended two months.

Smart William M., asst.-surgeon, ordered to proceed from Fort Caswell, N. C., to Camp Chickamauga Park, Ga., for temporary duty.

Gray, William W., deputy surgeon general, sick leave of absence further extended one month.

Miller, E. W., asst.-surgeon, ordered to proceed from Fort Clark, Tex., to Fort Sam Houston, Tex., for temporary duty.

Wilson, William H., asst.-surgeon, reports for additional duty at Fort Hamilton, N. Y., in addition to present duties in New York City.

Shimer, Ira A., asst.-surgeon, left Ancon, Canal Zone, on six weeks' leave of absence.

Scott, George H., asst.-surgeon, left from temporary duty at San Francisco, Cal., on ten days' leave of absence.

Ekwurzel, George M., asst.-surgeon, relieved from further duty at U. S. Military Academy, and from temporary duty at Fort Hamilton, N. Y., and ordered to Fort Keogh, Mont., for duty.

Geddings, Edward F., asst.-surgeon, relieved from duty at Fort Keogh, Mont., and ordered to report in person to the commanding general, Department of California, for assignment to duty at the General Hospital, Presidio, San Francisco, Cal.

The advancement from the grade of first lieutenant to that of captain of the following named assistant surgeons, with rank of captain, from June 29, 1906, is announced: Whitmore, Eugene R.; Brownlee, Charles Y.; Murtagh, John A.; Ekwurzel, George M.; Reno, William W.; Buck, Carroll D.; Koerper, Conrad E.; Allen, John H.; Patterson, Robert U.; O'Connor, Roderic P.; Heard, George P.; Noble, Robert E.; Brooke, Roger; Sweazey, Verge E.; DeLaney, Matthew A.; Bloombergh, Horace D.; Devereux, John R.; Halloran, Paul S.; Nelson, Kent; Brechemin, Louis, Jr.; Krebs, Lloyd Le R.; Woodall, William P.; Whitcomb, Clement C.; McAndrew, Patrick H.; Van Poole, Gideon McD.; Gosman, George H. R.; Van Dusen, James W.; De Witt, Wallace; Thornburgh, Robert M.; Grubbs, Robert B.; Shortlidge, Edmund D.; Field, Peter C.; Shaw, Herbert G.

Whinnery, Jean C., dental surgeon, left Fort Casey, Wash., and arrived at Fort Worden, Wash., for duty.

Long, Charles J., dental surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Keogh, Mont., for duty.

Boak, S. Davis, dental surgeon, granted leave of absence for one month

Wolven, F. Homer, dental surgeon, left Fort Warren, Mass. and arrived at Fort Mansfield, R I., for duty.

Ferguson, James B., contract surgeon, left transport *Dix* on leave of absence for three months.

Hereford, John R., contract surgeon, ordered from Fort Moultrie, S. C., to Fort Caswell, N. C., for temporary duty.

Adair, George F., contract surgeon, ordered from Fort Wadsworth, N. Y., to Fort Washington, Md., for duty.

Smith, Rodney D., contract surgeon, relieved from duty at Fort Columbia, Washington, and ordered to duty in the Philippines Division.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 7, 1906:

Rossiter, P. S., asst.-surgeon, ordered to the Naval Academy.

Backus, J. W., asst.-surgeon, ordered to the *Franklin*.

Garrison, P. E., asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Rennie, W. H., asst.-surgeon, ordered to the *Lancaster*.

Ryder, C. E., asst.-surgeon, ordered to the Navy Yard, Boston.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended July 4, 1906:

Oakley, J. H., P. A. surgeon, granted leave of absence for two days, from June 29, 1906.

Lumsden, L. L., P. A. surgeon, relieved from duty at U. S. Revenue Cutter Service Depot, and directed to proceed to Washington, D. C., reporting to the director. Hygienic Laboratory, for temporary duty.

Anderson, John F., P. A. surgeon, directed to proceed to Charlotte, N. C., for special temporary duty, on completion of which to rejoin station in Washington, D. C.

Ramus, C., P. A. surgeon, granted leave of absence for fifteen days, from July 1, 1906.

Stimson, A. M., asst.-surgeon, relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., reporting to the director, Hygienic Laboratory, for temporary duty.

Ashford, F. A., asst.-surgeon, granted leave of absence for seven days, from June 27, 1906, under paragraph 191 of the Regulations.

Stiles, Ch. Wardell, chief, division of zoology, granted leave of absence for three days, from June 25, 1906.

Cleaves, F. H., acting asst.-surgeon, granted leave of absence for fourteen days from July 14, 1906.

Rowles, J. A., acting asst.-surgeon, granted leave of absence for nine days, from July 3, 1906.

Gibson, R. H., pharmacist, relieved from duty at Vineyard Haven, Mass., and directed to proceed to New Orleans, reporting to the medical officer in command for duty and assignment to quarters.

Richardson, S. W., pharmacist, relieved from duty in New Orleans, and directed to proceed to Vineyard Haven, Mass., reporting to the medical officer in command for duty and assignment to quarters.

Morris, G. A., pharmacist, granted leave of absence for thirty days, from August 1, 1906.

APPOINTMENTS.

Dr. Joseph G. Wilson was appointed an acting assistant surgeon for duty at Ellis Island, N. Y.

Dr. J. G. Siffer was appointed an acting assistant surgeon for duty at Port Huron, Mich.

BOARDS CONVENED.

A board of officers was to meet at the Hygienic Laboratory, Washington, D. C., July 2, 1906, for the purpose of making an investigation of the origin and prevalence of typhoid fever in the District of Columbia. Detail for the board: P. A. Surgeon M. J. Rosenau, director of Hygienic Laboratory, chairman; P. A. Surgeon L. L. Lumsden; J. H. Kastle, chief of Division of Chemistry, recorder.

A board of officers was convened to meet at the Bureau, Washington, D. C., Aug. 6, 1906, for the purpose of examining candidates for appointment to the position of assistant surgeon in the service. Detail for the board: Surgeon D. A. Carmichael, chairman; Surgeon L. L. Williams; P. A. Surgeon Joseph Goldberger, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended July 6, 1906:

SMALLPOX—UNITED STATES.

Connecticut: Stamford, June 1-30, 1 case.
Florida: Brevard County, June 23-30, 1 case; Columbia County, 4 cases; Duval County, 3 cases; St. Johns County, 1 case.
Georgia: Sapelo Island, June 29, 1 case.
Louisiana: Shreveport, June 23-30, 2 cases, 1 death.
Massachusetts: New Bedford, June 23-30, 6 cases.
Michigan: Detroit, June 23-30, 1 case.
Nebraska: Omaha, June 8-23, 5 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila (received out of date), April 21-28, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, April 1-30, 159 deaths.
China: Hongkong, May 5-12, 8 cases, 6 deaths.
France: Paris, June 2-16, 13 cases.
Germany: Bremen. June 9-16, 1 case.
Great Britain: Liverpool, June 9-16, 1 case; London, 1 case.
Greece: Athens, June 4-11, 5 deaths.
India: Bombay, May 29-June 5, 7 deaths; Calcutta, May 19-26, 35 deaths; Karachi, May 27-June 3, 16 cases, 6 deaths; Madras, May 26-June 1, 9 deaths; Rangoon, May 19-26, 12 deaths.
Italy: General, June 7-14. 32 cases.
Japan: Yokohama, May 6-20, 2 deaths.
Russia: Moscow, June 2-9, 6 cases, 4 deaths; Odessa, 6 cases, 2 deaths.

YELLOW FEVER.

Honduras: Pimienta, June 13-16, 13 cases.
Mexico: Merida, June 17-23, 17 cases, 7 deaths.

CHOLERA—INSULAR.

Philippine Islands: Provinces, April 21-28, 17 cases, 16 deaths.

CHOLERA—FOREIGN.

India: Bombay, May 29-June 5, 16 deaths; Calcutta, May 19-26, 25 deaths.

PLAGUE—INSULAR.

Philippine Islands: Manila, April 21-28, 1 case, 1 death.

PLAGUE—FOREIGN.

China: Hongkong, May 5-12, 96 cases, 89 deaths.
Egypt: Alexandria, June 8-12, 5 cases, 3 deaths; Keneh, June 9-10, 3 deaths; Port Said, June 8-9, 2 cases, 1 death.
India: Bombay, May 29-June 5, 180 deaths; Calcutta, May 19-26, 43 deaths; Karachi, May 27-June 3, 80 cases, 73 deaths; Rangoon, May 19-26, 39 deaths.
Peru: Lima, May 25-31, 1 case; Paita, 1 case, 1 death; Trujillo, 1 case.

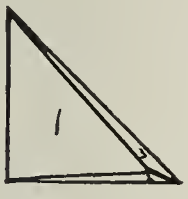
Miscellany

A New Method for Indicating Food Values.

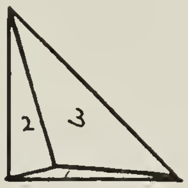
The calculations necessary to determine the calorific value of particular articles of food and to estimate the number of calories consumed by a patient on a mixed diet are a tax on the time of the dietary specialist and extremely perplexing to the ordinary physician. The method usually adopted in these calculations necessitates multiplying the percentage of the different constituents of the food by weight of the food consumed and again by the calorific value of proteids, fats or carbohydrates. Roughly, one may add the percentage of fat to that of solid matter and obtain a figure which, multiplied by four, will give the calorific value. J. H. Kellog has simplified the matter somewhat by devising a table which gives the number of calories produced by the proteids, fats, carbohydrates, and the total solids in a given weight of each food. The patient is supplied with a menu card, on which the weight of each food served at the table, and the calories of proteid, fat and carbohydrate, are printed. All the weighing is done in the kitchen and the patient needs merely to check on his menu the articles eaten. Irving Fisher, in the *American Journal of Physiology*, April 2, 1906, presents a method which effects a still greater saving of labor and enables the proportionate calorific value of the different elements of the food to be graphically presented to the eye. The standard of measurement in this method is such a weight of food as will produce 100 calories. Thus, instead of serving to the patient four or some other number of ounces of milk, he is given 4.9 ounces, or some multiple of this standard, which is the amount of milk necessary to produce 100 calories. Of these 100 calories, 19 will be yielded by the proteids, 52 by fat and 29 by carbohydrates.

The method enables one to appreciate the true relations of proteid and other constituents of the food. A comparison of milk with pecan nuts by the weight percentage method shows milk proteids, 3.3 per cent.; pecan proteids, 11 per cent.; calculated on the amount yielding 100 calories, the relation appears as milk proteids 19 calories, pecan proteid 6. Tables constructed on this plan will be more instructive than those usually given in the dietetic textbooks. The author proposes to publish such tables.

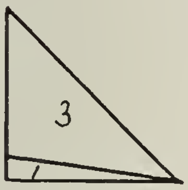
A geometric representation of the calorific proportions of the elements of a food is obtained by representing 100 calories by an isosceles right-angled triangle, which is divided into three other triangles, whose areas are proportionate to the number of calories yielded by the proteids, fats and carbohydrates of the food. The different triangles may be colored, proteids red, fats yellow and carbohydrates green, or distinguished as in the accompanying diagrams, by figures: 1, proteids; 2, fats; 3, carbohydrates. Somewhat elaborate directions are given by Fisher for drawing these triangles. On the principle that the areas of triangles having the same base are proportionate to their altitude, a common point can be found in which the three triangles will meet. This will be situated at distances from the base and perpendicular proportionate to the calorific power of two of the constituents of the food.



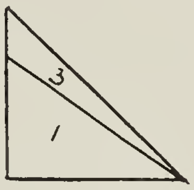
RIPE OLIVES



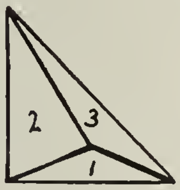
BEETS



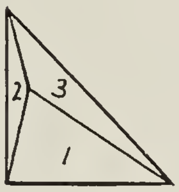
FIGS



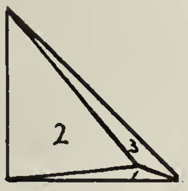
BOUILLION



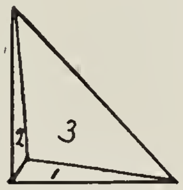
MILK



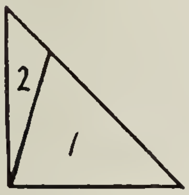
CLAMS



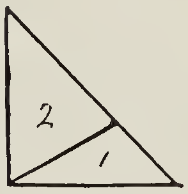
PECANS



WHITE BREAD



CHICKEN



SIRLOIN STEAK

Thus for bread, which produces 13 calories from proteid and 6 from fat, the meeting point of the triangles would be 13 per cent. of the altitude above the base and 6 per cent. of the base from the perpendicular.

When two foods are combined it is necessary to find an average, determined by the proportions of the various elements and the relative amounts of each food used. Thus if bread and chicken be combined in equal portions the relations will be represented in the following table:

Food.	Weight of standard portion.	Proteid.	Fat.	Carbohydrate.
Bread	1.3	13	6	80
Chicken	3.2	79	21	0
Chicken sandwich	2.25	46	14	40

Geometrically, the point of meeting of the triangles is found midway on a line connecting the meeting points of the triangles for each food taken separately. If unequal portions of the two foods are used the new point divides the line joining the points previously determined in an inverse proportion to the amount of each food used. This point is what is called in physics the center of gravity of the previous points, each weighted in proportion to the calories contained in the two ingredients. When three foods are combined the center of gravity of two is first found and this is then combined with the third.

Since the resultant point is the center of gravity, it is evident that it can be obtained by mechanical methods, and the author has devised a mechanical diet indicator, which consists of a card on which the points for various foods can be marked and the center of gravity found by placing at these points pins of a weight representing standard portions or parts of a portion. The card is now placed in a basket suspended on a standard or allowed to assume stable equilibrium, when the center of gravity will be found directly under a pin attached to the standard and which is so arranged that it may be pressed on the card.

This mechanism will be useful in physiologic computations and in sanatoria where it is necessary to determine when a patient has taken a well-balanced diet and in determining whether a menu represents the requisite number of calories with the proper proportion of the various nutritive elements.

The Press and Quack Advertisements in Germany.—An interesting article on this subject in the Berlin *Hygienische Blätter* for April comments on the way in which the press dominates the entire life of the public. It exerts such a powerful influence in all civilized countries that it is rightly called one of the Great Powers. Such authority, however, the article continues, not only confers powers and rights, but it also imposes great and sacred duties. "To the honor of the high-class press be it said that it is well aware of this. Over and over again we can read how the press regards it as its highest duty to watch over the welfare and the progress of the people and to spread enlightment through the broadest strata of society. The press of each political party seeks to perform this exalted duty and does so, frequently at great sacrifice, sometimes with actual and admirable martyrdom. All the more must it arouse our amazement that there is one branch of the public welfare in which a large part of our widespread press fails in its care for the public welfare. Its guardianship of the public welfare is only a sham in this direction. It gives with one hand, but takes back twice and threefold with the other. We refer to the attitude of the press in respect to quackery and nostrums. We can not take up a periodical without finding more or less of these ads., whether it is a daily paper, a magazine or a 'comic'. Even in the strictly scientific sheets we find these cuckoo eggs laid among the other advertisements. These quack ads. are often so shameless and brazen that we can not help sorrowing for the good name of such periodicals which do not blush to spread such fare before their readers." . . . "Quackery stands and falls with advertising. In the suits against charlatans the witnesses almost invariably testify that they were lured by the wonder-promising ads. of the quack." . . . "The vast sums which can thus be enticed from the public are shown by the ease with which a Nardenkotter can accumulate $150,000 in a short time, and the shepherd Ast can buy a property conferring the title of sir knight. The press is directly responsible for this damage to the health and pocket of the public." The writer, H. Koch, adds that he thrashes over this subject again because he is optimistic enough to believe that "the high-class press will in time, of its own accord and without legal compulsion, act in this matter according to the lights of reason and justice and will refuse to accept the brazen ads. of quacks and nostrums, true to the principles of exalted responsibility and readiness to make sacrifices which it already displays in large measure."

The "Magic Word": Organization.—Under the heading "La Magica Parola," E. Villa, in the *Gazzetta degli Ospedali*, May 17, presents an impassioned appeal for organization of the profession. The occasion is the recent sanitary congress at

Rome, which assembled the country practitioners from the remotest corners of the realm, as already described in these columns (page 1456). The most important result of the unique congress was the great advance made toward a realization of the benefits and power of organization of the profession to accomplish results beneficial to all and to the public at large. Physicians now complain, he says, and merely waste their breath in their complaints. When they once solidly band themselves together they can act and can demand that the matters of which they have cause to complain shall be righted. "All the speakers at the congress," he adds, "from Baccelli and Sanarelli down to the humblest and poorest country doctor, seemed to be inspired with the same zeal for organization. Once organized, then . . . *delenda Carthago!*" "Organization—this word of amity and of power—should burst spontaneously from every breast, and in this sign we will conquer." The physicians of Bohemia have completed the organization of a society to afford moral and financial support to members in enforcing their just claims in contract practice. It is modeled on the *Leipziger Verband*, and is called *Die Freie Organisation*. The last *Prager med. Woehft.* urges physicians throughout the country to elect a delegate and subdelegate from each district to confer in regard to desired sanitary regulations, legislation, etc. The appeal concludes with the words: "Away with indolence, away with pessimism, away with fatalism! If self-help is to succeed, every one must take hold and help organize for action along concerted lines. *Kollegen, auf zu Taten*"! Dr. F. Perko of Nuerschan is at the head of the movement. The first meeting was held at Aussig.

Dangers of the Factory.—Industrial diseases, according to the London *Daily Telegraph*, have recently attained a new plane of interest. Having baffled all the efforts of scientists and manufacturers to banish them, they have compelled the British government to deal with them as a necessary evil, and under the workmen's compensation bill, now before the British parliament, employers are rendered pecuniarily liable for injury and death which overtake their employés from these causes. Some statistics which appear in the *Labor Gazette* for April are, therefore, of considerable interest and importance. It is well known that lead poisoning claims more victims than any other of the diseases which threaten the factory hand, but the rare disease of anthrax, which attacked only a tenth of the number of people, was responsible in Great Britain, in 1905, for almost as many deaths. The figures for the past five years show that only one case of lead poisoning in twenty-eight proves fatal; the chances of life to a person attacked by anthrax are no more than three to one. Other forms of poisoning, including phosphorus, mercurial and arsenical, are almost a negligible quantity. The following summary shows concisely the relative danger to the victims of industrial disease:

Year.	Lead Poisoning. Cases.	Lead Poisoning. Deaths.	Other Poisons. Cases.	Other Poisons. Deaths.	Anthrax. Cases.	Anthrax. Deaths.
1901	863	34	34	1	29	10
1902	629	14	14	2	38	9
1903	614	19	13	..	47	12
1904	597	26	9	1	50	10
1905	592	23	12	1	59	18
Average of 5 years	659	23	16	1	47	12

Modern scientific improvements have very materially reduced the danger of lead poisoning, but anthrax, which seems inseparable from the handling of wool, hair and hides, has rather tended to become more serious, and the deaths last year were half as many again as the average for the past five years. Of the 592 cases of lead poisoning in 1905, 90 occurred in white-lead works and 84 in the china and earthenware industry, but the ratio of deaths to cases was highest in the glass-cutting and polishing industry. Much bigger figures are to be found in the records of industrial accidents. Last year 4,375 men died as the result of injuries received in the course of their employment. That total represents 600 more deaths than in 1904 and 121 more than the yearly average since 1901. There was a marked increase of fatalities in the shipping trade, 1,525 seamen losing their lives, as compared with 1,049 in 1904. A seafaring life is the most dangerous which finds a place in the board of trade statistics, as the following table of death rates will show:

	Per 10,000 Employed.
Seamen	58.06
Miners	12.88
Quarrymen	10.73
Railway men	8.01
Non-textile factories	2.23
Textile factories	0.72
Average of all occupations	6.56

It would be interesting, if possible, to compare the above figures for those of the same occupations in the United States.

Why the Death Rate of Norway Is Low.—Marcou (*Archives Gén. de Méd.*, Dec. 5, 1905), states that there are three reasons for the physical welfare and low death rate of the Norwegians: 1. Norway is a collection of village communities without great urban concentrations. 2. It has neither excessive riches nor excessive poverty. 3. It has the best schools in Europe. Its successful management of the alcohol question is merely a corollary to these. With a total population of about 2,500,000, it has only one city of importance, Christiania; the other towns give rather the impression of large villages. Seventy-two per cent. of its population is rural and there is no proletariat such as exists in other European countries. The primary and obligatory school course lasts seven years, and a large place is given in the instruction to hygiene and manual training. It is to this admirable system that alcoholism has been so successfully combated in Norway. In 1847 there were 1,101 wine merchants; in 1900 there were 130. Since 1894 the sale of liquors has been absolutely prohibited in the country districts; only the wholesale trade is free in the towns. Retail sale of liquor is permitted in the towns only by popular vote, women over 25 being permitted to vote, and if permitted the sale is conducted by a commission (Samlag), the profits can not exceed 5 per cent., and are devoted to charities, etc., the idea being to diminish the sale and not to secure revenue as in Russia, where the object is to enrich the state. During his stay in Norway of a month's duration Marcou says he did not see a single drunkard. The Norwegian birth rate is not excessive, 30 to the 1,000, but the mortality is low, 14 to the 1,000 population. In infants under one year the mortality is 104 to the 1,000, as compared with 20 to 23 in France and 35 to 40 in Russia. Hence the population increases. The Norwegians are hearty eaters, but are not vegetarians. Aside from potatoes they use but little vegetable food. They consume immense quantities of salt meats, and their diet is theoretically very unhygienic, but they do not show it. Marcou says that seeing the beautiful old age of the Norwegians who are all their lives absorbing toxins at high pressure made him begin to question the origination of arteriosclerosis from the accumulation of alimentary toxins.

Galvanic Treatment of Habitual Constipation.—M. W. Peyser (*Old Dominion Journal*) employs a short, soft rubber rectal tube in which is placed a metallic conductor, is passed into the rectum, coiling in the ampulla being prevented if possible. The metallic conductor is attached to the positive pole. The tube is connected with the tube of a fountain syringe which contains saline solution. A large pad electrode well moistened with saline solution or thoroughly soaped, is attached to the negative pole. While the solution is flowing, or after the syringe is emptied, the current is turned on and gradually increased in strength till from 15 m.a. to 20 m.a. are passing, or till the patient complains of burning at the negative pole. There should be no sensation from the current at the positive pole. The solution in the bowel acts as one of the terminals, thus spreading the current over a large extent of surface and permitting more current to be used. Similarly, the large pad permits increased amperage. In a varying period of time desire for defecation comes on—sometimes immediately, sometimes not for several hours. Should it come immediately, the patient should be persuaded to endeavor to continue the treatment for a while longer. The number of treatments required varies from six to ten, rarely less than the former or more than the latter. The tolerance of the patient should be the standard as to the quantity of current, some taking 20 m.p even at the first treatment, others never being able to take more than 12 m.p. at any. The time of each treatment should be from fifteen to twenty minutes, seldom more, repeated daily till positive effects are obtained, and then at lengthening intervals till success is assured or failure manifest.

Disinfection by Formaldehyd.—Disinfection by formaldehyd has tended to replace the use of sulphur on account of the greater convenience and especially because of the bleaching effect of sulphur. The methods of formaldehyd disinfection have been somewhat troublesome on account of the difficulty of vaporizing a sufficient amount of the gas from the solution and various lamps, machines, etc., have been devised for facilitating the operation. Stewart of Philadelphia, in *American Medicine*, concludes, after experimenting with various machines, that the simplest way after all is to wet the exposed surfaces with a 20 per cent. solution. This is disagreeable, however, on account of the irritating vapor evolved. When the gas is liberated slowly the penetration has frequently been imperfect so that a better method will be warmly welcomed. According to a bulletin of the Illinois State Board of Health, 1906, a method of using potassium permanganate to accelerate the evolution of the gas was first suggested in 1902-3. It has since been tested thoroughly by the State Board of Health of Maine, and its efficiency demonstrated by bacteriologic tests. These tests have been repeated and the results confirmed by the New Hampshire State Board of Health (*Sanitary Bulletin*, January, 1905), and by the Illinois State Board of Health. (Circular above referred to.) The method is very simple, requiring no apparatus except a tin pail of sufficient capacity, best made with flaring top. It is made with a double bottom with one-quarter-inch air space between the layers of tin, and is entirely covered on the outside with asbestos paper. Instead of this apparatus an ordinary milk pail, set into a pulp or wooden bucket, will answer every purpose. The room is sealed, fine needle-shaped crystals of potassium permanganate (3½ ounces to each 1,000 cubic feet of air space) are placed in the container. Over this salt is poured 40 per cent. solution of formaldehyd (1 pint for every 1,000 cubic feet of air space). The operator should leave the room quickly, as large quantities of gas are at once evolved. The results of laboratory experiments have shown that the gas thus evolved acts more thoroughly on account of its great concentration and kills very resistant micro-organisms, even when concealed under several thicknesses of cloth. The Maine Board of Health recommends 6½ ounces of permanganate and 2 pints of formaldehyd solution for every 1,000 cubic feet. Presence of moisture in the air is essential. The disinfection of the room, the woodwork, furniture and floors with liquid disinfectants (mercury bichlorid 1 to 1,000) is as important in this mode of disinfection as in any other. The method requires the use of common and relatively cheap chemicals so that it is estimated that the disinfection of 1,000 cubic feet costs about 75 cents. Based on this method proprietary preparations are on the market under fanciful names and for which extravagant claims are made, but they are in no way superior to the simple method and their use should be avoided because of the uncertainty as to the amount of gas they will evolve.

Book Notices

Medical Diseases of Infancy and Childhood, with Points on the Anatomy, Physiology and Hygiene Peculiar to the Developing Period. By A. C. Cotton, A.M., M.D., Professor of Pediatrics, Rush Medical College, University of Chicago; Attending Physician for Diseases of Children, Presbyterian Hospital, etc. Cloth. Pp. 670. Price, $3.50. Philadelphia: J. B. Lippincott Co., 1906.

It is impossible to review a book of this size in detail. Parr I is practically a revision of the author's previous published "Lessons on Anatomy, Physiology and Hygiene of Infancy and Childhood," and is very satisfactory indeed. We can commend highly the good judgment shown in the treatment of the much discussed subject of infant feeding. We think the author makes a mistake in recommending spring scales for weighing babies, as the result obtained with them can not be anything but inaccurate. The arrangement of the other parts of the book is unsatisfactory and the terminology bad, diseases and symptoms being badly confused. While it is not difficult to pick out minor defects in this book, as in others, on the whole the text is most satisfactory. The book is full of good sense and sound advice. It is fully up to date in every way. In his preface the author asks the indulgence of the reader for a flavor of dogmatism. We are inclined to think, however, that he is not dogmatic enough, but rather too much inclined to give all the theories on debatable points. The directions for treatment are practical and rational. The illustrations are, on the whole, good. We can not refrain, however, from referring to the spelling of the parts of the fetal circulation in the cut on page 31, hypogastric being called, for example, huncecastric, and umbilicus, umbilious.

Diseases of the Nose and Its Accessory Sinuses. By H. L. Lack, M.D., F.R.C.S., surgeon to the Throat Department of the London Hospital and Lecturer on Diseases of the Throat to Its Medical College, etc. With 124 Illustrations. Cloth. Pp. 399. Price, $8.50 net. New York: Longmans, Green & Co., 1906.

The brevity yet completeness of the descriptions, the simplicity of the style, as well as the choice illustrations, will make this a handy book for reference. References are mostly from English and European authors, little mention being made of American methods and writings. After a chapter dealing with the normal anatomy of the nose, the author gives technic of examination and general treatment, then proceeds to deal with the various disorders of the nose and accessory sinuses. An appendix contains a large number of useful formulas.

State Boards of Registration

COMING EXAMINATIONS.

Nevada State Board of Medical Examiners, Carson City, August 6. Secretary, S. L. Lee, Carson City.

California State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco. (Applications must be in August 4.)

California Announcement.—The next examination of the California Board of Medical Examiners will be held Aug. 21, 1906, but all applications must be filed on or before August 4, at which time all documents will be passed on by the board.

Pennsylvania June Examination.—The annual spring examination of the State Board of Medical Examiners was held in Philadelphia, June 19 to 22. Representatives of nearly every state in the union as well as of a dozen foreign countries were among the 414 persons who took the examination. One of the candidates, an Italian and a graduate of an Italian university, was expelled for "cribbing." It is probable that he will not be allowed the opportunity of another examination. The following questions were asked:

ANATOMY.

1. Describe bone, giving (a) its constituents; (b) stating which constituent increases with old age; (c) what are the periosteum and endosteum; (d) the medulla or marrow, and (e) whether bones receive blood from other vessels than those of the periosteum. 2. Describe the acetabulum, and name the bones that enter into its formation. 3. Give a general description of the parotid gland and its relations. 4. Describe the trachea and bronchi, give their important relations. 5. Describe the pancreas and name the organs and structures with which it is in contact, and give its outlet, blood and nerve supply. 6. Describe the clavicle and mention the various muscles which should be considered in its fracture and dislocation. 7. Describe the internal and external abdominal rings, where located, and name the structures found therein. 8. Bound Scarpa's triangle, and name the structures contained therein. 9. Describe the anterior, external and internal annular ligaments of the ankle joint and name the structures that pass beneath them. 10. Bound the axillary space and name the structures within it.

THERAPEUTICS AND PRACTICE.

1. Name some of the chief alkaloids of opium, and state the thereapeutic differences in the use of opium and morphin. 2. Explain the therapeutic indications for the relief of uremia and outline a method of treatment. 3. Name some of the astringents used in the treatment of diarrhea, and indicate the different kinds of diarrhea in which they are of service. 4. What do you understand by the therapeutic limit of a drug, and what is the therapeutic limit of opium, of digitalis, of strychnin, and of the bromids. 5. Name some of the coal-tar products used as antipyretics and describe their indications and contraindications. 6. Describe the symptoms and treatment of an acute cerebral hemorrhage. 7. State the symptoms of gastric cancer and ulcer, and give an appropriate treatment for each. 8. Define pericarditis, and describe its etiology, symptomatology and treatment. 9. Describe the treatment for vomiting of cerebral origin and that due to acute gastritis. 10. What are the indications for the administration of a cardiac depressant in pneumonia, and when would you use a cardiac stimulant in that disease?

DIAGNOSIS.

1. Differentiate pyemia and septicemia. 2. Differentiate intestinal colic and obstruction of the bowels. 3. Differentiate gastralgia and hepatic colic. 4. Differentiate chronic glaucoma, conjunctivitis and cataract. 5. Differentiate drunkenness and the various forms of unconsciousness.

HYGIENE.

1. How would you prevent malaria? 2. How would you prevent smallpox? 3. Describe a method for the disposal of human excrement, where there is no sewage system. 4. What precautions

should be taken in school rooms to protect the sight of scholars? 5. What fundamental principle is often disregarded for the sake of economy, in heating buildings by the direct hot-water or steam systems?

OBSTETRICS.

1. Aside from criminal procedures, what are some of the most potent causes of abortion and miscarriage, and when do they most frequently occur? 2. Give causes and treatment of adherent placenta. 3. Describe the management of labor in a presentation of the anterior fontanelle. 4. Describe the symptoms, respectively, of ectopic pregnancy and hydrosalpinx. 5. Give causes and treatment of antepartum hemorrhage. 6. Name some of the diseases or conditions which might complicate pregnancy or be mistaken for it. 7. Describe the management of a transverse presentation. 8. What conditions and symptoms would lead you to fear eclampsia, and how would you treat it? 9. Describe the sutures and fontanelles of the fetal cranial vault, representing their diagnostic value in labor. 10 Give conditions calling for the application of forceps, and tell when you would perform version in preference to instrumental delivery.

CHEMISTRY.

1. Differentiate albumin and mucin and give tests for each. 2. If the copper reaction is doubtful in a test for glycosuria, give a positive test. 3. Describe a test for the presence of formaldehyd in a suspected substance, and also state its chemical properties and uses. 4. Detail a method of detecting lactic acid in the presence of hydrochloric acid and state its significance. 5. State how hemoglobin can be recognized and name a test.

MATERIA MEDICA.

1. Give the standard alkaloidal strength of gum opium and powdered opium and state (a) which form is used in official preparations; (b) the color test for morphin; (c) the effect opium exerts on salivary and intestinal glands. 2. State what scopolamin is and describe in detail its use. 3. Give the official terms, the parts used and the active principles of henbane, foxglove, monkshood, deadly night shade and quaker button. 4. Describe the medicinal properties of colchicum and name the official preparations and the doses of each. 5. Properly write a prescription in Latin for twelve powders containing either calomel, Dover's powder, saltpeter, pepsin and sugar of milk.

SURGERY.

1. Name the different procedures for removal of stone from the urinary bladder and describe one operation. 2. Give the clinical history and describe the operation of appendectomy. 3. Describe Pott's fracture and give its treatment. 4. What are the various forms of abdominal hernia and how should they be treated? 5. Give the symptoms and treatment of a penetrating wound of the urinary bladder. 6. Give the symptoms and treatment of a dislocation of the head of the radius. 7. Give the contraindications against the administration of chloroform and of ether for anesthesia. 8. Give the causes of intestinal obstruction and the symptoms and treatment of any one type. 9. State the indications for intravenous saline infusion and give the technic of the procedure. 10. What are the signs or symptoms, respectively, of cerebral concussion and cerebral compression, and the treatment for each.

PHYSIOLOGY.

1. Explain the production of the normal respiratory sounds, describe and classify them, and state when, and at what location of the thorax they are heard. 2. What is accomplished physiologically by the bile? 3. Describe the physiologic conditions which influence intestinal peristalsis. 4. Describe the contractions of the muscles, of the arteries and veins during the passage of the blood from and back to the heart. 5. Enumerate the functions of the cerebellum.

PATHOLOGY.

1. Describe the cardiac changes that occur in mitral stenosis, and explain why and how they are caused. 2. What is jaundice and what conditions are capable of producing this symptom? 3. State the pathologic changes that occur in anyone from pleurisy. 4. Define and describe inflammation. 5. Discuss the morphology of the *Bacillus tuberculosis*, its sources and modes of entry into the human system; its products and the effects on tissues, and avenues by which general systemic infection occurs.

Pennsylvania Homeopathic Medical Examination.—The regular spring examination of the homeopathic medical examining board was held in Philadelphia during the week ending June 23.

North Carolina May Report.—Dr. George W. Pressly, secretary of the Board of Medical Examiners of the State of North Carolina, reports the written examination held at Charlotte, May 23-31, 1906. The number of subjects examined in was 7; total number of questions asked, 67; percentage required to pass, 80. The total number of candidates examined was 128, of whom 87 passed and 41 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Chattanooga Med. Coll.	(1904)	80.7
Jefferson Medical College, (1901) 84.1; (1904) 80.5, 81.8, 89.8; (1905) 93.8; (1906) 81.2, 82.8, 88.5, 90.5, 91.4, 91.7, 93.		
University of North Carolina, (1906) 83.4, 85.1, 85.8, 86.7, 88, 88.5, 89.4, 90.4.		
Georgetown University	(1905)	80.2, 85.4
University of Maryland, (1904) 80.4; (1905) 80, 81; (1906) 80.8, 86.7.		
North Carolina Med. Coll., (1903) 82.2; (1905) 80.1; (1906) 80, 80.1, 80.1, 80.7, 81.1, 81.2, 82.5, 83.8, 83.7, 84.1, 84.4, 84.5, 85.2, 85.7, 88.1, 88.8, 89.1, 90.2, 90.5.		
Woman's Med. Coll. of Pennsylvania. (1900) 84.4;	(1906)	93.4
Knoxville Med. Coll.	(1904)	81
George Washington University (1904) 90.8;	(1906)	83.2
University of Pennsylvania	(1901)	91.4
College of P. and S., Baltimore	(1906)	80.1, 85.1, 86.1, 88.2
University College of Med., Richmond. (1906) 82.7, 85, 85.5, 86.2, 87.2.		
University of Buffalo	(1905)	82.1
University of Virginia (1903) 87.1;	(1905)	80.2
Baltimore Med. Coll. (1903) 80.5; (1904) 80.;	(1906)	80.4
University of the South	(1898)	81.2
Medical College of Virginia	(1906)	80, 82.2
Howard University	(1903)	81
Chattanooga Med. Coll.	(1894)	81.7
Meharry Med. Coll.	(1904)	80.7
Leonard Med. Coll.	(1906)	80, 81.4, 85.1
Vanderbilt University	(1893)	80
Johns Hopkins University (1903) 94.2;	(1904)	90
Kentucky University	(1905)	83.8
College of P. and S., New York (1903) 82.5;	(1904)	88.8
College of P. and S., Atlanta	(1900)	80.2
Columbian University	(1892)	83.4

FAILED.

College.	Year. Grad.	Per Cent.
University of Maryland. (1903) 64.7; (1904) 56.8; (1905) 74.5; (1906) 77.1.		
Trinity University, Toronto, Canada	(1888)	63.4
Leonard Medical College (1905) 59, 66.5;	(1906)	67.2, 72.7
Meharry Med. Coll.	(1902)	56.8
Chattanooga Medical College (1900) 46.5;	(1903)	77.2
Atlanta Med Coll.*	(1898)	57.2
College of P. and S., Atlanta	(1900)	63.4
Tennessee Med. Coll. (1894) 67.1; (1901) 71.8; (1904) 47.1, 48.4; (1905) 75		
Hospital College of Med.	(1904)	43
University of Nashville	(1900)	56.8
George Washington University	(1905)	76.1
Southern Medical College, Atlanta*	(1888)	67.8
North Carolina Med. Coll., (1902) 75; (1905) 60, 72; 73.5; (1906) 74.7, 77.7.		
Maryland Med. Coll.	(1905)	73.1
Med. Coll. of South Carolina	(1906)	74.4
University of Louisville	(1893)	65.2
University of Tennessee	(1905)	62.8
Knoxville Med. Coll.	(1904)	68.7
Kentucky University	(1904)	72.8
University of the South	(1905)	76.7
Medical College of Virginia	(1905)	70.5
College of P. and S. Baltimore	(1905)	65.1
University of North Carolina	(1906)	71.1, 71.2, 74.4

* In 1898 these two colleges merged to become the Atlanta College of Physicians and Surgeons.

The following questions were asked:

ANATOMY.

1. Describe the atlas and name the bones with which it articulates. 2. Describe the ankle joint, name its ligaments (do not describe them) and name the bones which enter into its formation. 3. Locate and describe the mitral (left auriculoventriculo) valve of the heart. 4. Give the relations of the head of the pancreas. 5. Describe the spongy portion of the male urethra (do not give its histology.) 6. Name the nerves which supply the muscles of the eyeball, mentioning the muscle or muscles which each supplies. 7. Describe the Eustachian tube. 8. Give the relations of the third portion of the subclavian artery. 9. Give the relations of the female bladder. 10. Describe the median nerve (do not give its relations) and name the muscles or group of muscles it supplies.

N. B. Answer only eight (8) questions.

OBSTETRICS, GYNECOLOGY AND PEDIATRICS.

1. (a) Describe a normal ovary. (b) Give symptoms of pregnancy at end of second month. 2. Give etiology, prognosis, symptoms and treatment of concealed accidental hemorrhage. 3. Name risks to mother and child in breech presentations. 4. Give origin and distribution of uterine vessels and nerves. 5. Give causes and treatment of menorrhagia and of metrorrhagia. 6. (a) Give diagnosis of cancer of cervix uteri. (b) Give treatment of chronic cystitis. 7. Give written instructions for artificial feeding of an infant one week old. 8. Give symptoms and treatment of rickets. 9. Give location of lesions and symptoms of poliomyelitis.

MATERIA MEDICA AND THERAPEUTICS.

1. State the physiologic action of opium; dose of extract, tincture and camphorated tincture. Mention two most important alkaloids and dose of each. Antidotes in case of poisoning. 2. Give dose of tinctura aconiti; parts used, physiologic action. 3. Dose of caffein; its action on the system. 4. Explain laxative action of magnesii sulphas; oleum ricini; aloe, dose of each. 5. Principal alkaloid of pilocarpus; dose and physiologic action. 6. Physiologic action of acidum carbolicum; dose; chemical antidotes. 7. Explain action of apomorphin hydrochlor; dose. From what is it made. 8. State the effect on the heart of medicinal doses of nitroglycerin; digitalis; and strychnia. 9. Physiologic action of physostigma; dose of tincture; name the principal alkaloid and dose. 10. Physiologic action of oleum terebinthinæ; dose, symptoms of overdose. 11. If there are any reasons why the following prescriptions should not be used state them:

1. Pot. iod.
Spts. etheris nit.
Aquæ.
2. Pot. permang.
Glycerinæ.
Aqua.
3. Morphiæ sulph.
Aq. lauro cerasi.
4. Basham's mist.
Tr. digitalis.
5. Pot. iod.
Acid. nitro-hydrochl.
Tr. cinch. co.
6. Am. chloridum.
Syr. scillæ.

12—1. Am. Carbonat.
Syr. scillæ.
2. Pot. iod.
Coros. subl.
3. Pot. chlorat.
Acid. tannic.
4. Quin. sulph.
Sodii salicyl.
Acid. sulph.
Aqua.
5. Am. chlorid.
Pot. chlorat.
Aqua.
6. Strych. sulph.
Potassii iod.
Syr. sarsap. Co.

Answer any ten questions, No. 1 included.

PHYSIOLOGY AND HYGIENE.

1. What is the capacity of the normal bladder? 2. What portion of gastrointestinal tract accomplishes the greatest amount of absorption? 3. What color is the blood in the pulmonary artery, and why? 4. What is the function of the bronchial artery? 5. Name the forces that keep the blood in circulation. 6. What is a vasomotor nerve? 7. In the event you destroy the gyrus fornicatus, what happens? 8. In the event you divide the anterolateral columns of the spinal cord, what happens? 9. Give location of center of speech. 10. What pathologic bacteria most commonly pollute drinking water.

SURGERY.

1. Give the diagnosis of suppuration. 2. Give the causes of gangrene. 3. Define (a) septic intoxication (b) septicemia (c) pyemia. 4. Give symptoms of internal hemorrhage. 5. Give symptoms and treatment of fracture of middle third of femur. 6. Give symptoms of fracture at base of skull. 7. Give causes of intestinal obstruction. 8. Give symptoms of acute perforating appendicitis. 9. Give symptoms and treatment of ischio-rectal abscess. 10. Give causes of retention of urine.

CHEMISTRY.

1. Define the following terms, viz.: synthesis, equation, valence, dialysis, symbol. 2. Name the colors of the solar spectrum in their order. 3. The physical properties of a chemical element are as follows, viz.: An invisible, colorless, tasteless, odorless gas, heavier than air, s. g. 1.10 (air = 1), slightly soluble in water, 3 per cent. found in natural water; affinities of great power and wide range, combines with every other known element except fluorin and the argon group. What is the element? What is its distribution in nature? 4. Convert the following to grains and ounces: 3 grams, 30 grams, 500 c.c. 5. Give average composition of human and cow's milk. 6. Give composition of chalk stones of gout; of gallstones or biliary calculi. 7. Given a specimen of urine for examination, name ten things you would do, in their order. 8. What salts are insoluble in warmed urine, but are dissolved on addition of acetic acid? 9. About 1 in. of suspected urine is mixed in a test-tube with ½ in. of a saturated solution of picric acid and ½ in. of liquor potassa. On boiling this yellow mixture for one minute a slight deepening of color may occur in normal urine, owing to reduction by uric acid and kreatinin, but a dark mahogany-red color would denote what? 10. Write name of each formula in the following equations:

$$C_2H_5OH \text{ plus } H_2SO_4 = C_2H_5HSO_4 \text{ plus } H_2O$$
$$C_2H_5HSO_4 \text{ plus } C_2H_5OH = H_2SO_4 \text{ plus } (C_2H_5)_2O.$$

PRACTICE OF MEDICINE.

1. Give diagnosis between intestinal colic and localized peritonitis. 2. In chronic dysentery what character of lesions exist and where are they located. 3. Define cerebrospinal meningitis, giving cause of the disease and anatomic lesions. 4. What are the causes of relapses in typhoid fever? 5. What is meant by the term "gray hepatization" in pneumonia? 6. Define chlorosis and write a single prescription for it. 7. Name the cardiac affections in the order of their frequency that complicate acute articular rheumatism. 8. Give medical treatment for acute cystitis. 9. Give treatment for case of pleurisy with effusion. 10. Give briefly medical treatment for a case of chronic interstitial nephritis.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

NICHOLAS SENN, M.D.

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CHICAGO.

Zanzibar, Africa, May 24, 1906.

The east coast of Africa is not often visited by American physicians, and for a knowledge of the diseases which prevail there we must rely almost exclusively on English, and recently on German, literature. We have always looked on tropic Africa as the very embodiment of a disease-producing country, made so by the high temperature which prevails here throughout the entire year, and by the presence of pathogenic parasites found in no other climate to the same extent or at all.

To see and learn something for myself of those parts of Africa which have recently attracted so much attention owing to the opening up of new colonies, possessions and protectorates by different European powers, I decided to extend my trip from Lisbon to Africa, to circumnavigate the continent, and to penetrate into its interior from Beira as far as the Victoria Falls of the Zambesi, thence to go south to Cape Town, and from there homeward by steamer via Southampton. I have the pleasure and comfort on this trip of my friend, Dr. L. L. Seaman of New York, who, like myself, is interested in visiting the hospitals of foreign lands and in studying the diseases of the tropics. I made the calculation that this long trip, with the many stop-over places, would take four months, and here I am in Zanzibar, about half of the distance, in less than one-half of the expected time. I will relate in this communication as briefly as possible the result of my observations so far made on the subjects indicated by this title.

MOMBASA.

Mombasa is a city of 20,000 inhabitants, located on a small coral island of the same name. It is under British protection and has become the gateway to British East Africa by the construction of a railroad connecting the city with Lake Victoria Nyanza, a distance of 600 miles. The great and fertile country of Uganda, which promises much for European settlers and is at present the hunters' paradise, can be reached now by rail in two days. As naturally would be expected, the opening up of such a vast and rich country has resulted in a great boom of real estate in Mombasa, and all along the line of the road. Mombasa has become a little Chicago, and is destined to become, in the near future, the center of vast commercial interests. So far only about 100 white people live here, the great bulk of the population being made up of Swahili, Arabs, Hindus, and representatives of various tribes from the interior. The climate is severe, as Mombasa is only 4 degrees south of the equator. Not many Europeans hold out longer than three years, when they must seek a cooler climate to recuperate, and only too frequently, for complete convalescence from malaria. The natives are extremely lazy, thriftless and indifferent to the advantages offered by attempts to bring them under the influence of civilization.

MOMBASA HOSPITALS.

Nearly all diseases of the tropics can be found here. Mombasa has two hospitals, one for the Europeans and one for the blacks. The former is called Mombasa Hospital, which is in charge of Dr. Goldie, and the latter is the Native Hospital, under the care of Dr. Norman Leys. Both of these physicians are in the employment of the Protectorate Service. As the Europeans are few in number, not exceeding 100, the hospital space required for them is not large. The Mombasa Hospital is beautifully located on a bluff, near the edge, and facing the harbor. It is a handsome two-story building, with wide verandas on two sides on each floor, imparting to it a pleasing and comfortable appearance. Built of rough stone, with cement coating, it is a very attractive building. The interior arrangements of the hospital and the furniture remind one more of living in a private house than in a place for the sick. It has accommodations for only eight patients. At the time of my visit only two of the rooms were occupied, one by a patient suffering from pneumonia, the other by a patient with malaria. Mombasa has no trained nurses.

The Native Hospital, located near the old harbor on the opposite side of the island, has forty beds, or rather cots. The cots are low frameworks of wood, the open spaces spanned over with string cords placed crosswise, on which thin mattresses are placed; neither sheets nor pillows. Only about half of the cots were occupied. The hospital consists of three one-story cottages constructed entirely of corrugated iron, with the exception of the wooden floor. Besides the cots there were only a very few articles of the cheapest and plainest furniture. All indigent blacks are admitted free; those who are better situated pay what they can toward the support of the hospital. The hospital has no special room for operations. The government support is entirely inadequate. Few women seek hospital treatment, and among all of the patients I did not see a single child. The Swahili does not think enough of his babe to send it to the hospital for treatment, and does not like to part with his older children, who amuse him, for any length of time.

In a part of one of the cottages, partitioned off from the rest, I found five or six female patients. In this little ward the patients are left to take care of themselves, rendering each other such services as they can in the way of nursing. A dresser and native helper take care of the male patients. Malaria, ulcers of the legs, and ankylostomiasis formed the bulk of the diseases for which the patients were under treatment. The thymol treatment for the last-mentioned disease is still in vogue here, although it has been shown recently that beta naphthol, in the same dose (half a dram), is more effective and less disagreeable to the patient. Malaria is quite common in the city and surrounding country. The natives are beginning more and more to be affected with pulmonary tuberculosis; on the other hand, tuberculosis of the lymphatic glands, skin, bones and joints has so far spared the blacks. Lepra and elephantiasis are seen occasionally, but are not so common as in the West Indies and South Sea Islands. Beriberi is not very prevalent, but isolated cases find their way into the hospital. Both of the physicians whose names I have mentioned in connection with the two hospitals, have lived in Africa for a number of years, and neither of them has ever seen a case of carcinoma in the blacks. For drinking water the population of Mombasa depends entirely on rain water, as the well water is unfit to drink, and probably on this account typhoid fever has so far spared the city. Keloid is very common, and I saw in the hospital a woman, the subject of small multiple keloids widely diffused over the back and chest, unquestionably caused by the sting of insects.

Syphilis and gonorrhea prevail to a frightful extent, the former pursuing a rather severe course. From the latter the patients recover in a short time, without treatment. Stricture as a remote consequence is occasionally met with, but is by no means common. Black-water fever (neglected cases of malaria) and relapsing fever (caused by sting of a tick found in native huts) are frequently seen. The most fatal of the acute diseases is pneumonia. A patient in the hospital who had recently passed through a typical attack of this disease remains in a very weak condition, and physical examination of the chest reveals dullness over the apex of the same lung, and other physical signs suggestive of acute tuberculosis developing on a pneumonia basis. Dysentery is not a frequent disease, and usually yields promptly to high-seated injections of some mild, safe antiseptic. Constipation is a common ailment, and patients in large numbers seek the dispensary in search of laxatives. Appendicitis among the blacks has never been observed here. Stones in the kidney and bladder and prostatic hypertrophy do not affect the natives.

A dispensary, centrally located, is conducted by Dr. Leys, in connection with the Native Hospital. This is well patronized, as on an average about fifty patients apply daily for treatment. Chronic malaria and ulcers of the leg form a large part of the clinical material. What the government service is in sore need of is a more liberal financial support. The present striking defects are entirely due to inadequate funds. The monthly allowance for the care of the sick does not exceed $60, and that is judiciously expended, but does not meet the most urgent needs. This same evil is only too apparent in most of the British colonies, and protectorates in which the subjects have to depend on the home government for support, and can not receive too soon the serious attention of the authorities who are responsible for it. The colony that does more for the sick and poor than any other is Australia, and it is that country, financially independent of its parent, which makes the best provisions for medical education, far better than Old England herself.

TANGA.

I approached German East Africa with a keen interest and a vivid expectation to satisfy my desire to learn from my own observation what Germany and her men of science were doing for their black subjects in the way of preventive medicine and in the treatment of the sick. In Mombasa we heard nothing of preventive medicine and saw how inadequate were the provisions for the sick. I had reason to expect that in these matters I would find Germany ahead of all other countries who have undertaken to better the conditions of the savages and claim them as their subjects, and in this expectation I was not disappointed. So far as preventive medicine is concerned, Germany leads at home and in her few recently-acquired colonies. Tanga was the first city that I visited on German African soil, and it was there I first became familiar with what German science was doing to prevent and combat the diseases of the tropics.

Tanga, inclusive of the villages in its vicinity, has a total population of 20,000. The population, like that of every city on the east coast of Africa, is a very mixed one, including only about 100 whites, the rest being Swahili, Arabs and Hindus. It has an excellent harbor, and from here the interior of the country is being made accessible by the construction of a railroad, of which about 100 miles has been completed, and is now in operation. The traveler can now reach the beautiful, fertile and healthy Usambara high-mountain plateau by rail. The road will be extended farther into the interior of the country, and will reach other desirable localities for European settlers. The old village of huts was all cut up in making the wide, fine streets, which are the pride of the city. The public buildings of stone and cement, with tile roofs, would do credit to any of the smaller cities in Germany. There are no horses and carriages here; a man trolley line takes their place. The soldiers here, like elsewhere in the colony, are blacks from the Soudan, New Guinea, Somaliland and Zululand, under the command of white officers. They have won for themselves a good reputation for courage and discipline. The business part of the city is dull as compared to its British rival, Mombasa.

TANGA HOSPITALS.

Tanga has only one hospital, the Tanga Government Hospital. It was built and is maintained at the expense of the imperial government. Under the same administration, but on separate parts in the same spacious park-like grounds, are located the magnificent modern hospital for Europeans and three one-story pavilions, or barracks, for negroes. The hospital for Europeans faces the harbor and presents from there an imposing appearance. It is built, like all of the important public buildings, of uncut coral rock, coated inside and outside with a thick cover of cement. The many large windows, white walls, arched verandas and red tile roofs impart to it an appearance of outside architectural beauty and inside comfort. This building was completed three years ago at an expense of $75,000. It has room for twenty patients, much space being taken up by the spacious hallways, dispensary and store rooms. The entire management of the institution is in charge of Professor Ollwig, who at the same time attends to the administrative and medical needs of the native hospital. There are four German Red Cross nurses on duty; two of them take care of the European patients, and two of them are employed in the bacteriologic laboratory of the hospital and in carrying into effect the prophylactic treatment of malaria. The drug room is also in charge of these nurses. Nurses sent here from Germany receive special instruction to prepare them for these special duties. Their term of service is two years. While we were in the laboratory, engaged in scanning slide after slide of blood specimens from different patients and localities, one of these nurses spotted a filaria and her microscopic diagnosis was at once verified by a critical glance of Professor Ollwig. These nurses are a very important aid in ascertaining the existence of, and in locating the tropic diseases in the district to which they belong.

Professor Ollwig, the director of the hospital, has been in East Africa for twelve years. He is a distinguished scientist, who for that length of time has made malaria his special study. He was the right-hand man of Professor Koch in his first expedition to this part of Africa, and he undoubtedly knows more about malaria than the distinguished bacteriologist himself. He has returned to Germany only twice on short vacations during his long residence in this trying climate, and has retained to a remarkable degree his physical strength, mental activity and unremitting enthusiasm in his work. Although he is no surgeon—according to his own statement—he performs all operations in both departments of the hospital. The operating room is all that any surgeon could possibly desire, and is supplied with all necessary instruments and equipment for surgical asepsis. I was astonished to ascertain that none of the hospitals in German East Africa possess a Roentgen apparatus, in face of the fact that more or less fighting is going on every day in the interior of the colony, and that this condition of affairs between the whites and the natives will be kept up for a long time before a general submission to the new rule can be effected. With all other conveniences that the hospital offers for good surgical work, very few operations are performed except in traumatic cases. The natives take anesthetics well, and wounds usually heal promptly, by primary intention.

The cottage hospital for the blacks consists of three one-story pavilions, built of the same material as the principal building. As everywhere else on the coast, the majority of the patients under treatment were affected with malaria, ulcers or ankylostomiasis. These pavilions furnish room for 100 patients, so that the whole capacity of the hospital amounts to 120 beds. In one of the pavilions I found a number of women who had brought their thin little infants at the breast with them; these remain with their mothers as long as they are in the hospital. The nursing is done by native attendants, who have received a little instruction and training in the care of the sick.

When I came to the entrance of the main hospital, accompanied by Professor Ollwig, on whom I had called at his princely residence on the same grounds, a native boy dragged a large beheaded snake, attached to a string, to the very door. The beast was striped and mottled, about four feet in length, with a thick body, and short, abrupt tail. The snake was killed only a few minutes before in the hospital grounds, and the vermicular movements of the body were still going on. The professor, who inspected it, said it was a viper, the most venomous snake of East Africa. Vipers in the grass, anopheles in the air, tsetse flies in the bushes, scorpions and other poisonous insects crawling about, make a visitor who is unused to such carriers of deadly venom and disease-producing microorganisms feel a little chilly, even when exposed to the scalding rays of the tropic sun. The tropics have their attractions, but they are not devoid of lurking sources of danger, of which we, living in a temperate climate, know very little.

(*To be continued.*)

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls. Aug. 29-31.
Am. Academy of Ophthal. and Otolaryn., Detroit. Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.

STATE MEDICAL SOCIETY OF WISCONSIN.

Sixtieth Annual Meeting, held at Milwaukee, June 27-29, 1906.

The society is growing rapidly and proving to be most successful under the régime of its new constitution. Its membership is over 1,450, and the attendance at the meeting was about one-fourth of the membership.

Officers Elected.

The following officers were elected: President, Dr. L. H. Pelton, Waupaca; vice-presidents, Drs. A. J. Burgess, Milwaukee; W. E. Ground, Superior, and W. T. Pinkerton, Prairie du Chien; delegates to the American Medical Association, Dr. W. T. Sarles and Dr. B. M. Caples; alternates, Drs. J. V. R. Lyman and H. V. Würdemann; councilor of the Third District, Dr. F. T. Nye, Beloit; councilor of the Fourth District, Dr. C. A. Armstrong, Boscobel; councilor of the Fifth District, Dr. G. V. Mears, Fond du Lac.

Superior was chosen as the place for holding the next annual meeting.

State Board of Examiners.

Complaint being made that the regular medical profession was not adequately represented on the State Board of Medical Examiners, a committee was appointed to investigate the matter, which presented a report, which the house adopted, as follows:

> Your committee begs leave to report that in their opinion the regular medical profession is not adequately represented on the board of medical examiners, over 2,600 regulars being licensed in the state, as against 200 Homeopaths and 100 each of Eclectics and Osteopaths. We recommend, therefore, that the Committee on Public Policy and Legislation be instructed to investigate the subject, and if thought advisable to introduce a bill seeking to remedy this defect. Inasmuch as both Homeopaths and Eclectics are now admitted on an equal footing as members of the state society, a demand that the board consist of a majority of Regulars should be insisted on.

Drs. A. W. Gray, J. G. Babcock and O. H. Foerster were elected as a Committee on Public Policy and Legislation.

A motion to consider resolutions regarding fees for life insurance examinations was laid on the table, for the reason that the American Medical Association has appointed a committee to consider the matter.

Publication of Proceedings.

The contract of last year with the *Wisconsin Medical Journal* was renewed, and Council instructed to set aside $1.20 from each member's dues for the ensuing year for subscription to this journal.

President's Address.

Dr. J. R. Currens gave a history of the successful fight for good medical legislation in Wisconsin and showed how necessary it is for the medical man to take part in politics on account of medical legislation and the good of the people in general.

Purpura.

Dr. W. H. Neilson, Milwaukee, said that purpura is frequently of infectious origin; that the variations of purpura depend on the intensity of the infection and the condition of the blood.

DISCUSSION.

Dr. G. H. Fellman, Milwaukee, mentioned the marked changes taking place in the blood and stated that the various forms of the disease were really manifestations of the idiosyncrasy of the individual.

Dr. L. Schiller, Milwaukee, thought it very likely that those conditions which arise *de novo* or which are autogenetic or idiopathic, as well as conditions of a rheumatic nature, are due to toxins produced by germs the nature of which we have not as yet discovered, and that other apparent symptoms are the result of this toxic condition and are not in themselves causative factors in the production of this disease.

Apoplexy, Its Diagnosis and Treatment.

Dr. U. O. B. Wingate, Milwaukee, said that vital statistics are incomplete; that more accurate returns by physicians are necessary; that diagnosis of character and location of brain lesion are necessary as a basis for intelligent treatment; chronic endarteritis is the most common cause; suspect syphilitic history in cases between 20 and 45 years of age; the differential diagnosis between hemorrhage and thrombosis and embolism is difficult. The condition of the circulation is the key to the treatment.

DISCUSSION.

Dr. L. H. Pelton, Waupaca, said that it is often difficult to make a positive diagnosis in these cases, as it is, of course, impossible to make an antemortem examination. Compulsory autopsy in cases of sudden death would be desirable.

Surgical Shock.

Dr. James S. Reeve, Appleton, said shock is a nervous deluge; its essential features are profound prostration of the whole body and fall of blood pressure aggravated by inspissation of the blood. Pure shock is treated by stimulating remedies. There should be added in cases of hemorrhage, hypodermoclysis, and in case of pain, anesthetic remedies, the greatest of which is cocain.

Relation of Blood Pressure to Surgery.

Dr. A. H. Levings, Milwaukee, said that, while commendable progress has been made, the prevention and treatment of lowered blood pressure following operations and accidents are only in their infancy. It should be remembered that the lowest blood pressure compatible with life is often beneficial to the patient. Strychnin, morphin, digitalin, adrenalin chlorid and desiccated suprarenal gland are valuable adjuncts in treatment, and in loss of blood pressure due to hemorrhage hypodermoclysis is advisable.

DISCUSSION.

Dr. J. R. Barnett, Neenah, said that where there is danger of vital depression it is well to tie an extremity before anesthetization, thus storing up pure blood which can be released into the circulation, if required.

Dr. Ralph Elmergreen, Milwaukee, stated that in our definition we should eliminate conditions due to pain, anemia of the brain, syncope, etc., which are often confused with shock. The condition of the medulla in shock may be compared to polarization in electricity or crystallization in steel.

Dr. W. E. Ground, Superior, said that we must not class hemorrhagic conditions and resulting collapse with shock. Shock is really due to an exhaustion of the vasomotor centers from countless repeated impressions sent to them by the afferent nerves.

Dr. Herman Reineking, Milwaukee, said that in shock there is such an intense overpowering of the nervous system that it is absolutely unable to carry on its work. A detail of treatment to be emphasized is personal attention, not trusting too much to attendants and nurses.

Dr. F. Shimonek, Milwaukee, deprecated the use of strychnin. Adrenalin is the drug to use in shock or in lowered blood pressure. Normal salt solution should not be used unless there is loss of blood.

Treatment of Sepsis.

Dr. John M. Dodd, Ashland, said that serum therapy will in time be an almost certain means of curing sepsis, but until then we must simply be guided by the light of experience. If we can not attack the germ directly, we must keep the invaded body in the highest state of efficiency. I have little confidence, he said, in medical remedies for sepsis other than to keep the bodily functions properly performed. The first object of treatment is to minimize the blood poisoning and, second, to prevent destruction of tissue and abscess formation. The most appalling infection met with is that of the peritoneum.

Dr. L. G. Nolte, Milwaukee, recommended a dressing composed of a 1 per cent. solution of carbolic acid. He never had a case of dermatitis, necrosis or gangrene follow its use. Carbolic acid, moreover, has the advantages of being an analgesic and keeping the blood from the infected part.

Dr. R. G. Sayle, Milwaukee, recommended letting the infected point alone. Rubbing or palpating a focus of infection may extend the infection and is criminal massage. Rest of the infected part is of paramount importance.

A New Method for Reduction of Fractures of Lower Extremity.

Dr. Chas. H. Lemon, Milwaukee, described the remarkable results attained by the Lemon-Mueller fracture apparatus designed and built in Milwaukee. This apparatus enables the surgeon to make temporary extension, to accurately adjust fragments, and hold them rigidly in position while the plaster cast is applied. The use of this apparatus will absolutely preclude inaccurate apposition of broken parts and overriding of fragments.

Benefits of Modern Therapeutics.

Dr. S. R. Moyer, Monroe, said that the judicious application of preventive medicine accomplishes more than all the painstaking efforts to heal, and this is the main trend of progress in present years. We are living in an area of great therapeutic advancement, instancing serum therapy, fresh air treatment of tuberculosis, the treatment of yellow fever, and organotherapy in general. Proprietary preparations, whether ethical or otherwise, are for the most part absolutely worthless, but the therapeutic effects of modern surgery are extraordinary.

Negligence of Profession in Securing the Establishment of Temporary Detention Quarters for the Alleged Insane.

Dr. J. P. McMahon, Union Grove, said that the alleged insane should not be committed to jails or insane asylums until a careful diagnosis is made, but temporary detention quarters should be established. The law of Wisconsin permits the establishment of such quarters by county boards, but unfortunately is not mandatory. He recommended the appointment of a committee from the society at large to co-operate with county societies in securing necessary quarters throughout the state.

DISCUSSION.

Dr. W. F. Becker, Milwaukee, said that the chief necessity of temporary detention quarters in these cases is to keep the alleged insane out of police stations and lockups.

Dr. Walter Kempster, Milwaukee, stated that the law in Wisconsin, as in many other states, is extremely crude. It is as absurd for a jury of laymen to attempt to determine a man's sanity as it would be for such a jury to attempt to determine whether he had appendicitis or not!

Endometritis.

Dr. J. M. Evans, Evansville, said that endometritis is caused either by infection or disturbed circulation. Diagnosis is usually easy, but prophylaxis is an important factor.

Diagnosis and Treatment of Injuries of the Eye.

Dr. G. E. Seaman, Milwaukee, said that great interest attaches to all injuries of the eye on account of possible loss of vision. A complete history of the case is essential, and prompt and intelligent treatment at the outset is of great importance and is based largely on broad principles of surgery.

Dr. P. H. McGovern, Milwaukee, said that perforating injury in the dangerous zone from the margin of the cornea outward for at least a quarter to a third of an inch is bound to be serious and should be turned over to the specialist at once, as should all serious injuries of the eye.

Pancreatitis.

Dr. John H. Musser, Philadelphia, delivered the annual address in medicine and made a clear statement of the pathology and differential diagnosis of the disease. He said that very little reliance can be placed on the condition of the blood in attempting to differentiate between affections of the gall bladder and pancreatitis. Leucocytosis is more pronounced in acute pancreatitis than in acute inflammations of the biliary passages. The stools are white or slaty and are large in amount in pancreatic disease. The neutral fat is relatively increased, but may occur in other conditions and may not occur in pancreatitis. The presence of nuclei in the feces, determined microscopically, is characteristic of pancreatitis. Take meat fiber, sew it in a little bag, let it pass through the intestinal canal and be recovered from the stool; the meat is then examined for nuclei. In patients who have not pancreatic disease the nuclei are always digested. Excepting the nuclei test, laboratory tests are of little value because of the many qualifying circumstances that must be taken into consideration. With regard to the urine, more stress should be laid on the relative proportions of the ethereal sulphates present than anything else. It is a fair conclusion, then, that for a differential diagnosis of pancreatic affections we must still rely on close clinical observation and a careful study of the history of each case, availing ourselves of the aid (slight as it is) obtained from laboratory findings.

Pneumonia.

Dr. Julius Noer, Stoughton, said that pneumonia is a symptom of an acute infectious disease whose clinical phenomena and pathologic findings are usually quite characteristic. It is probably due to mixed infection or toxemia. Old views are confusing and misleading. Treatment should be symptomatic, not specific.

DISCUSSION.

Dr. W. H. Washburn, Milwaukee, considers pneumonia a general infection. The disease is not caused by the same germ in every case; therefore, antitoxic sera are disappointing. Alcoholic stimulants are not desirable, but actual cardiac stimulants, such as strychnin, are indicated. In cases of delirium we need not hesitate to use a hypodermic of morphin.

Dr. W. H. Neilson, Milwaukee, thought we should have something hard and fast to tie to. He has had good success in the use of full doses of digitalis followed by acetate or citrate of potassium, begun as soon as the presence of the disease is suspected.

Tuberculosis Sanatoria.

Dr. C. A. Harper, Madison, said that state sanatoria should adhere close to the rule to admit only patients suffering from incipient tuberculosis, and should return to their homes 50 to

75 per cent. of the patients cured or on the road to recovery. Advanced cases should be treated in consumptive hospitals. As tuberculosis is essentially a house disease, the house should be eliminated as a factor in the treatment of tubercular patients. The crusade of education can not be checked until the greatest foe of mankind is defeated at every point.

DISCUSSION.

Dr. F. F. **Bowman**, Madison, considered state sanatoria of prime importance in aiding the medical profession in methods of treatment and in instructing the laity, for example. The medical world is a unit on the question and on the methods of fighting this disease.

Dr. C. H. **Stoddard**, Milwaukee, described the tuberculosis movement in Wisconsin and asked for the assistance of the State Medical Society as a body in stimulating the movement and that each member assist in the formation of local anti-tuberculosis leagues.

Dr. G. E. **Seaman**, Milwaukee, mentioned the state institution to be provided at Wales. The medical profession, he said, must lead and bear the burden of the contest. A tuberculosis league will be formed under the sanction and approbation of the State Society.

Pursuant to a motion made by Dr. Stoddard, a committee, consisting of Drs. C. A. Harper, C. H. Stoddard, G. E. Seaman, John M. Beffel and C. E. Coon, was appointed to consider the question of the formation of a tuberculosis league, to report later.

Dr. W. C. F. **Witte**, Milwaukee, discussed the surgical aspect of the disease, and stated that cases due to traumatism, misplaced abdominal organs, disease extending from neighboring organs, especially the appendix, gall bladder and pelvis, are surgical.

Nervous and Mental Diseases in General Practice.

Dr. Richard **Dewey**, Wauwatosa, said the lack of instruction in these diseases in medical colleges is lamentable. There is a tendency on the part of the general practitioner to adopt inappropriate measures of treatment in psychopathic cases, using sedatives and narcotics too freely; sending patients away for travel who are in no condition to benefit by this measure; advising patients that there is nothing the matter with them; or that it is all "imagination;" also that the disagreeable symptoms will soon "wear off," and no special treatment is necessary. The writer dwelt on the powerful influence of the mind over the body, both for good and ill, and the necessity for reckoning with this agency in measures taken.

DISCUSSION.

Dr. W. F. **Becker**, Milwaukee, believes that mild cases of neurasthenia and melancholia are better treated in private practice than in institutions, and in such cases bed treatment is often the best. Cerebral palsies in children, if treated by the neurologist and the orthopedist in conjunction, frequently show excellent results. Because a person is insane is no reason why, *ipso facto*, he should be sent to an insane asylum or sanitarium. Paranoiac patients are often a source of absolute danger to the neurologist.

Static Disorders of the Feet.

Dr. H. E. **Dearholt**, Milwaukee, discussed all possible errors in weight bearing not primarily due to congenital or acquired faulty structure. Modern civilization is to blame for these conditions. The regulations of the army and various gymnastic regulations are entirely wrong in the position demanded of the feet in activity. Misguided directions are given children to turn their toes outward in standing and walking, and feet that would have grown into strong active members become disposed to future disorder. The treatment of static foot disorders is as specific as the treatment of syphilis or malaria. We are given a definite mechanical disorder which is to be met only by the rational application of mechanical measures. The result of ideal treatment is the complete restoration of the foot structurally and functionally; foot gymnastics are important; massage is of value; supports and rests may be useful.

Surgery of the Nasopharyngeal Structures.

Dr. M. **Iversen**, Stoughton, said that cutting operations are of great importance in securing free ventilation of the nose and pharynx. It is advisable to seal the cut tissues with trichloracetic acid albumin film. Free ventilation is of service for the relief of chronic deafness of a catarrhal nature if the structures are not degenerated or atrophied.

DISCUSSION.

Dr. H. V. **Würdemann**, Milwaukee, advised complete removal of adenoids and of faucial tonsils if the obstruction affects the general health, but to save as much of the turbinal body as possible when turbinotomy is done.

Dr. Herman **Stolte**, Milwaukee, finds that the restoration of the normal air passage by removal of adenoids, etc., effects a lasting cure in children. The operation of turbinectomy is greatly abused. Save as much of the turbinated bodies as possible.

Dr. G. E. **Seaman**, Milwaukee, warned against the use of the Carmal-Jones spoke-shave, which has been abandoned even by its inventor.

Obstetric Responsibility During Gestation.

Dr. W. F. **McCabe**, Beloit, said that the attending physician should give ample time to each case and should be well paid for doing so. He advised that examination of the urine should be made frequently.

Dr. Julius **Noer**, Stoughton, said that, confinement being a physiologic process, the laity fail to see the great importance of careful medical attention. Attention to metabolism is especially important. Lying-in hospitals are far preferable to homes for these cases.

Dr. H. **Sylvester**, Milwaukee, urged to keep pregnant women in pleasant surroundings, largely in the open air. Women themselves are the objecting factor to lying-in hospitals.

Medical Aspects of Exophthalmic Goiter.

Dr. W. H. **Washburn**, Milwaukee, said that the clinical features of exophthalmic goiter are not due to the same anatomic lesions in all cases, and in some no lesions other than hypertrophy of the thyroid can be found, and this hypertrophy of the thyroid is to be regarded as a consequence of the disease rather than as being the disease itself. We have no present means of determining in a given case what, if any, anatomic lesions exist. From these facts it follows that treatment in each case must be tentative. Many cases recover permanently and these are most likely of toxemic origin. Where sympathetic nerve or parathyroid lesions exist, surgery doubtless holds out the only hope of relief.

Surgical Treatment of Goiter.

Dr. H. A. **Sifton**, Milwaukee, said that the etiology, pathology and treatment of goiter are far from being settled. Of all surgical procedures thyroidectomy has afforded most relief in goiter. The administration of the anesthetic is an important question and may be fraught with danger; but he has never seen a case which demanded a local anesthetic where general anesthesia was contraindicated. Cocain should not be used; ether is just as safe. Thyroidism is an unfortunate postoperative complication. Good results from medicinal treatment can be expected in the hypertrophies only. When such treatment fails, surgery should be resorted to. All asymmetrical enlargements of the thyroid in persons over 30 should be removed. If thyroidectomy is done early the best results are achieved.

Basal Principles of Oral, Nasal and Facial Deformities.

Dr. George V. I. **Brown**, Milwaukee, presented considerations of prenatal and postnatal conditions that have an influence in the development of deformities. Stereopticon views were shown of sections of human embryo heads and pictures of faces of infants, children and adults, showing nasal or oral defects of varying degrees before and after operative correction.

Clinical Aspect of Stomach Surgery.

Dr. A. J. Ochsner, Chicago, delivered the annual address in surgery. He gave a review of the anatomy of the stomach. In this portion of the body as well as in every other, there is a natural tendency to repair. A diseased stomach which has recovered without surgical interference is very much better than a stomach which has been operated on. Hygienic measures are of the highest importance. If normal conditions can be otherwise restored, do not operate. From a surgical point of view, aside from malignant disease, we have most frequently to deal with obstruction. Dr. Ochsner reviewed the various forms of obstruction and indications for operation, viz.: (a) Extreme dilatation with decomposition of residual stomach contents; (b) starvation; (c) threatened perforation; (d) adhesions increasing obstruction; (e) incipient carcinoma. *X*-ray, blood and urinary examinations are of but slight diagnostic importance; but in carcinoma and ulcer blood will be found in the feces. It is easy to differentiate between gallstones and stomach disease. Duodenal ulcer can also be readily distinguished. We must look on the stomach as a machine, and must try to restore that machine to as nearly normal working condition as possible.

Tuberculosis League.

The Committee on the Organization of a State Tuberculosis League reported in favor of the organization of such league and recommended that a committee be appointed, to consist of one member of this society from each councilor district, to further the work in the several districts, and that also a special committee of five be appointed for the incorporation of a state association for the study and prevention of tuberculosis. This report was adopted.

AMERICAL SURGICAL ASSOCIATION.

Annual Meeting, held at Cleveland, Ohio, May 30-June 1, 1906.

(Concluded from page 67.)

Hyperplastic Tuberculosis of the Intestines and Peritoneum.

Dr. Charles B. Nancrede, Ann Arbor, Mich., said that treatment resolves itself into excision of the affected portion of the bowel. Doubtless fresh air, sunshine, tonics and the ordinary measures addressed to the treatment of tuberculosis located elsewhere may serve as roborants and increase the peritoneal tissue resistance, as well as that of other parts, but no direct benefit can be expected, as is the case in certain instances of ordinary tubercular peritonitis. He reported one case.

Review of 1,500 Operations on the Gall Bladder and Bile Passages.

Dr. William J. Mayo, Rochester, Minn., said the mortality in 1,500 operations was 4.4 per cent. In the last series of 500 cases it was 3.2 per cent. Every patient dying in the hospital, without regard to time or cause of death, is counted as an operative mortality. Of operations for uncomplicated gallstone disease, the mortality, one-third of 1 per cent., was due to accidental causes. Complications the result of delay caused more than nine-tenths of the death rate; 95 per cent. of all complications occur in patients who have had marked evidences of gallstone disease and ample period of good health for safe operation. Of 845 cholecystostomies, the mortality was 2.13 per cent. In the last series of 500 cases it was 1.47 per cent. Of 319 cholecystectomies, the mortality was 3.13 per cent. In the last series of 500 it was 1.62 per cent. The operation is indicated in all cases in which the gallbladder has lost its function, especially in cystic duct obstructions and for malignant disease. It is a slightly more serious operation than cholecystectomy, but has a growing field of usefulness in all cases in which the gallbladder is involved.

Common duct operations, 207 cases. Group 1, consisting of those cases having gallstones in the common duct, operated during the quiescent period; jaundice and infection moderate; 105 cases; 3 deaths; 2.9 per cent. Group 2, 61 cases; 10 deaths; 16 per cent; in which there was active infection, involving the ducts of the liver, and jaundice; patients suffered from Charcot's fever (fever and ague type); obstruction was severe, but not continuously complete. Group 3, 29 cases; 10 deaths; 34 per cent.; complete obstruction of common duct, in which no bile passes into the intestinal canal; elimination taking place by means of the kidneys and skin. Group 4, malignant disease; 12 cases; 4 deaths; 33 1-3 per cent.; gallstones present in nearly all. Pancreas involved in 86 of the 1,500 cases; 4 acute, with 2 deaths; 6 subacute, with 1 death; 9 cancer, with 5 deaths; 67 chronic, without marked effect on the mortality.

Serumtherapy of Tetanus.

Dr. C. A. Porter, Boston, Mass., recommended the following: (1) Immediate intravenous and subcutaneous injections to neutralize the circulating toxin. (2) Immunizing or neutralizing injections at the highest level which the severity of the symptoms appears to justify; directly into the cord, as advocated by Rogers, or into the higher motor nerves, such as the hypoglossal and spinal accessory. (3) Peripheral intraneural injections as near to the cord as possible; where amputation is indicated or allowed there is positive experimental evidence that nerve section will isolate the toxins in the limb. (4) Lymphatic absorption will be diminished by the application of Bier's principle of passive hyperemia, or by circumcision of the limb. (5) Parenchymatous injections, especially into the muscles, may be of distinct value in addition to subcutaneous and intravenous injections. (6) If possible, the local focus should be thoroughly eradicated. (7) We have no right to neglect symptomatic treatment. (8) When once the disease has progressed beyond a certain stage, animal experimentation gives no ground for hope that any treatment whatever can be successful.

Treatment of Tetanus by Magnesium Sulphate.

Dr. Joseph A. Blake, New York, said that from his experience in human tetanus intraspinal injections relieve spasm, so it must be inferred that they produce a block of nerve impulses by direct action on the nerve trunks. So far its employment in human tetanus has not been attended by uniform results. This may be due to different degrees of susceptibility on the part of the patient, and partly by variation in technic or lack of experience in the use of magnesium sulphate on the part of the medical attendant. So far as he could ascertain, only four cases of tetanus have been treated with magnesium sulphate. Of this number only one recovered, and this was his own case. His case was one of acute tetanus in a boy of 15. The injections controlled the convulsions in this patient for periods varying from twenty-nine to thirty-seven hours each. His impression of this drug is that it is reasonably safe and offers a means of modifying the convulsions and relieving pain in a way no other drug has approached. For those reasons alone it is worthy of a more extended trial.

Present Status of Serotherapy of Surgical Affections.

Dr. Charles A. Powers, Denver, stated that while there are a vast number of contributions to this subject, very few of them bear the test of rigorous analysis. The majority consist of scattered cases of recovery from sepsis, a serum having been employed. Scientific details are lacking. Scientific requirements should be fulfilled as far as possible. It should be shown in individual cases that a correct diagnosis has been made and that the infection is a pure one. The mere fact that a patient recovers is not sufficient for a demonstration. Given the special symptoms produced by a certain germ, it should be shown that the serum, shortly after its administration, favorably modified these symptoms so far as the latter could have been due directly to the specific toxemia or bacterio-toxemia of the disease. But few articles reach this standard, and analysis of these shows that at present serotherapy is valueless in sepsis other than that due to tetanus. Antistreptococcic serum has failed to gain a place in surgery. The serotherapy of tetanus has a place, but its exact value is as yet unknown. It seems probable that while it fails to cure severe and advanced cases it has effect in early and mild cases. As a prophylactic measure it seems to have achieved a standing, yet many fatal cases develop, despite its early use. Further, it is never possible without bacteriologic proof to say that tetanus would have developed in the cases in which serum is used as a prophylactic.

Traumatic Gastric and Duodenal Ulcer Due to Trauma.

DR. A. F. JONAS, Omaha, said the progress of cases of extensive contusions that occur after severe blows to the stomach and intestines is rapid; death occurs early unless prompt surgical aid is brought to bear. It is difficult to judge correctly in cases where the injury has produced a contusion or laceration of a part of the gastric parietes, as, for instance, mucosa, or where a hematoma has developed between the coats of the gastric wall, i. e., between the mucosa and muscularis.

Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of Pylorus.

DR. ARCHIBALD MACLAREN, St. Paul, Minn., said the question how we may distinguish between medical and surgical gastric ulcer is of the greatest importance to the medical world to-day. It is known that some ulcers cure themselves and that many give no symptoms. He agrees with Shattuck that there are only two conditions in gastric ulcer which demand operation: (1) Perforation; (2) obstruction. In perforation due to an acute ulcer, if the opening can be closed, the wound sponged or irrigated, a large-sized suprapubic drain put in soon after operation, a large percentage will recover with the aid of Fowler's position. In obstruction cases the condition is mechanical and demands mechanical relief. One other class should be added to this list, i. e., relapsing gastric ulcer; the ordinary medical treatment is useless in these cases; proper medical treatment is putting the patient to bed, taking away all food by mouth for some days, supplying water and nourishment by rectum. Gastroenterostomy is the most popular; posterior no-loop operation, last described by Mayo, is the best operation. The anterior long-loop operation is followed by a relapse, due to dragging of loop on the anterior suture line, producing contraction of the opening. The Roux is not necessary, and is more dangerous because of the two intestinal openings and two lines of suture.

Early Operations for Cerebral Hemorrhages of Childhood.

DR. CHARLES H. FRAZIER, Philadelphia, said that in order to put on a rational basis the surgical treatment of epilepsy greater discrimination must be made in the selection of cases. No opportunity should be lost in operations on epileptic subjects to observe as closely as possible the existing pathologic conditions. A more intimate knowledge of the pathology of the disease is necessary for the establishment of a basis on which to determine the propriety of operative intervention and the character of the same. Epilepsy develops sooner or later in from 30 to 50 per cent. of cases of infantile hemiplegia. In many of these the lesion has been proven by autopsies to have been a hemorrhage, and in children the hemorrhage is often either on or near the cortex rather than intracerebral, as in adults. The tendency toward secondary degenerative changes, such as atrophy and softening, the greater disposition in epileptic subjects toward mental defects, especially idiocy, and the otherwise hopeless nature of the disease constitute the principal arguments for surgical intervention.

Pulsating Exophthalmos; Ligature of Common Carotid, External Carotid and Superior Thyroid Arteries.

DR. JOSEPH RANSOHOFF, Cincinnati, presented a case of this nature. The patient was 21 years of age, and after an injury to the temple had paralysis of the outer rectus and a pulsating exophthalmos. The pulsating exophthalmos did not come on until about four weeks after the injury was sustained. It is not known how long the paralysis of the abducens had continued. There was intense chemosis of the ocular conjunctiva, which threatened to produce ulceration of the cornea. There was no pain, but great pain produced by the ringing and buzzing noises in the head. The case was treated by tying the common carotid, external carotid and superior thyroid arteries. This extensive operation was done through one incision and was made in order to prevent, as far as possible, the establishment of an anastomotic circulation too early. Three months after the operation the patient continued well, without return of pulse in the facial or temporal artery. The abducens paralysis persisted.

The essayist collected twenty-one recent cases, in which the tying of the common carotid artery resulted in fourteen cures. In five the cures were partial or there was a recurrence. Death followed the operation in only one instance.

The following papers were also read: "Surgical Treatment of Epispadia and Ectopy of the Bladder," by Dr. F. Trendelenburg of Leipzig, Germany; "Inflammations About and Displacements of the Sigmoid," by Dr. Arthur T. Cabot of Boston; "Technic of Ablation of Hemorrhoids," by Dr. Lewis S. Pilcher of Brooklyn, N. Y.; "Radical Cure of Femoral Hernia," by Dr. William B. Coley of New York; "Aspiration of the Thorax in Alleviation and Cure of Empyemic Cavity," by Dr. Joseph D. Bryant of New York; "Excision of the Scapula for Malignant New Growths," by Dr. Frank J. Lutz of St. Louis, Mo.; "Histological Basis and Limitations of Surgery of the Spinal Cord Based on Experiments, Clinical Experience and Histological Research," by Dr. J. B. Murphy of Chicago; "Tetanus and Its Serum-Therapy," by Dr. Nathan Jacobson of Syracuse and Dr. Henry D. Pease of Albany; "Medico-Military Notes in Manchuria," by Dr. J. Van R. Hoff, U. S. A.

Officers Elected.

The following officers were elected: President, Dr. Dudley P. Allen, of Cleveland, Ohio; vice-presidents, Dr. Thomas W. Huntington, of San Francisco, Cal., and Dr. A. F. Jonas, of Omaha, Neb.; secretary, Dr. Robert G. Le Conte, of Philadelphia, Pa.; recorder, Dr. Richard H. Harte, of Philadelphia; treasurer, Dr. Charles A. Powers, of Denver, Colo.

Place of next meeting, Washington, D. C., in conjunction with the Congress of Physicians and Surgeons, 1907.

AMERICAN PHARMACEUTICAL ASSOCIATION.

PHILADELPHIA BRANCH.

Meeting held May 28, 1906.

Prof. HENRY KRAEMER in the Chair.

Limitations to Self-Medication.

DR. THOMAS R. NEILSON stated that the question of the right of an individual, not a physician, to prescribe for himself touched largely on the question of individual freedom, but that it must be governed by common sense and the public welfare. He believes the greatest question to be one of diagnosis, and that good would often result if the patient knew what he was treating himself for. He considered the subject under (a) asking for and receiving the drug one's self, and (b) telling the apothecary, "I have such and such a thing; what is good for it?" The latter he termed as strictly counter-prescribing, and the individual often suffers seriously because of the erroneous idea of his condition. He referred particularly to cases of infected wounds, venereal disease and even appendicitis, in which individuals have been treated in this manner. He referred at length to the treatment of gonorrhea, etc., by this method, and stated that these diseases are often considered by the patient as trivial, which, together with his desire to keep the matter secret, causes him to seek the druggist. He emphasized the necessity for proper treatment in order to prevent the more serious results, not only for the person suffering, but for future generations as well.

DR. W. M. L. COPLIN considered the subject of counter-prescribing by (1) those individuals who failed to pass the state examination or failed to register; (2) individuals who passed the state examination, but failed to register; (3) prescription druggists. He considered these conditions as constituting (a) a fraud on the individual, and (b) a detriment to the public health, and referred as an instance of this fraud to certain shoes with electric soles, etc., which had been sold in New York at fabulous prices. He then took up the question of communicable diseases generally, and on their treatment, either by men not competent to make a diagnosis or by counter-prescribing. He reported three cases illustrative of the danger of contagious diseases treated in this manner. He referred to the danger of allowing cases of specific disease to remain untreated or of treating them either by self-medication or by counter prescription, as both this condition and the secondary complications, if allowed to remain unattended to, will develop more serious conditions. He also called attention to the fact that many of the disinfectants are not of a proper strength and character, and stated that not only should the disinfectants be properly selected, but they should be applied by a man competent and willing to do the work.

DR. H. C. WOOD, JR., felt that it is, perhaps, justifiable for the druggist to prescribe for some slight ailment, such as constipation, slight sore throat, etc., where the diagnosis is known or readily established, but not where there is any doubt as to the diagnosis, and that such methods should be avoided in the more serious conditions or where the diagnosis is not easily established.

Dr. Charles H. Lawall referred to a disinfectant which has recently come under his observation, which consists of 99 per cent. of sodium chlorid and 1 per cent. of sodium permanganate, the directions given with it being that it be applied a teaspoonful to a bucket of water. He stated that the forms of counter-prescribing directly affecting the health of the community were (1) counter-prescribing, (2) dispensing of drugs used for improper purposes. He called attention to the practice of some druggists to prescribe set prescriptions and prescriptions found in books, and expressed the opinion that it was beyond the scope of a druggist's field to assume the responsibility of diagnosis and prescription. He referred particularly to the treatment of eruptive symptoms, which were frequently treated as of local origin when they were really of a constitutional character and should have been so treated, while the treatment given had a deleterious effect on the health of the patient. He referred to the work of the Council on Chemistry and Pharmacy of the American Medical Association, and urged that the pharmacists work in conjunction with this council, which he believed would tend toward establishing a more friendly feeling between the two professions.

Mr. Franklin M. Apple felt that it is the best policy when a patient applies for treatment for some simple condition to give a simple remedy therefor under a known name: for instance, in cases of sore throat, chlorid of potash, at the same time telling him if he did not get relief he should consult a regular physician.

Mr. Josiah C. Peacock urged the importance of the publicity of papers read at these meetings and the necessity of impressing on the public the need for consulting regular physicians in order to get proper treatment. This would do much toward establishing a more friendly relation between the two professions.

Prof. Henry Kraemer felt that the public wanted counter-prescribing in many instances, just as they wanted "patent medicines," and believes that the publicity urged by the last speaker would be one of the most important means of eradicating this evil.

Mr. John D. Berry referred to the fact that the druggists are not always at fault, and that sometimes the prescriptions are not written plainly, referring to a case in which a physician wrote a prescription for calomel pills, A. B. C. pills.

Dr. William D. Robinson stated that if there is anything the druggist must of necessity know it is to be thoroughly conversant with the language of pharmacy. He directed particular attention to the evil of counter-prescribing, both from its effect on the health of the patient and the legal responsibility which is assumed by the druggist.

Dr. William E. Robertson urged the necessity for greater publicity and the education of the public to the fact that they would necessarily receive better treatment at the hands of the physician who had spent years in the practice of medicine than at the hands of the druggists. He also urged the necessity for the physician to keep himself thoroughly advanced, instead of falling into careless and slipshod habits, and stated that when the physician realizes that he owes at least a moral responsibility to the patient he would then command more the respect of the patient. Some of the blame for counter-prescribing should be placed on the physician as well as on the pharmacist.

Mr. M. I. Wilbert called particular attention to the necessity for careful and continued treatment in genitourinary cases and also in communicable diseases, which he believes should be in the hands of competent men, and that the public should be educated and that no better means for accomplishing this education exists than through the daily papers.

Mr. Ambrose Hunsberger felt that the pharmacist is not alone to blame for the evil of counter-prescribing, feeling that they are forced to do a certain amount of it, particularly in some neighborhoods, by the physicians who own drug stores and give advice free and charge only for the medicine. He also cited the abuse of the free dispensaries as a fertile factor in producing this result.

Therapeutics

Spasm of the Pylorus.

After outlining the important symptoms which may arise as the result of spasm of the pylorus, Graham Chambers, in the *Dominion Medical Monthly*, states that in the treatment of the disease, whether primary or secondary, a general course should pertain both to the etiology and to the symptomatology. In primary spasm the nervous system should receive special attention, and every measure taken to allay excessive irritability and to improve the general tone and strength of the patient. To meet these conditions the author recommends the bromid of sodium and strontium, and if anemia be present, iron and phosphates are indicated. The diet, however, is the most important thing to consider. The food should be very soothing, easily evacuated, sufficient to support nutrition, and not too great a quantity should be taken at one time. In relieving the spasm the best medicinal preparations are the bromids, chloral hydrate, extract of belladonna, cannabis indica and codein. These preparations may be administered either by the mouth or by the bowel. Codein phosphate may be given hypodermically. In the treatment of secondary spasm of the pylorus similar measures should be taken as in the treatment of the primary form which tends to relieve the stagnation of food. However, the primary factors must always be taken into consideration, such, for instance, as gastric ulcer, which, when situated near the outlet of the stomach, usually produces severe pain and a consequent spasm of the pylorus, and in many instances the only way to prevent such spasm is to give complete functional rest to the stomach for a considerable length of time.

The Value of Drugs in Therapeutics.

Dr. F. C. Shattuck, writing on this subject in the *New England Medical Monthly*, states that in a great many instances drugs are mainly adjuvants only and that they serve merely to alleviate untoward symptoms, such as insomnia and pain, which tend to retard or to prevent recovery. He mentions this as being true, especially in such diseases as typhoid, pneumonia, the exanthemata and tuberculosis. In many cases of acute infection drugs are not used at all, or if they are used it is merely for symptomatic purposes. In many other cases drugs are indispensable in the treatment of disease, such, for instance, as myocardial disease. In this connection he mentions the invaluable aid which digitalis affords in such cases, while in some instances it has been curative and could not be dispensed with in the treatment of the malady. He mentions other minor ills which experienced physicians can greatly modify by drugs. For illustration he mentions the condition of so-called biliousness, more generally termed autointoxication, which can be so readily corrected by means of calomel. The bromids seem to allay reflex irritability, and often are of value in certain forms of dyspepsia, palpitation of the heart, and genital disturbances, in so far as these disturbances are mainly due to faulty innervation based on nothing worse than functional disorder. The bromids are of value also as hypnotics in aiding Nature by securing a proper amount of sleep, keeping in mind, however, the danger of too constant use of such remedies.

The leading therapeutic principles, according to Shattuck, are to be summed up as follows: 1, Do no harm; 2, try to see as clearly as possible just why a drug should be given, the purpose of giving it, whether as a specific, curative, palliative, or as a placebo; 3, so far as possible, give one drug alone, that is, uncombined with other preparations; this general rule, of course, is subject to many exceptions; 4, in using an efficient preparation, be as sure as possible that a good preparation is employed, and then give it until something happens—either the desired effect or evidence appears that the limit of toleration has been reached—what is called the physiologic, but what he should prefer to call the toxic effect. As an example, Shattuck mentions nitroglycerin as a preparation which should not be thrown aside as useless until the dose has been pushed to the point of producing headache or flushing of the face without relief. In syphilis he is of the opinion that the dose of potassium iodid should be rapidly pushed, once in a while even to three ounces a day. From one to four drams of this preparation three times a day are not infrequently necessary to make any impression on the disease. Shattuck's suggestions are very timely in that there is always danger of going to the extreme of therapeutic nihilism, as he states it, and of disregarding the individual; and while our knowledge is imperfect as to the exact action of many preparations, the suffering patient demands all that the imperfect knowledge will allow.

Eczema.

In the treatment of eczema Prof. Allen Jamieson, in the *Edinburgh Medical Journal*, emphasizes the following important points: First, cleanse the part; second, soothe the surfaces; third, stimulate very cautiously. He states that these principles of treatment can be safely followed out in all types and stages of the disease. He mentions the conditions of eczema of the legs with oozing and crusting where a cold starch poultice applied to the affected parts is of service in loosening the adherent crusts and cleansing the epidermis. After this application an ointment composed of the following combination is recommended:

℞.	Emplastri plumbi			
	Adipis, āā	ʒii	8	

M. Fiat unguentum. Sig.: Apply locally.

After using the foregoing ointment for some days, the following ointment may be substituted with advantage:

℞.	Hydrargyri ammoniati			
	Hydrargyri bisulphid, āā	gr. x		65
	Sulphuris precipitat	ʒss	2	
	Camphoræ	gr. iv		25
	Adipis, q. s. ad	℥i	30	

M. Fiat unguentum. Sig.: Apply locally.

When there is eczema of the scalp, a good lathering with warm fluid potash soap is advised, followed by an ointment similar to the following:

℞.	Acidi salicylici	gr. x		65
	Sulphuris precipitat	gr. xv	1	
	Camphoræ	gr. iv		25
	Adipis, q. s. ad	℥i	30	

M. Fiat unguentum. Sig.: Apply locally.

As a substitute for the foregoing the following combination is sometimes very efficacious:

℞.	Resorcini	gr. x		65
	Adipis, q. s. ad	℥i	30	

M. Fiat unguentum. Sig.: Apply locally.

He makes strong mention of the fact that the official unguentum zinci is too often imposed on and prescribed when not indicated. It is by no means a panacea for all cutaneous affections, and the slight amount of benzoic acid in the lard often proves irritating and is very liable to become rancid in spite of the small amount of antiseptic present. The following combination, however, is sometimes of value:

℞.	Zinci oxidi	gr. v		30
	Ceri albi			
	Adipis, āā	ʒss	2	

M. Fiat unguentum. Sig.: Apply locally. Or:

℞.	Zinci oxidi	gr. xx	1	30
	Olei amygdalæ			
	Aquæ, āā	℥ss	15	

M. Sig.: Apply locally.

Acute Gastritis in Infancy.

In the treatment of acute gastritis of childhood Cotton, in his text-book on "Diseases of Children," states that the withholding of food and drink from the stomach is of the first importance. In infants and tractable older children the stomach should be washed out with the following solution:

℞.	Sodii bicarb	gr. xxx	2
	Aquæ steril	Oii	1000

M. Sig.: As a solution for performing lavage.

No treatment for the temperature is required as a rule, except sponging occasionally at a temperature agreeable to the patient. In older children he recommends that an ice bag be placed over the epigastrium to lessen the pain and to diminish the frequency of the vomiting. Constipation, if present, should be corrected by means of a soap and water enema. He advises frequent small doses of calomel, combined as follows, to clear out the intestinal tract:

℞.	Hydrargyri chloridi mitis	gr. 1/20	003
	Pulv. ipecacuanhæ	gr. 1/50	001
	Sodii bicarb.	gr. ss	03
	Bismuthi subnit.	gr. i	06
	Olei anisi	m. 1/20	003

M. Fiat chart. No. i. Sig.: One such powder every half-hour until a thorough evacuation has been obtained.

The foregoing may be continued for ten or twelve doses and then given once every two hours. If the vomiting persists bismuth subnitrate may be given in from 2 to 10 grain doses, added to the foregoing combination. The thirst may be relieved by small, high enemas of normal saline solution three or four times a day. Small bits of ice may be swallowed. Food should be withheld for forty-eight hours. If the vomiting still continues, nourishment must be given by the bowel. If the symptoms are so severe as to require stimulation the author recommends small doses of brandy or aromatic spirits of ammonia diluted with iced water. Strychnin hypodermically may be required in the severer cases, and as the gastric symptoms subside the tincture of nux vomica may be substituted for the strychnin. The nux vomica should be given well diluted, three or four times a day. When beginning on foods only the bland ones should be given at first, such as barley water, albumin water, whey and strained gruels, in small quantities at intervals of from two to four hours. The food, however, must be withdrawn if vomiting reappears. The return to the usual diet must be very gradual, as such errors cause an unnecessary continuance of the trouble.

Medicolegal

"Bad Result" and Second Operation in Malpractice Case.

The Supreme Court of Washington says that immediately after the plaintiff in the malpractice case of Peterson vs. Wells and another sustained a fracture of both bones of the left leg, at or near the ankle, he was removed to a hospital conducted by the defendants for treatment. The accident occurred at about 11 a. m., and at about 4 p. m. the defendants set the bones and placed the leg in a plaster cast extending from the knee down over the foot. The leg remained in this cast for about four weeks, and the plaintiff remained at the hospital for about two weeks after the cast was removed. According to his testimony and that of his witnesses, when the plaster cast was removed the leg was crooked, curving in at the ankle, so that he walked on the inside of the ball of the foot and heel and was very lame. Some three or four months after the injury he went to another city and consulted a physician, who was a witness in his behalf at the trial, and who made a somewhat cursory examination of the leg, advising him, on account of his being without means, to go to the county physician. But instead of doing that he went to a hospital there, where the bones were rebroken and reset, the condition of the leg being materially improved by this second operation. At the close of his case he was non-suited, and he appealed. He contended that he had made out a prima facie case of negligence or want of skill on the part of the defendants, and that he was entitled to have his case submitted to the jury. The defendants, on the other hand, contended that he had proved nothing more than a "bad result," and that this of itself is no evidence of want of care or skill in actions of this kind. The Supreme Court takes the plaintiff's view. It says that a surgeon does not undertake to effect a cure or restore a broken limb to its normal condition. If he treats the injury with a reasonable degree of skill and care he is not responsible for the results. The testimony in this case, as to the nature of the fractures, was very general, and if nothing further was shown than the "bad result," as contended by the defendants, the judgment below was doubtless right; but this court can not agree with the defendants that nothing beyond a bad or unfavorable result was shown. It was further proved that a second operation was performed in which the bones were rebroken and reset, and that the second operation resulted in a very considerable improvement in the condition of the leg. This of itself was some evidence of negligence or want of skill in the first treatment and would probably carry the case to the jury without more. In addition to this, however, the physician who examined the leg after the first treatment and before the second testified that the results indicated that the leg had not been treated with ordinary skill; and after a searching cross-examination of the plaintiff nothing was adduced tending to show that any act of his contributed in any way to the unfavorable results produced by the defendants' treatment. Wherefore, the Supreme Court is clearly of the opinion that a prima facie case of want of diligence or skill was made out.

Women Entitled to Be Examined by Women Physicians.

The Fourth Appellate Division of the Supreme Court of New York says, in the personal injury case of Potter vs. Village of Hammondsport, that it thinks the provisions of Section 873 of the Code of Civil Procedure of that state, which provides for the physical examination of a plaintiff at the instance of the adverse party, entitles a female to have the examination by physicians of her own sex, and that the phrase, "before physicians or surgeons of her own sex," means that the examination shall be made by them, and not merely in their presence. The court can not assent to the view that it was ever intended that a woman should be compelled to expose her person to a physical examination by physicians and surgeons not of her own sex or selection. The information so acquired by the examining physician is not gained under the ban of secrecy, for she does not stand in the confidential relation of patient to the examining physician. Judge O'Brien, in the case of Lyon vs. Manhattan R. Co., 142 N. Y., 298, quotes from the opinion of Mr. Justice Gray delivered in the Supreme Court of the United States in the case of Union Pacific Ry. Co. vs. Botsford, 141 U. S., 250, the following: "The inviolability of the person is as much invaded by a compulsory stripping and exposure as by a blow. To compel any one, especially a woman, to lay bare the body, or to submit it to the touch of a stranger, without lawful authority, is an indignity, an assault, and a trespass." The court is not called on to give a construction of this provision so literal as to permit this to be done. While Section 873 of the Code of Civil Procedure has changed this rule of the common law, this change should not be extended beyond a fair and reasonable interpretation of the statute which makes this innovation. Where a woman is compelled to submit to a physical examination under the provisions of this section, the court thinks she has the right to require such examination to be made by physicians of her own sex. This view to the court seems reasonable, and does no violence to the language of the statute. Two members of the court, however, dissent, insisting that the plaintiff was entitled merely to have the examination before, not by, physicians or surgeons of her own sex. They say that, while the county judge had a discretion as to the persons to be appointed, he should have treated the defendant fairly, and not put it at a disadvantage. It seems to them that the defendant should be permitted to have its own physicians or surgeons, the persons it would rely on to aid it in the trial, make the examination, providing they are reputable and not personally objectionable to the plaintiff.

Relation Between Company's Physician and Patient.

The Supreme Court of Utah says, in the personal injury case of Viallet vs. Consolidated Railway and Power Co., that the evidence tended to show that soon after the plaintiff was hurt, by a collision of cars, and while in an unconscious condition, and while he was being treated for his injuries by another physician, he was taken in charge by the defendant's physician, who set and bandaged his shoulder, and thereafter made regular visits to his home, and waited on him there, ostensibly for the purpose of giving him medical treatment, but the main and principal object being to procure as favorable settlement for his company as he could induce the plaintiff to make. When, however, the defendant's physician took charge of the plaintiff at the drug store soon after the accident occurred which caused his injuries, set and bandaged his shoulder, and otherwise treated his injuries in a professional capacity, the confidential relation of physician and patient was created, and continued to exist. The law is well settled that from the time the relation of physician and patient is created until it ceases to exist the physician is not only legally bound to act in the utmost good faith in his treatment of his patient professionally, but he is inhibited from taking advantage of the confidence growing out of this relation, reposed in him by his patient, and, by misrepresentations, or other unfair means, or by the exercise of undue influence, induce his patient to convey, transfer, or otherwise dispose of, to such physician, or to other parties whom the physician may represent in other capacities, valuable property rights for a wholly inadequate consideration, as appeared from the record was done in this case. But even if it be conceded that the plaintiff, notwithstanding the repeated assurance of the physician that his injuries were slight, and that the disability caused thereby would be of short duration, still had some doubts as to their absolute correctness, he was not necessarily bound by the release which he signed, provided he was induced to sign it because of such representations and assurances. The rule is that it is not necessary, in order to avoid a contract of this kind, when the transaction is between physician and patient, to show that the patient had unquestionable belief in the infallibility of the judgment of the physician to whom he has given his confidence, and to accept, without question or doubt, the statements and representations made, by which he is induced to part with his property. It is sufficient, if the statements made and assurances given by the physician induce the patient to part with his property, even though he may have some doubt as to their absolute correctness.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

June 30.

1 Science and Art of Fitting Glasses. A. E. Davis, New York.
2 *What Has Surgery Left to Medicine in the Treatment of Peritonitis in Adults and Children? H. W. Berg, New York.
3 *Examination of the Spinal Fluid in Dementia Paralytica. P. B. Brooks, Buffalo, N. Y.
3 Precise Definitions for Many Diseases. J. F. Leys, U. S. N.

2. **Treatment of Peritonitis in Adults and Children.**—The object of Berg's paper is to show that while surgery is the stronghold in the therapy of peritonitis, medicine, with the basic knowledge as to diagnosis, pathogenesis and etiology which it has developed in the past few years concerning this affection, has laid the groundwork for successful surgical therapy and has amplified the purely medical curative resources to an appreciable, if more limited, extent. Although the preponderance of opinion seems to be in favor of the treatment of tuberculous peritonitis by surgical means, some cases improve under the ordinary medical régime suitable for tuberculous patients. The latter method of treatment is indicated in cases of advanced pulmonary tuberculosis to the exclusion of surgical methods. In cases in which tuberculous peritonitis is the prominent lesion, especially when there is a fluid or semi-fluid effusion, or if the tumor masses are seriously embarrassing to the patient, laparotomy is the treatment of choice.

3. **Examination of Spinal Fluid in Dementia Paralytica.**—Brooks does not believe that it is yet possible to make a positive diagnosis of dementia paralytica from the cytologic examination of the spinal fluid. Nevertheless, he thinks that this examination bids fair to become a valuable aid to diagnosis in some doubtful cases. It is also frequently of use in other conditions, such as meningeal syphilis associated with meningitis. The writer has made satisfactory examinations of fluid in 29 cases. Thirteen of these have been typical paretics, 3 probable paretics, while 13 suffered from other conditions. Sixty-eight and three-quarters per cent. of the paretics showed an abnormal lymphocytosis, while the lymphocytes were normal in number in 82 2-3 per cent. of the cases other than paresis. The amount of serum albumin varied and seemed to bear no particular relation to the number of lymphocytes or to the presence or absence of dementia paralytica. A reduction of Fehling's solution was obtained in but one case.

New York Medical Journal.

June 30.

5 An Interesting Case of Pernicious Anemia. J. V. Shoemaker, Philadelphia.
6 Plea for More Catholic and Broader Views in Ophthalmology. E. N. S. Ringueberg, Lockport, N. Y.
7 Fever in Childhood Due to Other Causes than Sepsis. A. S. Wilner, New York.
8 *Ocular Eczema in Children. F. Krauss, Philadelphia.
9 *Atypical Features of Appendicitis. E. Eliot, Jr., New York.
10 Technic of Intramuscular Injections for Syphilis. W. S. Gottheil, New York.
11 *Thumb Sucking. G. B. Webb, Colorado Springs, Colo.

8. **Ocular Eczema in Children.**—According to Krauss, ocular eczema is a disease common in childhood, forming 21 per cent. of all eye diseases in children under 16 years. It is most common at the age of 2 years, becoming less frequent as the age advances. It is endemic, but especially prevalent during the months of May, June and April, in the order named. Treatment is very important in modifying its progress and tendency to relapse, and should comprise general treatment with attention to diet and hygiene, as well as local treatment for the eye; the severer and stubborn cases quickly improve when rest in bed is required of the patient.

9. **Atypical Appendicitis.**—In this, the concluding portion of his paper, Eliot reports a case of acute appendicitis simulating surgical treatment, acute appendicitis with slight symptoms and marked lesions and a chronic appendicitis, interval cases with abscess formation.

11. **Thumb-Sucking.**—Webb describes an ingenious method for overcoming this habit in infants. Taking an appropriately sized thin rubber ball, an oval hole is cut to loosely fit the wrist, and the surface ventilated by very numerous punches with a stable harness punch. A cheesecloth bag is sewed on to the oval hole and a tape run in and out of the cloth at this aperture, which can be gently tied at the wrist. A woolen mitten can be worn within this if required for cold weather. Several sizes have to be made at intervals of two months to allow for growth. For half hour night and morning these are removed and the child taught gradually to pat-a-cake and play with her own hands. After four months the child will be completely broken of the habit, but still must wear them at night as a precautionary measure.

Boston Medical and Surgical Journal.

June 28.

12 *Nature and Progress of Malignant Disease. J. D. Bryant. New York.
13 What Effective Measures Are There for the Prevention of the Spread of Syphilis and the Increase of Prostitution? C. G. Cumston, Boston.
14 *Consideration and Treatment of the Accidents of Surgical Anesthesia, with Special Reference to Prevalent Drug Treatment. B. H. Caswell, Boston.

12. See The Journal, June 9, 1906, page 1740.

14. **Treatment of Accidents of Surgical Anesthesia.**—When the shock features decidedly predominate, Caswell agrees with Crile and Horsley that no drug is of any use, except, possibly, adrenalin. Hypodermic stimulants are contraindicated. There can be nothing done which will so augment shock and diminish the chances of recovery for the patient as to give any of the nitrite group (amyl nitrite, nitroglycerin, sodium nitrite), remedies which are often used. They are distinctly vasodilators, and what is needed is high pressure, whereas the dilators give low pressure, the important feature of shock. Probably some cases that would have recovered without treatment have proved fatal on account of such medication. Adrenalin is the only drug to be used in this condition. It should be given with saline solution by intravenous infusion. The proportions of adrenalin are 1/1,000 solution, one part in 200,000 parts of saline solution. Salt solution when alone given intravenously under the skin or by rectum is of little or no benefit in cases of shock, as it does not raise the blood pressure. All other stimulating drugs, as strychnia, are out of the question for the same reason. Digitalis can be ruled out, if for no other reason, for its slowness of action. In collapse drugs may be employed with advantage, because the vasomotor center needs and can take stimulation to bring it to its proper condition. Strychnia may be used here. Alcohol is of some value in surgical collapse, but its stimulating effect is due to the chemical irritation which it causes. Cold water on the face, ammonia fumes, artificial respiration will do the work. Salt solution is indicated if the collapse is due to loss of blood. When shock and collapse are combined, the outlook is unfavorable, but treatment should be along the lines of shock. Rhythmic traction of the heart, by the hand in the abdomen and pressure against the diaphragm, should be tried in desperate cases.

St. Louis Medical Review.

June 23.

15 Treatment of Gallstones. E. A. Babler, St. Louis.
16 Surgical Anesthesia with Hyoscine Hydrobromid and Morphin. E. Lanphear, St. Louis.

Lancet-Clinic, Cincinnati, Ohio.

June 30.

17 Pathologic Physiology of the Tractus Vascularis. B. Robinson, Chicago.
18 Gastroenterostomy—Its Indications and Limitations. A. Schachner, Louisville, Ky.

Surgery, Gynecology and Obstetrics, Chicago.

June.

19 *Gram Stains of the Stools. C. A. Elliott, Chicago.
20 *Study of Five Cases of Subcutaneous or Concealed Rupture of the Intestines Treated by Laparotomy. E. W. Andrews, Chicago.
21 *Spontaneous Dislocation of the Hip Joint. J. Ridlon, Chicago.
22 *Wounds in the Ureter. W. R. Cubbins, Chicago.
23 Cholecystectomy; Its Indications and Technic. W. Van Hook, Chicago.
24 *Spontaneous Cure of Cancer. H. R. Gaylord and G. H. A. Clowes, Buffalo, N. Y.
25 *Treatment of Cases of Extensive Cystocele and Uterine Prolapse. T. J. Watkins, Chicago.
26 *Vitelline Duct Malformations. H. M. Richter, Chicago.
27 Palpation of an Ear as a Means of Accurate Diagnosis in Vertex Presentations. H. M. Stowe, Chicago.
28 *Acute Localized Inflammation of the Large Intestine. C. M. Matter, Chicago.
29 *Carcinoma in Early Life. C. G. Grulee, Chicago.
30 *Significance of Skull Defects. W. E. Schroeder, Chicago.
31 Technic of Forceps. C. B. Reed, Chicago.
32 Plastic Operation for Covering the Exposed Vulvar Surfaces with Skin After Excision of Extensive Growths of the Vulva. E. C. Dudley, Chicago.
33 Technic of Removal of Tumors of the Large Intestine Causing Obstruction. S. C. Plummer, Chicago.
34 Operative Technic in Wesley Hospital. R. Gillmore, Chicago.
35 *Temporary Splint for Fractures of the Leg. A. B. Kanavel, Chicago.
36 *New Technic of Nephropexy. A. Werelius, Chicago.

19. See abstract in The Journal, July 7, 1906, page 72.

20. **Concealed Rupture of Intestines.**—Andrews reports five cases of subcutaneous rupture of the intestines, with three recoveries. One patient was operated on too late, after several days, when a general peritonitis had developed. The diagnosis in this case was not positive before operation, as a large hernia was present, which had been treated for strangulation by force production under anesthesia. Another patient died on the table before the operation could be begun, probably from a hemorrhage. The three patients that recovered were seen consecutively, and Andrews concludes that under favorable circumstances, with a correct early diagnosis and an instant operation thereafter, a majority of torn intestines will recover. All the patients in this series were injured in one or two ways. Either the patient fell heavily, striking the front wall of his abdomen on some hard angular body, or else a heavy body fell on him while supine. Andrews believes that in this way the bowel is cut in two by the angle or promontory of the sacrum, against which it is forced when the anterior abdominal wall is pushed against the spine. Andrews makes immediate incision and washes out the peritoneal cavity with deci-normal salt solution, using a two- or three-point irrigator. The rent, if large, is closed with a Connell stitch; if small, as in multiple puncture wounds.

21. **Spontaneous Dislocation at Hip.**—Ridlon claims that normal hips do not become dislocated, except from extreme violence and with rupture of the capsule. Abnormal hips may become dislocated at any period of life up to 15 years, and perhaps later, without traumatism and without tearing of the capsules. Ridlon holds that these dislocations without tearing of the capsule should be called spontaneous dislocations, unless it is positively known that the dislocation was present at birth.

22. **Wounds in the Ureter.**—As the result of a very extensive study of the regenerative activity of the ureter to wounds involving all the coats of the tube, Cubbins presents the following conclusions: 1. Regenerative activity of the ureteral

mucosa is very marked. 2. Muscularis, submucosa and adventitia regenerate here the same as in other places. 3. Continuous suture is to be recommended in wounds of the ureter. 4. Transverse two-thirds of diameter and longitudinal wounds of the ureter heal without suture. 5. Catgut is preferable to silk, as it leaves fewer scars; there is less danger of obstruction due to kinking. 6. Sutures of wounds in small ureters nearly always cause some obstruction and renal disturbance. 7. A papillomatous formation is usually due to the presence of suture material in the lumen, but not always. 8. Van Hook's method is simpler on account of the shoe-horn effect of the incision. It also gives a wide surface for firm adhesions and causes practically no renal obstruction.

24. **Spontaneous Cure of Cancer.**—Gaylord and Clowes found that spontaneous cure of cancer in experimentally inoculated mice occurs in about 23 per cent. of the animals, and that the chances of spontaneous cure are inversally proportional to the size of the tumor. The frequency of the occurrence and its distribution in animals suggests that it may be more frequent in human beings than is generally supposed. The occurrence of spontaneous recoveries from cancer, indicating the existence of immune forces capable of terminating the disease, demonstrates that cancer is not necessarily incurable and should serve as an additional stimulus to research directed toward the discovery of a serum treatment.

25. **Treatment of Extensive Cystocele and Uterine Prolapse.**—Watkins describes an operation which he considers ideal for the relief of most cases of these displacements, especially after the menopause. After the usual preparation the patient is anesthetized and placed in the lithotomy position. The uterus is dilated and curetted, if indicated. The anterior lip of the cervix is grasped with the vulsella; the anterior vaginal wall is separated from the cervix by a semi-lunar incision, and the anterior vaginal wall is incised in the median line from the cervix to within one-half to one inch of the meatus urinarious, care being taken not to injure the bladder. With the finger covered by gauze, the bladder is separated from the uterus by blunt dissection. The uterovesical fold of peritoneum is either perforated by the finger or is grasped with forceps and incised. The wound in the peritoneum is then stretched with two fingers sufficiently to allow the uterus to be delivered through the opening. In cases in which difficulty is encountered in separating the bladder from the uterus the procedure can be much facilitated by making the separation to either side before it is made along the median line, as the attachment of the bladder to the uterus is firmer in the median line than at the sides. The anterior vaginal wall is now grasped on one side at the edge of the incision with an eight-inch forceps and separated from the bladder wall by means of gauze pressure. The same procedure is carried out on the opposite side. Separation of the anterior vaginal wall from the bladder should extend over most of the cystocele that comes into view, and should make the flaps sufficiently large to cover the uterus after it is brought into the vagina. The uterus is then delivered into the vaginal canal. A suture is passed through the vaginal flap near the urethra, through the body of the uterus, a little posterior, to the fundus, and brought out through the opposite flap at a corresponding point. The placing of this suture should vary in different cases. The fundus should be drawn sufficiently downward to support the entire prolapsed bladder wall, but care should be taken not to draw it down so firmly that it may press on the urethra and interfere with urination. This suture is then tied and another suture is passed parallel to it. Two or three such sutures are usually sufficient, as there is very little traction on them. The remaining portion of the wound is closed in much the same manner as a wound in any part of the body. The after-treatment is about the same as that usually employed in most vaginal operations.

26. **Vitelline Duct Malformations.**—Richter reports the following cases: Acute diverticulitis in a right-sided inguinal hernia; removal of the diverticulum; recovery of the patient. Intussusception caused by Meckel's diverticulum; reduction of intussusception and removal of diverticulum; death. Large congenital hernia into the cord; reposition, followed by death in three days.

28. **Acute Inflammation of Large Intestine.**—Matter reports a case of acute localized inflammation of the sigmoid flexure occurring in a woman of 78. She had suffered with severe abdominal pain for four or five days. The onset was acute; the symptoms resembled those of appendicitis, but at the end of two days the pains had localized themselves in the lower left quadrant of the abdomen. A very tender, broad, elongated, smooth, resistant, sausage-shaped swelling was palpable, extending from about the level of the umbilicus in the left mid-axillary line downward and inward to the middle of Poupart's ligament. The tumor persisted for about a week and then gradually began to get smaller and simultaneously the pain and local tenderness diminished. The bowel movements, which could be obtained only by enema, consisted chiefly of mucus. Matter says that the diagnosis of this condition is based on the finding of an elongated resistant tender mass in that part of the abdomen occupied by the large intestine.

29. **Carcinoma in Early Life.**—Grulee reports a case of carcinoma of the rectum occurring in a girl aged 16. The examining finger, on passing about two inches inside the sphincter, encountered a hard, irregular mass, evidently involving the wall of the rectum.

30. **Significance of Skull Defects.**—Schroeder claims that no protrusion is found when the dura remains intact, but that it is quite the rule when the dura is torn. In skull defects, when the dura remains intact, connective tissue fills the gap so firmly that it seems to the sense of touch as though it is bone, but the *x*-ray picture disproves this. The result of replacing bone fragments is very uncertain, as such fragments frequently become absorbed. Cases requiring mechanical devices, or Konig-Miller osteoplastic flaps, are infrequent, and should present more severe symptoms than mere absence of skull fracture. He has been unable to find cases recorded of injury to the brain resulting from skull defects.

35. **Splint for Fractures of Leg.**—Kanavel holds a blanket sidewise, so that its width is about three and one-half feet, then two boards of that length, six inches broad and one in thickness, are secured, and one folded into the blanket at either end, so gauging their position that as they are folded over and over and meet in the middle they will lie closely approximated edge to edge. He turns the whole over, end to end, and sets it down so that the two boards stand on edge and parallel, and the intervening blanket makes a trough in which the leg may be suspended as in a swing, with the boards approximated to each side of the leg. It is essential that the boards shall be of such a width that when the leg lies in this swing it will not touch the bed. As little cotton as possible is used, a small roll is placed in the popliteal space and some laterally over the bony prominences, and possibly a little about the heel, but for the most part the blanket will accommodate itself to the shape of the leg. The leg is placed in the blanket splint above described. The boards are brought up snugly to the sides, and a third board, similar in size and shape, is nailed to the ends of the boards in the blanket, extending approximately a foot and a half to either side, so that there is a T-shaped box-blanket splint, with this advantage over the blanket splint: that it never tips from side to side, thus calling for frequent adjustment, and which is superior to the box splint in that it fits the leg accurately, suspending it in a swing which is always adapted to the leg, no matter what changes may take place in its size as a result of the post-traumatic swelling. A strip of a roller bandage is tied around the upper end of the splint at the level of the knee to reinforce that end. There is no wadding of cotton at one point to the exclusion of another. Generally by the time the swelling has subsided a complete relaxation has been secured, incident to the easy position of the leg. The bones are in proper position, or so nearly so that with but little manipulation the leg is ready for the cast. If desired, for instance, in treating a severe compound fracture it may be left in this dressing until union is complete.

36. **New Technic of Nephropexy.**—Werelius describes what he calls the basket-handle operation. After having exposed and delivered the kidney, the capsule is split and deflected according to the methods of Ferguson and Edebohls. With the scissors two flaps are cut out of the capsule and to the end

of each flap a strong silk ligature, armed with a needle, is tied. The kidney is pushed down into the wound. The inner ligament or flap of capsule is drawn through the quadratus lumborum, and the outer through the thinner muscles in front of the fascia. The remaining border of the deflected capsule may be sewed to the transversalis fascia, or a small strip may be cut from it and used for suture material, the capsule and transversalis fascia being united as in McArthur's method for hernia. The muscular layer is united over the kidney. The kidney is then drawn up against the denuded muscles by the artificial capsular ligaments, the ends of which are tied in a knot and this is transfixed by a silk suture. The silk sutures used in pulling the ligaments through are cut off. The united flaps thus form a basket-handle from which the kidney is suspended. The method has been employed successfully in one case.

New York State Journal of Medicine.

June.

37 *Therapeutic Value of Antithyreoidin in the Treatment of Exophthalmic Goiter and Kindred Affections. H. L. Elsner and J. R. Wiseman, Syracuse, N. Y.
38 Observations on the Removal of the Prostate for the Cure of Prostatic Dysuria. L. S. Pilcher, Brooklyn, N. Y.
39 Treatment of Inoperable Conditions of the Prostate. G. M. Muren, Brooklyn.
40 Autopsy as a Judge of our Bedside Conclusions. B. Stow, New York.
41 Milk Problem from a Sanitary Standpoint. W. A. Baker, Islip, N. Y.
42 *Determination of the End of Danger of Infection from Patients Who Have Suffered from Infectious Diseases. L. F. Bishop, New York.
43 History of the Medical Society of the State of New York. (To be continued.) J. J. Walsh, New York.

37. **Value of Antithyreoidin in Exophthalmic Goiter.**—Elsner and Wiseman present a preliminary report on the results of their study of the therapeutic value of antithyreoidin in the treatment of exophthalmic goiter and kindred affections. In all of their cases blood pressure study proved the disease to be one in which, despite the small and thready pulse, the sphygmomanometer showed high pressure. With an improvement in the tone and character of the pulse under treatment the measure of the blood pressure showed no appreciable reduction. They are positive that antithyreoidin is a remedy which can be used for the relief of the annoying and alarming symptoms of exophthalmic goiter in typical and atypical cases. The greatest improvement is found in the relief of the tachycardia, precordial distress and tremor. This improvement is hastened by rest in bed and close attention to diet. Rest in bed and diet alone, without the administration of antithyreoidin, will not lead to the same degree of cardiac comfort. Improvement of one or more of the symptoms of the disease is likely to follow within from three to seven days after beginning the use of the remedy. If there is no improvement of symptoms after from three to four weeks of administration, the chances are against ultimate benefit from the prolonged use of the serum. In serious cases it will be necessary to continue the treatment during many months. In all cases after the disappearance of the subjective symptoms, it will be wise to administer antithyreoidin during periods varying from four to eight weeks at intervals of two or three months. Cases without marked goiter, with slight exophthalmos, tremor and the Graeffe symptom have yielded most readily to the antithyreoidin treatment. The enlarged thyroid has become perceptibly smaller, but has not returned to the normal size. Exophthalmos continues to be the most rebellious symptom, never yielding entirely to antithyreoidin treatment. Nervous symptoms usually yield as the heart becomes slower. The many fears which take possession of these patients are also relieved at the same time. The majority of their patients increased in weight. Patients who have taken antithyreoidin during a long period feel, when the serum is discontinued, as if they had been robbed of a food to which they are entitled, and return to its use with confidence and pleasure. In no case have they had occasion to regret the trial of antithyreoidin. It has always proved itself harmless. It may be given during pregnancy without fear of injuring the mother or fetus. Hypertrophied and dilated hearts offer no counter-indication to its administration.

They have administered the serum night and morning in doses of from fifteen to thirty minims. In mild cases the initial dose was from ten to fifteen minims. The serum may be given in raspberry syrup, may be taken in water or the elixir of orange peel. After having administered the serum during several weeks, its use was discontinued for a day or two at a time.

42. **End of Danger of Infection from Infectious Diseases.**—Bishop urges that the rule should be enforced that every individual who has suffered from an infectious disease of whatever kind should be restrained from such relations with nonimmune people as would render infection possible until there has been a determination of the end of danger of infection. This may be determined by experience which shows that danger of infection is over at a certain time, but in diseases of indeterminate duration it can only be determined by a careful investigation by the physician and the laboratory.

Southern California Practitioner, Los Angeles.

June.

44 The Physician's Duty to His Patient—An Address on Ethics. W. Lindley, Los Angeles.
45 *Rôle of the Peritoneum and of the Lymphatic System in Abdominal Surgery. A. J. Bouffleur, Chicago.
46 Emergencies in Internal Medicine—Treatment J. H. Utley, Los Angeles.
47 Emergencies in Surgery—Treatment. J. Kurtz, Los Angeles.
48 Emergencies in Obstetrics—Treatment. M. L. Moore, Los Angeles.
49 Emergencies in Urology—Treatment. P. Newmark, Los Angeles.
50 Internal Secretions of Certain Glands which Elaborate External Secretions Also. L. B. Stookey, Los Angeles.
51 Treatment of Fractures. W. W. Richardson, Los Angeles.

45. **Rôle of Peritoneum in Abdominal Surgery.**—Bouffleur summarizes his paper as follows: 1. That the varied lymphatic supply produces a variance in the behavior and manifestations of infections of the different abdominal viscera and may account for the diseases most frequently manifested in some of them. 2. That the normal peritoneum possesses marked powers of exudation and absorption. 3. That both of these functions may be life saving or death producing according to the asepticity of the peritoneal cavity. 4. That while all parts of the peritoneum are capable of both exudation and absorption, the lower or pelvic zone is most exudative and the upper zone most absorptive. 5. That the difference in relative powers of upper and lower zones explains satisfactorily the evident fact that infections in upper peritoneum are more acute, more serious and produce marked symptoms more promptly than in the lower, and the operations in the upper zone are attended with greater risk than those in lower abdomen. 6. That in aseptic cases we can favor restoration of circulatory equilibrium by introducing fluids into the abdomen and favor its absorption by Clark's inverted position. 7. That in septic conditions we should lessen absorption, localize exudation in lower abdomen and provide for its rapid external drainage by Fowler's sitting position and the use of large tubular drains. 8. That as the condition of the peritoneum and the recuperative powers of the patient are equal factors with asepticity in attaining results, time and trauma are especially important elements in successful abdominal surgery.

Archives of Ophthalmology, New Rochelle, N. Y.

March and May.

52 Knife-Needle Operation for Secondary Capsular Cataract. E. Jackson, Denver.
53 Treatment of After-Cataract. H. Smith, Juliundur.
54 Etiology of Lamellar Cataract. H. Knapp, New York.
55 Plexiform Neuroma of the Orbit. C. H. Beard and E. V. L. Brown, Chicago.
56 Case of Parinaud's Conjunctivitis, Accompanied by Erythema Nodosum and Tonsillitis. C. N. Spratt, Minneapolis.
67 Case of Antipyrin Amaurosis Induced by 130 Grains Taken in Forty-eight Hours. F. C. Hotz, Chicago.
58 Case of Transient Lead Amaurosis. O. Loewe, Frankfort-on the-Main.
59 Action of Alypin on the Eye. Ed Hummelsheim, Boston.

Physician and Surgeon.

May.

60 Modern Skiagraphic Technic. V. J. Willey, Ann Arbor, Mich.
61 Surgical Pilgrimage to Arkansas. H. C. Wyman, Detroit.
62 Value of Time and Natural Uterine Efforts in Parturition. A. N. Collins, Detroit.

Fort Wayne Medical Journal Magazine.

June.

63 Scopolamin in Anesthesia. P. Weaver, Ft. Wayne.
64 Heart Lesions and Surgical Operations. M. F. Porter, Ft. Wayne.

Woman's Medical Journal, Toledo, Ohio.

June.

65 Observations on Some European Climate Resorts. E. H. Root, Chicago.
66 Timidity. (To be concluded.) M. K. Isham, Cincinnati.

Pennsylvania Medical Journal, Athens.

June.

67 Collateral Interests of the Medical Profession. I. Cleaver, Reading.
68 *Clinical Examination of the Feces. J. D. Steele, Philadelphia.
69 Essentials of Successful Roentgen Ray Therapy. C. L. Leonard, Philadelphia.
70 Adjustment of X-Radiations for Various Physiologic Effects. R. H. Boggs, Pittsburg.
71 *Treatment of Mediastinal Carcinoma with the Roentgen Rays. G. E. Pfahler, Philadelphia.
72 Treatment of Empyema with Especial Reference to Irrigation of the Pleural Cavity. P. Y. Eisenburg, Norristown.
73 Ocular Headaches. W. Zentmayer, Philadelphia.
74 Autotoxemia. H. Wilson, Somerset.
75 Considerations on the Treatment of Typhoid. L. Litchfield, Pittsburg.
76 Eye Injuries. E. Stieren, Pittsburg.

68 and 71. See abstract in The Journal, Oct. 28, 1905, pages 1350 and 1351.

Virginia Medical Semi-Monthly, Richmond.

June 22.

77 Notes on Headaches. H. S. Hedges, Charlottesville.
78 Gonococcic Infection of Women. J. T. Johnson, Washington, D. C.
79 Extravasation of Urine. P. C. Layne, Ashland, Ky.
80 Empyema of the Accessory Sinuses of the Nose. W. W. Bulette, Pueblo, Colo.
81 Perverted Metabolism, with Special Reference to Liver Function. C. M. Hazen, Bon Air, Va.
82 More Rational Practice of Obstetrics by the General Practitioner. H. L. Finley, Pawnee City, Neb.
83 Etiology and Pathology of Urticaria. F. H. Beadles, Richmond.
84 Symptoms and Treatment of Urticaria. T. W. Murrell, Richmond.
85 A Suggestion Regarding the Management of Alcoholic and Drug Habitués. H. B. Mahood, Belfield, Emporia, Va.

Iowa Medical Journal, Des Moines.

June 15.

86 Intravenous Injections of Mercury as a Therapeutic Test in the Diagnosis of Syphilis of the Nervous System. W. F. Bernart, Chicago.
87 Materialism in Medicine. H. P. Wilson, Mediapolis.
88 Salient Points of Gastric Ulcers and Medicinal Treatment as We Meet Them in Country Practice. C. J. Plonske, Bancroft.
89 The Osteopaths. C. A. Boice, Washington.
90 Medical and Surgical Progress. G. Cullen, Des Moines.

Medical Fortnightly, St. Louis.

June 11.

91 Acute Mastoid Abscess. F. Allport, Chicago.
92 Importance of Postoperative Treatment of Diseases of the Rectum. W. H. Stuffer, St. Louis.
93 Evolution of the Roentgen Ray. H. P. Wells, St. Louis.
94 Case of Tertiary Syphilis which Resembled in Its Course and Symptoms Phthisis Pulmonis. W. Fischel, St. Louis.
95 Syphilis of the Lung. E. Smith, Jr., St. Louis.

Colorado Practitioner, Denver.

June.

96 Tuberculosis of Joints. G. B. Packard.
97 Case of Nervous Vomiting Simulating Pyloric Obstruction; Operation. W. T. Little, Canon City.
98 Subcortical Cerebral Gumma Accurately Localized in the Comatose State. G. A. Moleen, Denver.
99 Diseases of the Stomach Requiring Surgical Treatment. I. B. Perkins, Denver.
100 Roentgen Therapy of Tubercular Glands. G. H. Stover, Denver.

Medical Age, Detroit, Mich.

June 25.

101 The Cleanly Consumptive. A. L. Benedict, Buffalo.
102 Merycism. O. W. Hunter, Louisville, Ky.
103 Aneurism of the Aorta. F. Billings, Chicago.

Central States Medical Monitor, Indianapolis, Ind.

June.

104 Endometritis. W. Schell, Terre Haute, Ind.
105 Gonorrhea and Its Effects in Women. A. S. Jaeger, Indianapolis.
106 Practical Points Concerning Certain Joint Injuries and Diseases. M. A. Austin, Anderson.
107 Diagnosis and Treatment of Chronic Gastritis. S. P. Scherer, Indianapolis.
108 Old and the New in Medicine in Indiana. W. W. Vinnedge, Lafayette.
109 Diagnosis of Tuberculosis. W. T. S. Dodds, Indianapolis.
110 Cardiac Stimulation for Suspended Animation by Direct Digital Manipulation. B. M. Ricketts, Cincinnati, Ohio.

Therapeutic Gazette, Detroit.

June 15.

111 Choice of Anesthetics—A Symposium. W. W. Keen, Philadelphia; W. T. Bull, R. Park, New York; W. L. Rodman, Philadelphia; R. T. Morris, New York, and others.
112 Treatment of Chronic Constipation. H. Richardson, Baltimore.
113 Uses of Adrenalin in the Peritoneal Cavity. E. Marvel, Atlantic City, N. J.
114 Cocillana as an Expectorant in Pulmonary Tuberculosis. G. W. Norris, Philadelphia.
115 Hyperemesis Gravidarum. L. Frank and O. W. Hunter, Louisville, Ky.

Wisconsin Medical Journal, Milwaukee.

June.

116 Doctorate Address. J. C. Hodgins, Milwaukee.
117 Two Cases of Membranous Urethritis Probably Influenzal in Origin. A. W. Myers, Milwaukee.
118 Two Years' Experience in the Sanatorium Treatment of Tuberculosis in the Pineries of Northern Wisconsin. W. B. Hopkins, Cumberland, Wis.
119 Arteriosclerosis. F. S. Tufley, Livingston, Wis.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

June 15.

120 *Medical Profession and the Issues which Confront It. W. J. Mayo, Rochester, Minn.
121 Notes on Empyema. F. G. Landeen, Stillwater.
122 Causes of Painful Menstruation in Young Girls. H. Hughes, Mankato.
123 Correlation of Medical Teaching. F. F. Wesbrook, Minneapolis.

120. See The Journal, June 9, 1906, page 1737.

Journal of the New Mexico Medical Association, Albuquerque.

June 15.

124 Trichinosis. W. D. Radcliffe, Belen.
125 Acute Suppuration of the Middle Ear. C. Losey.
126 Family Physician as a Children's Specialist. T. B. Hart, Raton.

Vermont Medical Monthly, Burlington.

June 15.

127 Clinical Considerations of Carcinoma Uteri. F. A. L. Lockhart, Montreal.
128 Eyes and Ears of School Children. F. Allport, Chicago.
129 Pathology of Chronic Nephritis. W. E. Lazelle, Barre, Vt.
130 Hypospadias Through Five Generations. T. J. Strong, Burlington.
131 Bullet Wounds of the Intestine. E. W. Melville, St. Albans.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 16.

1 *Injuries Commonly Associated with Displacement of the Head of the Humerus. R. Jones.
2 Torticollis, or Wry-Neck. A. H. Tubby.
3 *Wound of Thoracic Duct; Ligature; Recovery. A. Fullerton.
4 *Etiology and Treatment of Oblique Inguinal Hernia. R. W. Murray.
5 *Comparison of Phthisical with Non-Tuberculous Males. W. C. Rivers.
6 *Two Cases of Amebic Abscess of Liver. L. Rogers and R. P. Wilson.
7 Case of Pneumococcic Arthritis. S. Raw.

1. **Injuries Associated with Displacement of Head of Humerus.**—In Jones' experience the most common complication of fracture of the upper head of the humerus is dislocation of the shoulder. Out of 200 consecutive cases of complicated dislocations of the shoulder radiographed he found 16 connected with fractures of the surgical neck. In all the cases the patients were over 30 years of age and most commonly between the ages of 40 and 50. Jones believes that occasionally a fracture may follow the dislocation, but that in the majority of instances it most probably occurs synchronously. The shoulder should be reduced at the earliest possible moment. A method which has proved most successful in his experience is the forcible extension of the arm held vertically, with often very hard pushing upward of the fragment. Having reduced the dislocation, the fracture is of comparatively little moment.

3. **Wound of Thoracic Duct.**—Fullerton says that during the removal of a large number of tuberculous glands from the neck the thoracic duct was cut. An artery clip was applied to the open ends of the duct and the latter was ligated with formalin catgut. The patient was kept on the lowest possible diet for a few days, and all unnecessary movements were interdicted, so as to diminish as much as possible the pressure and flow in the occluded duct pending the establishment of the collateral circulation. A blood count made on the eighth day after the operation showed that there was very little deviation from the normal as regards the lymphocytes—the constituents of the blood most likely to be affected by the accident. Fullerton thinks that this case shows that if leakage from the duct can

be prevented and rupture avoided after ligature the collateral circulation becomes established without any difficulty. Ten months after the operation the patient was well. Fullerton says that the first indication in treatment is to stop the flow from the injured duct. This can be effected most surely and apparently quite safely by ligature of both ends. If the wound is small it may be sutured without occluding the vessel, but if large or if the duct is severed completely the most satisfactory method is ligature.

4. **Oblique Inguinal Hernia.**—A very careful review of all the evidence at hand with reference to the etiology and treatment of oblique inguinal hernia has convinced Murray that the main factor in the causation of this form of hernia at all periods of life is the presence of a preformed sac, a patent funicular process, and that whether the bowell will or will not enter this process depends primarily on the size of the opening at the internal abdominal ring, and secondarily on the strength of the muscles guarding it. As a general rule the only satisfactory way of treating a hernia is by means of an operation, and, other things being equal, the earlier in life the operation is performed the better. The essential point in the operation is so completely to obliterate the sac as to render the peritoneal surface at this level free from any dimpling or depression. In order to insure this the inguinal canal must be opened up and a ligature applied to the sac at the level of the internal abdominal ring. The divided aponeurosis of the external oblique should be subsequently united by overlapping, for the inguinal canal is thus narrowed, lengthened and its original obliquity restored.

5. **Phthisical and Non-Tuberculous Males.**—The following reasons are advanced by Rivers in favor of the view that an hereditary causal relation to phthisis may be predicated of mouth breathing and of deficient physique: 1. Both conditions prevailed to a much greater extent among consumptive males, quite independently of their disease, than among a comparable series of non-tuberculous men. 2. Whereas some causes of mouth breathing, as also physeical build, are known to be hereditary, a family history of phthisis is much more often given by those who are mouth breathers or of deficient physique—whether they be healthy or phthisical—than by others. 3. The physique incidence of mouth breathing in phthisical subjects probably differs from that in the non-tuberculous. 4. Consumptives of a naturally good height-weight ratio fall ill, on an average, at a later age than do others.

6. **Amebic Abscess of Liver.**—The two patients whose cases are reported by Rogers and Wilson were cured by aspiration of the abscess and injection of a quinin solution into the cavity without drainage. Ten ounces of pus were drawn off and three ounces of sterile bihydrochlorate of quinin of a strength of 30 grains in 4 ounces of water were injected. A dose of 30 grains of calcium chlorid was given both before and after the operation to check any tendency to oozing from the punctures.

The Lancet, London.

June 16.

8 Stray Thoughts on Tuberculosis. E. Owen.
9 Aphasia. (To be concluded.) B. Bramwell.
10 Occurrence of Metrorrhagia After the Menopause in Cases of Ovarian Tumor. A. H. N. Lewers.
11 Vacuolated Mononuclear Cells in the Blood of the Guinea-Pig. J. C. G. Ledingham.
12 *Complete Removal of Multilocular Cystic Tumor of the Pancreas. J. D. Malcolm.
13 *Hernia of the Vermiform Appendix, Probably Infantile, and Perforated by a Pin While in the Scrotum. J. A. C. Macewen.
14 *Femoral Hernia, Herniated Appendix, and Suppurative Appendicitis Due to a Pin. L. C. S. Broughton and J. T. Hewetson.
15 Diverticulum of the Bladder; Prostatic Obstruction; Operation. H. A. Lediard.
16 Case of Intranasal Chancre Simulating Nasal Diphtheria. J. D. Rolleston.
17 Examination of the Feces. R. Baumstark.
18 Analysis of the Results Obtained at the Sidlaw Sanatorium. R. C. Macfie.
19 Case of Cerebral Tumor; Operation; Recovery. H. Smith.
20 Specific Nature of the Spirocheta of the African Tick Fever. A. Breinl.

12. **Tumor of Pancreas.**—In the case reported by Malcolm it became necessary, because of an obstruction at the splenic flexure of the colon, to perform colo-colic anastomosis sixteen days after the removal of the tumor. The patient then made an uneventful recovery. The fact that the pancreas had been incised did not give rise to any subsequent trouble.

13. **Hernia of the Appendix.**—Macewen reports the case of a man 62 years of age who presented himself for the relief of a strangulated hernia, the hernia supposedly having existed for twelve years. The patient had worn a truss until two weeks before his presentation, when he began to suffer considerable discomfort, which eventually turned to distinct pain. He was found to have a large pyriform swelling affecting the right inguinal region and scrotum. The scrotal tissue was much inflamed. The testes appeared to be fused with a mass which was firm in consistence and dull in percussion. No impulse on coughing was elicited. The hernia was not reducible. At the operation the hernia was found to consist of the appendix, the latter being held in position by a pin, the point and about one-half the shaft of which projected through a small ulcerative aperture in the wall of the appendix. Appendicectomy was performed in the usual manner. Owing to the condition of the bowel and the surrounding parts it was decided not to proceed with the radical operation for the cure of hernia. The bowel having been returned to the abdomen, the inner fibrous sac which had contained the appendix was removed, after which the outer sac was ligatured, freed from the testes and likewise removed. The patient made an uneventful recovery. Although the head of the pin had perforated the appendix, there was no abscess formation.

14. **Appendix in Femoral Hernia.**—Broughton and Hewetson report another case of herniated appendix, the hernia in this instance being of the femoral variety, occurring in a woman 63 years of age. After having been present for twenty-four years, the small lump in the right groin showed signs of inflammation. A diagnosis was made of inflamed femoral epiplocele. An incision over the mass was made, an abscess containing about two ounces of fetid pus and surrounded by ragged gangrenous walls was evacuated, and a pin, incrusted with fecal matter, was found lying in the mass. Nothing resembling a hernial sac could be distinguished up to this point. The whole gangrenous mass was isolated down to the saphenous opening. After carefully covering up the gangrenous area with gauze, this was opened and the contents were readily recognized as a thickened appendix and a small mass of omental tissue. The appendix was withdrawn and amputated close to the cecum, the omental loop was divided and both were pushed just within the abdomen. A strand of iodoform gauze was inserted into the femoral canal, partly to act as a drain to the appendical stump, but chiefly to protect the peritoneum from becoming infected from the gangrenous Scarpa's triangle. A large drainage tube was passed into the bottom of the wound and the skin margin was approximated by silk-worm gut sutures.

Bulletin de l'Académie de Médecine, Paris.

21 (Year LXX, No. 23.) Resolutions in Regard to Communicable Diseases, Especially Tuberculosis. See news columns, page 46.
22 La revision du Code civil. A. Lacassagne.

Presse Médicale, Paris.

23 (XIV, No. 35.) Un nouveau cas de syphilis stomacale. G. Hayem.
24 (No. 38.) Etude sur la scoliose dorsale. P. Desfosses.
25 Acute Edematous Hypertrophy of the Tongue in Scarlet Fever in Adult.—Macroglossite edemateuse aigue. J. Sabrazes and J. Bonnes.
26 (No. 44.) Bacillus fluorescens putridus et diarrhée verte (green). E. Bodin and M. Dide.
27 *Consequences of Transvesical Prostatectomy.—Suites de la prost. transvésicale. J. Moscou.
28 How Does Iodin Act?—Comment agissent l'iode et les iodiques? A. Martinet.

27. **Consequences of Transvesical Prostatectomy.**—Moscou reports the results of histologic study of the parts in a man of 68, who had been operated on for hypertrophy of the prostate by the Fuller-Freyer technic. He died twenty-four hours afterward. The anatomic findings showed that enucleation of the adeno-myomatous growths of the prostate leaves a cavity the walls of which are formed of true prostatic tissue, the original prostate having been compressed and pushed back by the encroaching growths, without losing its integrity. The ejaculatory ducts are retained unimpaired and ap-

parently permeable, the natural result of the preservation of the prostate tissue. The findings in this case show that the repair of the parts proceeds with remarkable rapidity, while the retention of the ducts favors retention of the genital functions.

Revue de Chirurgie, Paris.

Last indexed XLVI, page 1891.

29 (XXVI, No. 6.) *La résection totale des saphènes dans le traitement des varices superficielles des membres inférieurs et de leurs complications. F. Terrier and P. Alglave. (Continued.)
30 *De la péritonite généralisée par perforation au cours de l'entérite tuberculeuse. L. Bérard and M. Patel (Lyons).
31 *Stab Wounds of Thyroid Gland.—Des plaies par instruments tranchants du corps thyroide. H. Toussaint.
32 *Study of 43 Cases of Tropical Abscess of the Liver.—Les abcès du foie d'origine coloniale. E. Loison. (Commenced In No. 3.)

29. **Total Resection of the Saphena.**—Terrier and Alglave are convinced that the resection of the saphena should be as complete as possible to obtain satisfactory results in severe cases of superficial varices, especially those with ulcers. They give illustrations of cases thus treated, showing the skin turned back after incision extending from the ankle to the hip, on the inner aspect of the leg. They operate by four different technics according to the conditions. The first aims to resect both saphenous veins and as much as possible of their varicose branches by the above long incision. They have thus operated on 6 patients. In other cases they resected merely one of the saphenous veins; in 11 cases they resected the internal and in one case the external vein. Their third procedure is merely resection of the internal saphena on the leg (2 cases), and the fourth is the circular section advocated by Moreschi, supplemented by simple or double resection of the saphenous vein in case of high leg ulcers. These procedures accomplish the best results and without danger for the patient. The results, they state, are bound to prove satisfactory. The details of the technic and the clinical experiences will follow in a second installment of the article.

30. **Diffuse Peritonitis from Perforation in Course of Tuberculous Intestinal Processes.**—Bérard and Patel analyze 2 cases personally observed, one reported by Chatin, and 23 others from the literature. The clinical picture varied, depending on whether or not the acute peritonitis was preceded by circumscribed abscess. Any aggravation of the condition in case of a known tuberculous intestinal affection should suggest the possibility of perforation. Pain is significant, it may become lessened in severity or disappear, but it generally recurs and is elicited by palpation. The lack of harmony between the pulse and temperature, slight meteorism, rigid abdomen and extension of the areas of dullness, are all suggestive, especially when accompanied by vomiting, dryness of the mouth, progressive dyspnea, chilliness and cyanosis of hands and feet. A cancer in the small intestine rarely comes to perforation. Operative treatment of the tuberculous perforation offers little chance of success. It was attempted only once in the total 26 cases reviewed and the patient rapidly succumbed. The general condition of the patient is generally too grave to allow the extensive surgical intervention which alone offers chances of success. Search for the perforation is almost sure to be fruitless on account of its small size and the fact that it is frequently hidden by a serous covering. Even if it should be readily found the patient could not tolerate the extensive resection demanded. If the abdomen has been opened, as soon as the nature of the lesions is recognized, they would hasten to complete the operation with merely palliative drainage of the peritoneum.

31. **Stab Wound of Thyroid.**—Toussaint had occasion recently to suture the thyroid in a man of 27. The gland had been cut completely in two by a stab in the throat, but soon healed after the suture. In order to arrest the hemorrhage Toussaint pedunculated the upper and lower parts of each half by a chain of catgut sutures, passing a curved needle around inside of the capsule. The capsule was then sutured over them. The patient soon recovered.

32. **Tropical Abscess of the Liver.**—Loison discusses the diagnosis and treatment of tropical abscess of the liver, from an experience of 44 cases. In 35 the mortality was 40 per cent.; in 10 cases of acute suppurative hepatitis it was 70 per cent. while it was only 28 per cent. in the 25 chronic cases. The gravity of suppurative hepatitis may be due to the multiplicity of the abscesses developing in the liver, or to the variety of infectious accidents that may complicate it. Abscesses of the liver display a tendency to reach the convex surface of the organ, and the exploratory trocar should be inserted at the intercostal or epigastric point of tenderness located in the thoraco-abdominal region. When pus is once discovered the trocar should not be withdrawn before opening up the focus, for fear of losing it again or of allowing the escape of pus through the trocar hole into the adjoining regions. He usually resects a rib to obtain better access, incises the pleura and diaphragm, and thus reaches the liver. The transpleural route ensures better drainage than an abdominal operation, as a rule. He describes the precautions to prevent escape of pus into the pleura or elsewhere, and reviews the complications liable to develop.

Semaine Médicale, Paris.

33 (XXVI, No. 24.) *Spikes for External Prothesis in Case of Complicated Fracture of the Leg.—Le traitement sanglant des fractures compliquées de jambe par l'appareil à prothèse externe. Jaboulay (Lyons).

33. **Row of Spikes for External Prothesis of Fractures.**—Jaboulay uses spikes to hold fractured bones in proper coaptation while healing. The appliance is a strip of steel with five long spikes set in a row. When the bones have been placed in proper position the spikes are driven into the bone deep enough to hold the ends firmly. The spikes are not exactly parallel, but converge slightly, so that the end spikes exert slight traction on the bones, pushing them together. The appliance is left in place as long as the limb is immobilized. He advises not to trust to a plaster cast alone, but always to apply some external prothesis which holds the fractured bone immovable after reduction. Nothing has answered the purpose so satisfactorily as the little set of spikes he here describes and illustrates. He disapproves decidedly of prothetic appliances left permanently in the tissues.

Zeitschrift f. klinische Medizin, Berlin.

Last indexed XLVI, page 1325.

34 (LIX, No. 1.) *Diagnose und Pathogenese der im Kindesalter häufigsten Form der Concretio pericardii cum corde. H. Flesch and A. Schossberger (Budapest).
35 *Ueber die Struktur und die diagnostische Bedeutung der Curschmannschen Spirale bei Asthma bronchiale. W. Predtetschensky (Moscow).
36 Causes of Predisposition of Lung Apex to Tuberculosis.—Ursachen der Disposition der Lungenspitzen für Tub. L. Hofbauer (Vienna).
37 *Poisoning from Canned Beans.—Ueber eine Massenerkrankung an Botulismus infolge Genusses "verdorbener" Bohnenkonserven. A. Fischer (Darmstadt).
38 *Bemerkungen zur Sigmoiditis. A. Simons (Berlin).
39 *Morbid Appetite, etc., with Erosions and Ulcers in the Stomach.—Die Reizerscheinungen des Mundes, das Verhalten des Appetits und die Heisshungererscheinungen bei den Erosionen und Geschwüren des Magens. W. Plönies (Wiesbaden).
40 Roentgen Outlining of Heart.—Bestimmung der sogenannten wahren Herzgrösse mittels Roentgenstrahlen. F. Moritz.
41 *Ueber hämorrhagische Diathese bei Typhus abdominalis. F. Meyer and W. Neumann.

34. **Adherent Pericarditis in Children.**—Flesch and Schossberger have been studying the relics of adhesive pericarditis in children, and have been conducting experiments on dogs to investigate the causes of the symptoms observed. They found that adhesion of the visceral and parietal pericardium always induced isolated ascites in the dogs. This shows, they think, that the adhesion in itself produces a pure portal stasis of cardiac origin, and harmonizes with what is observed in the clinic. As the result of their research they announce that this most frequent form of adhesion of the pericardium in children is characterized by a special symptom-complex. The most striking symptom is the excessive, isolated ascites; the face is slightly edematous, giving it a doughy look, pale, with cyanosis of the lips and ears and enlargement of the liver. Except for the small waved, rather rapid pulse, none of the symptoms observed points to the heart. On account of the constancy of the above symptoms, this form of adherent pericardium presents an easily recognized clinical picture. The cyanosis does not subside after tapping. The postmortem findings in 4 cases are described. In 4 others an operation was performed, a herniotomy or the Talma operation. Articular rheumatism was known in the history of 2 of the patients,

and the other spoke of an affection of the lungs or pleurisy in the past, which probably was the unrecognized pericarditis causing the adhesions. Contrary to the general assumption the ascites preceded edema in the extremities. Adhesive pericarditis does not cause always the above clinical picture, but when the latter is observed an adherent pericardium can be safely diagnosed.

35. **Curschmann's Spirals in Bronchial Asthma.**—The results of the investigations reported in this article may be summarized in the statement that the principal constituents of the typical Curschmann spirals are eosinophile leucocytes; the mucus serves merely as a vehicle to bind them together. Only the isolated central thread and the rudimentary spirals are of simpler structure, and consist merely of extremely thin fibers of mucin. Any ordinary cough or hacking is sufficient to transform a tenacious sputum into spirals. The asthmatic attacks increase the number of the spirals, but single spirals can originate without the asthmatic respiratory movements. The spirals are not specific for bronchial asthma, but only the peculiar bronchial secretion, out of which the spirals are formed. This secretion consists of a large amount of eosinophile cells, and from the latter in turn originate the Charcot-Leyden crystals.

37. **Poisoning from Canned Beans.**—Fischer gives the particulars of the severe poisoning of a number of persons in a cooking school at Darmstadt, mentioned in the news columns at the time (1904). Eleven out of the 21 persons affected died. The beans had been put up in the school during the preceding autumn and were eaten as a salad without cooking. They were unusually soft when taken out of the can, and the salad acquired a cheesy smell after the vinegar had been added. The symptoms were those of typical botulismus, the same as observed from sausage and fish poisoning, although there were no mydriasis, no fever, no gastrointestinal disturbances, and the consciousness was unimpaired to the last. The ocular muscles were affected, the ptosis first attracting attention; the secretions were altered, and the entire motor sphere was enfeebled to actual paralysis, the disturbances in the innervation being symmetrical. Death was due to the severe bulbar disturbances affecting the tongue, throat, respiration centers and heart, with death from asphyxia. The incubation period lasted from 24 to 48 hours. The assumption seems plausible that the toxic substances must have reached the beans in the manure, which had been taken from the pig pen, and that the beans had not been thoroughly washed before being sealed up. Fischer adds that the safest way to destroy the toxins in canned goods which do not arouse suspicion by their aspect or smell is to cook them or to boil the can before opening. One person ate the salad freely but experienced only slight disturbance from it. He was the only person who had heated the beans. His dinner having become cold, he set the plate in the oven and heated the whole, beans and all, until they simmered.

38. **Sigmoiditis.**—Simons describes the postmortem findings in a case of chronic inflammation restricted exclusively to the sigmoid flexure.

39. **Significance of Morbid Appetite with Erosions and Ulcers of the Stomach.**—Plönies discusses the phenomena of irritation in the mouth and the behavior of the appetite in case of gastric lesions, remarking that sudden, imperative hunger (Heisshunger), seems to be peculiar to erosions and ulcers of the stomach and deserves special attention. Each attack of this morbid appetite announces another step in the progress of the stomach lesion. The sudden, imperative hunger accompanies the transformation of the superficial erosion into an ulcer, and the progress of the ulcer into the phase of imminent hemorrhage, perforation or other complication. The onset of the morbid appetite follows some chemical irritation of the surface of the lesion as the protecting surface becomes eroded. His extensive experience through sixteen years has demonstrated that this symptom of attacks of sudden, imperative hunger has the diagnostic importance of a physiologic experiment. It is a sign that the gastric lesion has lost its protecting covering. The morbid appetite comes on when the stomach is empty, and its appearance is always followed by exacerbation of the symptoms from the lesion: the phenomena of nervous irritation in the vagus-sympathetic domain recur with greater or lesser intensity, and the area of tenderness on percussion widens. In treating gastric ulcer, the importance of regularity in the meals, not allowing the stomach to remain empty unduly long, is the corner stone of proper treatment. Any excess or error in diet, drinking cold water, or the like, may bring on an attack of the morbid appetite after it has vanished either spontaneously or under treatment. This symptom of sudden, imperative hunger serves also to differentiate a lesion in the stomach from an affection of the neighboring organs. It also aids in differentiating symptoms due to irritation of the surface of the ulcer from those due to fermentations or intestinal disturbances of toxic origin. Bulimia occurs also in diabetes and in convalescence from tetanus, but without the local and reflex phenomena peculiar to the gastric form. He has observed it in 1,036 out of 1,200 patients with erosions or ulcers in the stomach. The irritation from the lesions causes an incessant secretion of gastric juice, which has an irritating action in turn on the lesion, contributing to the progressive tendency of the ulcer. In cases without bulimia, reflex symptoms may be observed from irritation of the lesion, but they are liable to divert attention entirely away from the stomach. In one instance a young physician experienced vertigo and symptoms of ataxia in the legs, whenever his stomach was empty. These symptoms vanished completely when he complied with the order to eat something every three hours without fail. The fact that these reflex symptoms vanish when food is taken is their chief characteristic. They existed alone in 20 patients, and included headache, vertigo, or both, tickling in the throat, weakness and retching. In one case dizziness and amaurosis recurred regularly when the stomach became empty. In 300 cases the attack of imperative hunger was noticed within the first six months of the development of the stomach lesion, in others not until later, and in 10 per cent. not until after from 16 to 40 years. In some cases the reflex phenomena included rumbling in the stomach or intestines and a feeling of emptiness in the stomach, in others nausea, with discomfort, pains, etc., the one feature common to all being that the symptoms appeared when the stomach was empty, and vanished when food was taken. In most cases the food never caused discomfort, the latter developing only after the food had passed out of the stomach. The proportion of hydrochloric acid in the gastric juice does not seem to have much influence on these phenomena—all grades of acidity down to zero having been observed in the different cases. The onset of the morbid appetite was sometimes accompanied by a feeling of gnawing, burning, rubbing, boring, painful pulling or other disagreeable local sensation. In 26 cases the patients complained that the gnawing pain was so great that it left them weak, with a cold sweat. A burning sensation alone was felt in 203 cases; bulimia alone in 624 cases. These various forms of the morbid appetite sometimes merged into each other, and in 13 cases they were accompanied by pains in the back. The gnawing sensation was interpreted by some as a sign of tapeworm, although it has nothing to do with tapeworm. Even if a tapeworm happens to be present, the morbid appetite vanishes completely when the stomach lesion is cured. In 5 instances pulsation was noticed in the stomach region, with bulimia. In a few others the gnawing sensation was referred to a part remote from the stomach, but as a rule it coincided with the area of tenderness. In 19 cases the attack of bulimia was followed by syncope; in 8 cases it induced morbid yawning or other reflex phenomena: trembling followed in 115 cases.

41. **Hemorrhagic Diathesis in Typhoid.**—This communication from von Leyden's clinic describes 3 cases of the hemorrhagic diathesis in typhoid. The patients were women between 24 and 48, all with a severe form of the disease, but all recovered. Treatment consisted in the usual measures, supplemented with gelatine and copious saline infusion. The heat was oppressive at the time the three cases were under treatment, and possibly may have favored the hemorrhagic diathesis. It first became manifest during the third or fourth week. There was no tendency to nosebleed.

Hospitalstidende, Copenhagen.

Last indexed XLVI, page 761.

42 (XLVIII, No. 49.) *Behavior of Lymphatics in Primary Syphilitic Infection in Women.—Om. Lymphekarsystemets Forhold ved (primair) syph. Infection hos Kvinder. R. Bergh.
43 (No. 50.) Diagnostiske Tuberkulin-Injektioner. G. E. Permin.
44 (Nos. 51-52.) *Den saakaldte Enteroptosis og dens chirurgiske Behandling. T. Rovsing.
45 (XLIX, No. 1.) *Studier over den kroniske Gastritis. IV, Achylia gastrica. Knud Faber.
46 Undersogelser over Spirochæta pallidas Forekomst ved Syfilis. A. Brönnum.
47 (Nos. 2-3.) Undersogelser over Urin-Sediment. I. De hyaline Cylindre. P. Liebmann.
48 Et sjaeldnere Tilfaelde af (unilateral) Syringomyeli. A. Wimmer.
49 (No. 4.) *Om Chirurgisk Behandling af Ischias (sciatica). A. Pers.
50 (Nos. 5-7.) *Den medfodte Pylorus-Stenose og dens Behandling (congenital). C. E. Bloch.
51 (No. 8.) *Intestinal Invagination.—Tarminvagination. I. Sorensen.
52 (No. 9.) *Kan en Difteritis-Epidemi stoppes ved preventive Indsprojtninger af Antidifteri-Serum? H. Maag.
53 Chirurgie minor. L. Bramson. New model for knife, retractor, etc.
54 Om Leukocyt-taelling (count). O. Thomsen.
55 (No. 10.) Sinus-Trombosens Behandling. F. Pontoppidan.
56 (No. 11.) *Return Cases of Scarlet Fever.—Af udskrevne Sodskende smittede, paa Hospitalet genindlagte Tilfaelde—ved Scarlatina. Sorensen.

42. **Behavior of Lymphatics in Primary Syphilitic Infection in Women.**—Bergh relates the findings in the lymphatic system in 1,260 women examined during the last eighteen years. The women were mostly young and 321 were professional prostitutes. The inguinal glands were found enlarged in practically 100 per cent., the posterior cervical glands in 83 per cent., the submaxillary in over 43, the axillary in over 33, the epitrochlear in over 15, the mastoid in 10, the anterior cervical in over 8, the occipital in over 4, the paramammary in 3, and the popliteal in 0.7 per cent. The enlarged glands were indolent as a rule, but sometimes they were a little tender. Suppuration occurred in only 15 cases, about 1.2 per cent. of the total. The suppurating glands were the inguinal in 8, the submaxillary in 5 and axillary in 1. The literature on the subject is reviewed.

44. **Surgical Treatment of Enteroptosis.**—Rovsing protests against the term enteroptosis. The condition known by this name, he says, is better described as splanchnoptosis, partial or universal, according as one or more of the abdominal organs are involved. He has performed nephropexy in 100 cases, hepatopexy in 18 and gastropexy in 54. The results obtained from these operative measures have been most excellent. He gives illustrations of an abdominal supporting bandage, but adds that it is preposterous to expect that even the best bandage can restore the sunken organs to place and hold them there. All that can be attained with a bandage is to increase the intra-abdominal pressure by the elastic pressure on the lower part of the abdomen, and thus to lift up the intestines which then serve as an air cushion to hold up the organs below the diaphragm. This can be accomplished only when the ptosis is due to the relaxation of the abdominal walls and consequent reduction in the intra-abdominal pressure. The bandage can do no good in the case of splanchnoptosis in a woman who has never been pregnant, with unrelaxed, strong and muscular abdominal walls. The ptosis in these cases can not be ascribed to the same cause as in women who have borne children. It must be the result of a congenital weakness of the intra-abdominal supports, a lesser vitality of the tissues, possibly supplemented by abuse of the corset, and the general shape of the body. The diagnosis of splanchnoptosis in a virgin is somewhat difficult. There is no lack of symptoms, but the strong, muscular abdominal wall hinders palpation and examination of the abdominal organs. Nephroptosis alone is liable to induce symptoms simultaneously in the urinary apparatus, the intestines and the genital organs. The symptom that attracts attention first, as a rule, is an annoying frequency of scanty urination, with the characteristic that the incessant desires cease when the woman lies down. This symptom is frequently attributed to bladder trouble, and the patient is treated for a non-existent cystitis, although the urine is entirely normal. In rarer cases there is intermittent hydronephrosis. In many cases, however, the symptoms due to the displaced kidney do not attract attention to the urinary apparatus at all, but seem to be those of intestinal dyspepsia. It is sometimes difficult to differentiate nephroptosis with secondary colitis from colitis with appendicitis, and the splanchnoptosis is frequently mistaken for a genital affection. Patients complain of pains in the side corresponding to the displaced kidney at each menstruation, suggesting ovarian trouble. In 3 out of his 106 cases of this kind the woman had been castrated solely on this account. The pains persisted, unmodified, after the removal of the ovaries. One of the reasons, he declares, why nephroptosis is so frequently overlooked is because the patient is examined as she reclines. The kidney slides back into its normal place as she lies down, and nothing abnormal is discovered. If the patient is in bed he tells her to get up and hop on both feet around the room for several minutes. Or to sit up in bed, and, supporting herself with both hands on the sides of the bed, to raise herself in the air and then allow herself to drop down again on her seat, repeating this a number of times. The physician then palpates the normal site of the kidney with both hands, from front and back. He thinks that gastroptosis is much more frequent than is generally recognized. In only 12 out of his 53 cases of gastropexy had the condition been diagnosed correctly. Constipation and its consequences were noted in all the cases. In the moderate degrees the patients complained of discomfort, a sensation of oppression over the entire abdomen or only in one side or in the region of the cecum or ascending colon. These uncomfortable sensations vanished as the patient reclined, but returned as she stood, and continued severe during work or exercise. The woman tires easily, becomes nervous and irritable, loses appetite and strength. On these are superposed in the severer cases and also in patients with virginal abdominal walls other symptoms such as cardialgia, pains in the abdomen on eating and after meals, and sometimes vomiting, the dread of the gastric disturbances causing the patients to starve themselves into actual cachexia. This gastroptosis cachexia is often mistaken for ulcer or cancer, even by skilled physicians. The disturbances depend on the quantity rather than on the quality of the food ingested; a small amount of irritating food causes little disturbance, while a large amount of even milk or water brings them on, the reverse of what is observed in case of ulcer. The pulsation of the aorta can be perceived in the epigastrium as it is not hidden by the stomach. Examination of the stomach content after a test meal shows normal conditions, but inflation of the stomach through a tube will generally reveal the altered position of the organ with sufficient accuracy. His technic of nephropexy aims to fasten the kidney to the soft parts in its normal, natural niche. The organ can move comparatively freely with the respiration. He refrains from throwing a suture around the kidney as he thinks this invites necrosis, and he also dispenses with any suture in the kidney tissue proper.

45. **Achylia Gastrica.**—Faber has encountered 35 cases of primary achylia during the last three years. In 11 the patients exhibited symptoms on the part of both stomach and intestines. Cardialgia was the most frequent symptom. It may range from simple oppression or burning to violent pain; it generally appears after eating, and lasts several hours. Sometimes nausea, pyrosis and vomiting may be observed. There may be diarrhea or constipation, or both alternating. The symptoms of dyspepsia may be accompanied by nervous symptoms, headache, vertigo, broken sleep, depression. In 10 of the patients the intestinal symptoms masked the gastric; in 10 there were only gastric disturbances, and in 3 other patients the achylia was a chance discovery, not accompanied by any symptoms. He believes that the achylia is always secondary to chronic gastritis. With correct diet the achylia usually rights itself. Hydrochloric acid may be found useful, as also bitters, especially condurango.

49. **Surgical Treatment of Sciatica.**—See summary in THE JOURNAL, June 16, 1906, page 1896.

50. **Congenital Stenosis of the Pylorus.**—Bloch reports a dozen cases of congenital stenosis of the pylorus in infants. All were healthy, well-grown children, who began to vomit

their food without any appreciable cause, after intervals of from a few days to four weeks after birth. This symptom was accompanied by constipation and scanty secretion of urine. The pylorus in such cases can be palpated readily, especially after rinsing out the stomach. After a time the vomiting is less frequent, and peristaltic waves become noticeable, especially when the child is at the breast the waves show more plainly. The best results were attained with Heubner's plan of feeding the infants copiously, according to their age and weight, notwithstanding their vomiting, supplemented by poultices to the abdomen and opium to aid in controlling the spasmodic constriction. The poultices are applied for two hours at a time and renewed every half hour. Lavage of the stomach is not required. The 6 infants treated on these principles all recovered. His experience indicates the importance of curing first the concomitant gastritis, if such be present. It also emphasizes the great value of buttermilk in such cases. Two of the children were treated with a Loreta operation and both died; 2 others died soon after they were received in the hospital. All the others recovered.

51. **Intestinal Invagination.**—Sörensen reports 6 cases. The first was in a male child 5 months old with ileocecal invagination successfully reduced at the twenty-second hour by laparotomy. The second patient was a girl of 7 with invagination of the ileum. The operation was not undertaken until three weeks after the first symptoms, but the child recovered after resection and enteroanastomosis. In one infant a temperature of 40.2 C. suggested diffuse peritonitis from the invagination, but the latter was found uncomplicated. In a girl of 14 there was an interval of two and a half months before surgical intervention and the child recovered. Two of the infants died, one of bronchopneumonia four days after the operative reduction of the invagination, and the other two days after a laparotomy and an apparently successful bloodless reduction.

52. **Arrest of Diphtheria Epidemic with Antitoxin.**—Maag's experience is certainly encouraging. An epidemic of 125 cases of diphtheria in a Norwegian town was arrested by the systematic preventive use of diphtheria antitoxin in all the healthy members of the families attacked. Out of the 423 persons thus immunized, only 3 developed diphtheria later, and this not until after intervals of from 35 to 56 days. In some cases the parents, who had not been injected, developed diphtheria, while all the children escaped. The immunity conferred lasted about five weeks.

56. **"Return Cases" of Scarlet Fever.**—Sörensen states that out of the 10,299 cases of scarlet fever treated at the Copenhagen Contagious Diseases Hospital, 372, or 3.6 per cent., were return cases, that is, occurring in other members of the family after the return from the hospital of the child first attacked. The most striking example was in a family with seven children. One was received in the hospital October 22, and was dismissed December 17. Five days later a brother developed symptoms of scarlet fever and he remained in the hospital until February 15. March 24 a sister arrived at the hospital with the same symptoms and was dismissed May 25, and June 1 another sister was received. In another family a child entered the hospital August 15 and left October 9. A brother was received October 17. He left the hospital after 80 days of treatment, with a discharge from the ear not quite cured; another brother was received 17 days later, and three days after this the fourth and last child in the family. The return cases were received after an interval of from 2 to 10 days in 163 cases, of 11 to 20 in 77, of 21 to 31 in 30, of 34 to 38 in 2, and once after an interval of 70 days. The children are kept in the hospital for about eight weeks. Of course, a larger number of return cases actually occur than are brought to the hospital. Other cases of infection outside of the family are not considered in these statistics. The particulars are given regarding the strict measures taken to prevent infection. During some years the outgoing children were given a "sublimate bath," in others they were anointed with eucalyptus oil, in others they received both and in others the throat and nose were disinfected with creolin. The proportion of return cases remained about the same each year, the percentage infected within 11 days ranging from 1.2 to 2.7 per cent., and within 21 days from 2.1 to 3.7 per cent.

Gazzetta degli Ospedali, Milan.

Last indexed XLVI, page 1484.

57 (XXVII, No. 6.) Mortalita per tubercuiosi in Italia durante gll anni 1897-1902. C. Sforza.
58 (No. 9.) Tracheotomia od intubazione? M. Fasano.
59 *Sulia pseudo-digestione putrefattiva. C. Ferrai.
60 2 casi di malaria acuta primitiva nella convalescenza del tifo. P. Trapani.
61 (No. 12.) Albuminurie studiate col metodo della precipitazione frazionata. A. Barlocco.
62 Sulla genesi delle scosse ritmiche del capo nel morbo di Flajani-Basedow (cause of jerking of head in exophthalmic goiter). Bocciardo.
63 *Potere ipertensivo degli estratti surrenali dell' uomo in alcune forme morbose (suprarenal extracts from human subjects). A. Conti and O. Curtl.
64 *Impiego dl lievito di birra contra la tonsillite flemmonosa (yeast). U. Melzi.
65 (No. 15.) *Dl alcuni criteri prognostici nelia tifoide. Curlo and Goggia.
66 Methylene Blue Test of Urine.—Intorno alla cosi detta bleu-metilenereazionc. M. Carletti.
67 *Patogenesl dell'itterus grave in gestanti (icterus in pregnancy). P. Gioielli.
68 *Epidemia di morbillo (measles). E. Leonardl.
69 (No. 18.) *Alcune note sul tifo (typhoid fever). L. Peserico.
70 *Triangolo paravertebrale dl Grocco nelle pleuriti sierose dell'infanzia. A. Vignola.
71 Sulla terapia del cancro cutaneo. A. Campani.
72 *Infezione pneumococcica primitiva dello stomaco e dell'intestino. Peritoniti e polmoniti secondarie. B. Marchicio.
73 *Prevenzione nell bambino delle malattie dell'adulto (prevention of disease in children). P. G. Batta.
74 Variazioni dell'apnea volontaria durante le inalazione solfidriche (therapeutic inhalation of sulphurous gases). P. Sabbatani.

59. **Putrefactive Pseudo-Digestion.**—Ferrai asserts that he was the first to call attention to the fact that the digestive processes are liable to continue their action for several hours after death. He is now studying the pseudo-digestion due to putrefactive processes after death. He found that they are more pronounced in the semi-fluid parts of the stomach content than in the parts not yet acted on by the digestive juices.

63. **Pressure-Raising Power of Suprarenal Extract.**—The experiments described were made with extracts of suprarenals obtained soon after death from 23 cadavers. It was found that the cadaveric autolysis did not modify the specific action of the suprarenal extracts from well-preserved cadavers twenty-four hours after death. The suprarenal extracts all displayed about the same specific blood-pressure raising property, irrespective of the terminal affection. In animals, on the other hand, succumbing to rapidly fatal experimental toxi-infections, the specific action of the suprarenals seemed to be much lowered.

64. **Brewer's Yeast in Phlegmonous Tonsillitis.**—Melzi reports a number of cases of suppurating peritonsillitis aborted by administration of from 8 to 20 gm. of brewer's yeast in the twenty-four hours. It was taken in sweetened milk in three doses and rapidly cured the incipient cases and improved all.

65. **Prognosis of Typhoid Fever.**—The relations between the pulse and the temperature curve, the agglutinating power and the arterial pressure have been carefully noted in 700 typhoid-fever patients at Maragliano's clinic during the last few years. The prognosis was always found favorable, as a rule, when at the same time the pulse was slow and the agglutinating power high. On the other hand, the prognosis was grave when the pulse was rapid and the agglutinating power low. The course and outcome of typhoid fever are evidently decided, he states, by the aptitude of the cell to produce antibodies and the anatomic-physiologic condition of the heart and its nervous apparatus. These two factors are independent of each other. The lowest arterial pressure was found in the gravest cases. Experiments on laboratory animals demonstrated that typhoid virus has a marked depressing action on the ganglia of the heart. The experiments were made on the isolated and normal heart with cultures of the typhoid bacillus or with serum from typhoid patients. It seems probable that in man the nervous regulating apparatus of the heart is especially susceptible to the action of the typhoid toxins, and it reacts with a retarding influence on the heart beat. Thus a special sensibility on the part of the vagus indicates that the nervous apparatus presiding over the circulation and the movements of the heart is in good condition. This is demonstrated by the cases of actual bradycardia observed in certain mild cases of

typhoid. In the severer cases this special sensibility becomes deadened and the conditions then favor the production of the more rapid heart beat, reduction of the arterial pressure and the other phenomena leading to final paralysis of the heart.

67. **Icterus in Pregnancy.**—In this communication from Bossi's clinic at Genoa 5 cases of severe fatal icterus in pregnant women are described, with a series of experiments on rabbits inoculated with toxins from bacteria cultivated from the feces or organs. The toxins seemed to display an elective action on the livers of the animals. In some the findings were analogous to those of acute yellow atrophy of the liver. The article is illustrated.

68. **Study of Spread of an Epidemic of Measles.**—The day after the first case of measles was observed all the schools were closed down, but, notwithstanding, in a few days nearly every child in the district presented symptoms of measles. The invasion was like a cloudburst, and 600 cases were reported before the epidemic finally died out six months later. Koplik's spots were noticed in about half the cases, sometimes six or seven days before the eruption appeared. A map of the tract affected shows that the epidemic proceeded along a comparatively narrow, almost straight line from southwest to northeast. Part of the way is along a river and part along the main highway, but both river and highway diverge from the line of the epidemic, and other adjoining or interposed districts through which the river or highway pass did not present a single case. The conditions of this epidemic suggest that the germs were spread by way of the wind. The sudden invasion and the continuance of the epidemic along the path of the prevailing winds, in a mountainous country, with the entire escape of districts in shut-in valleys, harmonize with this conception of air-borne contagion. In 2 cases tuberculous meningitis developed afterward, in others conjunctivitis, and other serious after-affections were observed in many instances. Measles alone does not seem to be a very serious affection, but danger comes when it is complicated with infection from other germs. The difference between the mild and the severe cases of measles is so great that mere variation in the virulence of the measles germ is inadequate to explain it. A severe course must be due to associated infection. Treatment should aim to improve the hygienic condition and to keep away all possible infection from other sources.

69. **Notes on Typhoid Fever.**—Peserico mentions that all his cases of typhoid fever in nursing women have terminated fatally. Also that a number of his cases which seemed to be of the mildest form suddenly assumed an almost fulminating character. He has also noticed that drugs given to act on the heart are much more effectual when the circulation has previously been stimulated, as a preliminary, by mechanical and hydrotherapeutic measures, thus allowing the heart tonics a chance to work. It has been his experience that the course of epidemics is graver when the season is rainy and cold and after an inundation.

70. **Grocco's Triangular Dullness.**—Vignola found in 3 children the triangular area of dullness on the side opposite the pleural effusion, first described by Grocco. The dullness gradually subsided as the effusion was absorbed. It also subsided in one case as the serous effusion became purulent. The triangular area of dullness is perceived in the back, along the spine, the base line extending outward for from 3 to 6 cm. from the vertical line along the spine. Injecting a fluid into the pleura of the cadaver does not cause this area of dullness unless the diaphragm has been previously immobilized by injecting gelatin beneath it.

72. **Primary Pneumococcus Infection of the Digestive Tract.**—Marchisio reports 5 cases with secondary peritonitis or pneumonia. All the cases were observed in the course of three months, the primary lesion being multiple ulcers in the stomach and intestines, as was determined by the autopsy in 4 cases. The patients were all adults. The secondary pneumonia in these cases always affected the lower lobes, as also in Dieulafoy's 2 cases. The symptoms of ulcerative gastritis appeared first, the peritoneal and pulmonary symptoms not developing for several days. In one patient, a woman of 35, the ulcers evidently passed into a chronic stage with occasional hematemesis. A milk and fluid diet, continued for months, with no food for a few days after a hematemesis, suprarenal preparations for a few days, and ice to the abdomen were the measures found effectual in this case. The patient kept fairly well nourished under this treatment.

73. **Prevention in Children of Disease in the Adult.**—Batta expatiates on the great importance of detecting the tendency to certain affections in their early stages and curing them before they become irreparable. Scoliosis, for instance, is seldom diagnosed until the deformity is well established. Spasms in a child are attributed to worms or other causes, not to latent epilepsy, until when grown to adult age he has the typical epileptic seizure. Bronchial asthma in the adult may have been heralded by slight asthmatic disturbances in the child to which no one paid attention. If the course of ideas, slight psychic deficiencies, etc., in children were better studied and guided many adults, he says, might escape insanity later. Umbilical hernia in the adult is the result of umbilical hernia in the child, which, although possibly healing spontaneously, leaves a predisposition for later recurrence. The same might be said of inguinal hernia. The daily bath for infants may induce icterus later in the predisposed if the temperature and other conditions are not carefully regulated. As the child grows, attention should be paid to its harmonious development, whether the great cavities of the body are developing proportionately to its size, etc. The physician watching over the development of a child, Batta states, can guide it to the harmonious proportion between its various organs and parts, which is the best safeguard against disease. Preventive medicine has to be based on accurate observation to be effectual. Its field is particularly encouraging in children as they are in the formative period, but it requires a constantly vigilant eye and a skillful hand. The physician, becoming counselor in hygiene for the family, can educate the parents to direct the steps of their children into the ways of health.

NEW PATENTS.

Recent Patents of Interest to Physicians:

820948. Device for treating the nasal passages. Edward Baum, Knoxville, Tenn.
820950. Medical instrument. Karl A. Bode, New York.
821354. Inhaling apparatus. Theophil H. Gebauer, Cleveland. Ohio.
821291. Benzoyl succinyl peroxid and making same. Alexis C. Houghton, Syracuse, N. Y.
821180. Electrical massage and vibrator machine. Sampson W. Moon, Chicago.
821315. Stethoscope. Charles M. Root, Philadelphia.
821259. Douche apparatus. Charles P. T. Roux, Niort, France.
821141. Lens-finder for clinical thermometers. Waldemar Ude, St. Louis.
821004. Vaporizer. Henry A. Veazie, New Orleans.
821389. Medicine-distributor. Charles L. Wells, St. Paul, Minn.
821783. Apparatus for promoting muscular or physical development. Frederick M. Clease, London, Eng.
822101. Machine for forming pill-mass rolls. Henry Copleston, Cincinnati.
821619. Surgical arm-splint. Ezra N. Drier, Vancouver, Canada.
821620. Casein solution and producing same. Henry V. Dunham, Bellows Falls, Vt.
822197. Surgical table. Wm. Evans, Norfolk, Va.
822110. Syringe for subcutaneous or other injections. Anne A. Gaillot, Paris, France.
822119. Invalid-bed. George Harden, Toledo, Ohio.
821655. Radium surface. Hugo Lieber, New York.
821831. Vibrator. Henry F. Rooney, Randolph, Mass.
822019. Disinfecting apparatus. Wm. H. Rose, Baltimore.
822020. Disinfecting apparatus. Wm. H. Rose, Baltimore.
822079. Hypodermic syringe. Louis Roussy, Geneva, Switzerland.
822092. Surgical appliance. Wm. L. Woodruff, Troy, Ariz. Ter.
822811. Truss. Gustav C. Abraham, Flint, Mich.
822370. Pharmaceutical compound. Fritz Hofman, Elberfeld, Germany.
822385. Artificial leg. John A. Peer, Washington, D. C.
822329. Physical culture appliance. Margaret A. Wilcox, Chicago.
822809. Combined reading and invalid table. Wm. B. Young, Albion, N. Y.
823409. Vaginal irrigator. Thomas W. Heuston, Coffeyville, Kans.
823472. Making sulphuric anhydrid. Rudolf Knietsch, Ludwigshafen-on-the-Rhine, Germany.
823069. Vaginal syringe. John T. McCarthy, Baltimore.
822980. Water-ozonizing apparatus. Marius Otto, Paris, France.
823233. Chloroform dropper. Frederick Wachter, Jersey City, N. J.
824057. Invalid-bed. Wm. H. Armstrong, J. M. Pugh and R. W. Magee, Indianapolis.
823499. Surgical appliance. Ashbel P. Barlow, St. Joseph, Mich.
823500. Truss. Ashbel P. Barlow, St. Joseph, Mich.
823841. Combined fracture-bed and invalid's chair. James T. Boyd, Indianapolis.
823946. Inhaler and respirator. Edwin K. Hill, Valparaiso, Ind.
823873. Poison indicator. Philip H. Jones, Lutcher, La.
823877. Surgical implement. Alonzo C. Kellogg, Portage, Wis.
824038. Clinical thermometer case. John F. Myers, Sodus, N. Y.

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Address

SOME RECENT RHINOLOGIC ACHIEVEMENTS AND TENDENCIES.

ADDRESS OF CHAIRMAN OF SECTION ON LARYNGOLOGY AND OTOLOGY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, AT BOSTON, JUNE, 1906.

OTTO T. FREER, M.D.
CHICAGO.

Articles on rhinologic subjects are being produced in such numbers and are so widely scattered in the medical journals of all nations that much that is of higher value than what has been noted in this paper has doubtless escaped my notice, and this review necessarily includes only a portion of the many subjects that interest rhinologists to-day.

THE EXTERNAL NOSE—ACNE ROSACEA.

F. Bloebaum[1] describes a radical treatment by means of the galvanocautery for rhinophyma, that aggravated form of acne rosacea in which the nose is disfigured by lobes and tuberosities of hypertrophied integument. He employs pricking of the skin and slitting of ectatic vessels with the galvanocautery needle, in diffuse cases going over the whole surface of the nose in this manner. Hypertrophic protuberances are removed with the hot wire snare, a platino-iridium knife and a flat burner. The cosmetic effect is perfect, the nose becoming smooth and of normal color.

In this connection I wish to call attention to a method of my own for dealing with disfiguring ectatic branching veinlets on the nose in less marked cases of acne rosacea. These vessels can be completely obliterated by means of a platino-iridium needle attached to the positive pole of a galvanic current of about 3 milliamperes, the needle being inserted into the branches of the vessel at close intervals along their course from their periphery to its main trunk, which is finally also punctured. The vein will then be found to be blanched and will remain permanently closed if the process has been thorough enough. The positive needle does not cauterize, so that the procedure leaves no perceptible trace on the skin even immediately after the treatment. The usual practice among dermatologists is to use the negative pole for the needle. This cauterizes and makes a loose clot in the vessel so that it usually reopens. Reasoning from analogy in the treatment of aneurisms where the positive pole is used to form a firm coagulum, I employed it for the cases mentioned with good results.

THE COSMETIC USE OF PARAFFIN.

Paraffin injections under the skin of the nose for cosmetic effects have unfortunately led to a number of cases of sudden monocular blindness. These group themselves as shown by W. Uhthoff[2] and Rohmer[3] in two classes, both characterized by the rapid occurrence of blindness, but differing in their symptoms. The first group is due to plugging of the arteria centralis retinæ by a paraffin embolus which has passed through the pulmonary circulation and the accident is accompanied by but slight or no inflammatory reaction and by the typical ophthalmoscopic changes of embolism of the retinal artery. In the second group the vessels involved are veins, a thrombosis occurring in the vena ophthalmica inferior and extending to the vena centralis retinæ. In the second class of cases there is exophthalmos, diminished mobility of the globe, edema of the lids, conjunctival chemosis, and intraocular hemorrhage.

The danger of such embolic accidents will always cling to paraffin injections. The melting point for the paraffin used in several cases was around 110 F., a melting point very commonly recommended. There seems to be no physical reason why the needle should not in rare instances enter the lumen of a minute veinlet and force a particle of even semisolid cold paraffin directly into the circulation or else the pressure employed might drive a bit of paraffin through a rent in the vessel wall. Hard paraffin of an even higher melting point, 122 F. (50 C.), would, of course, lessen the danger of embolic accidents, but it seems proper both for the sake of the operator and the patient that the latter should be told of the remote possibility of blindness in one eye as a consequence of the operation.

Eschweiler[4] presents an interesting description of the histology of a piece of tissue containing paraffin which had been injected into the nose of a young woman a year before. His conclusions confirm the usual opinion that in time all of the paraffin is absorbed and replaced by connective tissue.

THE VIBRISSÆ.

Proceeding into the nasal interior, I wish to call attention to the common statement recently again emphasized that the hairs of the nasal vestibule, the vibrissæ, are of great functional importance as catchers of dust from the inspired air. If this were the case it seems to me that all human beings from birth would be provided with these hairs, while as a matter of fact they are absent or hardly noticeably present in most children and in many women. These individuals certainly need protection against dust in their noses as well as men who usually have a decided growth of hair in the nostrils. In my experience the coarseness and abundance of these hairs coincides with the growth of hair on the face and they are thickest and most numerous in well-bearded men in whom they often create a positive obstruction to the nasal respiration so that they need clipping away.

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[1] Muench. med. Wochft., vol. lii 1904.

[2] Berl. klin. Wochenschrift, No. 47, 1905.

[3] Annal. d'oculist, September, 1903.

[4] Fraenkel's Archiv. für Lar., 1905, p. 1.

HISTOLOGY OF THE NASAL MUCOSA.

The histology of the secreting mechanism of the nose is most ably considered by Goodale,[5] and his research has disclosed the important fact that in vasomotor rhinitis there is an increase in both the number and size of the canaliculi of the basement membrane of the nasal mucosa and also in the perviousness of the columnar epithelium resting on it. Goodale thinks that this accounts in part for the profuse watery discharge, either seasonal or perennial, that characterizes vasomotor rhinitis, because the largest part of the moisture of the nose normally comes through these canaliculi and the interspaces in the columnar epithelium. Goodale found the canaliculi absent in atrophic rhinitis.

HOT AIR TREATMENT OF CHRONIC RHINITIS.

The group of conditions called vasomotor rhinitis, spasmodic rhinitis and nasal hydrorrhea, all marked by attacks of sneezing, sudden distention of turbinals and free watery secretion, is most resistant to treatment and it is a satisfaction to learn that Lermoyez and Mahu[6] have had brilliant results from the use of a stream of hot air applied to the mucosa at the high temperatures of 70 to 90 degrees Centigrade (158 to 194 F.). The result of the treatment on an inferior turbinate is at first reddening and retraction, then a free watery discharge lasting for several minutes to hours. The original must be consulted for the technic. The authors feel justified in regarding the hot air treatment as a specific for nasal hydrorrhea.

HAY FEVER.

Hay fever, whose symptoms are analogous to those of vasomotor rhinitis, is the subject of another article by Dunbar,[7] written in his usual scholarly and clear manner. A great deal of attention is devoted to hay fever as it occurs in America, and Dunbar states that persons subject to the ragweed and goldenrod pollentoxin of our late summer are usually immune to the vernal type of hay fever most common in Germany and due to the pollen of the grasses, wheat and rye especially. Some unfortunates, however, are subject to intoxication with both kinds of pollen and suffer all summer. He advises the use of pollentoxin as a diagnostic test of hay fever. Dunbar thinks that where there is local irritation and failure in the use of his powdered pollantin the poor result is due to the insufflation of excessive doses. Dr. Lewis Somers[8] found that the powdered pollantin acted as an irritant and had little effect, while the results from the liquid form of the serum were excellent. Dunbar's objection to the fluid type of the remedy is its instability, as it is liable to decompose, in spite of the carbolic acid it contains, if it be contaminated. Of 505 of Dunbar's patients, 299 used pollantin with complete success, 143 were helped, on 63 it had no effect. A singular phenomenon is the fact that, though normal persons are immune to pollentoxin, their blood serum has no antitoxic effect in neutralizing the poison of hay fever. R. Mohr,[9] judging from experience with 501 cases of hay fever, feels certain that pollentoxin is the cause of the disease and thinks the disposition to the affection incurable.

Experience with the new ragweed and goldenrod pollantin designed for the autumnal form of hay fever has been rather disappointing in America, though to many the remedy has seemed effective in a proportion of cases. It certainly does not begin to be for hay fever what antitoxin is for diphtheria. It will take a trial of several years to decide definitely the value of pollantin.

Alfred Denker[10] and Urbantschtisch[11] have found that massage of the nasal interior markedly diminishes the tendency to hay fever. Denker uses a stiff probe covered with cotton dipped in europhen oil, while Urbantschtisch uses an elastic steel probe moved by an electric motor. Denker massages even during the attacks. Mohr had no result from intranasal massage, and, to judge from my own lack of success with it in vasomotor rhinitis, I think that little more than temporary damage to the epithelium will be accomplished with it in hay fever. I think, however, that it may be worthy a trial.

VACUUM THERAPY.

R. Sondermann[12] employs a rubber bulb connected to a mask placed air tight over the nose in order to produce a negative pressure in the nasal cavity and suck secretions from it and the accessory sinuses. In order to shut off the oropharynx he has the patient say "ee" or inspire through pointed lips.

Gustav Spiess,[13] of Frankfurt, describes a suction pump operated by an electric motor for the same purpose as Sondermann's mask. Both authors emphasize the advantage of this vacuum method for the diagnosis and treatment of disease of the accessory sinuses, secretion being aspirated from these cavities, provided their orifices be not occluded by swelling or polypi. They also had marked success in atrophic rhinitis (ozena), the free secretion following the rarefication of air in the nose, loosening the crusts, while such sinuses as were affected by empyema were emptied of their contents. In the suppurative rhinitis of children Sondermann obtained so much more secretion with his suction mask than he judged could come from the nasal cavity alone that he was led to think that the sinuses must furnish a large proportion of the discharge and that empyema of the sinuses must be more common in childhood than is commonly supposed. He also found empyema of the sinuses in all of his ozena cases. Intumescent states of the nasal mucosa were much improved by the suction treatment, deturgescence of vessels following on a temporary distention. It is possible that the vacuum methods of Sondermann and Spiess may prove of great value to rhinology.

PARAFFIN FOR ATROPHIC RHINITIS.

Fliess,[14] Zaalberg, Brockhart and Burger[15] have been following Moure and Brindel[16] in employing paraffin injections into the turbinated bodies and also the septum for the relief of atrophic rhinitis (ozena). A review of these writings leads to the conclusion that the method is only useful in cases where the atrophy is slight or moderate, and that it is not only useless but harmful where the turbinated bodies are much shrunken. Burger states that a possible complication is thrombophlebitis of the facial vein, which may persist for months and can not be prevented. Other unpleasant effects are swelling of the cheek and eyelids on the side operated on. In 20 out of 60 cases Zaalberg had cessation of the fetor and crust formation, and regards this as an argument against Gruenwald's theory that ozena is nearly always due to sinus suppuration. The melting point of the paraffin used by Fliess and Zaalberg was high, 118 to 125 F.

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[5] Annals of Otology, March, 1905.

[6] Revue Hebd. de Laryng., March 4, 1905.

[7] Berl. klin. Wochft., Nos. 26, 28, 29, 1905.

[8] Medicine, March, 1904.

[9] Münch. med. Wochft., p. 1585, 1905.

[10] Münch. med. Wochft., 1905, No. 19.

[11] Münch. med. Wochft., 22, 1904.

[12] Fraenkel's Archiv für. Laryng., vol. xvii, p. 425, also Münch med. Wochft., No. 1, 1905, and page 1440, 1905.

[13] Archiv für Laryng., 1905, p. 179.

[14] Berl. klin. Wochft., 1904, p. 252.

[15] Internat. Centralb. für Laryng., 1905.

[16] Le Bulletin medical, 23, vol. v, 1900.

For my part I have never felt the need of paraffin injections in ozena, for I have found the disease not difficult to control by local treatment in nearly all cases. I have the patient employ irrigations with my hard rubber irrigating tube, which emits minute jets at a right angle to its surface and can be passed back and forth and rotated in the nasopharynx and nose while it washes away secretion. Where needed the irrigation is preceded by the use of a Gottstein tampon for some hours to soften scabs. After washing I have the patient apply freely to the nasal interior and nasopharynx by means of a long applicator and cotton swab an ointment of lanolin with a little vaselin and 2 per cent. of salicylic acid. This thick unguent makes it impossible for crusts to adhere and it remains in contact much longer than thin oils do. In addition I massage the mucosa with a 50 per cent. fresh solution of argyrol. Under this treatment I have always seen rapid improvement, cessation of the fetor and a great lessening of the crust formation and in several instances in the course of months to a year a complete relief from all of the symptoms. Considering what can be accomplished by this local treatment, I can see no need of the painful and risky paraffin injections.

THE GALVANOCAUTERY.

In recent times the use of the galvanocautery for the reduction of obstructing swellings of the inferior turbinated body has been denounced as an antiquated procedure that did much harm and should be wholly discarded for the more radical cutting methods. I think that disappointing attempts to reduce true hypertrophies of the lower turbinated body with the galvanocautery and excessive reaction with chronic scabbing following extensive surface cauterizations have influenced those who would thus wholly discard a most valuable and proven means of treatment if properly used for the proper condition. I refer to linear cauterization of purely vascular distention of the turbinal, either transitory or permanent and with but little or no hyperplasia of tissue. Even a partial resection of the turbinate is out of all proportion to the dignity of these intumescences and in almost all cases I have found that a single linear cauterization, horizontally along the whole length of the turbinate down to the bone permanently relieved the nasal obstruction or at least prevented its recurrence for years. It is quite necessary, however, to use a very heavy platinum wire, where there is current enough No. 20 gauge, as light wire cools too soon and does not create enough of a scar to bind down the mucosa to the bone. I have never seen prolonged scabbing or excessive reaction after this treatment. I should not have referred to so old a measure as the cautery were it not that its improper use has brought this valuable agent into undeserved disrepute. Rindfleisch,[17] in reporting 627 conchotomies agrees with what I have stated in favor of linear cauterization in vasomotor rhinitis.

THE SUBMUCOUS RESECTION OF DEFLECTIONS OF THE SEPTUM.

Imported ways of doing the operation, the Hajek-Menzel and Killian methods with modifications, have been largely adopted in this country, and I think to the injury of the cause of the submucous resection, for the tendency of these operative modes is to transform it from its true nature of an operation of deftness, neatness and painstaking deliberate skill, such as I have advocated from my first publications, into one whose aim is to finish the work quickly at the expense of thoroughness and with the use of a certain amount of blind force. The instrumentarium of these methods corresponds to this idea, and the elevators employed are made large and blunt or chisel-edged and are intended to forcibly push off the mucous covering of the septum rather than to gently undermine it or dissect it off from adherent places, as should be done if traumatism is to be minimized, perforations avoided and the denudation to be made sufficiently extensive. The need of keen cutting is, in fact, quite ignored in these methods and their outfits include none of the long, thin, rounded, razor-edged blades absolutely needed to dissect up the mucosa-perichondrium and periosteum where it adheres to cartilage and bone. In fact, the advocates of these methods speak of the elevation of the mucosa as a simple matter to be accomplished in a few minutes in all cases, a most misleading description and one sure to lead novices in the operation into difficulty, for in many cases if the separation of the mucous membrane is to be done thoroughly enough to expose all of the deviation it will prove tedious and demand a high degree of skill, and the skeleton of the septum will in large part have to be dissected out of its coverings. An important point is the following: In a number of cases, especially in the young, the mucous membrane is not as usual firmly attached to the underlying perichondrium, but is quite freely movable on it, and in such instances the blunt separator, instead of conducting the separation next to the cartilage, enters between the perichondrium and mucous membrane, uplifting the latter with great facility over wide areas, while leaving the perichondrium still clinging to the cartilage and destined to be sacrificed with it when it is resected. With the loss of the perichondrium, of course, all hope of a regeneration of the cartilage is gone.

A serious objection to the operative methods mentioned and their modifications is the location of the first incision in the mucosa in the foremost part of the septum where there is not sufficient room for a long cut because of the near approach to each other in this locality of the dorsum and the floor of the nose. Further back a long vertical incision can be made, and, though this necessitates in most cases the making of an anterior L-shaped flap as in my method, the great length of the cut made gives far better access to the least accessible deep-seated bony part of the deflections than does the buttonhole type of incision in front, which also entails the sacrifice of a portion of straight septum before one can reach deflections which begin farther back in the nose and which compels the operator to resect them in a long bag of mucous membrane with a narrow opening which makes vision difficult and hinders the manipulation of instruments.

Dictated by the fear of perforations the idea is also advocated by some that these may be avoided by the elevation of the mucosa with blunt instruments, while sharp or dulled thin ones are supposed to be more liable to cut through the covering of the other side of the septum. This is the reverse of true, for the blunt instruments require force in their employment and are hence liable to plunge through the frail mucosa where at all adherent. The operator who boldly trusts to his skill with sharp or thin dulled blades is far less liable to perforate than the timid one who tries to forcibly work his way with a thick blunt elevator.

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[17] Bericht ueber 627 Conchotomien, Monatssch. für Ohrenheilkunde, 1905, Nos. 3, 4.

As a step following the resection of the cartilage and perpendicular plate a writer in a recent article advocates the fracturing of the vomer as a part of the submucous resection as he does it.

He uses a heavy forceps similar to the Adams or Asch, a blade being introduced into either nostril outside the mucous membrane, the vomer being seized and with a twisting motion fractured from its attachment to the superior maxillæ. Those of us who have worked at the submucous resection from its earliest beginnings in this country and have followed its development view with regret this needless attempt to introduce into it the primitive and crude methods to avoid which the window resection was created as a method of precision and least injury. We are always ready to welcome any real improvement of the technic of the operation, but we must express our emphatic disapproval of a reversion to the rougher and uncertain fracturing methods which we have long since discarded as unfit and the use of which in the submucous resection shows that their employer has no proper conception of what the method can accomplish without the least employment of blind force, for it is not difficult to cut away cleanly all of the deflected bone, including the superior maxillary crest and vomer with proper cutting forceps and with the deviation in plain sight if the mucous membrane cuts be so made as to give proper access to the deeper parts of the deflection. This is, of course, not the case where the Hajek or Killian buttonhole incision at the front of the septum is employed.

Some authors in America have of late referred to the submucous resection in general as Killian's operation. Professor Killian should receive credit for having developed his instrumentarium and mode of operation only and it is only proper to speak of Killian's way of performing the submucous resection, not to name the whole method after him. The essence and principle of the operation is the radical resection of the cartilage and the bone, and the one to first have the boldness to do this was Krieg, of Stuttgart, in 1886. He gave the operation the name of the window resection, and if any name should be connected with the operation in general it should be Krieg's. I think, however, that it is more just to the many who have toiled to develop the submucous resection to name it after no man.

THE ACCESSORY SINUSES.

A number of modern methods for relieving empyema of the frontal sinus are now at our command and each is adapted to its own class of cases. The most radical procedure, that of Killian, is at present familiar to all and is suitable to the most inveterate and extensive types of frontal and ethmoidal sinuitis where nothing but the broadest access to the disease will suffice.

Cornelius G. Coakley[18] reports 101 recoveries in 113 cases of frontal sinusitis operated on by his open method. In this he removes the entire front wall of the sinus in the manner of Kuhnt, and after opening such adjacent ethmoidal cells as are diseased he packs the nasofrontal duct and the cavity of the sinus until they become obliterated by granulation so that relapses become out of the question. Some deformity, of course, remains. Richard Hoffmann[19] follows Kocher and Hajek in recommending the osteoplastic resection of the anterior wall of the sinus. Hoffmann begins with a cutaneous incision below the lower margin of the inner two-thirds of the eyebrow, not in the eyebrow itself, and follows this by a periosteal cut one-half centimeter above the orbital margin. A small opening is then chiseled into the lower inner part of the sinus and a probe is inserted to determine its extent and the thickness of its walls. Then, after the manner of Hajek, a vertical cut is made in the fold of skin marked by the corrugator supercilii and a rectangular bone flap is outlined after Kocher with the chisel, cutting outward above the brow and upward parallel to the septum of the two sinuses. If need be the neck of the bony flap may be narrowed with the chisel so that it will break over more easily. The base of the flap is then fractured, the flap held out of the way and the diseased mucosa and suppurating ethmoidal cells removed, the nasofrontal duct being enlarged as much as possible. The sinus is drained into the nose with a spiral silver wire drain and the external wound closed up in two days with a cosmetically perfect result. Hoffmann admits the possibility of relapses, but thinks the large opening made into the nasal cavity makes drainage so perfect that a recurrence is not of much consequence.

The osteoplastic operation even with the possibility of persistence of some of the discharge has the great advantage that the patient may be assured that there will be no deformity. It is, therefore, suitable for those cases where he refuses anything but palliative treatment, because of the dread of disfigurement. Where the frontal sinus has a thick front wall it is impossible to form a bone flap. The usefulness of the operation is, therefore, limited to larger sinuses with thin front walls.

The intranasal operation of Ingals is designed for those cases where the disease is probably confined to the frontal sinus and where the pathologic changes do not demand a free exposure of its cavity, or where the patient refuses all external operations. Ingals' procedure can only be used where it is certain that the frontal sinus may be entered with a probe. Ingals continues to find the operation satisfactory, and I think it may be regarded as one of our permanent resources in suitable cases.

The modern tendency is to abandon drainage of empyema of the maxillary antrum into the mouth as unsuitable and to rely instead on an intranasal opening. That this needs to be free enough to establish permanent ventilation in chronic cases is demonstrated by Johannes Martin,[20] who emphasizes the fact previously mentioned by Zuckerkandl and Zarniko that closure of the normal outlet of the antrum leads to absorption of the air in its cavity and a negative pressure that creates venous stasis in its lining, thus aiding in causing the chronic edema of the mucous membrane of the sinus so characteristic of older cases of maxillary sinuitis and which is one of the chief causes of the persistence of the suppuration. The needed opening may be made from the antrum into the nose after preliminary resection of the buccal wall of the maxillary sinus after the older method of Caldwell-Luc, or, as has more recently been advocated by Claoué,[21] Béthi,[22] George L. Richards,[23] Holbrook Curtis,[24] and myself,[25] the antrum may be opened widely from within the nasal cavity by resection of the greater part of its nasal wall without disturbing the buccal one. The latter method inflicts so much less injury than the Caldwell-Lue operation that its advantages are obvious. The amount of rhinologic skill required, however, debars the general surgeon from its employment and makes it eminently the method for the rhinologist.

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[18] The Laryngoscope, 1905, p. 606.

[19] Wein. klin. Rundschau, No. 45, 1904.

[20] Monatssch. fr Ohrenheil., p. 62, 1905.

[21] Revue hebt. de Laryng. et de Rhinol., 1903.

[22] Wiener klin. Wochft., 1904, Nos. 3, 4.

[23] Journal of the American Medical Association, 1905.

[24] The Laryngoscope, 1903, p. 737.

[25] Chicago Med. Recorder, July, 1905; Illinois Med. Journal, 1905; Laryngoscope, 1905, p. 343.

M. Hajek[26] presents an important article on suppuration of the posterior ethmoidal cells and of the sphenoidal sinus. He describes his operative method for exposing the front wall of the sphenoidal sinus and for resecting it so extensively that relapses of the suppuration can not occur. He shows cuts of two beautiful forceps which seem perfectly adapted for the work.

Original Articles

REPORT OF FOUR CASES SHOWING THE RESULTS OF KILLIAN'S OPERATION.*

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All these patients whose cases are here reported had suffered for years from chronic suppurative ethmoiditis, with abscess breaking into the orbit. Exophthalmos varied from slight to marked protrusion of the eye. The operation performed was practically the one described by Killian.[1]

In the Massachusetts Charitable Eye and Ear Infirmary, we prefer Krause's trephine for making the opening in the nasal bone and then remove by means of bone forceps as much as is necessary for freer access to the nasal cavity. By this method there is less risk of breaking downward, an accident which probably would be followed by some deformity. Mosher's graduated curette is of great use in the deeper parts of the nasal cavity. In intranasal operations it is of inestimable value.

Great care must be exercised in avoiding injury to the lachrymal sac. Ophthalmologists tell us that injury to the superior oblique muscle is not harmful; care will prevent both of these accidents.

In one of these cases the sac was mildly affected for several days, although apparently it received no injury at the time of operation.

One is hardly warranted in drawing positive conclusions from four successful cases.

A somewhat wider experience with the so-called conservative or intranasal method, however, and the growing list of fatal results[2] render it questionable if the external operation should not be considered the more conservative; that it proved so in these cases is evident. Rhinologists are not agreed on the results by the intranasal method. For obvious reasons its performance is not without danger. One can not see the entire field of operation, and it is almost impossible to remove all the diseased bone.

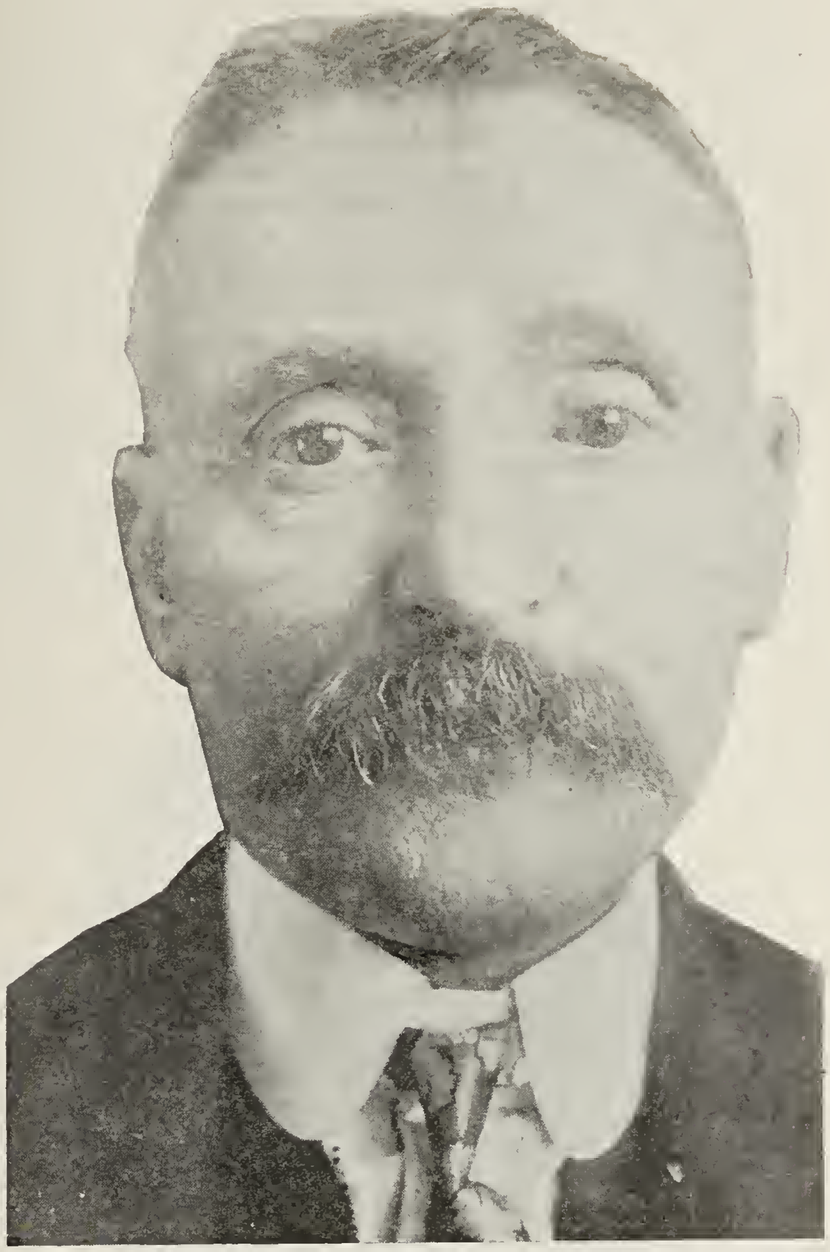

Fig. 1.—Patient in Case 1, six and one-half months after the operation.

The chief objection to the external method is the scar and the deformity from sinking of the tissues, but these objections hardly apply to the cases here reported. I am of the opinion that this method in the future will show a larger percentage of cures and a lower mortality.

Foster[3] states that in a series of eighty cases, published and unpublished, which he has been able to collect, only two deaths occurred, making a mortality of only 2.5 per cent. The cases collected by Turner show 87 per cent. of cures for the Killian operation, as against 58 per cent. for the Ogston-Lue.

Convalescence was rapid and uncomplicated. The wounds healed by first intention except in Case 2. Tampons to prevent hemorrhage were removed in twenty-four hours. There was no ethmoid packing and no after-treatment, except gentle cleansing of the nose. The supraorbital scar in all these cases is now practically covered by the eyebrow. The scar over the side of the nose can barely be made out. The contour of the skin is preserved by the supraorbital bridge.

The results of the x-ray examination have been unsatisfactory. The use of the x-ray as an aid in the diagnosis of diseases of the accessory sinuses is now almost universal, but the value to be placed on skiagraphy is not yet fully determined.

Coakley[4] has published the following conclusions:

First.—It is possible by means of a skiagraph to determine the presence or absence of a frontal sinus which extends vertically above the glabella.

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26. Fraenkel's Archiv für Laryng., 1904, p. 105.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Killian: Münch. med. Wochft., No. 28, 1895, and Archiv für Laryngologie, vol. xiii, 1902.

2. Mosher and Toby: Report of Cases at the Meeting of the New England Laryngological and Otological Society, May 17, 1906.

3. Foster: Boston Med. and Surg. Journal, Jan. 25, 1906, p. 96.

4. Coakley: Transactions American Laryngological, Rhinological and Otological Society, 1905, p. 490.

Second.—A frontal sinus may be small, parallel with the upper, inner margin of the orbit and not detected in the skiagraph.

Third.—In all cases of unilateral diseases of the frontal sinus verified by operation, a cloudiness has been observed in part or all of the area occupied by the sinus and an indistinctness in the outline of the cavity when compared with the opposite or health side.

Fifth.—He believes that the examination of a skiagraph of the two frontal sinuses when compared with the results found on transillumination will aid very much in determining the presence of a diseased frontal sinus.

Sixth.—A skiagraph may also be of considerable value in determining the height and width of the ethmoidal cell area.

In two of my cases, however, the plates were entirely negative on the suspected side, the cloudiness appearing on the opposite or healthy side. This may have been and probably was due to faulty methods. Opinion based on many careful examinations of plates verified by operations is necessary to determine their true diagnostic value.

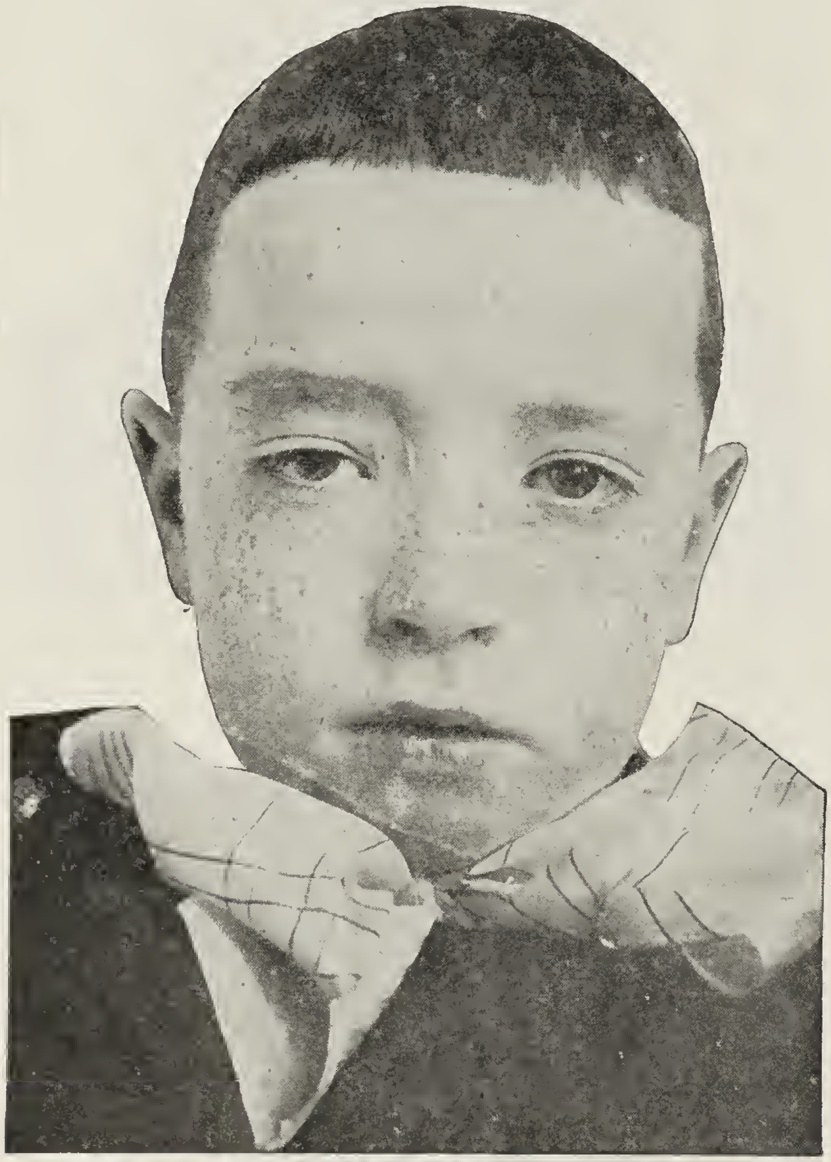

Fig. 2.—Patient in Case 2, six months after the operation.

Case 1.—R. D., a weaver, age 54, born in Ireland.

Diagnosis.—Left frontal sinusitis, ethmoiditis.

Complications.—Left exophthalmos, with destruction of inner wall of left orbit.

Operation.—Radical frontal sinus operation (Killian).

History.—The patient was transferred from the eye department; his previous history was negative. He received a kick in the left eye 12 years ago. Eight weeks before admission he noticed a lump in the inner angle of the orbit. There was dull pain on pressure and slight headache over the left frontal sinus. He had a slight chilly sensation but apparently no fever. There was a slight discharge from the left nostril but no history of epistaxis. There was no nausea or vomiting; appetite was fair. V. O. D. = 20/20. V. O. S. = 20/40, .50 cyl. ax. 180° = 20/30.

Examination.—Nov. 28. O. D. normal and quiet. Fundus normal. The left globe was pushed outward; there was no limitation of motion in any direction. There was slight ptosis. At the inner superior angle of the left orbit, apparently occupying the region of os planum of ethmoid, was a firm elastic fluctuating swelling about the size of a marble. The rough edge of the orbital plate of the frontal bone can apparently be felt. The surface of the lachrymal bone was normal; there was no frontal tenderness. The fluctuating tumor was practically painless.

Nose: There was deviation of the septum to the left. The left middle turbinate was somewhat enlarged and blocked the narrow space above; there was no discharge.

November 29: The x-ray plate shows destruction of the inner wall of the left orbit, with disease of entire left ethmoid labyrinth.

Operation.—December 1: Ether was administered and the Killian operation performed. The usual frontal incision was elongated and carried down along the edge of the nasal bone, the cut was nicked for better coaptation. A fluctuating tumor was found protruding into the orbital cavity through the os planum of the ethmoid. It was incised, and the whole ethmoid labyrinth was found filled with mucopus. The floor of the frontal bone was wanting. The outer wall of the frontal bone was removed with exception of a narrow piece of bone with periosteum over the inner brow. The bone edges were beveled and the nasal bone and part of the ascending process of the superior maxilla were chiseled away. The ethmoids and the anterior two-thirds of the middle turbinate were removed. The incision was closed (silkworm gut) with the exception of a small opening at the outer end which was kept open for a wick. The nostril was packed with a long strip of selvage gauze. The eye was in normal position after the operation.

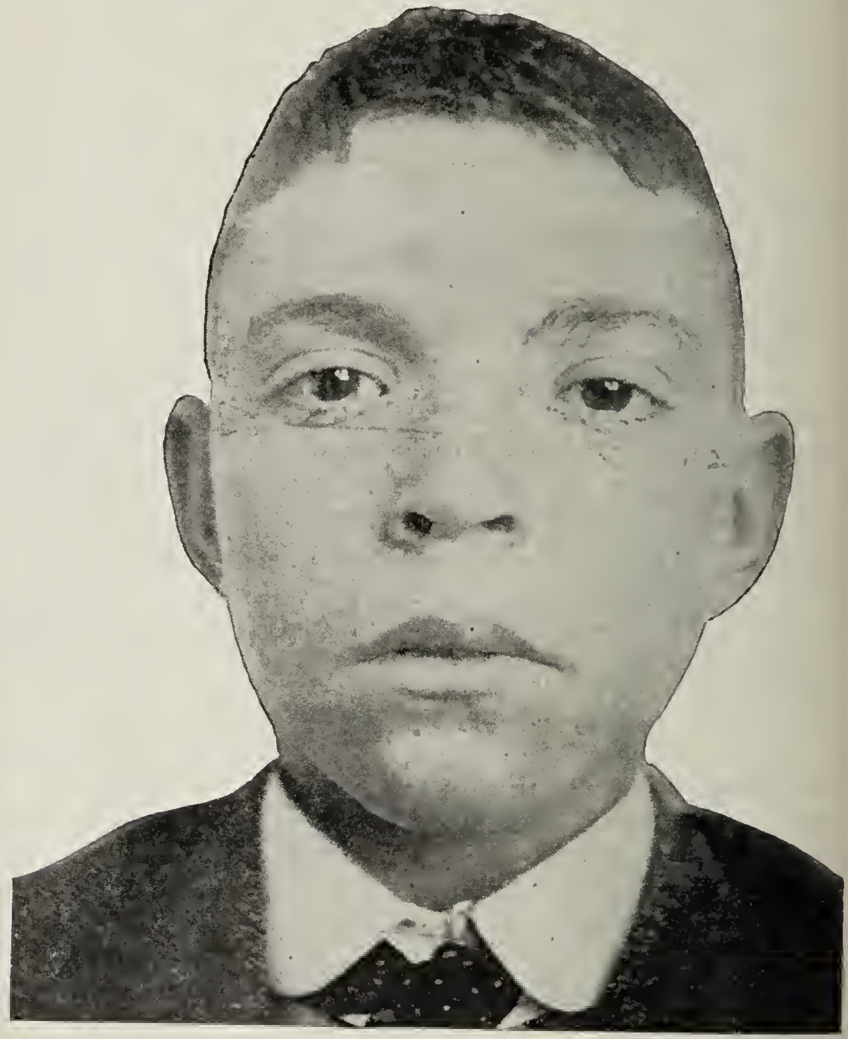

Fig. 3.—Patient in Case 3, five months after the operation.

December 2: The packing was removed from the nose and not replaced. The incision was clean. There was slight chemosis of the lids. Eye was normal.

December 4: The wick was removed; there was considerable nasal discharge.

December 8: The incision was almost healed.

December 9: The incision was healed; there was considerable nasal discharge. The ocular movements were apparently normal.

December 17: There was a very fine cicatrix. There was considerable crusting and discharge from the left nostril.

December 19: The wound had entirely healed (since December 9). There was a very fine light cicatrix, no depression, no external deformity. There was still considerable crusting of the nostril but the discharge grew less every day. The nose was sprayed with an atomizer. The patient was recommended for discharge (Fig. 1).

Case 2.—S. J., aged 9.

Diagnosis.—There was a growth at the inner canthus of the left eye, frontal sinusitis and ethmoiditis.

Operation.—Exploration of frontal sinus (partial Killian).

History.—The patient had an abscess over the left eye two years ago, but had no further trouble until July, 1905. There was swelling at the inner angle of the orbit, lasting to date, with severe headaches. There was no pain in the eye and no history of trouble with the nose. The general condition was fair.

Examination.—December 4: O. S., normal. There was no chemosis of lids (with the exception of a small area to be described). The ocular movements were normal. Just above the inner canthus was a moderately large, apparently papillomatous growth which was movable and had no connection with the bony wall of the orbit (os planum of ethmoid). There was slight secretion about the growth and very slight redness of the skin immediately surrounding it. There was no tenderness over the frontal sinus. The probe did not enter the growth.

Left Nostril: There is a slight deviation of the septum to right. There was hypersecretion but no purulent discharge from nose. There is slight compensatory hypertrophy of inferior and middle turbinate on the left side. The mucous membrane was not reddened.

Operation.—December 6: Ether was used. The eyebrow was not shaved (after Killian). The usual frontal incision was prolonged downward along the nasal process of the superior maxilla. A bridge of periosteum and bone just above the root of the nasal bone was preserved. The bony inner wall of the orbit was exposed. There were no signs of disease. The frontal bone forming the supraorbital ridge was normal. A small hole was chiseled in the frontal bone low down, just above the articulation of the ascending process of the superior maxilla, and another more external into the supraorbital ridge. A very small and normal frontal sinus was found. The wound was closed (silkworm gut) with the exception of very small opening for drainage at the inferior angle.

December 8: The small drain was removed. The wound was clean. O. S. normal. There was still slight chemosis of the upper lid.

December 10: The subcutaneous sutures were removed.

December 11: The incision was practically healed. There was no chemosis of the upper lid; the movement of the lid was free. Ocular movements were apparently normal.

December 17: There was a slight thin cicatrix following the incision. A small ulcerated area just above the inner canthus was almost covered with epidermis.

December 19: The incision was healed. There was still a very small ulcerated area just above the inner canthus.

The patient was discharged well to the out-patient department Dec. 19, 1905 (Fig. 2).

Case 3.—S. J., aged 6.

Diagnosis.—Right orbital swelling above the inner canthus; right ethmoiditis and frontal sinusitis.

Operation.—Radical frontal and ethmoid operation.

History.—The child had an attack of whooping cough in the summer of 1905, followed by pain about the eye at times, and occasional bloody discharge from the right nostril since the abscess of the orbit was incised in the out-patient department eight days before admission to hospital.

Examination.—O. D. normal. Ocular movements were apparently normal. There was some swelling and redness of the tissues just above the inner canthus and the scar of a recent incision. There was no marked chemosis of the lids, and no tenderness over the right frontal sinus. The mucous membrane of the nostril was somewhat reddened and there was hypersecretion. The middle turbinate was somewhat enlarged. The previous incision healed without fistula. X-ray plates were unsatisfactory.

Operation.—December 29: The posterior nares were plugged. The eyebrows were not shaved. The usual frontal incision was elongated and carried down along the nasal process of the superior maxilla closely following the circumference of the orbit. The cut was nicked for better coaptation. The periosteum was left along the superior ciliary ridge. With a chisel the bone was removed over the usual location of the frontal sinus, exposing a small area of the dura.

With a hand burr a small hole was drilled upward at the junction of the internal angular and nasal process of the superior maxilla into a very small normal frontal sinus; a bridge of bone with the periosteum was left over the brow. The nasal process was chiseled away and the ethmoid cells were curetted. These cells were found filled with granulations and pus. The ethmoidal vessels were pulsating. The anterior wall of the sphenoid and the pulley of superior oblique muscle were easily seen. The right middle turbinate was removed. The wound was closed with silkworm gut, and the right nostril was packed with a long strip of selvage gauze.

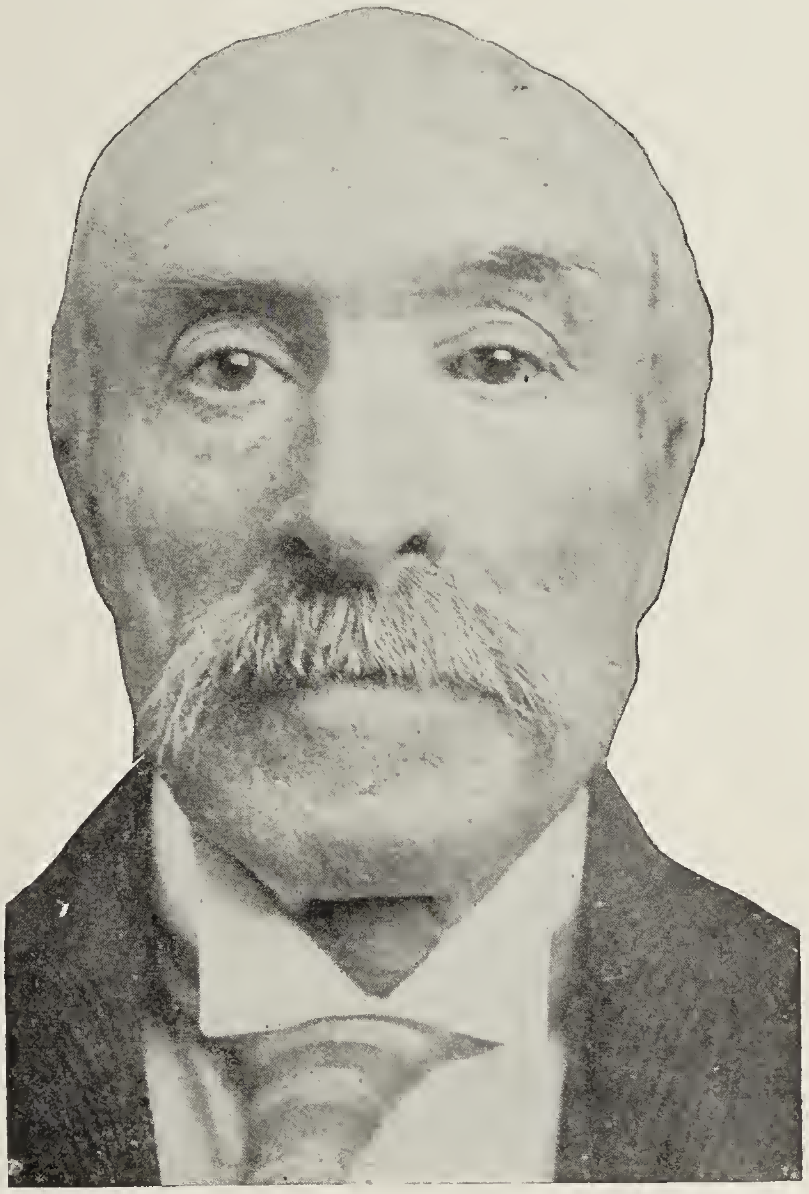

Fig. 4.—Patient in Case 4, four and one-half months after the operation.

December 30: Packing was removed from the nose; there was no hemorrhage.

December 31: There was slight chemosis of the lid. The wound healed rapidly.

January 5: The wound was healed. There was a very slight discharge from the nose. The eye was normal.

January 9: There was practically no discharge from the nose.

January 21: The patient was discharged well (Fig. 3).

Case 4.—M. M., aged 60, a stonecutter.

Diagnosis.—Left ethmoiditis and frontal sinusitis.

Complications.—Orbital fistula and atrophic rhinitis.

Operation.—Radical frontal and ethmoid operation.

History.—For the past eight or ten years there has been a crusting and discharge from both nostrils. For six weeks before admission to hospital there had been a very profuse discharge from the left nostril. For one month there had been swelling and itching of the nose near the inner canthus of the eye which caused patient to rub it violently. One week before admission the swelling increased and there was a discharge of thick pus.

Examination.—O. D. apparently normal. In the right nostril there was atrophic rhinitis with crusts. O. S.: There was slight conjunctival injection with chemosis and reddening of the upper lid. A fistula was discharging pus above the inner canthus; a probe apparently encountered denuded bone. The lachrymal sac apparently was not involved. There was no distinct tenderness over the left frontal sinus. There was marked deviation of the septum to the left, and there was a distinct mucopurulent discharge from the region of the middle turbinate, which, apparently, was not enlarged. There was atrophic rhinitis. An *x*-ray picture was not taken.

Operation.—January 29: The eyebrow was not shaved. The usual frontal incision was elongated and carried down along the nasal process of the superior maxilla; the cut was nicked for better coaptation. The periosteum was stripped back with the exception of a narrow band along the superior ciliary ridge. With a hand burr a small hole was drilled into the left frontal sinus just below the root of the nasal bone. The frontal sinus was opened (Killian chisels V) high up and the edges were beveled, a supraorbital bridge of bone with periosteum being left over the inner brow. A few granulations were found in the frontal sinus, otherwise it was normal, no pus. A portion of the left nasal bone, the nasal process of superior maxilla, and part of the os planum of the ethmoid were chiseled away. The ethmoid cells were curetted out; they were filled with granulations, but no pus. The left middle turbinate was removed. The wound was closed with silkworm gut. The left nostril was packed; a postnasal plug was introduced at the beginning of the operation. A fistula leading into the abscess cavity did not apparently directly communicate with the ethmoid cells.

February 4: The incision healed by primary union. The stitches were removed February 3. There was a slight discharge of pus from the fistulous area just above the inner canthus. There was slight conjunctivitis (bulbar), but the motions of the eyeball were apparently normal. There was considerable crusting of both nares, slightly more marked on left.

The man was discharged well Feb. 12, 1906 (Fig. 4).

DISCUSSION.

Dr. C. G Coakley, New York City, stated that he saw Killian operate and saw the result, last summer. Dr. Coakley finds that in the cases in which he himself has operated there is a great deal of discharge from the nose for some months after the operation. In all the cases he saw last summer in Killian's clinic, patients who had been operated on from three to five months previously, there was still a discharge, but the patients were relieved from the headache and other symptoms for which the operation was performed. Still they could not be called cured from the standpoint of a clean nose. Practically all patients who had been operated on two or more years before Dr. Coakley visited the clinic, and five or six came for his inspection, were perfectly well and free from any scab or sign of pus in the nose. The scar from the Killian operation is linear and in that respect it is better than some other methods of operating. The depression which comes from Killian's operation is greater than from any other form of operation of which Dr. Coakley knows. The large depression can not be helped but it can be overcome to a great extent by the subcutaneous injection of paraffin. He believes that Killian's operation is valuable and one that is satisfactory in many cases.

Dr. H. P. Mosher, Boston, said that he has seen a number of cases of Killian's operation, seven in all. He agreed with Dr. Coakley that the amount of depression in the Killian operation is considerable but in his experience, even in large sinuses, it is not more than the amount of depression from some other operations. He asked why there should not be a considerable discharge for a time after such an extensive operation as the Killian. It does not seem to him at all abnormal. It goes away in time.

Dr. Thos. J. Harris, New York City, declared that the last word in reference to the proper surgical procedure on the frontal sinus has not yet been spoken. He believes that it will only be by the largely increased experience of all rhinologists that we will be able to say what is the best method of attacking the frontal sinus radically. While he agreed with the favorable remarks on the Killian operation, he said that it is but fair that we should not lose sight of the fact that the Killian operation is not the only operation. The operation Dr. Richards has used in a number of cases has been satisfactory. He showed a year ago cases in which the medical results could not be excelled. The method commonly used, the open method, is undoubtedly a proper one to pursue, Dr. Harris said, and yet perhaps the Killian operation will give better results in the majority of cases. Still it presents difficulties in practice, and possible accidents may occur. Any one who has not tried it and expects that it will be as easy as a paracentesis of the drum or opening an abscess will be disappointed. In considering the best method of approach, the possibilities of intranasal surgery must be considered. A short time ago Dr. Harris was of the opinion, he said, that an approach through the nose to the frontal sinus was distinctly contraindicated, but he has watched Dr. Ingals' work and although he has not done the operation, he thinks it might be one to consider. Dr. Wyeth has recently written an article on this subject and he states that he has had no chronic empyema of the frontal sinus with symptoms of such degree and extent as to demand external operation. Dr. Harris grants that this operation perhaps suggests possibilities of untoward danger, but with the instruments used and the methods suggested by Dr. Ingals and Dr. Myles there is the possibility of a satisfactory approach through that route.

Dr. W. P. Eagleton, Newark, N. J., referred to the four cases mentioned by Dr. Jack in relation to opthalmitis, and said that Dr. Jack was not speaking of chronic suppuration, but the relation to exophthalmos. Killian's operation is the only one that gives an entrance not only to the frontal sinus, but to the anterior and posterior ethmoidal cells. Of all the operations it is the only one that will give a chance of drainage. Dr. Eagleton has seen a case of double opthalmitis with exophthalmos on one side, and total blindness on one side, completely cured by drainage through Killian's incision going back through the ethmoidal cells. About the advantages of the external operation he said that he knows of two instances, one fatal, that have never been reported, and one in which the patient, a man, is now in bed after four months with infective arteritis after an internal operation. He knows of no instance in which the external operation has been followed by a fatal result or fatal infection.

Dr. G. L. Richards, Fall River, Mass., declared that there is one phase of this question of frontal sinus disease which has not been referred to, but which from the standpoint of the private patient does have some effect. That is, a patient says, "I have had catarrh for years." The physician looks in the nose and finds a blocked frontal sinus and swollen middle turbinate. He removes the turbinate, the drainage is improved and the patient disappears. The physician looks these patients up, and they say: "I have no more trouble or pain. I have always had catarrh." The physician has made substantially a cure. The patient has only a little mucopus discharge, uses only one or two handkerchiefs a day and has no more trouble. Dr. Richards had a patient not long ago, illustrating that point. The middle turbinate had forced its way through and produced a fistula near the internal angle of the eye, which suggested an abscess of the tear duct and he had been treated for that. Dr. Richards took off the middle turbinate and told the man to come back and he would do a radical operation. The man came back when sent for and said: "No operation on me." From a strictly rhinologic standpoint he was not cured, but from the patient's standpoint he was practically cured.

Dr. E. Fletcher Ingals, Chicago, had no criticism to make of the external methods, they are admirable operations, he said, but many times they are unnecessary. From experience during the last year he is of the opinion that the intranasal method he has recommended, where a probe can be passed into the frontal sinus is as safe as any, and the results are good in the majority of cases. Dr. Ingals has seen only one case in which the results were not good, and that was where some one meddled afterward with the external operation; that caused all the trouble. The suppuration continued and kept discharging through the nose and the patient disappeared with the discharge going on. In that case it was clear that there was some condition that had not been thoroughly attended to at the time of the external operation and perhaps another operation would have been required to clear up the work. Dr. Ingals would not urge that the internal operation is a panacea, but he believes that when the cavity can be entered with the probe it is a safe and good operation and will cure a large percentage of the cases in a few months, which is as much as can be claimed for the external operation, and there is not the scar.

DR. OTTO T. FREER, Chicago, said that one point in the Killian operation which he would like to have considered is the removal of the orbit, which seems to him an objectionable feature.

DR. F. L. JACK, Boston, in closing the discussion, said that he did not hope to have a discussion on the frontal sinus at all, he simply wanted to explain his cases, which he had hoped to show. There was no question as to the operation. The patients had large orbits and exophthalmos. Some of the cases had lasted for a number of years. He said that his hospital house officer tells him that the cases are perfectly dry, there is no discharge from the nose; he has seen them recently. So far as Dr. Jack has seen the cases there is absolutely no depression. He has one or two cases in which one would have to get within a foot of the patient in order to see any scar. Of course there would be no question of a Killian operation in the class of cases mentioned by Dr. Eagleton. It is the only one to do.

A NEW METHOD OF ANASTOMOSIS OF THE VAS DEFERENS.*

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With the subsidence of the furore which attended the introduction to the profession of operations on the spermatic cord for prostatic disease, vasectomy was practically relegated to the dead lumber room. While recognizing the fallacy of the claims first made for testicle and cord operations in the relief of prostatic hypertrophy, and having early put myself on record in opposition to the extravagant claims made for such operations, I do not believe that the profession will be inclined to accuse me of over enthusiasm in my endeavor to establish the operation of vasectomy as a legitimate means of relief for certain conditions.

Despite the over enthusiasm which attended the introduction of cord operations, it was not fair to push them aside simply because they did not fulfill the extravagant expectations of those who for one reason or another first advocated them. Whatever may have been the merits of the operation as originally devised, this much must be conceded, viz., that cord operations in suitable cases have a profound influence on the innervation and circulatory supply of the prostate and seminal vesicles. Incidentally, a marked effect on nutrition must necessarily result. These effects, which we will term, for the sake of argument, physiologic, are not so manifest in elderly patients, in whom the importance of the sexual function is not great, as in younger patients, in whom the sexual function is at its height of activity.

This is an important point, for the value of the cord operations has thus far been estimated from their effects in advanced prostatic diseases in old subjects. These operations have not been employed to any extent in younger patients, in whom beneficial results can be more logically expected.

In setting forth the claims of vasectomy as an operation which has a legitimate field in genitourinary work, I wish it to be distinctly understood that I do not advocate the operation in any case in which there is a reasonable probability of relief being afforded by less radical means. The operation, when properly performed, is practically free from danger. It does not produce, as was formerly supposed, atrophy of the testicle—a condition which, when it follows vasectomy, can be explained on grounds other than disturbed circulation and innervation incidental to the operation on the vas. It is hardly fair, when the operation is clumsily performed, the testicle traumatized, and the tissues perhaps infected, to attribute the resulting atrophy of the testes to the vasectomy.

The principal objection to the operation thus far advanced is its alleged effect on the sexual power. It does not, so far as my experience goes, produce impotency, and while the bilateral operation necessarily prevents the testicular secretion from taking its normal course, sterility can not fairly be charged up to the operation, if the patient has been impotent prior to its performance. In other words, in most of the cases in which I advocate the performance of vasectomy, the patient is already impotent, and therefore dynamically sterile, and the operation does not add to his woes in these respects.

The most important point of all is the fact that while the operation does not produce permanent sterility, it is by no means necessary that the patient should remain sterile after the operation has accomplished its purpose. It is practicable in probably by far the larger proportion of cases to restore the continuity of one or both vasa deferentia at any time the surgeon may so elect, thus restoring fertility.

The operation of vasectomy has a certain range of application in sexual neurasthenics, spermatophobiacs, and in genuine spermatorrhea. The type of such cases is the individual who has been "quacked" for many years, is impotent, and profoundly neurasthenic, with or without frequent seminal losses. We are wont to say that suggestion and kindly counsel are all that are necessary in the management of such patients. Every practitioner of experience well knows that these means are often ineffective. Treatment, both local and general, is a failure in a certain proportion of such cases.

In a large proportion of cases of pseudo-spermatorrhea, the morale of the patient is so disturbed by prolonged treatment by quacks and worry that the condition with which we have to deal is one of psychopathia. These patients are impotent and perhaps have even lost sexual desire. More or less frequently recurring nocturnal emissions constitute a symptom which, pooh-pooh it as much as we like, has a very disastrous effect on the mind of the patient. Treat such patients as conscientiously as we may, a certain definite proportion of them fail to find relief. Indeed, no relief can be afforded the mental condition until the emissions have been checked for a more or less prolonged period. It is easy to talk about the efficacy of suggestive therapeutics in such cases, but in many of them it is a practical impossibility to accomplish anything so long as the emissions continue; and continue they will, despite all the ordinary methods of relief. Marriage as a specific is not always effective and is often inexcusable. I have seen a number of cases in which it not only was ineffectual, but appeared to aggravate the condition. It is not unusual for individuals who have been long married to become the victims of nocturnal losses as a result of neurasthenia or of some disturbance of the brain or cord due to irritation of the sexual apparatus from one cause or another.

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* Read at the Meeting of the Illinois State Medical Society, May 16, 1906.

Prostatic inflammation and seminal vesiculitis are perhaps the two most important conditions which give rise to nocturnal emissions. Prostatorrhea, dependent on hyperemia or inflammation of the prostrate, whether or not associated with symptoms of inflammation, is very often exceedingly resistant to treatment. Such patients are usually spermatophobiacs, it is true, but no amount of reasoning suffices to argue them out of the belief that the prostatorrhea constitutes a serious drain on the nervous system. The psychic demoralization of the patient is in many of these cases very profound. It has been my experience that while the majority of cases of prostatorrhea yield readily to treatment, a certain proportion of cases are absolutely resistant to it. Hypochondriasis, or even typic melancholia, may result, in the foregoing disturbances of the sexual system.

The records of our asylums show only too plainly that definite psychopathia is not infrequently associated with morbid conditions of the sexual apparatus. I will not take up here the question of the relation of masturbation to cerebral disorders, save to say that, whether it be admitted as a cause of psychopathia or not, it enters very largely into the field of brain abnormality, as it comes under the observation of the alienist.

I believe that, in the cases described, the operation of vasectomy has a perfectly legitimate field. That the result, if beneficial at all, is necessarily due to the psychic impression of the operation is not tenable, in view of what we know of the physiologic effects of resection of the vasa deferentia. The hyperesthesia of the sexual organs, particularly of the prostatic urethra and seminal vesicles, that exists in these cases, is unquestionably lessened by the operation.

True spermatorrhea is a rare condition, and as intractable as it is rare. That the disease is associated in the majority of cases with cerebrospinal disease of various kinds, is well understood. The fact that the primary disease is of an incurable nature, renders the duty of checking the pathologic seminal discharge none the less imperative in some cases because of both the physical and psychopathic results which are produced by it. Vasectomy affords in these cases the only hope of relief of what is a very prominent symptom, in the mind of the patient, at least. That the seminal loss is productive of debility, goes without saying.

Since the operation of prostatectomy has been generally adopted by the profession, patients appeal to us for relief of prostatic disease at a much earlier period than formerly. We are often consulted by patients at or but little past middle life, in whom the sexual function is still in full vigor. In many of these cases palliative treatment by massage, sounds, instillation of silver and proper hygiene will give relief and prevent serious trouble developing later on. In some cases, however, despite all our efforts, the prostatic symptoms continue and examination shows progressive enlargement of the prostrate. In such cases we are really not justified in suggesting prostatectomy until other means have been tried. Here, it seems to me, is a most useful field for vasectomy. Although the operation in old prostatic patients has not been followed by the degree of success at first claimed for it, it is far different in relatively young individuals in whom prostatic fibrosis is not yet developed. Here vasectomy offers a more than fair prospect of relief.

In intractable chronic prostatitis and seminal vesiculitis, vasectomy is of the greatest value. Its beneficial effects are due not only to the change which it induces in the circulation and innervation of the prostate, but also to the rest which it secures to the seminal vesicles. Chronic seminal vesiculitis is in some instances absolutely resistant to treatment. The patient is worn out by frequent micturition due to irritation of the vesical neck, with more or less constant pain in that vicinity, radiating into the perineum, testes, penis. Hemorrhagic emissions and functional disturbances of the sexual apparatus are very frequent. Frequent and exhausting nocturnal emissions and painful ejaculation are not rare in such cases. Patients afflicted in this way are generally ready to submit to almost anything which offers a prospect of recovery. This has led some over enthusiastic adherents of vesiculectomy and vesiculotomy to propose operation directly on the seminal vesicles. This operation is dangerous, difficult, and extremely bloody, and in my opinion should not be resorted to until vasectomy has been given a fair trial. It should be remembered in this connection that the full benefits of vasectomy, even in favorable cases, can not be expected for several months.

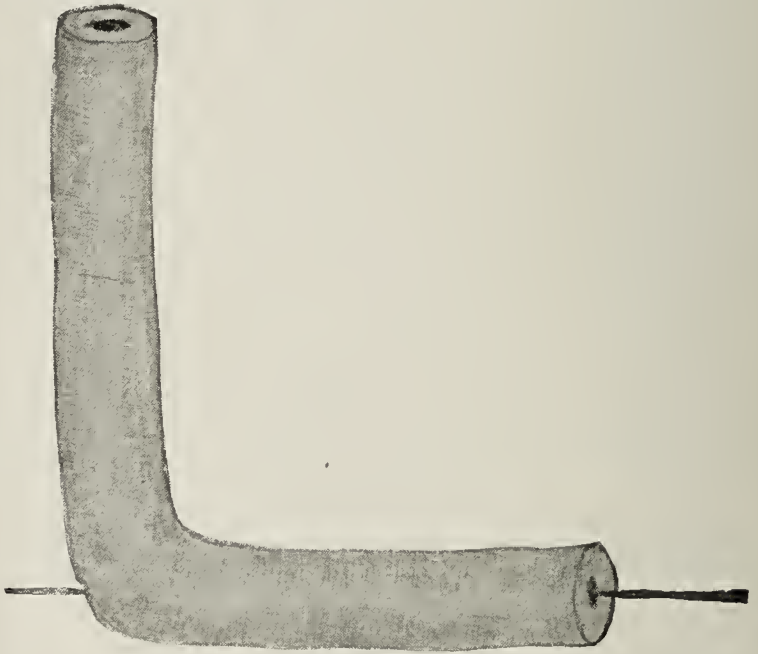
Figure 1.

In passing, I will call attention to a very important point relative to operations directly on the seminal vesicles, viz., the victims of seminal vesiculitis are often so profoundly neurasthenic that no surgical procedure is likely to give relief. It is by no means consoling to have the annoying symptoms continue after so formidable an operation as vesiculectomy. This is a further argument in favor of a trial of vasectomy before the major operation is resorted to.

A very important field of usefulness for the operation of vasectomy is recurrent epididymitis. In infective conditions of the prostate the epididymis on one or the other side often becomes infected and develops a greater or less degree of inflammation from time to time. In most instances the infective condition of the deep urethra on which the epididymitis depends can be corrected. In some cases, however, despite methodic, scientific treatment, the epididymis becomes inflamed at intervals and disables the patient for a greater or less period. This not only occurs in young and middle-aged subjects as a consequence of a specific infection, but in prostatics from pus or septic infection. The prevention of epididymitis in the latter class of cases is, of course, prostatectomy, but there are instances in which the patient is either too young for the operation or refuses to have it performed. Under such circumstances the operation of vasectomy may be performed, with the double object in view of attaining such permanent benefit as may accrue in the particular case so far as the enlargement of the prostate is concerned and the prevention of further attacks of epididymitis. That the integrity of the testes in these cases is in no wise menaced by the operation numerous cases in my own experience testify.

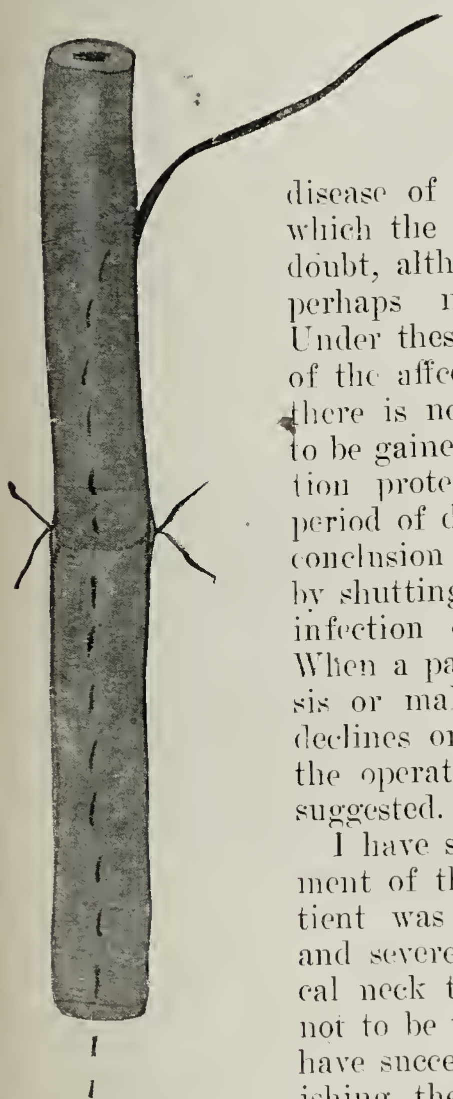

Figure 2.

The operation of vasectomy has a certain range of application in suspected or known tuberculosis or malignant disease of the testes. Cases occur in which the diagnosis is considerably in doubt, although a hard, thickened and perhaps nodular epididymis exists. Under these circumstances the fertility of the affected testis is already *nil*, so there is nothing to be lost and much to be gained by vasectomy. The operation protects the patient during the period of delay in coming to a positive conclusion as to the nature of the case by shutting off the principal avenue of infection of the genitourinary tract. When a patient with known tuberculosis or malignant tumor of the testis declines or defers a radical operation, the operation of vasectomy should be suggested.

I have seen several cases of enlargement of the prostate in which the patient was so debilitated by frequent and severe hemorrhages from the vesical neck that a radical operation was not to be thought of. In these cases I have succeeded by vasectomy in diminishing the frequency and severity of the hemorrhages or checking them altogether, thus enabling the patient to gain sufficient strength to endure prostatectomy. I recall one case in which the patient had suffered from such severe hemorhages from an extremely large, hard prostate that I suspected malignant disease. Vasectomy was performed in this case, and about two months later prostatectomy was done. The result of the vasectomy was all that could be desired, and, while the patient was in by no means first-class condition at the time of the prostatectomy, he was sufficiently recuperated from his anemia to render operation justifiable. In cases of enlargement of the prostate where the patient can not or will not have prostatectomy performed, or in which the general condition is so bad that the radical operation does not seem advisable, vasectomy is indicated. It is often palliative, and, while I believe the reports of cures accomplished by the operation were undeniably exaggerated, I believe that the frequency with which benefit is derived from vasectomy warrants the operation under the circumstances outlined.

In inoperable malignant disease of the prostate with severe hemorrhages, vasectomy has, in my experience, been beneficial. There is no possible objection to the operation, and, therefore, no reason why the patient should not have the benefit of an attempt at palliation by its performance.

TECHNIC OF THE OPERATION.

After the usual preparation of the scrotum the vas is isolated from the cord and picked up in a fold of skin between the thumb and index finger. As small an amount of the skin as possible should be grasped with the vas. A straight needle of good size is now made to transfix the scrotum beneath the vas in such a way that the latter structure remains pinned firmly into the fold of skin and underlying fascia in which it was included by the grasp of the thumb and finger. The vas can now by no possibility slip away from the operator so long as the needle is *in situ*. An incision from a quarter to a half an inch in length, the smaller the better, is now made parallel with the vas and directly over it. The vas is exposed, separated from the fascia which envelops it, and lifted out of the small wound in the scrotum. It is now stripped for the desired distance until a sufficient extent of it is freed. If it be considered advisable to resect the entire vas up to the inguinal ring, a relatively free incision should be made just below the latter structure, so that the vas may be separated from the cord well up within the inguinal canal. The high incision is only necessary in cases of known or suspected tuberculosis or malignant disease. For ordinary purposes, as much of the vas as is necessary can be readily removed through the small incision which I have described. The vas, having been ligated at the points of election by medium-sized catgut, is resected, the lumen of the tubes at the severed ends touched lightly with carbolic acid, and the ends tied together by two of the free ends of catgut used in the ligation. The fascia should be stitched over the vas with fine catgut and the skin wound united with horsehair.

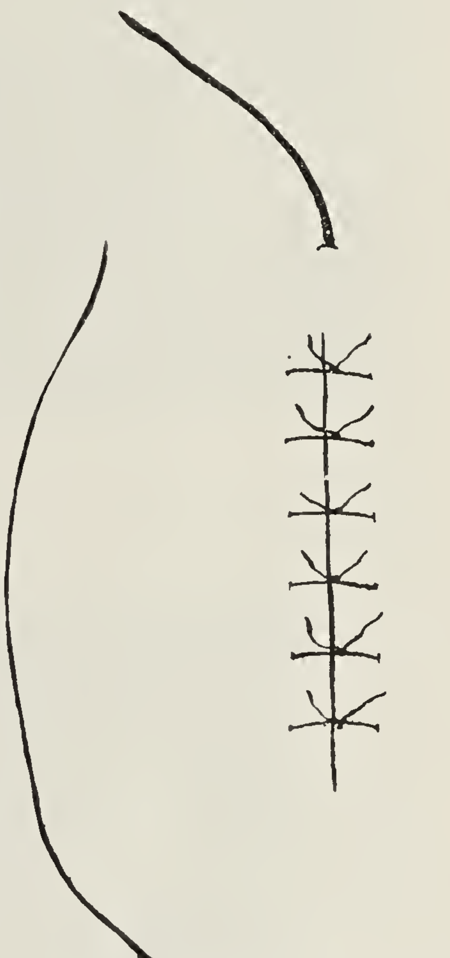

Figure 3.

In a certain as yet undetermined proportion of cases it is possible so to anastomose the divided vasa deferentia as to re-establish their continuity. This operation is not necessary save in cases of bilateral accidental injury or bilateral vasectomy. It is, however, an operation that should be performed whenever in the course of an operation the vas, even on one side, has been severed. A single permeable vas is sufficient in so far as fertility is concerned. Hence it follows that in cases of double resection, followed at a greater or less period by double anastomosis, there are two chances of restoring fertility. One or the other vas is liable to regain patency as the result of anastomosis. The time which should be allowed to elapse following the vasectomy before anastomosis is performed will necessarily vary, according to the amount and character of the improvement in the condition for which the vasectomy was originally performed.

A longitudinal incision from one and a half to two inches in length is made down to the spermatic cord and the vas deferens exposed, freed from its enveloping fascia and lifted out of the wound. The incision is made so that its center corresponds as nearly as possible to the slight nodule on the vas, which indicates the site of the original resection. The vas having been exposed, the nodule is excised. A fine, sharp-pointed probe or long straight needle is now passed into the vas, which is bent at a sufficient angle to facilitate passing the needle through the wall of the duct about an inch and a quarter from its cut extremity (Fig. 1). A strand of the heaviest silkworm gut is now passed into the vas and out of the opening made by the needle. This can be done with no difficulty whatever. The opposite end of the silkworm gut is made to enter the lumen of the distal end of the vas. The object of this silkworm gut is to preserve the continuity of the lumen of the vas during the process of healing. The vas is now stitched, end to end, over the coupling of the silkworm gut with very thin catgut (Fig. 2). A portion of the free edge of the fascia which was divided in order to expose the vas deferens is now wrapped about the vas for a short distance above and below the line of anastomosis. The envelopment of fascia is now stitched about the vas deferens in such a way that the line of junction of the vas is completely closed in. The free end of the silkworm gut which has been made to traverse the wall of the vas is now passed from within outward through a puncture in the fascia and skin and made to emerge a short distance above the upper angle of the incision (Fig. 3). Care should be taken not to pull on this strand of silkworm gut, the intention being to allow it to remain within the lumen of the vas until complete union has occurred. The silkworm gut should be removed at the end of a week. The fascia is now stitched with fine catgut and the edges of the scrotal wound brought together with fine silkworm gut or horsehair. The process is repeated upon the opposite vas. There is very little reaction following the operation, although a certain amount of exudation and nodulation about the line of union is perceptible for some weeks after the operation.

Of the six cases which I have operated on in this manner, one has shown microscopically a restoration of the function of the vas on one or the other or both sides by the presence of spermatozoids in the semen. Of the other five, one is apparently a failure, and I have had no opportunity to determine the condition of two. The last two cases were too recent for consideration here.

Unrecognized Causes of Cough.—G. S. Ingersoll, in *Mass. Medical Journal*, June, 1906, describes two unrecognized or unusual causes of cough: 1, Hypertrophied glossal papillæ, overlapping an epiglottis which is bent far forward but otherwise normal; 2, a congenitally asymmetrical epiglottis, which has been made still longer by inflammation, caused by constant friction with the tongue.

ELBOW-JOINT INJURIES, WITH REPORT OF CASES.

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Elbow-joint injuries are troublesome and frequently leave the arm in a most useless condition. Causes for such a condition are fracture into the joint, with displacement of fragments, dislocation forward of the head of the radius, and pathologic ankylosis. In all of these conditions when it is impossible to use the hand while dressing and eating, any operation that will place the hand back into service will be acceptable to unfortunates, and recommended by physicians.

Case 1.—A young man received the contents of a shotgun in the elbow, the upper part of the radius and ulna being torn off. Figure 1 shows that these bones were thrown above the condyles of the humerus. The operation consisted in squaring all the bones so that their ends could rest against each other. This required the removal of the condyles of the humerus at about the diaphyso-epiphyseal line, and the removal of the upper end of the bones of the forearm. The wound healed promptly. Figure 2 shows that extension is complete. Flexion is somewhat better than shown in Figure 1. The usefulness of the forearm is greatly increased.

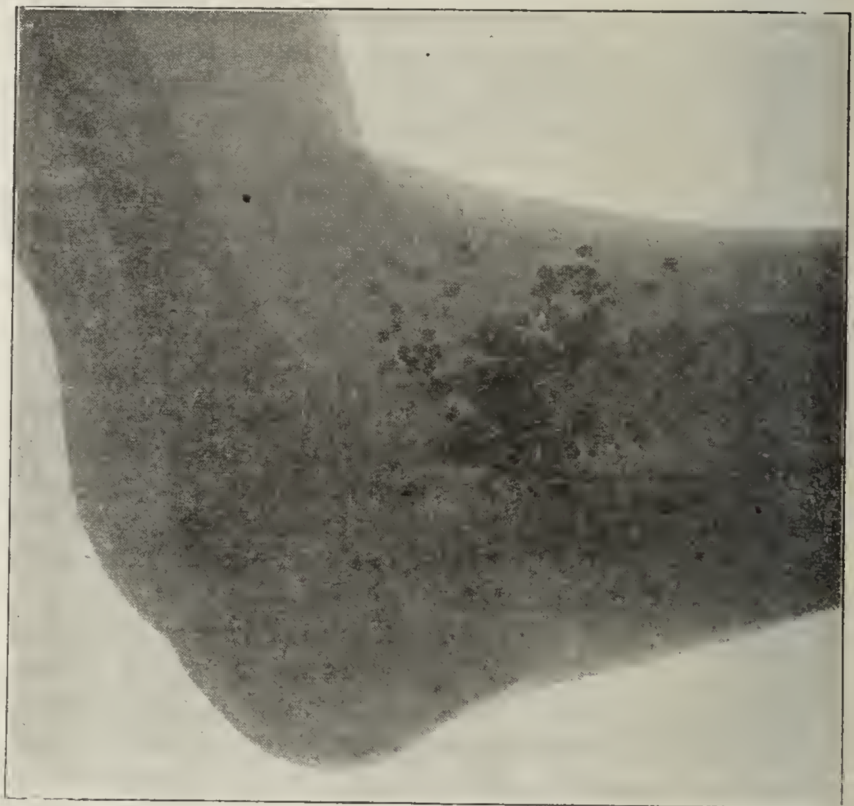

Figure 1.

Case 2.—Another case of equal interest is that of a young man who received a compound dislocation of the elbow joint and fracture of the olecranon process. The external condyle, including the entire radial articulation, was broken away. This, as you can see, means that the origin of the entire extensor group of muscles from the external condyle was destroyed, all of these muscles being lacerated extensively. The forearm was turned inward to a right angle with the arm. The patient expected amputation when he came to the hospital. The operation that was done, however, was first to wire the fractured olecranon (Fig. 3). All of the muscles that were so extensively lacerated were brought back into position and sutured to the soft structures that remained about the external condyle, some to the periosteum of the supracondyloidal ridge, others to what remained of the orbicular and external lateral ligament. The forearm was placed in extreme extension, as all elbow joint fractures should be placed. The forearm in semipronation so that the head of the radius might rest as near as possible in its normal position, or, in this case, immediately distal to the point where the external condyle would be, had it not been torn away. The positive injunction to the patient, nurses, and house physician was, "thumbs up."

The wound healed promptly and the patient left the hospital in three weeks. At the end of eight weeks he was given an anesthetic and *brisement forcé* practiced for the first time. I do not believe in passive motion in these cases for the first six or eight weeks or during repair. Immediate passive motion in fractures and injuries to joints is as great a factor in the production of ankylosis as the injury itself. After the forcible breaking up of the adhesions in this case the patient was permitted to make such use of his arm as he desired. The case was seen every few days and forcible manipulations were kept up. The result obtained is shown in the accompanying photographs taken four months after the accident. The arm is practically as good as before the accident. The extensor muscles became attached to the cicatricial scar about the external condyle. All finger and wrist movements are normal. He can extend the forearm completely and flex it sufficient to button his collar and tie his necktie. Figure 4 shows the arm in extension. Figure 5 shows the range of motion with the arm in flexion.

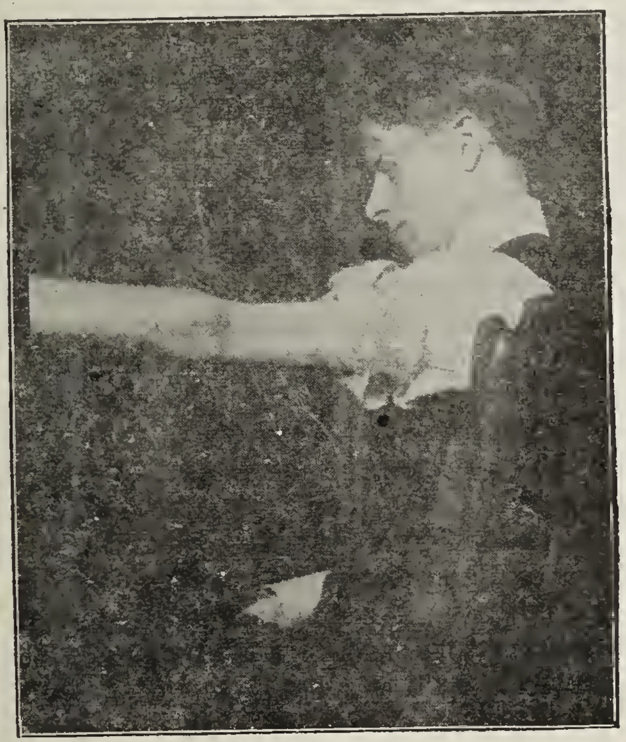

Figure 2.

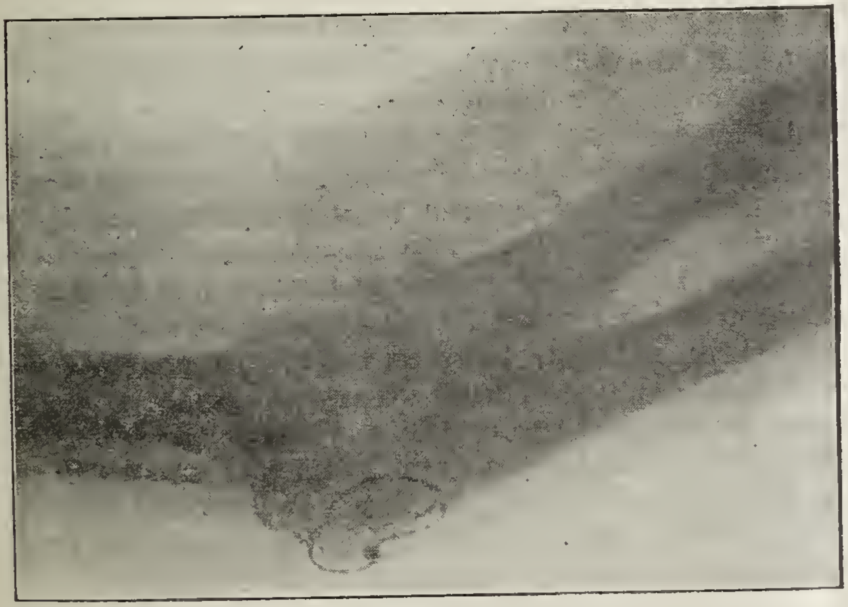

Figure 3.

Case 3.—This was a forward dislocation of the head of the radius resting on the anterior surface of the condyle of the humerus.

This variety is one of the most difficult displacements to reduce and maintain in reduction, even immediately after dislocation. As time passes the task increases. After five or six weeks when ruptured ligaments have had time to repair, it is practically impossible by the bloodless method to force the head of the bone down in position, and when this can be done there is not one case in ten that it will not return as soon as the hands are removed. When it is possible to reduce temporarily by plaster-of-Paris or a splint, the amount of pressure required to hold the bones in position will invariably cause pressure sores. With such a deformity the arm can not be flexed sufficiently to permit the patient to eat or dress with the disabled arm.

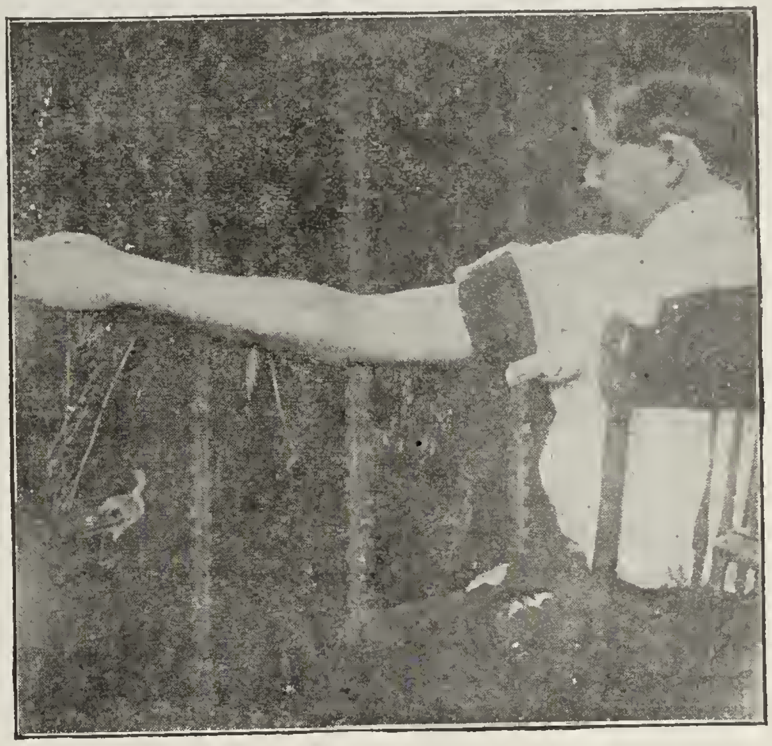

Figure 4.

In view of such helplessness, I have performed open operations and placed the bones back in position, and secured the head of the radius with sutures and made further effort to maintain a reduction with external supports. Disappointment as a rule followed, for when repair had taken place, and an effort was made to flex the forearm on the arm, no appreciable improvement had been made. In view of the foregoing, and with a desire to make some permanent improvement, I decided to remove the head of the radius and enough of the shaft to permit free flexion.

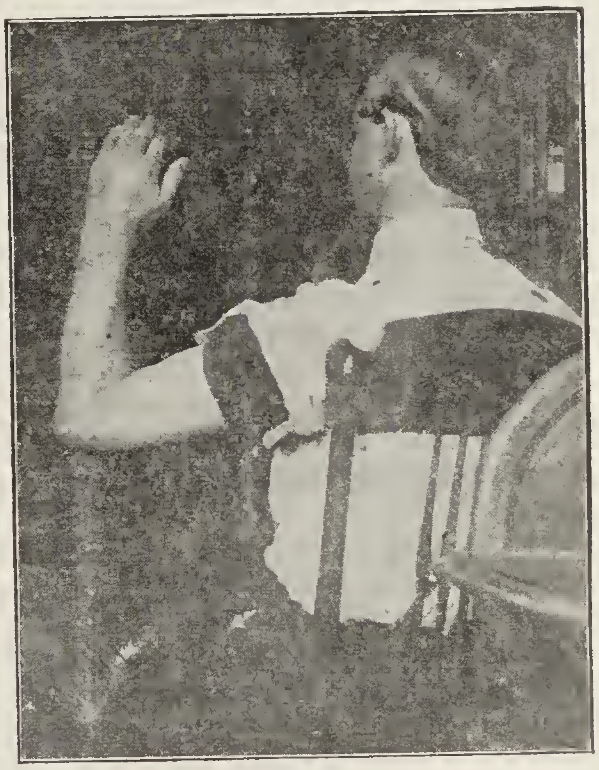

Figure 5.

The operation consists in making a longitudinal incision immediately over and down to the head of the radius. The head is dissected out and cut off with a Gigli saw. An effort is now made to flex the forearm If this can not be done, another half inch of the bone is removed and the forearm again flexed. If complete flexion can not be made other segments must be removed until a range of motion can be made. The wound is now closed, and under proper precautions should be well in two weeks.

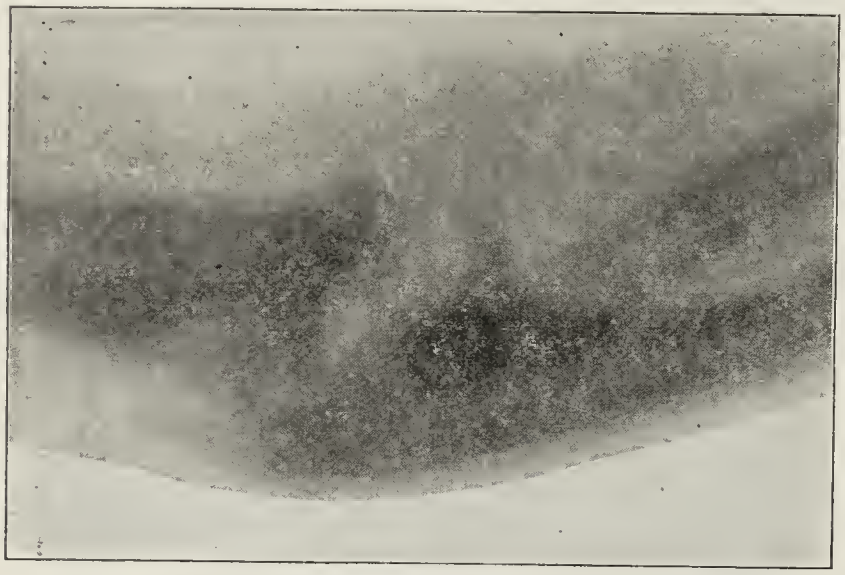

Figure 6.

Figure 6 shows a radiogram of an elbow taken several weeks after the injury. The bony deposits on the anterior portion of the capsule prevent flexion of the forearm. Operation for the removal of the bony formation was advised.

THE POISON OF THE MENINGOCOCCUS.*

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Perhaps it would be less presumptuous to entitle this communication "A Poison from the Meningococcus." By this expedient one might at least evade some of the perplexities which now surround the problems relating to the composition, varieties and effects of toxic substances elaborated by pathogenic bacteria. At least it is my desire to escape as far as possible any committal on the head of the exact nature of the agent to be here described, and to record simply the method by which a product with poisonous properties was obtained from cultures of the meningococcus and tested for its toxicologic action.

The subject for these experiments was the horse, and it was by means of intravenous injections that evidences of a powerful poison derived from the meningococcus were first secured. Such toxication was elicited both by the use of living cultures, dead cultures, acidulous cultures in glucose broth; but the most pronounced effects and those of relatively uniform certainty followed the use of a filtered or unfiltered meningococcus culture specially prepared.

SOURCE OF CULTURES.

Pure cultures of the meningococcus from several sources have furnished the seed. No difference of noteworthy magnitude has been detected between the poisons from each of these several cultures which include one from Professor Hektoen's laboratory in Rush Medical College, isolated by Dr. D. J. Davis from the spinal fluid of a case of cerebrospinal meningitis, and three from the laboratory of Professor Ewing in Cornell University Medical College procured by Dr. W. J. Elser from the nasal discharge, circulating blood and spinal fluid in three cases of meningitis. All these cultures exhibit the usual characteristics of the meningococcus. All produce acid in glucose bouillon and expire after a brief existence, usually as a filmy surface growth. These stock cultures have been kept in a state of active vegetation by 48-hour transfers on a Loeffler's medium prepared with horse serum. Repeated attempts to induce specific pathogenic effects in rabbits and guinea-pigs through the agency of subcutaneous, intraperitoneal, intranasal, subdural and intracerebral injections of living fluid cultures were fruitless.

METHOD OF OBTAINING THE POISON.

As finally adopted, the procedure for obtaining the poison consists in growing the meningococci on a glucose-chalk-bouillon. The medium is ordinary beef peptone bouillon. Lots of 500 c.c. are placed in Fernbach flasks to obtain large aërobic surface exposures. The glucose in proportion of 0.5 per cent., which is dissolved in water and separately sterilized by discontinuous steaming, and the chalk in proportion of 1 per cent., which is suspended in water and previously sterilized in the autoclave, are added to the bouillon at the moment of planting with the meningococcus. At ordinary brood oven temperature the meningococcus grows luxuriantly in this medium as a surface layer with stalactite-like pendants, as thick as the veil of a diphtheria culture but a little less coherent. During a period of from two to four weeks several such layers form and the mother liquor takes on a darker hue. By constantly neutralizing its acid, and perhaps also by the liberal exposure to the air, the meningococcus retains its vitality for a period of from three to six weeks in one of these flasks of glucose-chalk-bouillon. At the end of this term (three to six weeks) trikresol is added and the mixture filtered through paper.

TOXICOLOGIC PROPERTIES.

A clue to a uniform toxic phenomenon following the treatment of the horse with meningococcus products came by accident. A horse which had been used for various immunizing experiments, and whose skin was in consequence easily aroused to suppuration, was tentatively subjected to ascending subcutaneous injections of living and dead cultures of meningococcus in glucose bouillon which reached 80 c.c. each in amount. Moderate febrile reactions followed these injections, together with local swelling and not infrequently abscess. In the effort to escape the troublesome abscesses an intravenous dose of 50 c.c. of seven days' living meningococcus culture was administered. Evidence of profound intoxication speedily followed and the horse died in 18 hours. Attempts to recover meningococci from the blood and organs of this animal were futile. With the express purpose of studying this form of poisoning, three new horses were secured and employed for experiment.

The first of these animals was subjected to an intravenous injection of 50 c.c. of meningococcus glucose-broth culture, half of which had grown for 6 days and the remainder for 13 days. It expired between the twelfth and fourteenth hour after the treatment. Another horse received in the jugular vein 10 c.c. of the culture, half of which had grown for ten days and was dead; the remainder was 6 days old and alive. This horse survived 62 hours. The third animal was treated with intravenous injections of the trikresolized poisonous extract prepared as described above. Three doses of 10 c.c., 20 c.c. and 30 c.c. each were administered, each causing severe temporary illness with symptoms like those obtained with the cultures, but in each instance the animal finally recovered. As the symptoms of intoxication were essentially alike in all of these tests, they will be summarized. The only exception is that the nervous phenomena were more intense in the animals in which the specially prepared poison was used. At this point it might be added that subsequent experiments have shown that the special poison in sufficient subcutaneous dose, besides arousing fever and extensive local swelling, induces the nervous symptoms to be mentioned. Further, the poisonous effect is absent when the fluid is filtered through unglazed porcelain bougies or balloons, but present and active in the product of filtration through Berkefeld candles.

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* Read before the American Association of Pathologists and Bacteriologists, Baltimore, May 18, 1906.

Within five minutes following the administration of the meningococcic products restlessness is produced, accompanied by a rise in temperature, pulse and respiration. The temperature reaches a maximum elevation of 4 or 5 degrees F. above normal; the pulse increases to 70 or 100, is soft and compressible, the respirations become accelerated to 30 a minute, are labored and take on a Cheyne-Stokes character. The animal paws, moves from side to side, breaks out in a profuse sweat, its head droops, restlessness and depression become more pronounced and in from 15 minutes to 2 hours, depending on the dose, it falls, not to rise again if the dose is fatal. With non-fatal doses the severe symptoms usually abate after 12 hours. The additional symptoms of a kind indicating particular involvement of the nervous system are as follows:

Almost immediately after the injection the horse exhibits weakness of its hind legs; it stands insecurely, shifting its weight from one hind leg to the other, and this evident asthenia becomes more pronounced until the animal falls. Muscular tremors appear, at first localized, fleeting and fibrillar, gradually becoming coarser and generalized; finally distinct clonic convulsions of large muscle groups like those of a limb, of the neck, of the back, or of the belly occur. In several instances these more severe spasms of the back and belly cause a pronounced transient opisthotonos. The subject was unusually sensitive to noise, and spasms more or less severe could be provoked by this form of irritation or by unexpectedly touching the body. Repeated soft bowel movements were noted during the period of acute symptoms. In event of a fatal outcome the more distressing symptoms gradually subsided, and death took place from exhaustion, such as one often sees in human beings with nervous disorders like tetanus, hydrophobia, epilepsy, mania and the like.

CONCLUSION.

To pass in review the essential points of this communication it may be reasserted that it deals with a poison of the meningococcus whose effect is most readily observed in horses subjected to intravenous injection. This toxic agent can be demonstrated in living fluid cultures of the meningococcus and in the dead fluid cultures. But its most uniform manifestations appear in the product of meningococcus cultures grown by a special method; and the toxicity is here elicited both in fluids roughly strained through paper or filtered through the Berkefeld bougie.

NEW PHENOMENON OF COLOR CONVERSION.*

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It is several years since I first observed and instituted some experiments with an interesting color conversion phenomenon which, so far as I could learn, had previously been unobserved.

After some thought and examination regarding the phenomenon I communicated it to Dr. George T. Ladd, professor of philosophy in Yale University, who, in connection with Prof. E. W. Scripture made some observations in the Yale psychologic laboratory. In Prof. Ladd's report of these joint observations[1] the elements of the appearance were not fully stated and no contribution to the elucidation of its nature or causes was made. I have improved the first opportunity of leisure which has been presented to me for a study of the interesting phenomenon and now present a description with a statement of some of the principles involved in its explanation.

THE PHENOMENON DESCRIBED.

If, in the midst of a somewhat broadly extended surface of a given color, a narrow stripe of complementary color is seen the narrow complementary color stripe, when viewed with a fixed gaze, will be eliminated from the field to be replaced by the color of the more extended surface. With certain color combinations the phenomenon is more easily observed than with others, and the "fixed gaze" must assume a character which it is difficult to describe but which is absolutely necessary to the color conversion.

Figure 1 shows a square of green surface, the predominant color, in which is a narrow band of red, the subordinate color, enclosing an oblong portion of the green surface.

The whole figure is divided into small squares by horizontal and vertical white lines which I have found to facilitate the induction of the phenomenon although they are by no means essential to it.

The colors of this particular figure, to be more explicit, are, for the broader expanse, blue-green, full color and red, full color. An excellent combination for the experiment is of orange-red and full color green. Many other combinations may be used, but as we shall see as we proceed, some are more favorable than others and with some combinations it is impossible to induce the phenomenon.

We may change the arrangement of the colors of a pair, making, for example, the red which in Figure 1 is the subordinate color, the predominant one as shown in Figure 2. In this case, however, the phenomenon is not induced with the same ease as in the first instance, and this rule prevails with all pairs that one element yields to the elimination as the subordinate color much more readily than the other.

The comparative illumination of the two colors of a pair is to be regarded. For example, if the composition is of blue and of orange-yellow the latter is so much more strongly illuminated that the phenomenon is difficult and generally impossible to induce. But if we employ a tint of blue and a shade of orange-yellow we have so modified the illumination as to render the induction of the appearance practical and easy. While it is possible to induce the conversion of the color with various complementary pairs properly toned as to the reflection of light, the excessive illumination of one of the elements in some complementary pairs renders the elimination of the subordinate color extremely difficult and in some instances impossible.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Ladd: "Studies." Yale Psychologic Laboratory, 1898.

The reason for this appears when we consider that the luminosity of the red, such as is used for Figures 1 and 2, is, according to Vierordt, exactly the same as that of the bluish-green of these figures. These two colors constitute the pair which lends itself most readily to the phenomenon. On the other hand, of the complimentary pair, blue and yellow-orange, the latter, under circumstances of good light, has about sixteen times more illumination than the former.

While for the perfection of the experiment complementary colors are to be used, some other strongly contrasting colors may be employed with a more or less approximately successful result. Thus, a full red band in a field of full blue color will become very nearly of the color of the broader field, yet in this case there remains, to some extent, the phenomenon of simultaneous contrast of which mention will be made later. In all these experiments the band of subordinate color should be narrow. About two millimeters is a favorable width in a square of the size shown in Figures 1 and 2, and it should be surrounded on all sides by the predominant color.

I have already remarked that I have found that breaking the larger surface and the bands into small squares by white lines promotes the ease of inducing the change of color of the band. Why this is so I am unable to explain, unless, as it will be seen as we advance, it may be easier to adjust the accommodation for the white lines which requires an effort in excess of that for the red surface and less than that for the green and that thus one may be aided in adjusting the accommodation for a point between what would be the point for clearest adjustment for the red and that for the green, an act which we shall see is necessary to the success of the experiment.

WHAT IS THE EXPLANATION?

In explanation of the phenomenon we may first consider in connection with it several known principles which might be suggested as causes, but all of which, on careful examination, we shall have to reject. We may premise that it is not a color illusion but an objective phenomenon.

Let us consider first the principle of simultaneous contrast. The principle has been stated as follows: "If we look simultaneously on two stripes of different tones of the same color, or on two stripes of the same tone of different colors placed side by side, if the stripes are not too wide, the eye perceives certain modifications which in the first place influence the intensity of the color, and in the second, the optical condition of the two juxtaposed colors respectively. . . They will appear as dissimilar as possible, both in the optical composition and in the height of their color."[2]

In all experiments of simultaneous contrast which are mentioned in works on color we find that the results differ absolutely from the phenomenon of conversion of color under consideration. For example, if orange and green are placed side by side the orange assumes a more brilliant red and the green a more luminous bluish green.

In Figure 3 we have an illustration of the principle of simultaneous contrast in which exactly the same colors as those which I have used in the experiment of conversion are employed. In Figure 3 the red central disc is too broad in proportion to the extent of the predominant field of green to permit of the conversion except with the greatest difficulty, but the phenomenon of simultaneous contrast is at once seen in the lighting of the green with a yellowish luminosity and a deepening of the red.

In the phenomenon of conversion under discussion if the predominant color is green, as in this case, this color will remain without modification, while the red will be completely eliminated and replaced by green of the exact shade of the general field. We may without further consideration dismiss this principle as an explanation of our phenomenon.

So also the principle of successive contrast or after images of complimentary colors must be rejected and the suggestion of fatigue of the retina need not be considered. Then also we may eliminate the principle of irradiation since irradiation becomes more marked in proportion to the contrast in illumination of the elements of objects and background, whereas in the case of the color phenomenon under consideration a certain degree of uniformity of illumination of the two colors is essential to its manifestation.

Our phenomenon reminds us of that known as the phenomenon of Purkinje and of that of Troxler, which last, however, is less a phenomenon of color than of form. Perhaps the experiment most nearly comparable to this is that of Ragona Scina. These and several known principles, when carefully considered, afford no explanation of our phenomenon, nor does it find a place under any category of phenomena which, so far as I have learned, have been heretofore described.

PRINCIPLES INVOLVED.

I venture to suggest two principles which are undoubtedly involved in the phenomenon and which appear to me to be elements in its explanation. They do not, however, complete the explanation, but lead, probably, toward it. Of these two elements, which I think may properly be included in the series of causative principles contributing to the phenomenon, the first to be mentioned is the difference of refraction of the various colored rays entering into the experiment.

Owing to the difference of wave lengths of the two colors which may be employed the refraction of one set of rays as they pass through the media of the eye must be greater than the other. Sir Isaac Newton observed that, with the source of illumination at six feet from his lens, blue rays converged an inch and a half nearer to the lens than red rays. Hence, if the accommodation of the eye were to be adjusted precisely and fixedly for the green rays of Figure 1, the red rays would only be converged for a point considerably behind the retina.

This brings us to the second element which may safely be regarded as contributing to our phenomenon. It is the adaptation of the eye through the act of accommodation to a place in advance of the surface on which the two colors are imprinted. If the accommodation is thus adjusted in looking at the two colors let us suppose those of Figure 1, with the green rays converged somewhat in advance of the retina and the red rays for a point which would lie somewhat behind the retina, a phenomenon will occur which is of much interest. It will be seen by examining the diagram, Figure 4, that the green rays will twice cross the red ones and reach the retina diffused.

What happens as the result of this crossing of rays

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[2] Chevreul: "Color," p. 71.

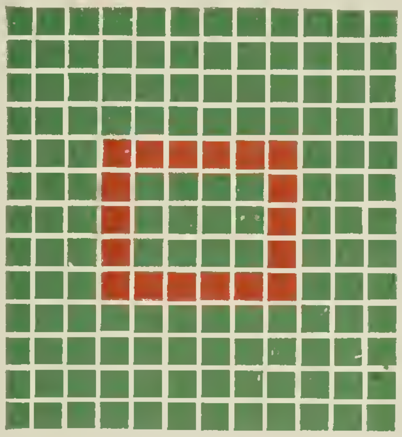

Figure 1.

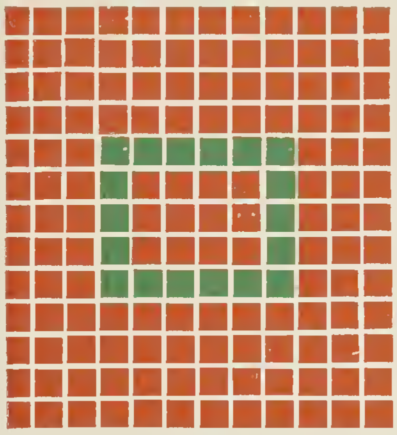

Figure 2.

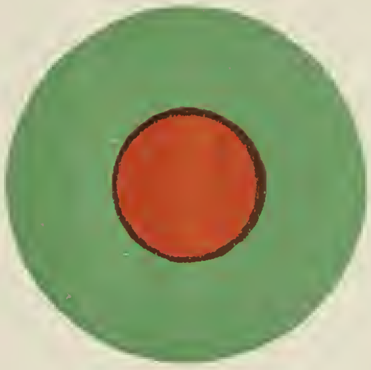

Figure 3.

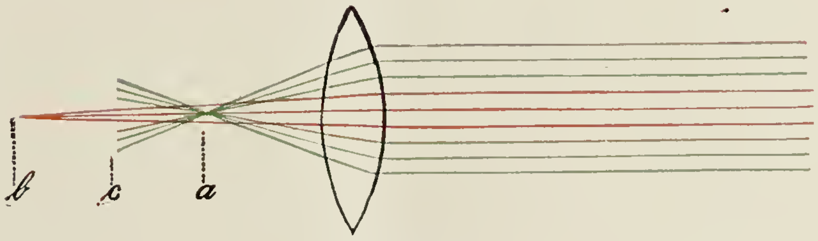

Figure 4.

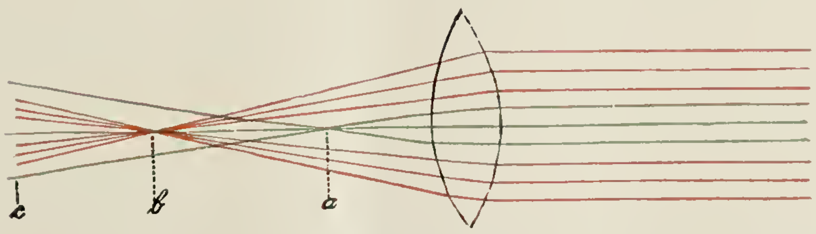

Figure 5.

Supplement to
The Journal of the American Medical Association,
July 21, 1906.

Illustrating Article by Dr. Geo. T. Stevens.

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is a question of difficulty as well as of interest to which we may refer when we have studied the phenomenon under other circumstances.

If we reverse the relation of the colors in Figure 1, using the green for the narrow interior band and the red for the greater surface, as in Figure 2, a complication at once arises. The conversion which, with the first arrangement, was induced with ease now becomes a matter of very considerable difficulty, and many persons who succeed in effecting the conversion with the first arrangement are unable to accomplish it with the second. Since we have the same colors and the same comparative illumination the question naturally arises why should there be greater difficulty in one case than in the other?

If it is true that the difference of convergence of the two classes of colored rays and the act of accommodation are elements in our problem we may receive an answer to the question, and it is the only answer that has occurred to me, from examining the diagram Figure 5, where the complications at once make themselves manifest.

Here the relations of the colored rays are the reverse of those in Figure 4. The red rays which converge only at the longer distance from the lens now occupy the outer ranks in the groups of rays approaching the eye. The now central green rays converge first and the red peripheral rays pass them by at first without crossing. It is only after the green rays have converged and have become again diffused that the first crossing could occur, and a second, if it should occur at all, could only occur behind the point of convergence of the red rays.

The difficulties then of inducing similar conditions of retinal impressions when the relations of the color spaces are reversed can be readily seen, and this principle holds good for all color pairs. In every instance the color whose wave length is shortest and therefore whose rays converge most is the color which, as the predominant or outside color, is best adapted to the experiment, while the companion color as the predominant one always presents a difficult combination and with some pairs in which the conversion can be made with the longer wave color as the subordinate it is quite impossible to induce the conversion phenomenon when the shorter wave color is subordinate.

These two factors, the differences of the refractive character of the two colors and the adaptation of the eye through the accommodation to certain conditions of refraction may, it would appear, be accepted as elements of the phenomenon, but there remains a factor or perhaps more than one factor still undetermined.

Some recent experiments may suggest the direction in which we are to look for the missing element or elements. On my library table stands an electric lamp enclosed in a large globe of corrugated glass. I take from a sheet of transparent "isinglass," a gelatine material such as confectioners use for enclosing bonbons, a strip an inch and a half wide by about five inches long. I hold it before my eyes and look at the globe. It is a rich, brilliant bluish-green. I take from another sheet a strip of similar proportions, and on looking at the globe through it the globe takes on a full deep red color. I now place one of these strips on the other, and on looking through find that the globe presents a deep red color, with the illumination so greatly reduced that the corrugations can hardly be seen and a sheet of white paper on the table near the lamp is so indistinctly seen that its borders can with difficulty be made out. All this is exactly as we should expect. I now take a strip of red about three millimeters wide and an inch or two inches long and place it on the original green strip. At first I see the general form of the globe of a fine green color and across it a dark red stripe through which no details of the surface of the globe are seen.

Presently, as I make an adaptation of the accommodation, the red stripe becomes green of the same color as that of the general appearance of the globe, but while not appearing of a lighter tint, it has a more pellucid and transparent appearance and is in fact more transparent, for the corrugations of the glass are seen more plainly through the layer of red and green than through the single layer of green. The corrugations also appear somewhat magnified, and I seem to see them not only through the transparent window but in advance of it.

Again, with a steel punch I make a circular opening in the broad strip of green and in it insert a disc cut by the same punch from the red. In the back of a large camera I place an electric light and in place of the lens a screen with an opening one-fourth of an inch in diameter. In front of this is a screen of white paper. If, holding a strong lens in my hand, I condense the beam of light to a focus on the screen and then bring it slightly backward toward the camera and then interpose the isinglass strip with the little disc of red exactly in the axis of the lens there is on the screen a small image of the red disc with a surrounding of green, but moving the strip backward and forward, keeping the little disc in the beam of light, I find, first, a point at which only a bright green beam passes through the strip with only a faint pink blush much diffused and hardly discernible in the field of green, and second, at another point, a green expanse surounded by a halo of red.

In the last instance we have, of course, a dispersion of the red rays. In the first instance there is a dispersion of the green rays which come to occupy a central as well as a peripheral position. In what manner the red rays are modified, whether by the ascendant influence of the other rays as, for example, when we look at the rotating Maxwell's disc in which, of the two colors red and green the latter occupies 80 per cent. of the surface, no suggestion of red is seen and the green is so slightly modified that the modification is with difficulty discernible, or by a modification from some form of non-destructive interference I am not ready to assume.

While the experiment with the lens fails to reproduce the conditions in the eye in an absolute manner, it approaches it very nearly.

DISCUSSION.

Dr. Charles H. Williams, Boston, showed some cards to uphold his suggestion that the explanation of this phenomenon depends on chromatic aberration and retinal fatigue.

Dr. Nelson M. Black, Milwaukee, remarked that the bleaching effect of various colors of the spectrum on the visual purple may help to account for the phenomenon, especially as Dr. Stevens states that "in every instance the color whose wave length is shortest is the color which, as the predominant or outside color, is best adapted to the experiment, while the companion color as the predominant one always presents a difficult combination." The greatest bleaching effect of the visual purple is produced by that part of the spectrum D and E, intensity diminishing with diminished wave length; red is least active, yellow slight, yellow-green greatest. Can not it be possible, he asked, that the long continued effect of gazing at the green outer color produces so much bleaching of the visual purple at the particular part of the retina that the rays fall on, that the red after a time fails to make any impression on that part of the retina. He first tried to produce the phenomenon while riding in a street car and could not succeed until the car stopped for a few seconds, when he succeeded, but the moment the car started again it was lost and he could not obtain the result again until the car was quiet, the motion of the car shifting the position of the image on the retina constantly, preventing sufficient bleaching of the visual purple to allow of completion of the phenomenon. The same would apply to the isinglass experiment. With some pairs, in which the conversion can be made with the longer wave color as the subordinate, it is impossible to induce the conversion phenomenon when the shorter wave color is subordinate.

Dr. F. H. Verhoeff, Boston, thought that Dr. Stevens failed to point out the essential feature of the experiment, the point which makes it successful, and that is that the eyes must be fixed on one point continuously. If they change, the red flashes out again. That has been indicated by Dr. Williams. It can be easily shown that the accommodation has nothing to do with it and therefore that chromatic aberration plays no part. That can be assumed off-hand, because the diffusion circles would be so small in comparison with the lines in the diagrams as not to cause sufficient confusion to bring out the phenomenon. If one holds a pencil so that it is interposed between the eye and one edge of the red square and looks at it steadily the phenomenon takes place, and if one removes the pencil the red flashes out. If accommodation played any part the whole square would be invisible when the pencil was removed.

Dr. Edward Jackson, Denver, stated that he was not satisfied that the explanation of this phenomenon had been given, and he had no explanation to give, but he believed that one factor has not been alluded to, something that comes nearer to suppression of the image of one eye than anything else. Dr. Stevens alluded to it, but did not give it prominence. It is more like the suppression of one image when using one eye with the microscope or ophthalmoscope, except that there is suppression of the visual field. Against the view that it is due to fatigue of the retina is the idea that while the eye is kept perfectly steady, so far as one can judge by the white lines in the figure, the red area on the green background comes back again. Now if that were due to retinal exhaustion why should it come back? There seems to be something here that is not explained by either of the theories offered or by any of the relations of different colors to each other. Disturbance of fixation may have a decided influence on the matter of suppression. In a good many people it is difficult to produce diplopia. By moving the glass they may be able to recognize the two images because the motion throws it on a little different part of the retina and they can recognize it. Both fixation and movement may in this way influence perception.

Dr. Myles Standish, Boston, said that the phenomenon described does not always occur. When he looks at the green image with the red band in it the phenomenon occurs as described, but when he looks at the opposite one, the red field with green band, it does not. He considers that the phenomenon is different with different people.

Dr. George T. Stevens, New York, said that the very interesting designs presented by Dr. Williams in every instance represent the rivalry between the two eyes, but that in the phenomenon he had shown it does not make any difference whether two eyes are used or one. He did not think that fatigue of the retina plays any part in the experiment, because some people make this conversion within less than a second, and it would seem to require more than that time to produce fatigue of the retina. Dr. Stevens has often tried to convert the larger circle to the smaller and could never do it, and Dr. Standish is the first one he has found that could.

Etiology of Neurasthenia.—In 103 private cases T. D. Savill finds that 69 were due to various abnormalities of the digestive tract, 3 to other abdominal conditions, 10 to septic or toxic conditions, 4 to circulatory troubles, 3 to phthisis, 4 to nervous fatigue, 2 to emotional and traumatic shock, and 8 to indeterminate causes. Autointoxication due to constipation and disordered digestion from insufficient mastication appears to be the chief cause of neurasthenia. Pyorrhea alveolaris and premature decay of the teeth, he states, play an important rôle in the production of this disease.—*Clinical Journal*, June 6, 1906.

CASES OF SPONTANEOUS INTRACRANIAL HEMORRHAGE ASSOCIATED WITH TRIGEMINAL NEVI.*

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From the unfortunate circumstance that capillary nevi, the "port-wine marks" of the vernacular, occur with especial frequence on the face, their appearance is but too well known and there are few of us who can not recall among friends or acquaintances instances of this lesion.

There is a topographical peculiarity of these vascular stains, however, which has received but little attention from writers in English. This peculiarity lies in the close correspondence which often exists between their field of distribution and the skin fields sensitized by one or more of the main divisions of the trigeminal nerve; for the blemish often demarcates with considerable accuracy the territory of the ophthalmic, maxillary or mandibular branches and in exceptional cases may even outline the trigeminal skin-field in its entirety.

The metameric boundaries of the nevus are not always anatomically exact, for the stain may to some extent overlap the adjoining fields or even cross the midline; but they may be said to be as topographically exact or even more so than the boundaries which can be mapped out after an eruption of trigeminal herpes, the cutaneous manifestations of which are now known to be secondary to a lesion of the Gasserian ganglion.

This correspondence in topography between birth marks and segmentally innervated skin fields is sufficiently close to suggest that a prenatal lesion (infectious or developmental) occuring in the ganglion or one of its compotent parts, may have been responsible in some way for the production of the defect; just as in adult life the acute lesion of a dorsal-root ganglion, whether spinal or trigeminal, may lead to the so-called trophic changes of zoster over its field of skin distribution.

Though this observation was first made years ago by Bärensprung, it seemingly has not been carried beyond the pages of an occasional monograph, and in most text-books of dermatology and neurology it receives no mention. This may be due to the fact that Bärensprung's views have not been accepted by all writers, some of whom, particularly in the case of nevi occurring on the body and limbs, have failed to find sufficient correspondence with the segmental fields to justify their being regarded as of metameric origin. Consequently, other hypotheses (such as their relation to Voigt's lines or to vascular rather than to nervous territories) have been advanced to account for the configuration of the lesions. There can be little doubt, especially through the evidence furnished by the vascular nevi of the face, that there is much in favor of Bärensprung's view.

In this paper I shall record three cases of trigeminal nevi in which have arisen certain complications, due, if my interpretation of them is correct, to the fact that the cutaneous lesion may be accompanied by a similar condition of vascularity of the dura mater; and it is suggestive that this membrane is also sensitized by filiments from the same nerve which innervates the cutaneous areas.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Case 1.—*Extensive nevus, involving principally the right trigeminal territory; right intracranial hemorrhage, leading to contralateral spastic hemiplegia; second hemorrhage, leading to hemianopsia; epilepsy; postmortem examination.*

Patient.—W. C., aged 4, was referred to me in May, 1904, by Dr. E. F. Cushing, of Cleveland.

History.—The child's parents are living and well, also two elder sisters. His birth had been normal, with no attendant difficulties. At the time of birth the child's skin was disfigured by a vascular birthmark of wide extent. It covered the entire trigeminal distribution on the right side of the face, and on the left side corresponded with the field of the third division of the nerve. The nevus was bright-red and sharply outlined. There was also a patch on the right buttock. During the first two years of life the excessively vivid color gradually faded from these areas, though they still remain clearly defined, particularly during cold weather or when the child cries. Some exophthalmos of the right eye was also present at birth, but this, too, has largely subsided. With the exception of a light attack of measles the patient was well in every respect until he was 13 months old.

In September, 1902, suddenly and without warning, he had a series of convulsions, which began in the left hand, extended to the left leg and finally involved the entire body. The first of these convulsions came on immediately after his daily bath. They were associated with a rise in temperature to 106 degrees. When these seizures ceased it was found that the child's left side was paralyzed. In the next few weeks after this sudden illness he had several other similar but less severe convulsive seizures.

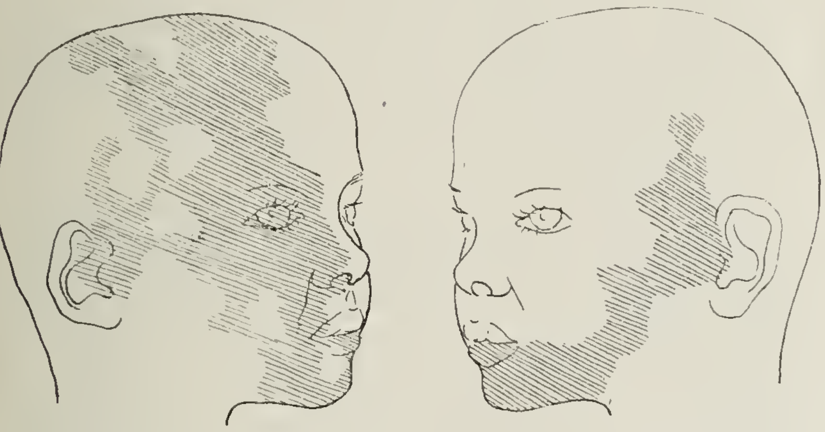

Fig. 1.—Case 1. Shaded areas show extent and outline of birth mark. Entire trigeminal field on right, with enlargement of eye; mandibular division on left.

During the following year he was practically free from convulsions and largely regained the use of his paralyzed arm and leg. At 17 months of age he began to walk, though with considerable limp, and there was evidence of a general weakness of the left side. The arm and leg were somewhat spastic. In December, 1903, there occurred abruptly, after the administration of an enema, a second series of left-sided convulsions, also associated with high fever. Ever since he has had more or less marked twitchings on the left side of the body.

Again in April, 1904, he had another series of attacks which were similar to the initial ones and which left him hemianopic. Since then isolated seizures of an epileptiform character have become numerous. These seizures are of greatly varying intensity: the least are mere twitchings, the more severe begin as left-sided spasms, when the child falls and remains unconscious for a few moments. They have varied in number from seven to ten a day since that time. The child is irritable, but seems to be in the best of general health. He requires constant care, owing to the frequency of his attacks and his liability to fall during them.

Examination.—Physical examination showed a child well-developed physically, but possibly somewhat backward in his mental condition. His parents and physician had not considered that there was anything seriously wrong with his intellect. He had learned to talk well, his memory seemed good and he played like the other children in his nursery.

Over the head and face, in the areas shown in the accompanying illustration (Fig. 1), there were fused patches of a bluish-red color, the so-called "port-wine birthmark." The child's head was normal in size and regular in outline. The right side of the face, however, that corresponding to the more extensive nevus, was somewhat larger than the left, the lips somewhat thicker, the development of the bones apparently somewhat greater and the eyeball considerably larger than on the opposite side. Not only was the globe of the eye larger, but the iris was 2 or 3 mm. greater in diameter than the iris on the left. The eye, furthermore, had a peculiar color. It looked like the china eye of a doll. The child apparently had some vision in this eye, but there was a question of his ability to see objects on his left side (homonomous hemianopsia?). The nevus on this side extended well up toward the vertex of the skull. The left hand and leg were somewhat smaller than the right and were not used particularly well. There was considerable spasticity and the reflexes were greatly increased. There were peculiar throwing movements in the left arm, and the attacks of petit mal, as well as the more severe convulsive seizures, began in this arm.

The suggestion was offered by the child's father, himself a physician, that the cutaneous nevus might possibly be associated with a nevus of the dura, and that the two critical periods of unconsciousness with fever and convulsions, one of which had preceded the hemiplegia, the other the hemianopsia, had been due to intracranial hemorrhages originating in the vascular membrane. We knew nothing at this time of the pathology of these conditions, nor were we assured of the fact that a trigeminal nevus might be associated with such a vascularization of the meninges.

Operation.—Thinking that possibly the child's epileptiform seizures might have a definite organic source, due to the absorption and organization of a clot which had originated in this way, we determined to operate, with the hope of finding and of separating some cortico-meningeal adhesions. Consequently, on May 30, 1904, under chloroform anesthesia, an attempt was made to turn down a bone flap and to expose the right hemisphere. Owing to the extreme vascularity of the scalp and the bone, this operation had to be abandoned. The bleeding from the diploë and dura was so tremendous after the removal of a single button of bone that it was controlled with difficulty, and without further attempt to open the cranium the button was replaced and the wound reclosed. The wound healed promptly and the child returned to his home.

Subsequent History.—The seizures continued as before. On Nov. 1, 1904, he contracted diphtheria, and after a serious illness passed into a seemingly normal convalescence. For several days his throat was clear, his temperature normal, and he was sitting up in bed. Suddenly one night his temperature shot up to 104 degrees, and there appeared an extraordinary swelling of one ear, together with an enlarged chain of glands down the corresponding side of the neck. The condition suggested an angioneurotic edema or an erysipelatous infection. The next morning the ear, together with the cervical glands on the opposite side, was correspondingly affected. Serious convulsions set in, and the boy died twenty-four hours later. During these two days an enormous enlargement of the liver took place, the lower border of the organ extending as low as the umbilicus.

Autopsy.—An autopsy was performed by Dr. Perkins of the Lakeside Hospital. The tissues generally showed evidence of an extremely active terminal infection. The liver had the appearance of a huge fatty liver. The glands over the entire body were greatly enlarged.

Our chief interest, however, lies in the condition of the brain. The left hemisphere was to all appearances normal; the convolutions were well-developed and presented the usual topography. The right hemisphere, however, was much smaller, and the meninges covering it were unduly vascular, in all probability representing a nevoid condition similar to that present on the skin. It was noticed, also, on removing the calvarium that the bone on the right side was soft and spongy and the diploë unusually vascular. Over the right occipital lobe, and also over the central region of the right hemisphere, the convolutions were atrophied and the overlying membranes thickened. There were adhesions between these areas and the overlying dura. The cerebellum was somewhat asymmetrical, the left hemisphere being considerably smaller than the right.

The right crus was small, and on cutting a fresh section of the cord the left pyramidal tract was seen to be smaller than the right. Furthermore, corresponding to the lesion of the right occipital lobe, the right optic tract was macroscopically smaller than the left. More important than this was the fact that the Gasserian ganglion on the right side was exceedingly small and Dr. Perkins found that there was little more than fibrous tissue to be removed from the situation of the cavum Meckelii.

Case 2.—*Birth mark limited to the ophthalmic division of the right trigeminus; intracranial hemorrhage; epilepsy; craniotomy after ligation of external carotid; recovery.*

Patient.—Willie K., aged 5, was referred to me by Dr. E. B. Rhodes of Cleveland.

History.—The child was the first-born of healthy parents possessing an excellent family history. The labor was long and difficult, finally necessitating an instrumental delivery. The child was born asphyxiated, and revived only after prolonged efforts of resuscitation. There was present at the time of birth an extensive vascular nevus over the right frontal region. The child was breast fed, and during its early life seemed normal in all respects. It grew and developed rapidly; was a bright and natural child, and had no untoward symptoms until it was ten months of age.

In July, 1901, after a period of several hot days, there was a sudden onset of convulsions involving the entire body; the child was unconscious, had a high fever, temperature 107 degrees, and was considered seriously ill. For a period of two weeks he continued in a critical condition, having from twelve to twenty-two convulsive seizures daily. Following this acute illness he continued to have a series of milder attacks, epileptiform in character. They were of sudden onset, involving the entire body, always with a period of unconsciousness. The child would foam at the mouth and would pass urine during the convulsions. For the past three years these attacks have been in a measure controlled by bromid therapy. He has grown to be a nervous, high-strung, excitable child, but apparently possesses a normal intelligence.

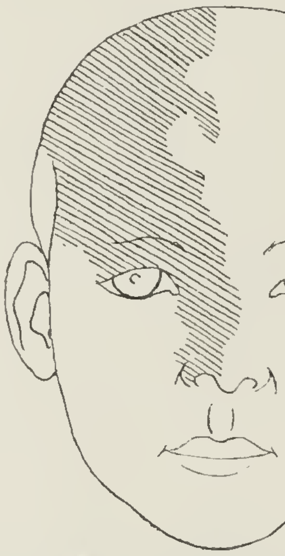

Fig. 2.—Case 2. Shaded area shows outline of birth mark limited to ophthalmic division of trigeminal field on right with enlargement of eye.

In January, 1906, the child had an active return of his convulsive seizures. There was a sudden onset of the attacks, which left him unconscious for several hours, during which time there were repeated seizures, limited for the most part to the left side of the body. They were checked by the administration of chloroform and heavy drugging.

He recovered from this period of threatened "status," and two weeks later was admitted to the Johns Hopkins Hospital in the hope that an exploratory craniotomy might reveal some adhesions, the result of an old lesion, the separation of which might benefit his condition.

Examination.—Feb. 2, 1906. Physical examination revealed no developmental abnormalities beyond the birth mark to be described, and a somewhat deformed pinna of the right ear. He was a well-grown child for his age, well nourished, and of a good color. His mental activity and acquirements seemed of a normal order. He was very nervous and unceasingly restless. An unexpected noise would make him start and twitch. During sleep he would keep his head jerking strongly from side to side, sometimes for hours at a time.

There was a congenital "port wine mark" which corresponded fairly well with the skin field of the ophthalmic division of the right trigeminal nerve (Fig. 2). There were no other abnormalities or similar stains elsewhere on the skin. The nevus was of a dusky, bluish red color and its hue had not faded perceptibly since birth. It was a true capillary nevus without elevation or pigmentation of the skin. The mark had an irregular outline, including the entire side of the nose, and even overlapping slightly the midline; including also the entire upper lid, whence it spread upward over the brow and forehead, into and beyond the hair margin as far as the crown. On the forehead it extended from the midline to slightly beyond the external angular process and temporal ridge of the frontal. Its outline was somewhat irregular, and within the field were a few small islands of normal skin. It evidently extended into the nose, as the mucous membrane on the right side bled often and after slight injuries.

The right eyeball was larger than the left, and the palpebral cleft wider open; the iris had a diameter of 1.5 cm., whereas on the left it measured 1.2 cm. The sclera on this side was more bluish in tint than the other, and the eye had the same "china eye" appearance described in Case 1. The pupils reacted normally to light, and an ophthalmoscopic examination by Dr. Bordley showed the media to be clear and without refractile errors. There was no increased vascularity of the fundus and the disc appeared normal in all respects.

The examination was otherwise negative. There were no sensory or motor disturbances to be made out. The reflexes, though active, were perhaps within normal limits. The results of delicate sensory tests over the territory of the nevus were difficult to interpret, but so far as could be told normal sensation was preserved.

Operation.—In spite of the operative difficulties that had been encountered in the exploration of the first case, it was determined to make a similar attempt in this patient after a preliminary ligation of the external carotid artery, a step which would, it was hoped, temporarily devascularize not only the superficial nevus, but the presumed dural nevus as well.

An operation was performed accordingly on Feb. 5, 1906. The external carotid was divided between two ligatures and the wound closed. There was an immediate blanching of the superficial nevus, which did not return to the former bright color until forty-eight hours later.

A cranial tourniquet was applied, and the incision for a large osteoplastic bone-flap was outlined, the central part of the opening being designed to correspond with the motor centers of the hand. This necessitated the inclusion of part of the nevus within the anterior leg of the incision. There was no bleeding of any consequence from the scalp or the bone, and only when the flap was elevated was any troublesome hemorrhage encountered. When the flap was turned back an unusual vascular condition of the anterior two-thirds of the uncovered dura was disclosed. This area, so far as could be told, corresponded in a measure with the outline of the cutaneous nevus, and was supposed to represent the field of dural innervation from the ophthalmic division of the trigeminus. There were many large vessels (veins alone, for the arterial supply was cut off) covering the area, connected by a network of smaller vessels, a condition that would have been regarded as an "angioma" of the dura had we not looked forward to the possibility of finding some such state of abnormal vascularity. Many of the large vessels evidently had emissary communications with the vessels of the diploë, and many of these had been torn when the flap was elevated. By the judicious use of cotton packing, bleeding from these points was controlled until the dura could be opened more posteriorly, where it was normal in appearance. Then some of the bleeding points in the nevoid portion of the dura were ligated by through and through sutures passed on curved French needles.

When the dura was turned down so as to expose the hemisphere a great number of adhesions were found between this membrane and the leptomeninges over the cortex. Most of these adhesions were delicate and non-vascular, breaking on slight tension; some of them were more dense and had to be sectioned with the scalpel. Connecting the precentral convolution with the dura above it, at the center of the exposed area of cortex, was one particularly dense bundle of adhesions. Cortical stimulation of this area elicited movements in the hand and wrist. The dura was then accurately sutured in position, the bone-flap was replaced, the scalp closed by careful approximation of its edges, and the dressing applied before the tourniquet was loosened. The sutures were removed on the second day. Healing was without reaction.

Postoperative History.—The child has been very greatly benefited. His nervousness has largely disappeared, and he has so far been free from attacks.

Although the former degree of vascularity of the cutaneous nevus, owing to free anastomosis of the superficial vessels, had returned by the end of the second day after the carotid ligation, it is hoped that collateral circulation in the meninges is less free, and that there may be a permanent diminution of blood supply to the nevus there. This may lessen the liability of a second hemorrhage from this source.

Case 3.—*Extensive nevus in a left-handed child, involving among other fields, the right trigeminal territory; right intracranial hemorrhage leading to contralateral spastic hemiplegia; idiocy; epilepsy.*

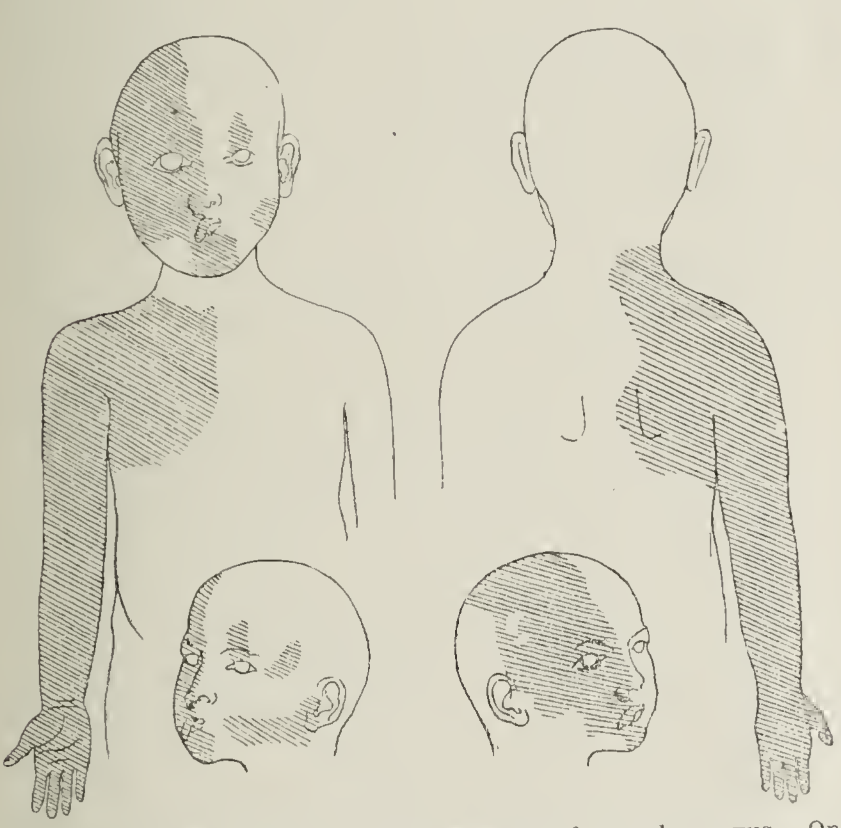

Fig. 3.—Case 3. Shaded areas show areas of vascular nevus. On right, entire trigeminal field with hypertrophy of face and eye; also field of Civ to Tv, with hypertrophy of arm. On left, small patches over each of the three trigeminal divisions.

Patient.—G. W., aged 8, was seen some months ago in consultation with Dr. Cuthbert of Washington.

History.—This, the second child of healthy parents, was born with a vascular nevus of wide distribution, covering almost the entire right side of the head and face, as well as the entire right arm and shoulder girdle. There were some patches also on the left side of the face.

With the exception of this cutaneous blemish the child was apparently healthy in all respects and developed normally until nine months of age. One evening while laughing and playing with its mother the child suddenly uttered a loud cry, fell back unconscious, and had a severe convulsion. He remained in a critical condition for several hours, and on recovering consciousness was found to have a complete left-sided hemiplegia. A diagnosis of intracranial hemorrhage was made at this time by the family physician. After a critical illness the boy so far recovered as to become a growing child, but he has since remained sadly crippled, both mentally and physically. There was some slight return of power of movement in the left side, and he learned during the course of the next year to take a few steps. For a year or two there was also some slight mental improvement, and by the time he was three years old he could talk a little, and seemingly had some power of understanding, but since that time there has been a series of progressively severe convulsive seizures, and, what with the effect of these attacks and an excessive administration of bromids, he has retrograded markedly. He has not spoken any intelligible syllables for the past two or three years; he does not recognize his parents; he is totally helpless. At present his epileptiform seizures occur at frequent intervals, often many in the twenty-four hours. These attacks are in a measure Jacksonian in character. Initiated by a cry, they begin with the turning of the head and nystagmoid movements of the eyes to the left; then follow twitching movements in the left side of the face and left hand before the convulsion spreads generally over the body.

It is noteworthy that before the first attack the child was recognized as being left-handed. There is a familial tendency to left-handedness, both parents as well as their other children having this trait.

Examination.—Physical examination shows a well-developed and nourished, but seemingly mindless child. He is irritable, restless, noisy when hungry, but seems to take no cognizance whatsoever of his environment. He does not recognize his parents or the attendant who has cared for him for some years.

Owing to the unsightly nevus his appearance is most startling. With the exception of one or two small patches of normal skin this nevus involves the entire trigeminal territory of the right side (Fig. 3). Here its color is most pronounced, being of a bright, reddish plum color and exceedingly vascular. To the touch the area feels quite hot. In some places the skin is somewhat thickened and elevated, apparently by larger subcutaneous vessels. Over the right side of the skull there is a palpably flattened area which would correspond with the central convolution and presumably indicates an underlying cortical defect. The deeper tissues of the right half of the face are thickened (hypertrophied?). The right half of the upper lip, the ala nasi and the eyeball are larger than on the left side. The diameter of the iris measures 2 mm. more on this side than on the normal one. The pupil also is considerably larger; both pupils react normally to light. The sclera has the same bluish tint and the eye in general the same "china-eye" appearance noticed in the other cases. There seems to be some enlargement of the bones on the right half of the face.

Over the skin on the left side of the face are several isolated patches of capillary nevus, less vivid in color than the large stain on the opposite side. There is a clear zone of normal skin around the neck, corresponding to the cutaneous distribution of the second and third cervical segments, but below this strip there is a solid area covered by a bright vascular nevus which extends from above the clavicle to below the nipple, including the entire upper extremity and running from mid-dorsum to mid-venter on the right side.

The left arm and leg are rather spastic and somewhat undeveloped, so that comparative measurements between the two sides are of no value. Nevertheless it is apparent that the right arm and hand, in comparison with the size of the rest of the body, are hypertrophied. The patients, furthermore, had noticed that this arm was larger than the left before the hemiplegic stroke occurred.

Remarks.—Even were there any certain prospects of modifying by an operation the character and severity of the epileptiform attacks in this unfortunate child, the gain would be trifling in view of the unalterable physical and mental deficiencies which are present, that no one could seriously contemplate its undertaking.

An operation performed when the child was nine months old, and a few days after the hemorrhage took place, might possibly have prevented these late complications by removal of the clot. It is improbable, however, in this case, that such a procedure could have had a successful termination. Operations for hemorrhage of this sort in infants or in the newborn are critical enough without the additional complication which an approach through a nevoid area would occasion.

DISCUSSION AND REVIEW OF LITERATURE.

The histories of three children, all of whom were born with vascular nevi which conformed with the territory of one or more divisions of the trigeminal nerve, are thus recorded; and in view of the facts mentioned in the paragraphs introducing this paper, we may with some justification regard these nevi as the result of some process, a congenital defect or intrauterine lesion, which has primarily affected the ganglion or its sensory root. In Case 1 this process may be considered to have involved all three divisions of the right trigeminus, together with the mandibular division on the left; in Case 2, merely the ophthalmic division on the right; in Case 3, the entire trigeminus on the right, the same nerve, in part, on the left and the lower five cervical and upper five or six dorsal root ganglia also on the right side.

It is well known from anatomic and physiologic studies[1] that the dura mater is sensitized almost entirely by filaments from the three divisions of the trigeminal nerve, and even had we not been assured by the postmortem findings in Case 1 and by the operative ones in Case 2 that this membrane also shared in the distribution of the vascular nevus we would nevertheless have been led to this assumption by the history given by each patient of a presumably spontaneous cortical hemorrhage.

Had there been no obvious vascular lesion on the skin to suggest this view, the cases would possibly have been regarded as instances of spastic hemiplegia of encephalitic origin. for an infectious process is regarded as the more common cause of the spastic palsies which date from infancy; and these children were afflicted at thirteen months, ten months and nine months of age, respectively. Owing to some surgical experiences with cases of so-called "birth-palsy,"[2] I am inclined to the view that most, if not all, instances of spastic paraplegia or hemiplegia which date from birth are secondary to intracranial hemorrhage, accidental to parturition. And certainly some of the infantile cases as well—for example, those with an abrupt onset during a paroxysm of whooping cough—have a like etiology, namely, cortical bleeding from ruptured vessels.

In no one of the three cases here reported have we proof positive that the acute illness which led to the cerebral complications was due to a hemorrhage. Most of the evidence, however, points in that direction.

The brain and its envelopes removed after the death of the first patient show. on the side corresponding to the extensive birth mark, an undeveloped trigeminal nerve, a meningeal nevus, and two areas of cortical atrophy with local adhesions such as are often found after cortical hemorrhage from other conditions. In the second patient we were able to demonstrate the nevoid condition of the membrane and the trace of the old hemorrhage *intra vitam*. In the third case, regarded in the light of these other two, there can be no reasonable doubt but that there has been an extensive hemorrhage over the right hemisphere which in a left-handed child has seriously interfered with mental development. The flattening of the skull over the area of the central convolutions on this side gives further evidence of a large defect.

Since Bärensprung's original communication there have been several papers dealing in general with the topographical aspects of nevi of all varieties, vascular and otherwise, and among these the study by Etienne[3] may deserve particular mention. Such a perusal of the general literature of the subject as I have been able to make has brought to light the scattered reports of a few cases presenting complications akin to those described above, evidently due, it seems to me, to intracranial hemorrhage. Thus Lannois and Bernoud[4] have described the case of a young woman, 20 years of age, in whom the left side of the face was covered by a blood mark and the tissues were hypertrophied. When 3 months old, after a supposed fall, she had become hemiplegic, and subsequently grew to be a weak-minded epileptic. At the same time he briefly cited a second case with a similar history.

Galezowski,[5] in the same year, reported a case with an extensive vascular trigeminal nevus covering almost the entire face, and he called especial attention to an associated monocular enlargement which he likened to the condition of buphthalmos. The fundus in the eye was normal, but the appearance of the choroid led him to believe that this structure might also have been involved in the nevoid process. His description corresponds with the unilateral ocular conditions which were found in all three of my cases.

I have met with only one report in which the author commented on the nevoid condition of the meninges in these patients. It was a case of Strominger's,[6] in which an extensive, left-sided facial nevus had led to hemiplegia. Death occurred from some intercurrent affection, and at the autopsy the meninges were found thickened and vascular.

Although it is somewhat apart from the primary object of this report, there is a further aspect of these cases on which I can not refrain from commenting, namely, the associated hypertrophy of the tissues which underlie the nevus. This condition, which was apparent in the half of the face of both Case 1 and Case 3, has attracted the attention of many writers, and an excellent review of the subject, with the theories advanced to account for these local hypertrophies, has been made by Grimaud.[7] In my cases this condition was possibly most pronounced in the arm in Case 3. Guillain and Constellemont[8] have recently shown before the Neurological Society of Paris a patient in whom the nevus similarly was limited to the right upper extremity with much the same distribution as in my case and with a corresponding degree of hypertrophy. Many similar cases have been reported, particularly with enlargement of an extremity, less often with enlargement of half of the face.

CONCLUSION.

In conclusion it may be said that:

Vascular nevi occurring on the face show a tendency to conform in outline with the distribution of one or more of the main trigeminal branches.

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[1] "The Sensory Distribution of the Fifth Cranial Nerve," Johns Hopkins Hosp. Bull., 1904, vol. xv, p. 223.

[2] "Concerning Surgical Intervention for Intracranial Hemorrhage of the New-born," Amer. Jour. of the Med. Sci., 1905. Since writing this paper I have operated on five other children a few days after birth. Two of them have had perfect recoveries; the others had a thick and widespread unilateral clot and all three succumbed.

[3] Etienne, G.: "Des naevi dans leur rapports avec les territoires nerveux, etc." Nouvelle Inconog. de la Salpêtrière, 1897, vol. x, p. 263.

[4] Lannois et Bernoud: "Enorme naevus angiomateux de la face avec hémiplégie spasmodique et épilepsie," Nouvelle Inconog. de la Salpêtrière, 1898, vol. xi, p. 446.

[5] Galezowski. M.: "Naevus congénital sous forme de couperose occupant la face, le front et le cuir chevelu, avec buphtalmie monoculaire," Annales de Dermat et de Syphil., 1898, vol. ix, p. 242.

[6] Strominger: "Angiom intins al hemisferului cerebral stáng," Spitalul, Bucuresci, 1905. vol. xxv, pp. 147-150.

[7] Grimaud, Leon: "Hypertrophie partielle congénitale du corps avec nævus," Thèse, Paris, 1901.

[8] Guillain et Constellemont: "Un Cas de Naevus du Membre Supérior avec Varices et Hypertrophie Osseuse," Révue Neurologique, 1904.

These cutaneous nevi may be associated with some degree of hypertrophy of the deeper tissues of the face, with an enlargement of the eye, and finally with the presence of a corresponding nevoid condition of the dura mater.

This dural nevus may lead to a spontaneous hemorrhage during infancy, with consequences similar to those which follow the subdural hemorrhages occurring during the early months of life from other causes—epilepsy, spastic hemiplegia or even amentia.

Absorption of the clot may lead to cortico-dural adhesions which in favorable cases can be separated with benefit to the epileptiform convulsions, provided measures such as carotid ligation are taken to prevent complications from too great a loss of blood during the operation.

RADIUM IN SURGERY.*

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To present in brief form to this audience of practical surgeons the experience of three years' use of radium, I have chosen to demonstrate graphically by a few colored plaster casts the results that may be obtained. A few facts are worth more to us than pages of historical review or speculation.

I would not have ventured to present the subject had it not been my privilege to use a rather large quantity of the most powerful radium yet made. Therefore, a fair estimate of its efficiency can be given.

Discarding all weaker specimens, I have used:

15 centigrams Curie radium, strength......	300,000
21 milligrams German bromid, strength....	1,000,000
100 milligrams German bromid, strength ...	1,800,000

The working unit of the most powerful and pure radium manufactured is 10 milligrams radium bromid 1,800,000, and is best used in a small cell covered by a thin layer of mica. This, for obvious reasons, cannot be sterilized for introducing into tumors, therefore I have had six such cells emptied into one small thin glass tube, about one inch long, and scarcely larger than a match stick, and two more cells into another similar tube, blown a trifle larger at one end, and sealed hermetically. Two other cells I reserve for surface applications.

The beautiful specimens of Curie radium chlorid 300,000, I divided in two similar tubes, one of ten centigrams and one of five. With this preparation I have been able to give a fair test of the efficiency of radium, to compare results with early exaggerated claims, and establish some definite value for its therapeutic action.

From a large clientele I have chosen 125 cases for the test, representing 22 different surgical conditions, as follows:

Lupus	6	Granulated Lids	1
Epithelioma	30	Tuberculous adenitis	1
Cancer	40	Seborrhea of lip	1
Sarcoma	9	Hypertrophy of tonsil	1
Enchondroma	1	Ganglion of wrist	1
Pigmented mole	4	Dupuytren contraction	2
Melanoplakia	2	Cyst of jaw	1
Leucoplakia	2	Angioma of face	1
Ulcer of lip	1	Tic doloureux..............	1
Warts	11		
Keloid	2	Uterine fibroid	1
Goiter	9		127

Many of these I shall not speak of, as they are under observation, and not ready for report, though of the utmost interest. In all cases possible I have had careful microscopic corroboration of the lesion by Dr. Francis C. Wood and others.

Our greatest interest centers around the new growths, lupus, epithelioma, cancer and sarcoma. These represent in their incipiency a large overgrowth of cells normal to the part invaded or grafted on it.

It is of some interest to note at this point that the ordinary wart, small or large, is but an overgrowth of cells normal to the skin, and in every case where I have laid a radium tube on one, it has speedily disappeared through a process of retrograde degeneration of the mass of cells composing it.

Let us dismiss that thought as simply an illustration of the subtle influence of radium rays on morbid cell growths and turn our attention to lupus, epithelioma and carcinoma. From a clinical point of view these three shade into each other, and with lapse of months or years the slow growing forms become destructive, penetrating and carcinomatous.

In the lupus type I would class only five cases. One of these had, in large measure, become cancerous. From a practical standpoint one may place in the same class all the lupus and epitheliomata, for they are equally relieved by radium.

Thirty-five cases of these classes have been studied, and with most gratifying results. Not one has failed to show prompt healing action. Twenty have been cured, at least for the time, and with probability that many are permanent, but with a slight point or two of recurrence in some, which always has yielded to a short secondary treatment. Many of these were distinctly malignant epitheliomas.

They were variously placed on the head, face and shoulders. Some produced extreme deformity and offensive ulcers, but gave full, soft pink cicatrices. Nine recent ones are still under treatment.

Twelve cases involved the nose extensively; four the ear; five the forehead; four the eyelid; five the cheeks; and four the chest and scalp. On the whole they represent slow growing epithelial cancer, existing from two to twenty years. Some were so called baso-cellular epithelioma, and others with very active mitotic figures, but all yielded equally well, regardless of these microscopic distinctions. Some had invaded and eroded cartilage of the ear and nose—which healed equally well—others invaded and destroyed bone, and yet in some places yielded to the searching rays and healed over.

Little difference was shown in susceptibility to the rays, whether the disease was recent or of many years' growth. One of the most striking cases was an epithelial cancer of the lip and wing of the nose in a lady of 74 years, which had progressed for seven years, destroying the nostril, septum and part of the lip, down to the vermilion border.

It had resisted all forms of treatment, including Roentgen ray, well given for several months. The patient was too old and unwilling to submit to disfiguring extirpation and plastic operation. Radium tubes were laid on the disease with interposition of rubber tissue for one hour daily for seven days. Slight reaction was then noticed and nothing more was done. In two weeks the second cast was taken and the disease shows healing. In five weeks all evidence of disease was gone, and the ulcer, shrunken to one-quarter size, was entirely healed. More than ten months have passed and the case remains perfectly well, with insignificant scar. Three casts of this case illustrate beautifully what the patient and her physician choose to call a miraculous cure.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Another, of the same type, referred to me by our chairman, Dr. Weir, had for two years been slowly destroying one nostril and the wing of the nose. As Dr. Weir said, an unsightly plastic operation would be necessary to repair the damage, and eradication would be doubtful. This was rapidly cured by three applications of radium tubes of 5, 10 and 20 minutes each.

Five exuberant and destructive epithelial cancers of the eyelids have yielded in the same way; two are cured, and the others, more recently treated, are approaching a cure. Such cases present to the surgeon a great relief from difficult and unsightly plastic operations with unsatisfactory final outcome. Some of the epithelial cancers originated as senile keratoses on the forehead, nose and cheek; and it was interesting to see all such early manifestations surely melt away under one or two applications. The difficulty of insuring successful outcome is in judging the exact dosage of radium treatment. Of this more will be said later.

The study of the cases of cancer in its graver form presents a worse picture and fewer favorable results. In 40 cases 28 were inoperable. 11 would have admitted operation, but were given a radium test, and 6 of these were subsequently operated on. The other 5 are so much improved that operation is hopefully deferred.

Of the 40 cases 3 were situated in the cheek; in the tongue, 6; tonsil, 1; parotid, 2; neck, 3; thyroid, 1; esophagus, 2; bladder, 2; rectum, 4; uterus 5; jaw, 1; glans, 2; lip, 1; breast, 7.

Most of the malignant growths showed more or less favorable retrograde changes at some stage of treatment. A few gave evidence of control; and I am encouraged to think that faulty use of this agent may be responsible for failure in some.

In several cancers situated on the mucous surfaces, such as the tongue, cheek and tonsil, I gave too severe treatment unwittingly, and produced temporary irritating effect, with partial destruction of the mass, it is true, but on the whole, I suspect an aggravation of the trouble. It would have given me satisfaction if I could have reported favorable outcome in the 40 test cases, of the grave form of cancer, but they must candidly be said to have yielded no results worthy to justify a statement that radium has established any claim to be a specific cure.

There is yet a possibility that in applying this wonder-working agent in some other manner than in this thin glass tube, we may obtain better results. To this end I shall continue to experiment, not forgetting that it was in the same sealed tubes that radium was so magically efficient in curing the epithelial forms of cancer.

There is one redeeming type of grave cancer which in some recent cases seems to promise good results, namely, mammary scirrhus. In seven such which I have critically treated, three were subsequently amputated for microscopic study, and showed characteristic retrograde changes, which explain the apparent excellent gain in four others recently treated, and which will be reported on a year hence. At the present writing these show encouraging condition.

Far more cheerful and inspiring are the results of radium treatment in a small group of sarcomas. A case of giant-celled sarcoma of the lower jaw, which had almost completely destroyed the bone at one side and replaced it by a soft tumor, was treated by me nearly 2½ years ago, with radium alone, and reported cured soon after,[1] was recently seen by me and found still well.

The retrograde changes from soft tumor back through ossification to almost a natural sized jaw bone with solidity, are unparalleled by anything I have ever seen in surgical work.

In a second case, where the jaw had been spontaneously fractured through a sarcoma, about the forward molar teeth and a bleeding tumor had grown upward into the mouth, pronounced by Dr. E. G. Janeway to be probably sarcoma, a rapid cure took place after several radium treatments, and the patient remains well after a year and a quarter. A third patient, who had a giant-celled sarcoma removed from her maxillary antrum, developed one in the lower jaw six months later. I removed this with apparent thoroughness by curette, though it involved the body of the jaw, all but the inner plate of bone, and applied radium on the bone for several days afterward. Six months have elapsed without recurrence.

From these experiences I would advocate treatment of this type of sarcoma by radium with confidence.

Another type of sarcoma has given the most brilliant result yet seen. A purple tumor occupied two-thirds of the lower eyelid, growing equally on the skin, on the mucous membrane, and upward between. Its growth had been watched at the N. Y. Eye Infirmary, and treated vigorously by Roentgen ray with no visible effect. It was of one year's growth and threatened serious consequences if not removed. It was referred to me by Dr. Peter Callan for possible effect of radium. Microscopic section showed round-cell sarcoma.

Two tubes were laid on it for one hour each day for four times, and then it was watched; at four weeks it was half gone, at six it was three-quarters absorbed, at eight weeks entirely cured. We have watched it critically for one year since it disappeared, and there has been no return. Not less remarkable is the fact that the skin and edges of the lid, as well as the growth of the eyelashes, are restored to normal, and one would not believe a tumor could have ever been present.

It is difficult to explain the reassembling of cells normal to the structures of the lid from the mass of tumor tissue in which they were lost. The same problem for the pathologist to explain occurs in the return to normal of the bone cells lost in the soft maxillary sarcoma just reported.

Another sarcoma of malignant type was an angiosarcoma of two years' growth, as large as the end of one's finger, inside the nasal fossa, with its base grown into the ala nasi, and beginning to show on the skin. This had been critically studied and treated by Dr. Lustgarten, New York, and found beyond control. It bled constantly. Four applications of strong radium are producing a rapid cure during two months of treatment, and there seems no doubt it will soon be well.

Two fine examples of spindle-celled sarcoma as large as an apple, one of the tibia and one of the sphenoid, have been thoroughly radiumized, and are being closely watched for two months with seeming arrest, but no retrograde changes as yet. I doubt its value in this class of tumors.

Rays of radium are essentially stimulating and irritating, and show two distinct effects; in moderate dosage, alterative, in excessive dosage, destructive. The former seems to me to be the efficient and elegant method. One may produce degenerative necrosis by radium in any tumor tissue, and thereby set up autotoxemia, with temperature, toxic rash, bone achings, lymphatic engorgement, and other characteristic symptoms. I have seen at least six such coincident toxic conditions, lasting a few days, in over zealous radiumization of large growths of the tonsil, face, tongue and thyroid. In general this is undesirable. Two years ago I inserted a strong radium tube into the substance of a very large goiter in a hopeless case of exophthalmic goiter, with prompt and remarkable convalescence. The patient remains well and strong and has but an insignificant remnant of goiter left.

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[1] N. Y. Med. Record, 1904, August 27.

This led me to repeat the attempt in seven cases. Two others have shown its curative effect. One other has shown extreme radium action, with slight incidental thyroid toxemia, a molecular necrosis of a large portion of her huge thyroid. This sinus healed kindly and the resulting reduced size of the oppressive goiter is very satisfactory.

The results thus far obtained by me justify further experimentation, but not a claim as yet to specific benefit in all cases.

In applying radium to pigmented moles one readily obtains removal by induced dry necrosis. Possibly this may have a specific advantage over escarotics or the knife. The cicatrix is certainly softer and better.

CONCLUSIONS.

1. Radium action resembles that of Roentgen rays.
2. It differs specifically and will cure some cases promptly which resist the latter.
3. It is applicable to the interior cavities of nose and mouth, inaccessible to the Roentgen ray.
4. It is curative in most superficial epithelial cancers and lupus.
5. It has failed of curative action as yet in forty test cases of grave internal cancers.
6. It promises interesting results in other surgical conditions under study.

DISCUSSION.

Dr. Seth Gordon, Portland, Me., asked Dr. Abbe whether he has ever used radium in Paget's disease of the nipple, which sooner or later becomes carcinomatous.

Dr. Abbe said that he has used it in one case which was nearly typical, a chronic ulcer of six months duration. The ulcer was cured after two or three applications of the radium. The patient then went to Baltimore, where she saw a surgeon who advised removal of the breast, so that he lost the opportunity of further treatment.

Dr. Gordon stated that he had a case in which he tried the Roentgen ray, but to no purpose. A friend asked Dr. Gordon to let him try radium. He tried it for three weeks every day, and finally sent the patient back saying that he believed that the treatment was not doing any good. Dr. Gordon afterward removed the breast and found it to be carcinomatous.

Dr. Robert F. Weir, New York, has sent several cases to Dr. Abbe and he has seen many of Dr. Abbe's cases and the results in these superficial tumors were very satisfactory so far as Dr. Weir's cases were concerned. After all, he said, it is the emphasis on the words immediate cure that is important. The Roentgen ray at first accomplished much for these patients, but the result was not a very lasting one. Whether the same thing will occur with the radium cure time must tell. Dr. Weir suggested that perhaps Dr. Abbe may bring forward instances in which the cure has passed beyond the time limit—possibly two or three years—and thus give us additional assurance concerning the value of this procedure.

Dr. Heffner, Pottstown, Pa., asked Dr. Abbe how long he has been using radium and the cost of such a tube as he uses.

Dr. Abbe stated that he has used radium for three years and has been very much impressed by several facts. The cost of the radium is large. The little samples he showed are worth about $10,000. He went into this work for the purpose of testing the value of the radium treatment. Reports in medical literature and the opinions of those using small specimens of weak radium leave one's judgment of its true value in a rather chaotic condition. The newspaper statements are not such as the medical man wishes to base his opinion on. This section should know something exact. Therefore, Dr. Abbe has put the matter in as graphic form as he could. There is a subtle and unique power in radium, he said, it acts somewhat like the Roentgen ray, but supplants it. It possesses additional power and in many cases in which the Roentgen ray failed to produce any results, radium succeeded in producing a cure. The correct use of radium in all cases of superficial cancer is curative, he said, some patients remaining cured for three years. Often they come back with a slight recurrence, but a little repetition of the treatment immediately cures them again. Radium alone will cure most cases of early epithelial cancer and therefore he believes that it is worth while to give it a trial, especially when surgical methods have failed to produce permanent results. The Roentgen ray will cure many cases, but not all. Radium will not cure all cases, Dr. Abbe said, but often the cases the Roentgen ray will not touch, radium will cure.

UNCINARIASIS IN MISSISSIPPI.

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NEW ORLEANS.

That uncinariasis exists throughout many sections of the southern states has been known and frequently stated in the last few years. Cases have been reported here and there, but apparently the only case reported from Mississippi is one by Weiss of New Orleans in 1904. The patient was a student nurse from Wilkinson County. E. H. Martin reported finding a hookworm in the ear of a negro girl in Clarke County in 1905. C. W. Stiles, zoologist, United States Public Health and Marine-Hospital Service, read a most instructive paper on the subject before the state medical association in 1904, and presented some cases picked up from the Baptist Orphanage in Jackson.

This study was undertaken with a hope of still further calling attention to the disease.

In March, 1906, I mailed the following letter to 821 physicians in Mississippi, whose names appear on the rolls of membership of the state medical association for 1904 or 1905 and to 172 other physicians whose names were selected from Polk's Medical Directory and who live in counties not represented on these rolls, making a total of 993:

Dear Doctor:—I am trying to ascertain the localities in the state of Mississippi infected with uncinariasis or hookworm disease and the probable prevalence of the disease in the state, and want to ask your co-operation. The result of this investigation will be made the basis of a paper to be read at the next meeting of the state medical association and due credit given those who contribute the information.

As you know, the disease in this country, is due to an intestinal parasite, the *Uncinaria americana* and the chief symptoms are anemia, pale, sallow complexion, dwarfed development, mental or physical, perverted appetite, chiefly dirt eating. The familiar dirt eater of the country is the type from which there are all grades of variation. All the above symptoms are not necessary and vary in degree, according to the number of worms present. Most people who have had "ground itch" within the past few years have the parasites in some number.

They lay enormous numbers of eggs which are easily found in the feces under the microscope. Disease is in the children who go barefoot chiefly but adults have it also.

I would ask if you will not send me in this month as many specimens of feces as you will from patients in whom you suspect the disease and if none, of some anemic or even well people whom you do not suspect. In return I will promptly report to you result of examination of each. Specimens of feces for microscopic examination are best sent in small one, two or three dram homeopathic vials in a mailing case, packed in wood box or placed in holes large and deep enough, bored in a small piece of wood. Not exceeding two or three grains should be sent, larger quantities are unnecessary.

I will ask you to answer the following questions as nearly as you can and return by April 1, whether you send specimens or not:

(1) How many cases of uncinariasis or hookworm disease have you treated in your county which were confirmed by finding the worm or the eggs?

(2) Do you believe that the disease exists in your county?

(3) What percentage of the population do you think have it?

(4) What percentage of the population have the average appearance and condition of those from whom you send specimens?

(5) What percentage of the population are anemic?

(6) Do you see "ground itch" in your section?

Name————————————

P. O.—————— County——————

Thanking you in advance for aiding me in studying a disease of paramount importance to the state of Mississippi.

I am, yours very truly,

C. C. Bass, M.D.

Of these 993 letters, 14 were returned unopened for various reasons, such as wrong address, moved, etc., leaving 979 that might reasonably be thought to have reached the addressee.

There were received 88 replies and 71 specimens of feces, 61 of which contained *ovæ uncinariæ*.

Here I want to thank the following physicians for replies, specimens, and other assistance: Abston, J. T., Allen, L. S., Allen, W. G., Arnold, E. F., Banks, E. J., Barksdale, J. W., Barton, W. P., Batson, W. L., Berry, J. T. B., Bethea, J. J., Brown, P. R., Bullitt, J. B., Castle, S. A., Coleman, S. K., Copper, J. A., Crawford, B. L., Crawly, Z. E., Crisler, Julius; Dooley, F. M., Eckford, J. W., Folkes, H. M., Fulgham, F. L., Garrison, H. F., Gibert, J., Guthrie, of Quitman; Hall, R. W., Harbour, G. L., Harman, S. B., Higden, R. E., Hill, J. P., Horton, W. H., Howard, R. E., Howard, W. L., Hunnicutt, J. W., Jagoe, A. J., Johns, W. A., Killis, J. D., Lamkin, L. H., Lewis, H. L., Lewis, T. B., Little, W. L., Lackwood, T. P., McKinnon, H. L., McLean, J. T., McNair, N. J., Martin, E. H., Warwell, W. B., Minor, H. A., Mitchell, T. J., Mohler, D. G., Murray, C. M., Nagle, A. K., Patterson, W. P., Payne, A. G., Perry, J. A., Philips, G. C., Poole, E. B., Price, C. M., Purser, Thos., Quin, R. A., Ramsay, H. H., Reed, A. E., Richardson, H. N., Rope, J. W., Rouse, S. C., Rowland, P. W., Sheetly, C. A., Shivers, M. A., Simmons, J. T., Simmons, V., Spencer, W. C., Stevens, J. J., Street, W. T., Stuart, H. A., Sutherland, H. L., Taylor, Arn., Tennison, D. A., Thompson, C. C., Waldauer, Jos., Weeks, J. D., Weissinger, W. S., Wendel, R. P., West, H. H., Wilkinson, E. T., Williams, J. R., Wilson, T. F., Young, J. W.

The number of physicians replying from each of the forty-five counties heard from is shown in Column 3 of Chart 1. This leaves 31 counties from which no report was received. The largest number of specimens sent by one man (44) was by Dr. L. C. Rouse, Harrison County, 41 of which showed *ovæ uncinariæ*. The largest number of cases reported by one man was 25, by Dr. C. C. Thompson, Marion County. The next largest (15) was by Dr. J. W. Hunnicutt, Pearl River County.

It is very likely that those who had had their attention attracted to the disease were so impressed with its importance that they would have been glad of an opportunity to promote the study of it. Hence we could suppose that the number (104) reported comprises most of the cases positively diagnosed by the physicians of the state. In addition, there were reported 39 cases, the diagnosis of which was not confirmed by identification of the parasite or ovæ, but diagnosed and treated empirically, or in which for some other reason the diagnosis was questionable. Probably many of these were cases of uncinariasis. They are shown in Column 2 of Chart 1 opposite the county from which they were reported. To the 104 positive cases reported by physicians in the state are added and shown in the first column of the chart, opposite the county from which they came, the 61 specimens found positive; 11 cases from Mississippi shown in the records of the New Orleans Charity Hospital; 2 cases from Wilkinson County reported to me by Dr. E. L. McGehee of New Orleans; one case reported from Wilkinson County by Dr. J. D. Weiss in the New Orleans *Med. and Surg. Journal*, and 27 cases from Mississippi in my own private practice since June, 1903. This makes 206 positive cases.[1]

Chart 1.

County:	All positive cases.	Questionable cases.	Physicians heard from.	Number of physicians suspecting his disease.		Number of physicians reporting ground itch.	
				Yes:	No:	Yes:	No:
1. Adams	..	6	2	..	2	1	..
2. Amite	1	Yes.	1	1	..	1	..
3. Alcorn	..	..	2	2	..	1	..
4. Benton	..	..	1	..	1	..	1
5. Bolivar	..	..	4	..	3	1	3
6. Carroll	5	..	1	1	..	..	..
7. Chickasaw	..	..	1	..	1	..	1
8. Choctaw	..	..	2	..	2	2	..
9. Clarke	13	3	2	1	..	1	1
10. Clay	1	..	2	1	1	2	..
11. Coahoma	..	..	3	1	2	..	3
12. Copiah	2	..	3	1	2	2	1
13. Covington	..	1	4	3	1	4	..
14. De Sota	..	..	4	..	4	..	4
15. Greene	..	..	1	1	..	1	..
16. Grenada	..	..	1	..	1	..	1
17. Hancock	2	..	1	..	1	..	1
18. Harrison	48	15	6	5	..	3	3
19. Hinds.	3	2	4	4	..	3	1
20. Holmes	..	..	2	2	..	1	1
21. Jackson	3	..	1	1	..	..	1
22. Jasper	12	3	2	1	1	2	..
23. Lafayette	..	..	3	..	2	1	2
24. Lamar	2	..	..	..	..	..	..
25. Lauderdale	..	..	2	1	1	1	1
26. Lawrence	3	..	1	1	..	1	..
27. Lee	..	..	1	..	1	..	1
28 Lincoln	6	3	2	1	..	1	..
29. Madison	..	..	1	..	..	..	..
30. Marion	48	..	2	2	..	2	..
31. Monroe	4	..	1	1	..	1	..
32. Newton	4	..	1	1	..	1	..
33. Noxubee	4	Many	3	2	1	2	1
34. Oktibbeha	..	..	1	..	1	..	1
35. Pearl River	16	..	2	1	..	..	..
36. Perry	2	Many	1	1	..	1	..
37. Pike	22	6	5	2	..	4	..
38. Rankin	..	..	1	..	..	1	..
39. Sunflower	..	..	2	..	1	..	1
40. Tippah	..	..	1	1	..	..	1
41. Warren	..	..	2	..	2	1	..
42. Washington	..	..	5	..	5	..	5
43. Wayne	2	..	..	..	..	..	..
44. Wilkinson	..	..	..	..	..	..	..
45. Webster	..	..	1	..	1	1	..
Total	206	39	88				

The number of physicians answering "Yes" or "No" to Question 2, "Do you believe that the disease exists in your county?" is shown in Columns 4 and 5 of Chart 1. Just what these opinions should count for will depend largely on the idea those giving them have of the symptoms of the disease. As for their correctness in a general way, it is interesting to note that "No" was the answer from 3 of 4 reports from Bolivar (the other physician not answering), all 4 from DeSoto and all 5 from Washington. These are all in the section of the state least likely to be infected on account of soil, and least likely to show infection if it does exist because of the large negro population who, though infected, are immune to a considerable extent to the effects of the infection. On the other hand, note the answers from the counties from which the most cases are reported; Harrison, all 5 "Yes;" Marion, both "Yes;" Pearl River, the only answer was "Yes;" Pike, the only 2 "Yes."

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[1] To show their geographical distribution I arranged them on a skeleton map of the state, a red dot representing each case in the county from which it came. Unfortunately, it was impossible to reproduce this map in The Journal.

The answers to Questions 3, 4 and 5 were too few and irregular to be tabulated. The answers to Question 6, "Do you see 'ground itch' in your section?" are shown in Columns 6 and 7 of Chart 1. In the light of recent study of the mode of infection and life cycle of the parasite every case of "ground itch" speaks positively for one and generally two cases of uncinariasis.

It may be interesting to speak of some of the experiments. Claude A. Smith applied a mixture of feces and earth containing the encysted larvæ to the arm of a man. In a few minutes stinging and burning was felt at the site. A dermatitis promptly developed which ran a course of swelling, papules, vesicles (which became confluent), scabbing, and healing, lasting about 12 days. The lesions and course were similar to those of the common "ground itch" except that they were more severe. This probably was due to the intensity of the infection. The man's feces were examined weekly and in about 8 weeks *ovæ uncinriæ* were found. He also demonstrated that mud containing the encysted larvæ when applied to the skin was, in a few minutes, free from them, but that they were to be found on the skin which soon developed dermatitis.

Looss, in 1898, had become infected, as he thinks, through accidentally soiling his hands in his laboratory with cultures of the parasite from which he developed dermatitis and later found ovæ in his feces. An unanswerable possibility of his infection, though, was that he might have been accidentally infected per os, instead of by the skin. In 1902 he infected a male nurse by letting seven drops of very heavily infected water fall on his arm. In 71 days ovæ were found in this man's stools. Very recently, however, Looss has worked out not only the place of infection, the skin, but demonstrated conclusively the route the larvæ take to reach the intestinal canal. They enter the skin and penetrate the veins and probably the lymphatic vessels. In the veins they are swept directly into the right heart. In the lymphatic system they would have to work their way through the glands, but finally by the thoracic duct they would be emptied into the vena cava and right heart. From the right heart they are swept into the lungs, and for the same reason that *Amebæ coli* are stopped in the liver and often cause liver abscesses they are stopped in the lungs. They are too large to pass through the capillaries. They now penetrate the lung tissue and bronchial tubes, whence they are coughed up; some are spit out. Many more are swallowed, pass through the acid gastric juice to the small intestines, their normal habitat, where they develop to maturity.

It is interesting to note that Lambinet found that the encysted larva is not killed by 25 per cent. sulphuric acid solution in three-quarters of an hour, or by 2 per cent. bichlorid solution in six hours.

Ninety-six per cent. of 18,865 patients seen by Ashford and King in Porto Rico who were questioned on this point gave a history of "ground itch," and many dated their decline in health back to severe attacks. Ashford and King believe that this is the source of 99 per cent. of the infection, and say that "all other routes are rarities, at least in Porto Rico, and do not merit the space necessary to discuss them."

The parasite does not reach maturity outside of the human host; hence the patients with "ground itch" must have gotten their infection indirectly from some one else already infected. From this we would conclude that the counties in which ground itch is reported are also infected. This would add the following 12 counties: Adams, Alcorn, Bolivar, Choctaw, Covington, Greene, Holmes, Lafayette, Lauderdale, Rankin, Warren and Webster.

Having shown that uncinariasis exists in a large part of the state at least, we would like to know to what extent. The answers to the question were few and too irregular to be tabulated. They would depend for their value on the physician's knowledge of the disease. Let us see what those having the largest experience with it think. Dr. L. C. Rouse furnishes 41 of the 48 cases from Harrison County and says that he thinks 6 per cent. of the population have the disease. Dr. Hunnicutt reports 15 of Pearl River County's 16 and thinks 25 per cent. of the population has it. Dr. Thompson reports 25 of Marion County's 48 and thinks 20 or 25 per cent. of the population infected. Twenty-two from Marion County were my patients, and, based on my recollection of conditions there and the subsequent routine examination of a large number of people for uncinariasis, I would say that Dr. Thompson's figure is even too small. I should expect a careful examination to show that 50 per cent. of the rural population of Marion County are infected to some extent and that several of the other counties in the southern part of the state are equally as badly infected. I speak of the southern part of the state because I am not acquainted with the conditions in the northern part, not because of the difference in soil. I believe the observation of Stiles that sandy soils are practically the ones infected, only holds good in a very broad sense. Most likely the prairie lands of Mississippi are less infected because privies are used more generally than in timbered lands.

Ashford and King studied over 23,000 cases in Porto Rico with reference to this point and concluded that the sandy soil was least infected. That the hatching of the eggs requires mixing with sandy soil, I am prepared to dispute, for I have repeatedly had them hatch in my laboratory in undiluted feces when allowed to become partially dry. I have not seen them develop into the encysted or infective stage, however.

It was not intended that this paper should deal further with the subject, but the many inquiries as to symptoms, diagnosis and treatment prompt me to say a few words on these points.

The most important and constant symptom may be given, I believe, as a secondary anemia of almost any degree and symptoms due thereto.

The worm is small, thread-like and about one-half inch in length. Its habitat is the duodenum, jejunum and ileum, chiefly the jejunum. It has long been considered a blood sucker. It buries its head in the mucous membrane and like many other blood-sucking parasites puts into the tissue a substance excreted by the buccal glands, which reduces the coagulability of the blood, causes local hyperemia, and in sufficient quantity is a systemic toxin. They change feeding ground often and leave a bleeding wound, which continues to bleed for some time. The red blood cells of the blood they swallow pass through them undigested, only the plasma being used. In both these ways they waste considerable blood. A patient may have anywhere from one worm to 4,000 or 5,000. If one drop of blood was wasted daily by each of 2,000 it would amount to nearly 3 ounces a day. It would be easy to see how marked anemia would be caused and how one patient might have slight and another marked anemia, depending on the number of parasites and also on his blood-making ability. Note the amount of anemia that would be produced by say 500 worms in a robust man taking outdoor exercise, sunlight and nutritious diet. He probably would make blood fast enough to feed the parasites and keep his demands well supplied. Take, on the other hand, a factory girl or boy, a man at some confining indoor work, a pregnant woman, or a case of any illness in which the blood-making power is reduced, and a marked anemia would develop from the same number of parasites that caused none in the other case.

Now add the effect of the toxin, which, if nothing more, destroys the coagulation of the blood as shown by Loeb and Smith. If it plays much part in the disease, which it probably does, the question of resistance or immunity to this toxin would also influence the degree of the symptoms. There is reduction in the number of red cells, with a still greater reduction in the percentage of hemoglobin. This explains the dirt eating of affected children, who are unconsciously trying to supply Nature's demand for iron with which to make more hemoglobin. Another fairly constant blood change is the marked increase of the eosinophilic leucocytes. The normal number may be given as from 2 per cent. to 4 per cent. Here they are generally increased to 10, 15, 20 or 25 per cent., and sometimes higher. Charts, 2, 3, 4, 5, 6 and 7 are copied from a few of Ashford and King's detailed blood reports of cases to show the average blood finding of severe cases and result on it of treatment. Chart 5 was a case of pulmonary phthisis complicated by uncinariasis. Think what the anemia due to uncinariasis may have had to do with the development or progress of the tuberculosis. Chart 8 is from a case from St. Tammany Parish, La., which shows about as marked anemia as the Porto Rico cases. Chart 9 is from Ashford and King's 540 cases at Bayamon, P. R., and compares race with hemoglobin percentage, and shows that the negro suffers less anemia than the white man or mulatto. After a study of over 23,000 cases, they conclude "the negro is just as heavily infected, just as dangerous to the community as the white man, but he possesses a relative immunity to the effects of the parasite." This may explain why it is thought the infection does not exist in the delta section of this state.

CHART 2.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 8	33	2.868,000	13,200	16.8
May 16	36	2,991,040	5,000	22.4
May 23	38	3,960,000	5,200	16.4
May 30	36	4,384,000	3,200	17.6
June 6	50	4,000,000	9,200	8.6
June 13	56	4,541,600	5,200	14.8
June 20	62	4,360,000	9,800	10.8
June 27	67	5,261,600	7,200	8.8
July 4	66	4,152,800	8,800	9.0
July 11	76	6,866,400	6,400	6.0
July 18	83	7,635,200	6,200	...
July 25	83	7,035,200	7,400	4.8
Aug. 1	82	5,176,000	4,000	5.6
Aug. 8	75	5,924,000	5,000	8.6
Aug. 15	101	5,164,000	7,800	8.8

CHART 3.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 17	28	3,480,000	7,400	10.
May 24	29	3,024,000	7,200	8.
May 31	30	3,864,000	5,000	8.8
June 7	50	3,981,600	11,600	4.
June 14	54	5,786,400	4,200	8.8
June 21	66	5,355,200	5,800	10.4
June 28	90	6,195,200	6,400	12.
July 4	103	6,088,000	17,800	6.4
July 21	115	....	.....	...
Aug. 2........	95	....	.....	7.2
Aug. 3........	92	....	.....	8.8
Aug. 4........	92	....	.....	6.4
Aug. 6........	85	....	.....	6.

CHART 4.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 12.......	20	3,195,520	6,400	.8
May 19.......	28	2,804,000	5,000	4.8
June 26.......	38	4,075,620	3,400	6.8
June 2.......	38	4,626,400	3,800	4.8
June 9.......	41	5,901,600	4,400	4.
June 16.......	46	5,817,600	4,400	7.2
June 23.......	49	6,016,000	5,000	8.
July 30.......	55	5,964,000	6,400	21.2
July 7.......	67	6,466,400	7,600	12.2
July 14.......	76	6,295,200	11,200	9.2
July 21.......	82	6,017,600	6,600	9.6
Aug. 28.......	83	6,364,000	4,400	8.
Aug. 4.......	90	6,630,400	8,800	2.2
Aug. 4.......	104	6,724,000	7.800	1.6

CHART 5.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 13.......	27	2,306,640	6,200	2.
May 20.......	19	1,688,000	5,000	.4
May 27.......	25	1,804,000	3,800	4.1
June 7.......	27	2,964,000	4,800	..
July 13.......	30	2,977,600	8,600	.8

CHART 6.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 13.......	14	1,226,400	4,200	8.4
May 20.......	21	1,746,640	5,000	4.4
May 27.......	21	2,084,400	5,600	2.8
June 3.......	22	2,504,000	4,000	3.2
June 10.......	22	2,377,600	3,600	2.4
June 17.......	32	2,555,200	2,800	3.2
June 24.......	52	4,461,600	4,200	3.2
July 1.......	41	3,528,800	4,200	2.8
July 8.......	65	4,870,400	8,200	1.2
July 15.......	78	4,852,800	4,200	5.6
July 22.......	78	4,352,000	5,600	3.2
July 29.......	68	4,417,600	6,200	3.2
Aug. 7.......	95	5,092,800	8,200	4.8
Aug. 14.......	109	5,190,400	10,800	2.

CHART 7.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
May 14.......	16	1,531,200	7,800	18.3
May 21.......	31	2,133,280	6,200	14.4
May 28.......	27	2,666,400	11,600	18.4
June 4.......	35	3,880,000	9,800	28.4
June 11.......	36	3,315,200	7,400	22.
June 18.......	50	4,181,600	14,800	17.2
June 25.......	59	5,238,400	11,200	46.
July 2.......	56	5,288,800	7,400	22.
July 9.......	55	5,195,200	11,200	32.4
July 17.......	64	5,461,600	8,600	40.
July 23.......	64	5,786,400	4,800	18.
July 30.......	84	5,440,000	9,600	24.4
Aug. 6.......	90	6,688,000	6,800	26.
Aug. 14.......	101	5,928,800	10,200	28.4

CHART 8.

Date.	Hemoglobin.	Red cells.	White cells	Eosinophiles
November 14..	25	2,457,500	5,035	16.
November 22..	35	2,987,500	3,050	12.
November 28..	50	3,603,125	2,431	21.
December 8..	65	4,050,000	2,083	20.
December 15..	65	5,005,600	3,024	18.

CHART 9.

Race compared with hemoglobin.	White.	Mulatto.	Black.
Below 20 per cent............	20	8	1
Between 20 and 30 per cent...	83	23	1
Between 30 and 40 per cent...	88	31	4
Between 40 and 50 per cent...	82	26	9
Between 50 and 60 per cent...	43	26	2
Between 60 and 70 per cent...	39	16	2
Between 70 and 80 per cent...	10	11	2
Between 80 and 90 per cent...	6	5	1
Between 90 and 100 per cent..	..	..	..
Between 100 and 110 per cent.	..	..	1
Total	371	146	23

The diagnosis is made by finding the worm or eggs n the feces. The latter requires the use of a microscope. A small dose of thymol, followed by a purgative will isually bring away a few parasites by which the diagnosis can be made in the absence of a microscope. I take his opportunity of making a preliminary announcement of what I believe to be a new, and I know, an improved echnic for examining feces for the eggs. When there are many eggs it is easy to find them by placing a small quantity of feces on a slide, diluting with a drop of water and examining under a low power microscope. This is sufficient for most cases with enough parasites o cause symptoms. Sometimes when this technic does not show eggs the question comes up whether there may not be a few, but like the "needle in the haystack," they can not be found. It is well known that patients with few parasites may have profound symptoms. Also to know that a patient is positively cured is hard with the above technic.

It is for this class of cases that I recommend this improved technic. It depends on the fact that the eggs will float in a solution in which the balance of the feces will precipitate. I am not prepared to give out exact figures as to the specific gravity or say what is the best solution. but for practical work nine-tenths of a saturated solution of sodium chlorid answers. Put a small quantity of feces in a 3- or 4-inch homeopathic vial, three-fourths filled with the salt solution, stopper and shake well. Set aside to settle. Then either with a medicine dropper take up several drops from the edge of the surface and examine under the microscope, or, with a small piece of wood like a toothpick, the end of which is wrapped with a little pledget of absorbent cotton, take up a drop from the edge of the surface and place on a slide. All the eggs rise to the surface and large numbers are found in one drop. They take up some of the solution by endosmosis and in about an hour begin to precipitate. I am sure some other salt would be better on this account than sodium chlorid, but have not been able to work it out quite satisfactorily yet. I expect to consider at length this technic in a future article on this subject.

The treatment is so simple, satisfactory and definite that I will simply state it without comment.

Empty the alimentary canal with any purgative, give 60 grains powdered thymol divided into two or three doses, two hours apart. In two or three hours give a saline cathartic. Allow no food, alcohol or oil during course of the treatment. Repeat once a week; continue until no ovæ are found. This requires from one to a dozen courses. Sixty grains of thymol is an adult dose; it may cause a little dizziness, but if not brought into solution by oils or alcohol it is not toxic. To discuss any other treatment would be like discussing something other than quinin for tertian malaria.

In conclusion, I believe that the state is widely infected with a disease slower, yet more deadly, either directly or indirectly, than yellow fever, tuberculosis, malaria or smallpox. That it is dwarfing and destroying, both mentally and physically, a very large percentage of her youth and sapping the very life blood of many of her men and women. My cases include every walk and stage of life, rich and poor, laborers, a lawyer, a doctor, a state senator, a baby, young girls, and a woman of 50. It is not necessary to say that a person's physical and mental capacity are reduced in the same proportion as the quality of the blood. Also the resistance to the effects of other diseases. A person constantly robbed of 20 per cent. of his blood would have a capacity of only 80 per cent. of his normal 100 per cent.; a loss of 50 per cent. would reduce his capacity one-half.

The daily financial loss to the state must be enormous. Thousands are disabled entirely, many more partially so, all due to a disease so insidious and slow that it causes little notice. In fact, patients affected generally do not consult a physician for their trouble. They are just passed as "pale, puny" children, "dirt-eaters," etc., without any definite cause being given or relief offered.

What is the remedy? I believe that it consists in disseminating knowledge of the disease to the profession of the state and through them to the laity. The Porto Rican government has spent $20,000 for this purpose. On this the "Porto Rico Anemia Commission" has treated 23,000 patients, most of whom were cured. In addition, they have assisted dozens of physicians to familiarity with the disease. Where else could government money have been so well spent? Why should not the State of Mississippi take the lead of the southern states, and just as Porto Rico has done, appoint a committee to investigate and to treat this disease in different parts of the state in co-operation with the profession? Let the physicians of the section come to a station, bring their cases, study the symptoms, diagnosis and treatment of the disease and take up the work of eradication. While the legislature is in session would be a good time for this association of representative physicians of the state to recommend and to ask for such a commission to ascertain the prevalence of this disease and to aid in treatment and dissemination of knowledge concerning it.

I have quoted freely from the literature without citing locations. Complete references will be found in the reports of the Porto Rico Anemia Commission.

314 Macheca Building.

A METHOD OF TREATMENT OF HEMORRHAGE.

PRELIMINARY NOTE.*

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The principal resources at present for the treatment of hemorrhage may be included in the following:

(a) The administration of various fluids, such as normal saline, Ringer's or Locke's solution; (b) posture; (c) bandaging or other means of compressing the extremities and the abdomen; (d) stimulants.

The effect of stimulants diminishes with the increasing gravity of the hemorrhage, and in every progressive case a stage is finally reached in which the anemic centers no longer respond. The heart muscle, however, retains much of its susceptibility to such drugs as digitalis, and may be functionally seriously damaged by the injudicious administration of this drug. Posture and bandaging may be considered together, as their aim is that of throwing as much of the diminished quantity of blood to the heart and the brain as is possible to help tide over the crisis. It is at once obvious that such measures are strictly limited in their therapeutic value, as in any progressive hemorrhage these mechanical means can not supply new blood. They are most

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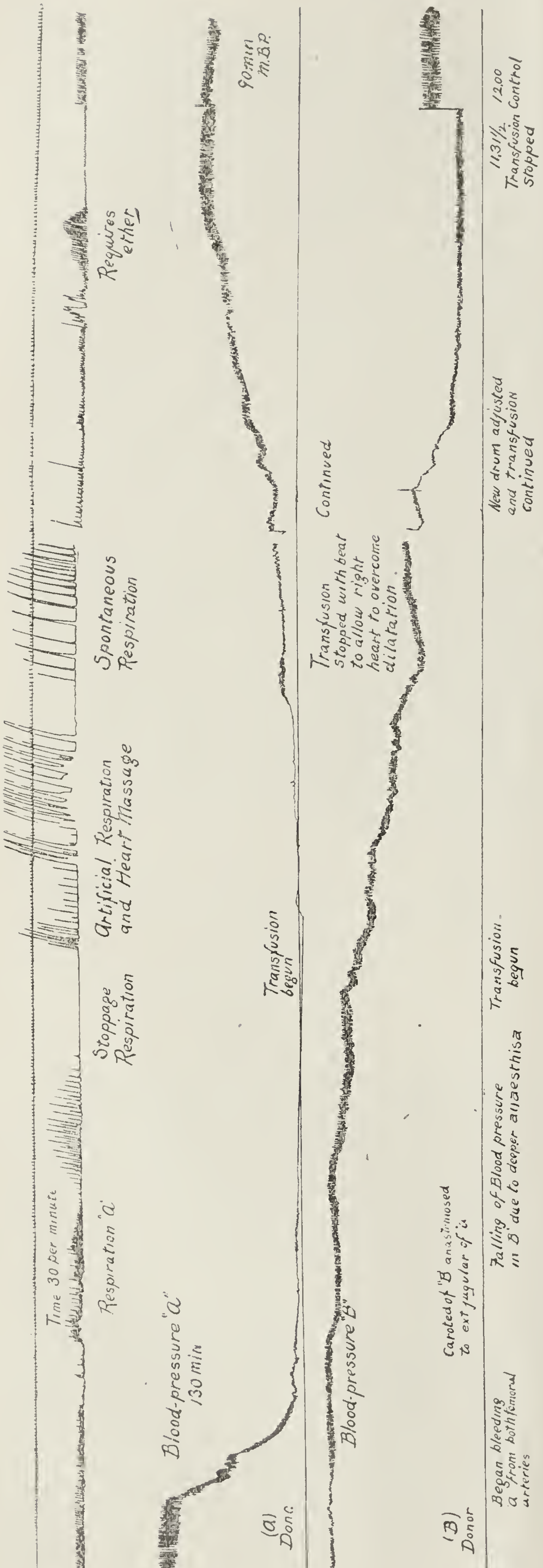
* From the Laboratory of Surgical Physiology, Western Reserve University.



valuable within their range, but wholly valueless when the amount of blood lost reaches the maximum consistent with life.

The administration of the various kinds of artificial sera, such as normal saline, Locke's or Ringer's solution, has the same and an additional shortcoming; viz., these solutions will not, beyond a certain amount, remain in the blood vessels. In excessive dosage these solutions accumulate in the gastrointestinal tract, the lungs, spleen, liver and many other parts of the body, constituting in itself a menace to life. The use of these solutions is exceedingly valuable, but there is an obvious limit to their usefulness.

Our research has been directed toward finding a means of successfully treating the class of grave cases in which our present methods can not relieve and death must inevitably follow. An effective method in this class of cases must supply more isotonic blood. The biochemic researches of recent years have established the principle that the blood of an individual of one species can not with safety be introduced into an individual of another species. One man must then be treated by another man's blood. On account of the risk of clotting and deterioration the methods of blood transfusion hitherto used are not applicable.

The recent technic of Carral has been utilized by us in a large series of experiments, which will later be published in detail, in the following manner:

The proximal end of an artery of one animal, the donor, is united by an end-to-end anastomosis with either an artery or vein of the bled animal, or donee.

The lumen of each vessel during the suture is closed by means of the author's special clamp used in closing the carotid and other arteries. After the anastomosis is complete and the line of union proven impervious, the arterial blood of the donor is allowed to flow into the vessel of the donee until a sufficient amount of blood has been transferred. If the proximal end of the artery of the donor be anastomosed with the proximal end of a corresponding artery of the donee there is virtually no risk of excessive blood transference, as the two pressures will tend to balance at some point lower than the normal.

In our researches every degree of hemorrhage was treated. Most of the cases were first treated by other methods. After these had wholly failed, transfusion was done. Later in the research the animals were at once bled to a presumably fatal degree. Without exception they recovered. Even when the animal was bled until the respiration ceased and no pulse wave reached the carotid artery, and after apparent death, i. e., when the animal appeared to be dead but the heart on inspection still showed a rhythmic contraction of the auricle, though there was not the slightest circulation, in every such instance the animal was resuscitated. However, after every rhythmic contraction wave had disappeared—usually from 8 to 15 minutes after cessation of the circulation and respiration—the animals were not resuscitated.

What is the result of the transfusion of so large a volume of blood from one animal to another? In a number of recovery experiments in which every possible drop of blood was removed, then replaced by transfusion from another animal there was no evidence that the blood became disintegrated or that it caused any pathologic changes. The animals showed no ill results; indeed, they seemed as well with their fellow's blood as with their own.

After the technic is learned the anastomosis may be completed in a few minutes. Under local anesthesia we performed such an anastomosis between the radial artery of a man with the proximal end of the basilic vein of his wife and readily transferred some of his blood to her circulation. This method would be applicable to any case of hemorrhage not amenable to ordinary methods. We are unable to resist the conclusion that the faetor of hemorrhage may, under favorable circumstances, be eliminated.

The tracing shows a case of resuscitation after apparent death from hemorrhage. Dog A., weight 6.8 kg.; dog B., weight 8.1 kg. 1. Time, 30 per minute. 2. Respiration of bled animal. 3. Blood pressure curve (carotid artery) bled animal. 4. Base line bled animal. 5. Arterial pressure donor (animal supplying blood). 6. Base line of donor. On the upper half of the cut is represented the blood pressure and the respiration of the animal bled; on the lower half is represented the blood pressure of the animal from which blood was transferred (donor). Reading from right to left, note in the upper tracing the abrupt fall in the arterial pressure during hemorrhage of 300 c.c. arterial blood. The animal was bled until there was neither pulse nor respiration wave recorded and there was no sign of life. Two minutes later transfusion from the carotid artery to the jugular vein was begun. Note the fall in the blood pressure of the donor and the rise in the donee (bled animal). The ventricular beat had stopped and was inaugurated by rhythmic pressure on the chest. On account of the freshly oxygenated blood transfused, artificial respirations were unnecessary. Both animals promptly recovered. Recovery would have been even more prompt had the transfusion been given into an artery toward the heart. Also, when a longer time has elapsed after apparent death adrenalin injected into the artery is required. The least favorable conditions were purposely chosen for this experiment.

WHAT IS THE EFFECT ON PROGENY OF THE LOSS OF TEETH IN ANCESTRY?*

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In almost every country family there is a sub-family of dogs and my father's household was no exception to this rule. When I was a boy, there was born into our sub-family a pup with a short stump of tail, identical in proportion to his father's, whose tail had been cut off to suit the prevailing style.

This fact attracted my attention very strongly, and in looking over my research work I can see it has had great influence on my opinion as to variation in species and the law of heredity; to the end that I believe acquired defects in teeth as well as in tails can be inherited from ancestry.

DARWIN AND HEREDITY.

De Vries, Haeckel and others, in recent work, have made advances in working out details of Darwin's theories of inheritance, variation and natural selection, but none have cited evidence to disprove his main position; on the contrary, most research tends to establish and to strengthen him, hence I shall quote freely from his "Origin of Species."

In the chapter on "Variation and Inheritance." on page 11, he says:

> Any variation which is not inherited is unimportant for us. But the number and diversity of inheritable deviation of structure, both those of slight and those of considerable physiologic importance, are endless. Dr. Prosper Lucas' treatise, in two large volumes, is the fullest and the best on this subject. No breeder doubts how strong is the tendency to inheritance; that like produces like is his fundamental belief; doubts have been thrown on this principle only by theoretical writers. . . . Everyone must have heard of cases of albinism, prickly heat, hairy bodies, etc., appearing in several members of the same family. If strange and rare deviations of structure are really inherited, less strange and commoner deviations may be freely admitted to be inheritable. Perhaps the correct way of viewing the whole subject would be to look at the inheritance of every character whatever as the rule and non-heritance as the anomaly.
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> The laws governing inheritance are for the most part unknown. No one can say why the same peculiarity in different individuals of the same species, or in different species, is sometimes inherited and sometimes not so; why the child often reverts in certain characteristics to its grandfather or grandmother or more remote ancestor.

Variation under domestication is more rapid than variation under Nature, for in the former we have conscious selection of variations, and in the latter unconscious or selection by chance. The study of these laws led Darwin to advocate his belief in natural selection or the law of survival of the fittest. On page 121, he says:

> In one sense the conditions of life may be said not only to cause variability, either directly or indirectly, but likewise to include natural selection, for the conditions determine whether this or that variety shall survive. But when man is the selecting agent, we clearly see that the two elements of change are distinct; variability is in some manner excited, but it is the will of man which accumulates the variations in certain direction; and it is this latter agency which answers to the survival of the fittest under nature. From the facts alluded to in the first chapter I think there can be no doubt that use in our domestic animals has strengthened and enlarged certain parts, and disuse diminished them; and that such modifications are inherited. Under free nature we have no standard of comparison by which to judge of the effects of long continued use or disuse, for we know not the parent forms; but many animals possess structure which can be best explained by the effects of disuse.

It would seem that the intelligence of man lays him the more liable to degenerative effects, except in intellectual progress, for our protected lives favor fluctuating variability and accumulate the variation. Man's intelligence is strenuously exercised to improve his beast, but under our present social system his own qualities can not be bred for improvement. Undoubtedly we grow physically weaker as we grow intellectually stronger. Fisk says that in man, "the ape and the tiger will become extinct and a process of psychologic change take its place. Henceforth, the dominant aspect of evolution in man is to be, not the genesis of species, but the progress of civilization." There can be no doubt, however, but that the evolution of both mind and body in man, will keep him and leave him in his proper and natural place, for such are these laws of our Creator.

DETERIORATION OF TEETH.

If modifications appear constantly under the tedious and accidental selection of Nature, conscious selection under the wholesale extraction and disuse of teeth in man must accumulate this variation and result in the deterioration of these organs. This extraction of teeth, however, can not properly be called conscious selection, for there is no premeditation in this sense, neither is there any fight for life in these organs, in the sense this term was used by Darwin. On account of artificial environment and misuse of the teeth, incident to civilization (if one might be allowed the liberty), this process in man could be called by the paradoxical term, artificial natural selection. Deterioration of teeth in man might be supposed to have begun when he ceased to use them as organs of defense, or when he began to build fires and cook his food, a thing wholly unknown to Nature, except with man. With fires and cooking, no doubt, many degenerative features began in his physique.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

There is much discussion as to whether acquired variations or mutilations are inherited. Darwin says: "The evidence that accidental mutilations can be inherited is at present not decisive. But the remarkable cases observed by Brown-Séquard in guinea-pigs, of the inherited effects of operations, should make us cautious in denying this tendency." In another place under the head of abortive organs, he says: "We have plenty of cases of rudimentary organs in our domestic productions, as the stump of a tail in tailless breeds, the vestige of an ear in earless breeds of sheep, the reappearance of minute, dangling horns in hornless breeds of cattle," etc. The teeth of man certainly can be no exception to this tendency.

VARIATIONS AND HEREDITY.

Variations are divided into two classes. First, those that are congenital or inborn, such as appear at birth and have no discoverable origin aside from life force; second, those that appear after birth, and seem to be due to environment, such as use or disuse, the effects of food, climate, conscious mutilation, conscious selection. Syphilitic and other diseases, peculiar to civilization, often produce defects and variations which are also inheritable.

Conscious Selection.—While we could hardly expect to see an unusual development of the hands of a child because its father or mother is an expert pianist, we do, under conscious selection, see most extraordinary developments in the pouter, fantail, and other varieties of pigeons, the original stock of which was the well known rock pigeon. Again, in color, size and varieties, of horses, dogs and cattle, we have features of the laws of heredity, which are hard for us to understand. These anomalies appear when least expected. For instance, when we have been breeding for certain features and have followed rules that formerly brought definite results, now and then unlooked-for freaks appear.

Defective Tooth Structures.—Most of us can cite instances of families in which there is a defective, malpoised, or absent tooth, often a superior lateral, running through several generations. May not this defect or mutilation have started from the loss of a tooth or from a badly decayed tooth in some ancestor? May not a principle have been fixed, by the almost universally defective sixth year molar running back for centuries or generations?

In view of the foregoing, is it not reasonable to assume that the general lack of resistance to decay of the teeth in most races of men is due to the loss of and disuse of teeth in ancestry, with the consequent defective tooth structure in progeny? A condition which seems to grow worse with each generation. Has this not become a fixed principle? It is found by examination of the skulls of aborigines, as well as of existing tribes of men, that with few exceptions all tribes have been and are subject to bad teeth and defective jaws to nearly the same extent as civilized man. This fact has been confirmed recently by Dr. W. J. Younger's examinations of Egyptians and Egyptian mummies. I believe one would be safe in assuming that a large majority of the human race have lost one or more teeth before the age of thirty, and a very large per cent. have lost eight, ten, or more. The first loss, more frequently, being the sixth year molar. In each case there is a loss of bone as well as of teeth, and what we know of heredity would make one believe that these mutilations can be handed down, if not in total absence of tooth or bone, at least in defective structure.

Talbot lays stress on unstable or defective nervous system as a cause of these heredity defects and goes more largely into degeneracy of the head, face, jaws and teeth, but I believe does not discuss to any degree, the question of defective teeth, or the loss of teeth in ancestry as affecting these special organs in progeny. One can easily admit that an unstable nervous system can effect the whole being. Any animal born perfect, with the exception of one organ, may perish immediately. Defective organs, such as eyes, ears or teeth, necessarily weaken the entire organism so that in the wild state, the creature soon dies or lives for a time in an imperfect condition. The nervous system, as well as other organs being unstable and inefficient, the animal succumbs to disease or to natural enemies long before its allotted time; hence the law of survival of the fittest. This law is not so strenuous with man, especially civilized man, since his intelligence and sympathy result in the protection and preservation of imperfect individuals. And imperfect humanity, under civilized protection, seems to be the class that propagates more freely than others, with the result that we have great numbers of degenerates, in one form or another, who continue to hand down their defects to their progeny, and no one organ seems to suffer this degeneracy more than the teeth, they being greatly prone to decay, accessible to removal and held in light esteem. Talbot supports the truth of inheritance of mutilation, giving statistics to show that circumcision in the Jewish race results in absence of, or defective prepuce in about 3 per cent. of male Jewish children.

NUMBER OF TEETH LOST ANNUALLY.

In endeavoring to get some fixed idea of how many teeth are lost annually, I secured an estimate from a prominent manufacturer, of the number of artificial teeth produced each year in the United States. His estimate was the astonishing figure of thirty-five millions. There may be various reasons *pro* and *con* for this not being a fair figure to calculate from, but it has a basis of truth and is the best plan I know on which to proceed. Thirty-five million teeth lost annually to the people of the United States would leave us, at the average age of 30, with only two teeth apiece, and this evidently is not the case. If, however, we assume the average loss to each one in a lifetime to be 5 and assume the average age to be 30, this would make an average annual loss to each individual of one-sixth of a tooth, or 13,333,333 for the United States. This means 40,400 pounds (330 teeth to the pound) or a large freight car loaded to its full capacity each year with human teeth, lost in the United States alone. Assuming the population of the earth to be one billion, five hundred million, the annual loss to mankind would be 757,576 pounds, or 18 carloads of 40,400 pounds each. These numbers are almost unthinkable, yet I believe they approach the truth.

TEETH HELD IN LIGHT ESTEEM.

Reparative dentistry is almost wholly unknown with the common people of all nations, and even with people able to pay, comparatively little dentistry is done where it should be, and numbers of teeth are lost to every one that is repaired or replaced. Throughout civilization there is no other organ of the body held in so slight esteem. Blacksmiths, barbers, physicians and even dentists dispose of teeth without thought of their importance. The only requirement in nearly all instances is that the patient himself wants the tooth out. One might say that the loss to future generations is never considered, and few really consider seriously the loss to themselves. If they can only get rid of the offending organ they are satisfied. In their desire to save their teeth they are little better than savages. I also believe that almost as many teeth are lost from disease of the gums as are lost from decay and accident.

The ability of civilized man to compensate for these losses, by the use of cooking and other methods of premasticating and preparing foods, enables him to live almost a normal healthy life with no teeth at all, or with poor substitutes. This compensation by intelligence applies to all disorders and conditions and accounts for the lack of application of survival of the fittest to man in the same degree that it does to other species of organic life, not affected by civilization. Defective or diseased eyes or ears nearly always cause the affected individual to make efforts to save them, or to make them better; the same is true of other organs of the body; but the teeth seem to be of less importance to the majority, otherwise dentists would be many times more numerous and in much greater demand. Who knows the far-reaching effects on the present or future generations from the loss of these organs at the present rate. The effect does not stop with the mouth and teeth, for the condition of each separate organ affects the whole organism either to a limited or to a greater degree, and it must be of the greatest importance to life and health that this vestibule of the body, through which all the nourishment of life must pass, should be kept in as perfect condition as possible.

THE LAW OF INHERITANCE: THEORIES.

The law of inheritance has been deeply studied by many of our most scientific minds for generations, yet up to the present, the practical results of breeding in plants and animals give us most of our knowledge. To go deeper into the subject means to take up the study of cell life, but when one has gone into this branch of biology far enough to discuss intelligently the idioplasm theory of Naegle, along with the beautiful theories of others, we are still left with only the facts as brought out by conscious and systematic breeding. This is indicated by Professor Edmund Wilson:[1] "Yet the splendid achievements of cell-research in the past twenty years stand as the promise of its possibilities for the future, and we set no limit to its advance. . . . We can not foretell its future triumphs, nor can we doubt that the way has already been opened to better understanding of inheritance and development." To go deeper than cell life means to debate whether heredity is heredity, or whether it is variation and modification due to environment; to go farther still, is to discuss the point as to whether all matter is dead, or all alive, and so on into unthinkable propositions.

LUTHER BURBANK AND PRACTICAL RESULTS.

On the side of thinkable and practical results, we have many assiduous workers, but no one seemingly has done so much, with such telling results as Mr. Luther Burbank, whose new creations in plant life seem to have upset some ideas, heretofore accepted as laws. In place of conclusions based on observations of dozens or hundreds of plants, Mr. Burbank decides only after observation on thousands or millions of individuals and many generations of tests. His experiments seem the only ones which at all compare in figures with the enormous losses of human teeth.

By keen and intelligent selection from millions of specimens he accomplishes in ten years what natural selection would probably require ages or æons to do, and does it with a much greater benefit to mankind and to science. Regarding the so-called Mendelian Laws, which refer to heredity in the breeding of plants, his biographer says:[2]

> Over and over again, through a series of many years, dealing with millions of plants, and on a scale which dwarfs all other experimentation, Mr. Burbank has disproved these laws. . . . Leading scientists have maintained, and their followers have added the weight of their evidence that acquired characteristics are never transmitted. In the limitless fields of operation before him, Mr. Burbank has not only disproven this over and over again, but has established the opposite, that acquired characteristics are the only ones that are transmitted. . . .
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> Regarding the laws governing mutation or saltation, Mr. Burbank, times without number, has produced these strange mutations at will. They can be produced, he says, by anybody who systematically sets to work to disturb the life habits of the plants. Thus the peculiar phenomena which scientific observers on a small field have so sedulously studied, and have at last come to consider the result of a supreme act of Nature, are entirely within the province of any market gardener or amateur plant breeder. . . . Putting the matter in condensed form, Mr. Burbank says, "Heredity is the sum of all past environment." Heredity now becomes something far different from what it had before been held to be. "Every plant, animal, and planet," he holds, "occupies its place in the order of Nature by the action of two forces, the inherent constitutional life force, with all its acquired habits, the sum of which is heredity; and the many complicated outside forces or environments."

If then, it be a law of heredity that variations and acquired habits are the ones transmitted and that this "principle is indelibly fixed by repetition," also the mutilations may be inherited, what should we expect in the case of such enormous losses of teeth as are now, and for so many ages have been, going on in the human race?

Under these laws and conditions we would not expect the absence of one or more teeth in thousands, or may be of hundreds of thousands of individuals, but we would expect to find, as indeed we do, teeth of most inferior quality prevading the whole of civilization, with the consequent ravages of disease from their lack of resisting power. A principle of heredity supporting this view is found in the presence of rudimentary incisors in the upper jaw of the calf, which do not erupt, and the rudimentary teeth in the baleen whale, which always appear in the gums, as in the calf, but never erupt and are never of any practical use. There seems to be no question about the law, as previously quoted, that the disuse of parts results in their reduced size and their rudimentary quality, also that the result is inherited.

To sum up the matter, it does not seem that we are in danger of a toothless future, since teeth are always likely to persist in mammals, yet we can imagine a future state in which the teeth of man might be rudimentary, as in the calf. In fact, it is not uncommon now for our wisdom teeth to be diminutive in size, or not to erupt at all. In structure our teeth are perceptibly rudimentary, and in consequence, they are lacking in power to live a normal, healthy life. In a former paper I stated that man can live, under civilization, a moderately normal and comfortable life without teeth. This is due to cooking and other methods of premasticating and preparing foods, but it is very much more desirable in every way to preserve our teeth as far as possible. Our specialty is making good progress in this direction, though one could wish our knowledge of prophylaxis in this line were greater, to the end that we would escape many diseases and much pain, handing down to progeny stronger jaws and better teeth.

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[1] "The Cell in Development and Inheritance," p. 434.

[2] Harwood: "New Creations in Plant Life," p. 342.

DISCUSSION.

Dr. Eugene Talbot, Chicago, said that there is no question but that we can produce a new species by mutilation, and that the jaws and teeth are affected by certain conditions that persist in this counry and abroad. Perhaps no better illustration of the inheritance of acquired defects can be found, he said, than that seen in the Boston terrier. Dr. Talbot spent some time studying that animal and declared that it is a singular thing that the inheritance of acquired defects is more beautifully illustrated in this than in any other animal he ever studied. The Boston terrier is about twenty-five years old, it is a cross between an English bull dog and an English terrier. Environment and breeding have produced this new race. These dogs used to have normal tails, and twenty-five years ago the parent dogs had their tails cut off, and by breeding in and in, the present breed with greatly deformed tails has been produced. Professor Wiseman believes deformities are not inherited. Dr. Talbot has many times shown the inheritance of acquired deformities. He has cut off the tails of mice and bred these animals in and in, and in the seventh generation mice have appeared without tails. If he were a young man he should breed dogs with cleft palates and hare lips. If any young man who is ambitious and were to take up this thing, in a few years he would be able to produce a new class of animals. In regard to the jaws and teeth, in some places dentists are in the habit of extracting the first permanent molars, but Dr. Talbot believes that the continual extraction of the first permanent molars, in eight or ten generations will shorten up the jaw. He knows this is possible, because the face, jaws and teeth are degenerating. The constant extraction of the first permanent molar as has been done in certain localities has been shown to produce people with deformed jaws, arrest in development, and irregularities of the teeth. The fact is, the face, jaws and teeth are degenerating for the benefit of the brain under the law of economy of growth laid down by Aristotle, who first discovered the inheritance of acquired defects. Decay of the teeth is a natural process in the evolution of man, and when there is an abnormal nervous system, as in degenerates—in the idiot and in the deaf, dumb and blind asylums—the teeth degenerate very rapidly, indeed. Teeth decay to a greater extent in England than in any other country, due to the fact that the English are a little farther along in the line of evolution.

Dr. M. L. Rhein, New York City, referred to the discussion on this subject at Portland, last year. He considers the key note of the situation to be Dr. Fletcher's statement that according to Burbank it is unquestionably proved that acquired defects can be transmitted. This, he said, removes at once all the contention that appeared between Dr. Fletcher, Dr. Talbot, and himself in last year's discussion. At that time, in reference to Dr. Talbot's point as to the eventful dentureless condition of the human race, Dr. Rhein took the position that such a condition would never exist, because something would always intervene that would interfere with any such deterioration in the physical condition of the race as a whole. He thought that the trend of this discussion illustrates the correctness of his remark on that occasion, because, if, according to Dr. Fletcher, acquired defective conditions can be transmitted, it follows as a logical sequence, that restorations of malformations of the maxillæ and teeth can be transmitted in a like manner. The superiority of American dentistry during the past three-quarters of a century has induced in this country an increased attention to the preservation of the natural physiologic condition of the human mouth. Dr. Rhein believes that the mission of American dentists for the regeneration of mouth defects has just begun. The lack of appreciation of the value of the preservation of the first permanent molar by the majority of dentists during the past fifty years has had a very important bearing on the oral deformities met with at the present day. We are just beginning to see, according to Dr. Talbot's well-defined ideas, the effect of transmitted acquirements of such defects. Something, however, has occurred effectually to stop this destructive tendency. The instrument which has intervened not only to prevent any further retrogression from the normal condition but which has become a huge instrument tending toward the restoration of abnormal mouths to the normal physiologic state, is the advanced school of orthodontia, instituted by Dr. Angle. These men have succeeded, not only in calling the attention of the dental world to the necessity of the preservation of the first permanent molar, but have so simplified the work of orthodontia and placed it on such a scientific plane, that the results in the shape of physiologic mouths restored from deformity and malformation are no longer a rarity but a very frequent occurrence in every part of the civilized world where the graduates of this institution have seen fit to locate. The normal development of this condition means in the future that human mouths will approach more nearly to the physiologic than they have in the past few hundred years.

PHYSICAL ECONOMICS.*

[Comprising a mathematical formula for the normal earning ability of the body by which, with the requisite data a person may be either rated, or his economic value may be ascertained, and thereby damages to his body from injury or disease, with an indemnity to be allowed therefor, may be determined in a manner equitable to all concerned.]

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An oculist, when called on to ascertain damages to the eyes from an injury, frequently meets with other disabilities of the body which occurred at the same time. If he works in connection with other physicians and surgeons who are to determine damages to other parts of the body, it is highly important that there should be standard methods of procedure which can be applied to every system and organ of the body so that each may understand the other and work together to obtain results on a scientific basis. The object of this paper is to promulgate methods by which this may be accomplished in a manner equitable to all concerned.

The problem is a mixed one, inasmuch as we must have a method for ascertaining the economic value of a person both before and after he has been damaged from injury or disease. All recognize the importance of scientific methods for solving this problem, but no one has had the temerity to attempt to overcome the difficulties surrounding it. It occurred to me, however, while I was disabled from an injury, received in 1903, that if, when the eyes were damaged, the remaining earning ability could be determined by a mathematical formula, based on the principles employed in the natural sciences in measuring any power, as had been done by Magnus[1] of Germany, the principle might be utilized for the whole body. I, therefore, spent many of the long weary hours of my disability in thinking how this could be accomplished. After I had adapted the principle to the whole body, it seemed so simple that I wondered if some one had not solved the problem in a similar way. On making inquiries in connection with the reprints of my papers among many persons I have failed to find any one who had solved the problem in this manner.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] "Visual Economics," by Dr. H. Magnus of Breslau, Germany, translated with additions by Dr. H. V. Würdemann, Milwaukee, Wis.

Professor Seaver, formerly director of the gymnasium of Yale University, replied:

> I wish to thank you for a reprint on "Physical Economics" . . . which strikes me as a very valuable contribution on a subject to which I have given considerable thought without being able to arrive at definite conclusions, and so I have never published anything. You have hit on a practical method of rating a man's physical utility so far as the physical side of him is concerned, as mental rating is given by intellectual tests, so that we may have a fairly accurate mathematical statement of his probable worth to society.

Professor Bowditch, of the Harvard Medical School, with several others, referred me to "Vital Statistics: a Memorial Volume of Selections from the Reports and Writings of William Farr, M.D., D.C.L., C.B., F.R.S., edited by Noel A. Humphreys." Dr. Farr spent his life in the Registrar-General's office of England, where by his writings on vital statistics and allied subjects he rendered one of the greatest services to his country that ever fell to the lot of man, and which made him an authority on these subjects throughout the whole civilized world.

In this work, under the head of "Cost and the Present and Future Economic Value of Man," we find: "The characteristics of life property in wages and in income from professions, commerce, trades and manufactures is that it is inherent in man and is the value of his services—of the direct product of his skill and industry. In slaves it is vendible and transferable; in freemen it is inalienable; but is not the less on that account property which in the early states of society is assessed and taxed in the form of personal services. It is combined with stock in all production; and the proportion of the elements varies in every kind of product. The labor of the parents and the expenses of attendance, nurture, clothing, lodging, education, apprenticeship, practice, are investments of capital, at risk extending over many years; and the return appears in the form of the wages, salaries or income, of the survivors, commencing at various ages, 12, 15, 21, 24, 30, 33, 36, 39, and ages still greater; for the incomes in the higher professions increase probably up to the age of 50 or 55. The outgo increases from infancy up to a certain age; the earnings then commence, and ere long equal the outgo; they are subsequently in excess throughout manhood, and at advanced age decrease, until they are extinguished amidst the feebleness and infirmities of old age. The present value of the person's probable future earnings, minus the necessary outgo in realizing these earnings, is the present value of that person's services. Like capital invested in the soil, in the vintage, or in a commercial adventure, the capital invested in the life of man returns, in happy natures, profit of a hundredfold; in other cases fifty, twenty, tenfold; in others it is barely returned; in some it is entirely lost, either by death, sickness, vice, idleness, or misfortune."

On the "Economic Effect of Death by Different Diseases," he says: "Life has a pecuniary value. In its production and education a certain amount of capital is sunk for a longer or shorter time, and that capital, with its interest, as a general rule, reappears in wages of the laborer, the pay of the officer, and the income of the professional man. At first it is all expenditure, and a certain necessary expenditure goes on to the end to keep life in being even when its economic results are negative.

"The value of any class of lives is determined by valuing first at birth, or at any age, the cost of future maintenance, and then the value of the future earnings. Thus proceeding, I found the value of a Norfolk agricultural laborer to be £246 at the age of 25; the child is by this method worth only £5 at birth, £56 at the age of 5; £117 at the age of 10; the youth £192 at the age of 15; the young man £234 at the age of 20; the man £246 at the age of 25, and £241 at the age of 30, when the value goes on declining to £138 at the age of 55, and only £1 at the age of 70; the cost of maintenance afterward exceeding the earnings, the value becomes negative; at 80 the value of the cost of maintenance exceeds the value of the earnings by £41. These values may be compared with the former cost of slaves in Rome, in the United States, and in the West Indies.

"The amount of capital sunk in the education of professional men is not only greater, but it is probably at greater risk, and it has to remain longer under investment before it is returned. The maximum value of such a man is attained later in life, probably 40; and in the highest orders of the church, law, and politics, where experience and great weight of character are requisite, the life still increases in value at higher ages."

This method employed by Dr. Farr, and other high authorities, for ascertaining the present value of a person, at any age, must be accepted as the correct one for determining the economic value of a human being. It necessarily involves a knowledge of the bodily functions, for on the physical condition of a person depends his prospective earning ability; therefore, an examination of the body must be made to decide whether it is in a condition to meet the expectations of a working life at that age. If the examination revealed conditions which are known to lessen the expectation of life, then this fact must be taken into consideration in the calculation and materially modifies the results.

The present value of the net yearly earnings of a person for a prospective working life is the sum of these net earnings when discounted at the rate of interest, used in the computation, compounded for each of the series of years before they will be realized. This makes the interest account of very great economic importance in the problem, because the present value of any sum, due any number of years hence, depends on the rate of interest per annum and the number of years before it becomes due. The present value is very much less when a high rate of interest is used than when a low rate of interest is used in the computation, for it is the reverse of a sum to be realized at compound interest in the future.

In the computation carried out in the work of Magnus already referred to, the gross earnings are taken and multiplied by the years of the prospective working life as a base on which to determine the damages. It is manifestly wrong to take the gross earnings of a person for a base on which to determine damages to his body, for if a man was totally disabled he should, according to this method, receive an indemnity equal to his gross earnings. We must keep constantly in view that the solution of this problem is based entirely on the present economic value of a person, and that this economic value must be determined from his age and his net annual earning ability for a prospective working life at a rate of interest to be realized on a long time, as we have shown by a quotation from the writings of Dr. Farr, whose authority is recognized throughout the civilized world. There might be fixed a value for a person whose earnings only equalled or were less than his expenses in realizing those earnings, but it would have to be estimated on a philanthropic and not on an economic basis.

The method employed by Dr. Farr for determining the present value of a person from the net yearly income of his normal earning ability has much in common with the principle employed in life insurance, and, therefore, is just as accurate and reliable in its results, especially when obtained with the same care as to all the details. The economic value of a person at the time of the accident is the base on which to compute his economic loss. After we have ascertained his remaining earning ability in the form of a fraction of the normal, the economic loss may be obtained in dollars and cents.

For the purpose of determining the remaining earning ability of a person damaged from injury or disease, we need a mathematical formula for the normal earning ability of the body.

In the analysis of a person to determine the elements which are indispensable for his normal earning ability and which may be used as factors to express them in a mathematical formula, we find that the functions of the body in a fairly normal condition are of first importance. This constitutes the functional ability of the person and the factor of first importance in the formula.

A person would be of very little use, economically, in the world without having had that training of the mind and body which would fit him to follow some occupation successfully. This constitutes the technical ability of a person and the second factor in the formula. With the functional and technical ability of the first order, there is another element of a person of considerable importance, namely, his ability to secure and perform the duties of an occupation successfully. It makes no difference whether his services are rendered direct to the general public or through some employer; his success depends on his ability to obtain work and to serve those who employ him. This constitutes the competing ability of a person and the last factor in the formula. Therefore, the three elements of a person which are absolutely indispensable to his normal earning ability are, first, the functional ability; second, the technical ability, and, third, the competing ability. This analysis of a person includes everything needed in the performance of the duties of any occupation. It may, therefore, be considered complete, and, moreover, it is in accordance with the principles employed in the analysis of any physical force by which its efficiency is determined. The acceptance of this analysis of a person is of prime importance to an understanding of the mathematical formula for the normal earning ability of the body, because its object is to determine the essential elements which may be used as factors in the formula.

In a similar way that much-used substance called electricity has been analyzed; the unit of the electromotive force being designated as a volt, which is a current of one ampere, with a resistance of one ohm. The amount of electricity is obtained by multiplying these three elements together, producing a composite quantity called watts, 746 of which make a horse-power. By using the first letter of each word this process is represented in the formula $W = V\ A\ O$. When, however, electricity is obtained by this standard of resistance, its efficiency is determined by multiplying volts by amperes, and the formula thus simplified is $W = V\ A$.

In a similar manner if we use the first letter of the prominent word in the analysis of a person, $F =$ the functional; $T =$ the technical; $C =$ the competing, and $E =$ the earning ability of a person; hence $E = F\ T\ C$, the mathematical formula for the normal earning ability of the body.

These three factors are not of equal value, although the efficiency of each is interdependent on the other, F being first in importance; T second in importance; whereas C is least important, because it depends on the other two and the conditions of the labor market. The competing ability is composed of the same elements as F and is modified to a similar but less extent when F is impaired. It is also modified by T and the way employers and the public consider the person, especially when he has been damaged by injury or disease. Therefore, to meet all these conditions, C must be placed under a radical in the formula, the index of which may be designated by an X to indicate that it is to be determined in each instance, and the formula thus modified is $E = F\ T\ \sqrt[x]{C}$.

To amplify the formula,[2] F must be resolved into its component parts by selecting and grouping into the form of units such systems and organs as are so interdependent that each is needed to insure the functions of the other in its particular unit, and these systems and organs taken together form a unit that is absolutely indispensable to the functions of the body. These units are to be regarded as factors of F, which when multiplied together, and by the other two factors of the formula, produce the composite quantity E. As much as possible, systems and organs have been selected and grouped together as units in accordance with their development and associated functions, it being found necessary to have four such units for the whole body, which when designated by the first four letters of the alphabet are as follows:

a =	Osseous, articular, and muscular systems, consisting of	e, the bones, f, the joints, g, the muscles.	
b =	Circulatory and respiratory systems, consisting of	h. the heart, i, the vessels, j, the lungs and their accessory organs.	
c =	Digestive and genito-urinary systems, consisting of	k, the alimentary canal, l, its accessory organs, m, the kidneys with the genital organs.	
d =	Cerebro-spinal systems, nerves and ganglia, consisting of	n, the brain, its membranes, and its nerves, o, the spinal cord, its membranes, its anterior motor, and its posterior sensory nerves, p, nerves, and organs of special sense.	the sympathetic nerves and ganglia.

Each of these units fulfills the requirements of our definition: it is composed of systems and organs so interdependent that each is needed to insure the functions of the other, and these taken together form a unit that is absolutely indispensable to the functions of the body. This being true, the value of the function of each unit may be obtained by a formula similar to that employed in determining the value of any physical force. In amplifying F, by resolving it into its component parts, as factors, a, b, c, d, each of these was resolved into its component parts, as factors, and $a = e\ f\ g$; $b = h\ i\ j$; $c = k\ l\ m$; and $d = n\ o\ p$.

In any computation, if one of the factors becomes 0, the product is 0. In diseases of the bones, like osteomalacia, producing an inability to support the body, e would become 0, then $a = 0$; in inflammation of the joints, like chronic articular rheumatism, causing a large number of stiff joints, f would become 0, and $a = 0$; in diseases and injuries producing paralysis of the muscles, g would become 0, then $a = 0$, and finally, in diseases and injuries by which a large portion of the extremities were lost, a certainty would become 0, and if $a = 0$ then $F = 0$. In serious valvular and organic diseases of the heart, or vessels, h or i would become 0, then $b = 0$; in serious diseases of the lungs and their accessory organs, j would become 0, then $b = 0$, and if $b = 0$, then $F = 0$. If the various serious diseases of the alimentary canal, its accessory organs, the kidneys with the genital organs, each of k, l, m, might become 0, then $c = 0$, and $F = 0$; and in the various serious diseases of the brain, spinal cord, and organs of special sense, each of n, o, p, might become 0, then $d = 0$, and $F = 0$, and finally, if $F = 0$, then $E = 0$. Therefore, the parts of each unit, as factors, bear the same relation to the unit, as the units, as factors, do to the whole body. Each part, as factor, is indispensable to the other, and each unit as factor is indispensable to the body. The units are always to be regarded as factors of F, and multiplied together and by the other two factors of the formula, if we are to conceive of the earning ability of the body as a whole which can be given a mathematical expression. Our formula represents, mathematically, the complete earning ability of the body in a healthy normal person, which is a composite quantity, resulting from the multiplication of factors; the same as was done in obtaining the efficiency of electricity.

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[2] The remainder of this discussion of the formula is from my article in the second and enlarged edition of the Encyclopedia Americana.

As has already been shown, when F is resolved into its component parts, as factors, it is represented by $(a\ b\ c\ d)$ and $\sqrt[x]{C}$, becomes $\sqrt[x]{(a\ b\ c\ d)}$, because C is composed of the same elements as F; hence the complete formula for the normal earning ability is $E = (a\ b\ c\ d)\ T\ \sqrt[x]{(a\ b\ c\ d)}$. Now in this formula the units, or factors, are not of equal value, and, hence, when damage to them has been ascertained by scientific standards of measurement they may be placed in the formula under a radical, the index of which will depend on how much less it is desired the damaged units shall affect the formula than that given to them by scientific standards of measurement. The unit, d, representing the cerebrospinal systems, nerves, and ganglia, would under almost all circumstances be placed in the formula at its full value, as determined by scientific standards of measurement, as any damage to it produces in the person thus affected proportional disability for all gainful occupations.

To ascertain the remaining value of a unit in a given case of damage, it must be compared with some scientific standard of measurement, and the remaining value given in the form of a fraction of the whole unit. This method, which permits of the mathematical determination of each unit of the bodily function, as a fraction of the normal unit must be considered complete, as it is in accordance with the principles laid down by the natural sciences in measuring the power of any physical force, one of which, that of electricity, has been given.

"The four units of F, or their remaining value, after being damaged, must always be regarded as factors and multiplied. Their product is a composite quantity—the earning ability of the body. They must never be regarded as quantities to be added, for wrong practical deductions would be obtained, as the following will clearly show:

In the formula, $E = (a\ b\ c\ d)\ T\ \sqrt[x]{(a\ b\ c\ d)}$, let us suppose that from an injury a person was rendered blind and deaf, and that, therefore, the unit, d, becomes 0. It is self-evident that a person in this condition would have no earning ability, and yet, if we add the remaining units, a, b, and c, which might be normal, we would obtain three-fourths of the earning ability of the body, which results in a *reductio ad absurdum*. With a, b, c, d, of our formula regarded as factors, to be multiplied, however, when d, or any other factor, becomes 0, the product is 0, also, and no absurdity results, because in any computation, if one of the factors is 0, the product will always be 0. If a person has no technical ability, T would be 0, and, therefore, $E = 0$. This would be true in actual practice. Finally, if we decide that a person has no competing ability $x = 0$, and $E = 0$, and this would be true in the labor markets, notwithstanding the bodily functions might be normal and the technical ability might be of the highest order, yet if the person's services were not needed and he could not dispose of them at any price, his earning ability would be 0. Therefore, in our mathematical formula for the normal earning ability of the body, if any one of the units as factors becomes 0, then $E = 0$, and no absurdity results. We have, at some length, dwelt on F, of our formula, because it is the most important factor in it. We now pass on to T, the next in importance.

The technical ability of a person is usually gained during adolescence, and is generally attained by the time the growth of the body is completed. The formula may be used as a guide during the years of growth and development and serve to rate the youth, taking into consideration the condition of the functional ability on which the mental and technical ability so much depend, but which has been heretofore practically ignored. As important as T is to the normal earning ability, and in rating a person, when that person's vocation becomes fixed, T may be considered as equal to one in estimating damages. The technical ability is not injured, but limited only in proportion to the damages to F, impairment of which will include these damages; therefore, T may be omitted, and the formula thus modified for determining damages to the earning ability of the body is

$$E = (a\ b\ c\ d)\ \sqrt[x]{(a\ b\ c\ d)}$$

We now come to C, the third and last factor of our formula. The ability to compete is a condition which is affected by a variety of circumstances; first, by the person's functional ability; second, by his technical ability; and, third, by the way employers consider these conditions, together with the supply and demand for labor. Therefore, when a person becomes disabled, the damage to his body acts immediately in two ways: first, by its direct impairment of the functional ability, according to the nature and extent of the damage by reason of which he will not be able to perform so much, and perhaps not so good work, as he did before; and, second, by the way employers consider these conditions. The damage to the body might be of such a nature as to effect the appearance of the person without interfering materially with his earning ability; such as in the unit a, loss of the auricles, or nose; in the unit d, a large scar of the cornea, or an injury to a blind eye causing it to become crossed. Disfigurements like these, although not interfering with a person's ability to work as well as he did before the damage was done, would seriously interfere with his chances to obtain employment, and should, therefore, be considered a serious obstacle to his competing ability. In case of damages, a person has a right to secure compensation, not only for the loss to his functional ability but also to his appearance, when it seriously interferes with his ability to obtain employment in the grade of work and command the wages to which he is entitled. The part of his ability to compete not represented in the person himself, but in the way employers consider the damages we render in the number selected for the index of the radical of the competing ability. In general, if a person has no competing ability we would select 0; if it is seriously affected we would select 2 or 3; if only moderately affected 5 or 7; and if but slightly affected 10, for the index of the radical of the competing ability. By leaving this to the physicians who have ascertained the damages to F, and who are the most competent to judge what it shall be, disabilities of the body, and an indemnity to be allowed therefor, may be determined in a manner equitable to all concerned.

The higher mathematics involved in the extraction of the roots of the radicals are avoided by the construction of a chart by Prof. Hart of the University of Maine, by which geometric curves represent the different roots; the value of the abscissa being given at the top and bottom, and that of the ordinate on either side. By taking the remaining decimal value of the unit of the body, as abscissa, and tracing the line to the geometric curve representing the root sought, and from this point following the ordinate to its end on either side, the value of the root will be found. Inserting this value in the formula, the process of finding the remaining earning ability and thereby the damages to the body is one of simple computation, involving no more mathematics than an example in interest or partial payments.

Although it is true that scientific standards of measurement of all the parts of the units of the body have not been determined and agreed on, nevertheless it is a self-evident fact that anything that is used must have a value placed upon it, and when this value has been measured, tested, compared, and estimated in a scientific manner, in a large number of normal healthy persons, and an average value ascertained, this average value becomes a scientific standard of measurement for that particular part of the unit of the body. It is in this way that all the scientific standards of measurement, now employed, have been determined and agreed on, and it is in this way that all the remaining ones must be established. Until this work is consummated we shall have to employ such standards as have been agreed on, and by the same methods by which these have been obtained determine values for all the remaining systems and organs of the units of the body which will eventually be accepted as scientific standards of measurement.

In ascertaining damages to the body, a physician must first determine what the impairment of the function of the unit is, and then, by comparing this with the case record and the scientific standard of measurement for it, give the remaining value in the form of a fraction of the whole unit in the formula. The principles and process then are the same as those employed in determining the efficiency of any physical force. It will be seen that it is the damaged functions that the physician first seeks, and not necessarily the pathology of the damaged unit. To illustrate this, a physician might in examining the eyes find the sight seriously impaired, the fields markedly contracted, and the muscular movements badly deranged. He could determine the exact functional disability of each of these units of the eyes by the scientific standards of measurement for them, and give the remaining value of each unit in the form of a fraction for the Magnus formula, and thereby ascertain the remaining earning ability of the eyes without knowing the pathology of the disabilities. The exact nature of the disabilities could not be determined without instituting an examination which would reveal their pathology, and therefore the physician could not state whether the disabilities were temporary or permanent without such an examination. The pathology of a disability is necessary only to determine its character, whether transitory or permanent, serious or not, as the case may be, and should not be made the basis to determine the remaining earning ability of the body. The earning ability is a composite quantity made up of the physiologic functions of the systems and organs of the units of the body, each of which is interdependent on the other in making man the most wonderful product of nature.

In youth and the beginning of manhood, we can only rate a person according to his functional and his technical ability, but when that person has a fixed occupation we can, thereby, determine, by our formula, his earning ability and his economic power in the world as accurately as we can that of any physical force. We can determine his mental ability only so far as it is manifested in his vocation and the importance placed on it as evidenced in the remuneration he receives for it. We can not figure on possible prospects of advancement, nor change of occupation. We can only figure on the actual conditions of life as they exist, and when accidents occur, causing damage, on the supposition that these conditions would continue for a length of time thereafter according to the basis on which the American experience table of mortality has been constructed and on which has been established life insurance—the first business of the world.

The value of the functions of the body cannot be determined, for health, like character, is priceless. Even the possession of health much below any economic value is priceless, and is clung to under all conditions of privation and suffering. This does not affect the purpose of our formula, which represents mathematically the normal earning ability of the body. This has solely to do with the individual's ability to perform certain services and to receive a specific compensation therefor for the remainder of a prospective working life. No life insurance company would consider a risk on a man's life for an amount his business or wealth did not warrant. A man who has no income whatever and could offer no collateral would be refused a loan of money from any person, or bank, and he could not obtain money except by reasons which are foreign to the rules of business. A person with good habits and a steady occupation with a specified income would be able to hire money on that alone, in proportion to his income, other things being equal. The time is coming when the earning ability of man will be rated and will be just as valuable in the labor market as in the rating of his financial ability to-day in the business marts of the world.

We will now proceed to illustrate the use of the formula in the case of a young man whose eyes were severely damaged and the right hand badly burned by a current of electricity sufficient to kill two men instantly.

W. O'B., aged 20, mill employé, June 22, 1900, while standing on an iron platform and handling a portable electric light, received a current of electricity sufficient to throw him down instantly. Two of his fellow-workmen who saw him fall quickly went to his aid and, in attempting to pull him away from the platform and the wire of the lamp, which was burning his hand, both were killed instantly. The electric current was shut off as soon as possible and Mr. O'B. was extricated from his perilous position. Dr. G. F. Webber of Fairfield, Maine, was called to attend him and stated that the flexor tendons of the thumb and forefinger were burned off and the flesh of the other fingers was burned severely. The hair and scalp to the size of a silver dollar were burned off where the back of the head rested on the iron platform. He was unconscious for seven or eight hours after the accident.

There was evidence that the wires, of the electric light company, outside the mill became crossed in the mill yard, the primary wire carrying a current of 2,200 volts.

When the wound healed the thumb became adherent to the forefinger so he was unable to grasp anything between the forefinger and the thumb. His sight was seriously affected, and he came under the care of Dr. J. F. Hill of Waterville, Maine. He also consulted Hon. Charles F. Johnson of Waterville to ascertain how he might recover damages for his injuries.

On Sept. 13, 1901, I made an examination of Mr. O'B. with the following results: Vision right eye 0.1, no improvement with lenses. Vision left eye 0.4, no improvement with lenses. Corneal astigmatism right eye, 1 D. at 90°; left eye, 0.8 D. at 90°; abduction, 4°; adduction, 14°; esophoria, 5½°; sursumduction right eye, 3°; left eye, 3°. Deciphers type No. 10 (3½ mm. in height). The right field of vision was contracted 30° on the temporal side and 20° above, below and on the nasal side. The left field of vision was contracted about 10° in all directions. No limitations of the muscular movements were recorded.

Examination of the interior of the eyes showed the media fairly clear, so that the retina and optic nerve of each eye could be seen readily. It was evident from the ophthalmoscopic appearance that both the nerve and retina of each eye, especially of the right eye, had suffered from inflammation, but, of course, there was nothing in the slight changes to indicate the cause of it or when it may have occurred.

He was examined again on Dec. 27, 1901, and his condition was found to be about the same as here recorded.

The suit was brought for $5,000, and the trial took place at Skowhegan, Maine, in December, 1901, Hon. A. S. Littlefield of Rockland being the attorney for the pulp mill company. Mr. Littlefield consulted me about testifying for the defense. After I stated to him I was engaged, and the substance of my testimony, he did not engage any one to testify as to the condition of the eyes, but engaged Dr. W. P. Giddings of Gardiner, Maine, to testify as to the physical condition of Mr. O'B. After a trial of several days the jury rendered a verdict for Mr. O'B. of $3,271. This verdict was set aside afterward, because of the erroneous ruling of the judge who held the pulp mill company liable for negligence of the electric light company which supplied the electricity.

As to the verdict and a new trial Mr. Johnson writes me: "I am, of course, very much disappointed that the verdict should be lost on what really had nothing to do with the decision of the case, for if the jury had been correctly instructed by the court, I feel very certain that the result would not have been changed, but as attorneys, we have to learn to take the bitter with the sweet. I intended to try the case the second time, but the young man's brother-in-law, who was able to furnish him some financial assistance, died, and in the meantime the young man's hand was operated on in the hospital at Augusta, where I got him a free bed. After the operation he was able to use it more than before and found employment in the woolen mills at Fairfield at the same price per day which he had received in the pulp mill. He never will, however, have a good hand, and the work about which he is employed in the woolen mill does not call for very much use of his hand. Certainly through the remainder of his life he will not have more than one-half the use of that hand. The last time I saw him in 1905 his eyesight was no better. When he undertook to read or look at an object steadily, or for any length of time, his eyes manifested very marked signs of weakness. For the work about which he is now employed it is not necessary that he use his eyes very much. I think otherwise he has been in good health and has continued to work in the woolen mill.

"The insurance company[3] made an offer of $1,000, which could not be considered in any light adequate compensation for his injuries. However, he had no money to continue litigation, and he was able to work some, and there were troublesome questions of law about the liability of the defendant company, as well as the question about collecting an execution from the pulp mill, I thought it best to accept the offer.

"Since I heard your lecture on physical economics at Waterville I have been very much interested in the subject. The question of what are adequate damages for personal injuries is always a very troublesome one for the courts, and the juries have no certain guide to go by. It seems to me that you have developed a practical method for rating a person and for determining damages to the body from injuries or disease, and I shall hope to see it in daily use in the near future."

The position I took at the trial was that, inasmuch as Mr. O'B's eyes had never been examined and there was no record of the condition of the eyes before the accident, I could only state the condition I found them in, and the probable effect this would have on his future earning ability. In answer to a question as to the probable effect of a current of electricity of high voltage on the brain and organs of special sense, I replied that it could not be definitely determined without a carefully made record of the condition of a person before it passed through these organs, but in this case, inasmuch as two of Mr. O'B's comrades were killed, instantly, by the current which must have passed through his body to them, and there was no history of weak eyes to offset the claim that his eyes were good and strong before the accident, it was fair and equitable in my opinion, to assume that they were good before the accident. This testimony was acceptable to both parties to the suit.

In determining the damages to Mr. O'B. in consequence of the partial loss of the functions of the eyes, it was necessary to consider the loss of central and peripheral vision. Central vision was reduced to 0.1 normal in the right eye, and 0.4 normal in the left eye. As normal vision according to the standard of measurement is not essential to mill employés, that is, a large number of them earn and receive full wages when vision is very much below this scientific standard of measurement for normal vision, it could not be assumed that the fractional part of the loss of vision lessens the earning ability of the eyes to that same amount. At the time of the accident the American edition of Magnus' work had not appeared. I find, however, that my estimation of the effects of the loss of vision on the earning ability of Mr. O'B. at that time, correspond very nearly to the results obtained by the standard adopted by Magnus, as I assumed then from an examination of a large number of laborers of different vocations that one-half of the scientific standard of measurement for normal vision was sufficient for full earning ability, provided the fields of vision of each eye were nearly normal.

The loss in the field of vision in this case, especially of the right eye of 30 degrees on the temporal side, I regarded seriously as it is the same in amount as when one eye is entirely lost, and no matter in what direction Mr. O'B. looked there would be just so much narrowing of the field of vision, and a corresponding detriment in his ability to work in any vocation and protect himself from dangers without that are constantly menacing persons with such a disability. Considering the damages on this basis, I determined the economic loss to Mr. O'B's eyes 3/8 of the whole, and, therefore, the remaining earning ability 5/8. This corresponds closely to the results obtained by Mangus' method by which I figured it after the American edition of that work appeared.

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[3] The insurance company was one that insured the pulp mill company against liabilities for injuries to its employés and against the cost of defending suits to the amount of $5,000 in any individual case.

As much as we all admire the work of Magnus, and the additions made to it by the translator and editor of the American edition, Dr. Würdemann, it is not satisfactory to determine damages to the eyes by one method, and damages to another part of the body, which were caused by the same injury, by an entirely different method, therefore I saw the necessity of adapting the principle employed by Magnus in his formula for the normal earning ability of the eyes to the whole body, and developed the mathematical formula for the normal earning ability of the body, the application of which to solving problems in cases of damages to the body from injury, or disease, with an indemnity to be allowed therefor, is the object for which this paper has been prepared.

In determining the remaining earning ability of Mr. O'B. by the mathematical formula for the normal earning ability of the body, we will ascertain the remaining earning ability of the eyes, first, which are a part of one of the factors in unit *d*.

The eyes, as Magnus has clearly demonstrated, have three factors which are absolutely indispensable to their normal earning ability, namely the central acuity of vision, the field of vision, and the muscular movements. Although these factors are not of equal value, and for that reason are placed under a radical in the Magnus formula, nevertheless if either one of the two lesser ones in value be totally destroyed the earning ability of the eyes likewise will be destroyed.

Mr. O'B's best eye, the left, which determines his central acuity of vision, was 0.4 normal scientific standard of measurement. Assuming that 0.5 normal scientific standard of measurement is sufficient for full earning ability, which is the standard adopted by Magnus for mill employés, he had lost 1/5 of the sight actually needed in this vocation, and therefore had 4/5 left, which is one of the factors of the coefficient of the unit *d*. The vision of the right eye was 0.1 of the normal scientific standard of measurement, and the loss in the field of vision on the temporal side was 30° of the normal scientific standard of measurement. If the binocular field is divided into three zones, as suggested by Schroeter, and practiced by Magnus, there will be six zones of 30° each, and as the outer zone of 30° was gone, there was 5/6 left, which in consideration of the serious loss of vision of this eye, should be placed in the formula at its full value as the other factor of the coefficient of the unit *d*.

The defect in the muscular balance of the eyes (esophoria) and the weakened accommodation were not thought sufficient to be taken into account in the calculation.

The objective damages to the body are included in the unit *a*. The damage to the scalp could be concealed by the hair and the real damage from this particular part was to unit *d*, which has already been determined.

The damage to the right hand was severe. In looking for a standard of measurement by which the loss of the function of the hand could be compared and its remaining economic value be determined. I feel sure that all who saw the case would agree that the disability was equal to, or greater, than ankylosis of the wrist, and his competing ability would be less than a person suffering from ankylosis of the wrist, because in ankylosis of the wrist, there would be no scar, or deformity, only the loss of motion, whereas Mr. O'B. had loss of motion and a bad looking scar of the hand. If this disability of the hand is considered equal to that of ankylosis of the wrist, for which the standard of the Bureau of Pensions of the United States is one-ninth of total disability and which I have shown in a paper read before the National Association of United States Pension Examining Surgeons, at Atlantic City, published in their transactions for 1904, is equivalent to 10 per cent. of total disability when placed in the mathematical formula for the normal earning ability of the body and the competing ability considered, we have 9/10 of the unit *a* left, which is its coefficient. Discarding all undamaged units of the formula, we have as an expression of the remaining earning ability of the body of Mr. O'B. when placed in the formula the following:

$$E = 9/10a\ (4/5 \text{ x } 5/6)d\ \sqrt[x]{9/10a\ (4/5 \text{ x } 5/6d} = 0.60 \sqrt[x]{0.60.}$$

It is necessary now to ascertain Mr. O'B's competing ability. His right hand was a bad looking one, and moreover its functions were not one-half what a normal hand should be, which would prevent him from obtaining employment in many occupations. Taking the objective disability of the right hand, and the subjective disability of his eyes, we choose 5, as fair and equitable for the index of the radical of his competing ability on a scale of 2 being used when the competing ability is the most seriously affected, and 10 when it is but slightly affected. We then have $E = 0.60 \sqrt[5]{0.60} = 0.60 \text{ x } 0.905 = 0.543$: $E = 54.3$ per cent. Therefore, Mr. O'B.'s remaining earning ability is 54.3 per cent. of his normal earning ability, and, hence, his economic loss is 45.7 per cent. The loss in wages and other necessary expenses connected with the injury are as follows:

Two and one-fourth years' wages at $375......	$843.75
Less $80 earned canvassing during this time....	80.00
	$763.75
Physician's bill for services	208.00
Druggist's bill for medicine....................	30.00
Care and nursing, estimated.....................	42.00
Cost of treatment at hospital estimated........	58.00
Making a total of.........................	$1,101.75

This should be added to the loss of the earning ability.

We will now proceed to determine the present value of Mr. O'B. at the time of the accident from his age and the wages he was earning. He was 20 years old and was earning $1.25 per day. Assuming he would work, on an average of 300 days in the year, his income would be $375. This would allow thirteen days each common and fourteen days on leap year for sickness or vacation. It is a close approximation to what ought to be actually realized.

The cost of maintenance, as Dr. Farr says, is an estimate, but it must be remembered that any transaction of man must have a value placed on it and when this value has been measured, tested, compared and estimated in a scientific manner, in a large number of instances and an average value ascertained, this average value becomes a scientific standard of measurement for the value of that particular transaction.

We need a standard of measurement for the economic value of man[4] in two vocations, the average laborer, and the average professional man. The first should be obtained from the wages of a laborer of average minimum capacity, based on his age, his physical condition and his income. The present value of the net income must be computed at a rate of interest that has been accepted as a standard for such computations, which we have assumed to be 3.5 per cent., as nearly all insurance values are figured at this rate.

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[4] The Bureau of Pensions of the United States has established $864 for total disability, for a soldier or sailor. As total disability requires the regular aid and attendance of another person it may be inferred that this amount represents the gross earnings of two persons, and, therefore, the earnings of one would be one-half of it or $432 a year, $36 a month, and $1.44 a day.

As this has not been done in this country on an economic basis, we will accept Dr. Farr's standard for a Norfolk agricultural laborer, who at the age of 20, earned £23 a year, at the age of 25, £29 a year, and at the age of 30, £31 a year, and thereafter until the age of 60, £31 a year. Taking an average of £29 a year and reducing it to dollars and cents, we have $140.94. Dividing $375 by $140.94 and we obtain 2.66 as the ratio between a Norfolk agricultural laborer and the wages Mr. O'B. was earning. Multiplying the standard for the present economic value of a Norfolk agricultural laborer as determined by Dr. Farr on a basis of 5 per cent. per annum by 2.66, and we have a standard for an American laborer, on the same basis.

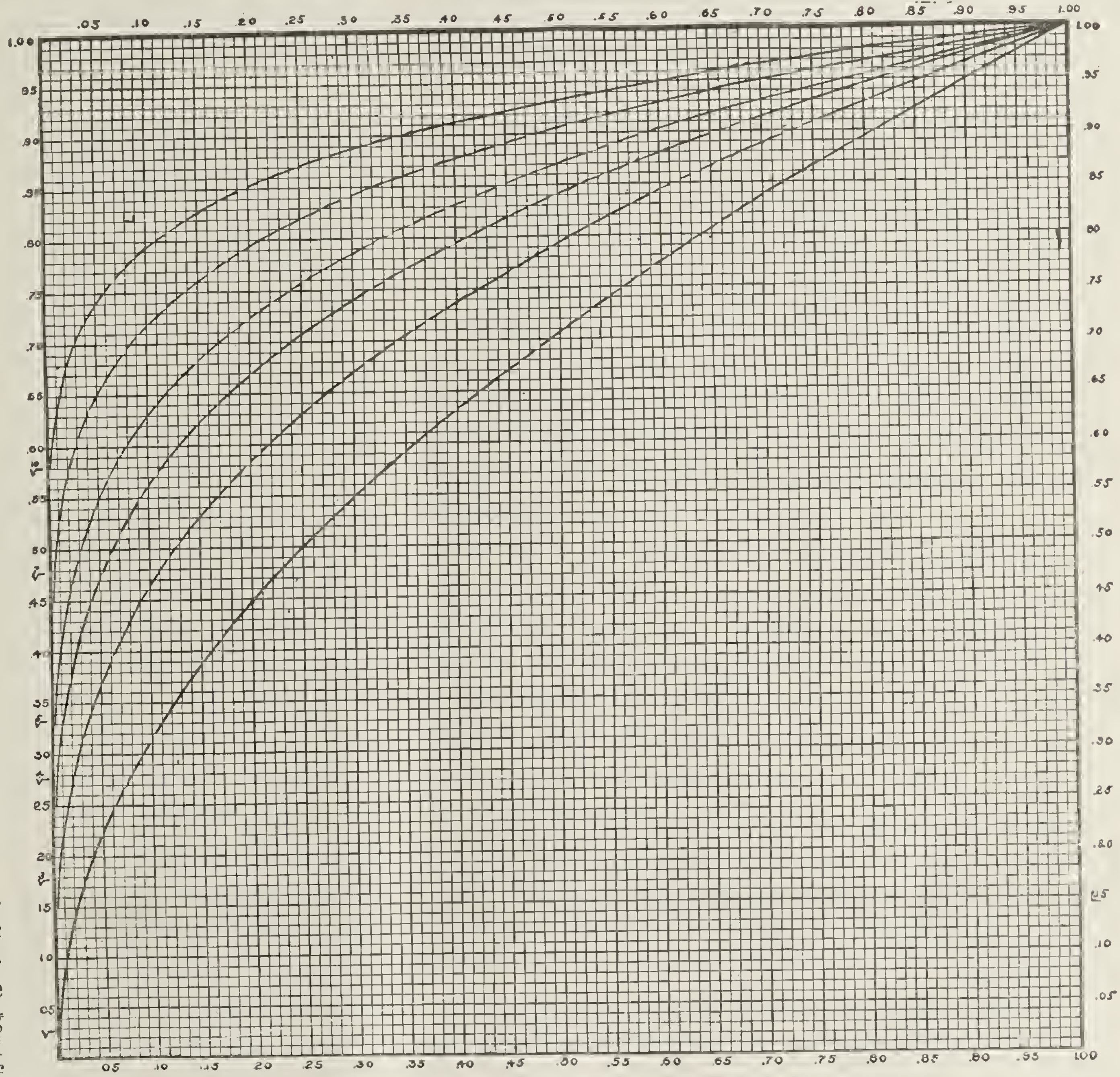
In another table Dr. Farr determines the present economic value of a Norfolk agricultural laborer on a basis of 3 per cent. With this and the 5 per cent. table, we obtain one on a 4 per cent. basis and with the 4 per cent. and 3 per cent. we obtain the present economic value on a 3.5 per cent. basis, which are as follows, from birth to 70 years of age. (See table top next column.)

Multiplying the present economic value for the age of 20, as here obtained by the percentage of the remaining earning ability of Mr. O'B., and we have the amount of his remaining earning ability. Subtracting this remaining earning ability from his present economic value and we have his economic loss, then adding his loss in wages and his expenses after the injury, and we have his total economic loss as follows:

$3,019.77 × .543 = $1,639.74 ; $3,019.77 — $1,639.74 = $1,380.03 ;
$1,380.3 + $1,101.75 = $2,481.78, 5 per cent. basis.
$5,451.75 × .543 = $2,960.30 ; $5.451.75 — $2,960.30 = $2,491.45 ;
$2,491.45 + $1,101.75 = $3,593.20, 3½ per cent. basis.
$6,295.74 × .543 = $3,418.58 ; $6,295.74 — $3,418.59 = $2,877.16 ;
$2,877.16 + $1,101.75 = $3,978.91, 3 per cent. basis.

Thus we see that the total economic loss to Mr. O'B. varies according to the rate per cent. used in computing his present value at the time of the accident. To whichever amount that may be accepted as equitable, should be added such a sum for the suffering in mind and body, as may be warranted on philanthropic grounds.

Age	Total	Died	English 5% basis	American 5% basis	3½% basis	3% basis
Birth	513		$26.10	$69.43	$119.54	$146.64
5	372	141	271.87	723.17	1,245.16	1,518.03
10	355	17	568.04	1,510.99	2,601.62	4,169.66
15	346	9	930.93	2,476.27	4,263.66	5,194.59
20	335	11	1,135.25	3,019.77	5,451.75	6.295.74
25	321	14	1,197.26	3,184.71	5,488.03	6.686.29
30	307	14	1,172.06	3,117.03	5,368.03	6,540.09
35	291	16	1,109.15	2,950.34	5.079.91	6.189.06
40	275	16	1,030.42	2,740.92	4,719.32	5.749.73
45	257	18	936.81	2,491.91	4,290.59	5,227.40
50	237	20	818.28	1,910.62	3,742.71	4,566.00
55	215	22	669.80	1,781.67	3,067.68	3,737.48
60	189	26	472.49	1,256.82	2,163.90	2,636.48
65	156	33	223.56	594.67	1,023.90	1,247.46
70	118	38	3.74	9.95	17.13	20.87
75	79	39	—119.31	317.37	—546.44	—565.75
80	44	35	—199.31	530.16	—872.74	—1,112.15



When these methods are accepted as a means of adjusting damages to the body from injury or disease, it will be necessary only to determine who was responsible for the accident that caused them, then the settlement may be made in a manner equitable to all concerned.

The amount for which suit was brought, ($5,000) in view of the serious damage to Mr. O'B., was not an unreasonable sum for such damages, as shown by his economic value at the time of the accident and from his remaining earning ability, as determined by scientific and economic standards of measurement, and the mathematical formula for the normal earning ability of the body. When the present value of Mr. O'B. is determined at the rate of 5 per cent. discount, the amount that should be paid him is $789.22 less than the amount of the verdict rendered by the jury; when determined at 3.5 per cent. it is $322.20 more than that rendered by the jury; while at 3 per cent. it is $707.91 more than that rendered by the jury.

We believe that if the jury, in this case, could have had these methods, as here worked out, demonstrated to them, their duty would have been easier to perform and the results would have been more satisfactory to themselves. However, we have no criticism to make on the verdict rendered, considering the standpoint from which it was ascertained.

In determining a standard of measurement for the present value of a man in the United States, we believe that the wages earned by Mr. O'B. at the time of the accident, $1.25 per day, are an average minimum for this country and that the rate of interest of 3.5 per cent. per annum, may be accepted as a standard for computation.

Dr. Farr determines the present value of persons in professions on moderate incomes, earning £288 a year, or $1,399.78, practically $1,400, or $4.50 per day, interest 3 per cent., as follows:

1.	Age 25, economic value	$25,898.94
2.	Age 30, economic value	27,702.00
3.	Age 35, economic value	28,921.86
4.	Age 40, economic value	29,344.68
5.	Age 45, economic value	28,829.52
6.	Age 50, economic value	27,138.24
7.	Age 55, economic value	23,974.38
8.	Age 60, economic value	19,337.94
9.	Age 65, economic value	13.209.48
10.	Age 70, economic value	2,988.00

It will be seen by reviewing the methods by which the damages to Mr. O'B. have been determined, that every step in the process has been taken with a well-defined object in view, and that it has been accomplished by the use of a mathematical formula for the normal earning ability of the body, based on the principles employed in the natural sciences in ascertaining the value of any physical power, and therefore is scientifically correct. The two values to be determined in the case were first, his remaining earning ability, in the form of a fraction of the normal earning ability, and second, his economic value at the time of the accident. We determined the first by comparing the conditions found in the eyes with such economic standards of measurement of the eyes as have been found by the examination of a large number of cases by different observers to be sufficient for a mill employé to perform the work required of him successfully, and give the remainder in the form of a fraction for each of the factors of the eyes thus involved. These remaining values of the factors of the eyes were multiplied together for the coefficient of the unit *d* to which they belong.

We obtained the remaining value of the hand by comparing the disability with the standard of measurement established by the Bureau of Pensions of the United States for all minor disabilities, namely, ankylosis of the wrist, by which millions are paid to soldiers and sailors annually. We then had the remaining value of the damaged units *a* and *d*, as their coefficients, and discarding *b* and *c* because not considered injured, and therefore equal to one each, we have the formula complete for working, except the index of the radical of the competing ability. The number for the index of the radical of the competing ability is determined by a method based on principles as well defined as those employed in rating a person at school or college. With this chosen, we proceed to work the formula according to the principles upon which it is constructed, and obtained the remaining earning ability of Mr. O'B. in the form of a fraction of the normal earning ability as 54.3 per cent.

Thus every step of the process to determine the economic value of the damage to Mr. O'B. in consequence of the injury he received June 22, 1900, has been taken with a well-defined method of procedure, as that of weighing or measuring of any commodity and then multiplying the quantity by the price per unit of the standard of measurement for that commodity, in order to obtain its value. The final result then can not be questioned on the ground of the want of care in obtaining it, it can only be questioned on the ground as to whether the principles on which the methods are based are correct and give results that are right and equitable to all concerned.

On both of these points we have the highest authority, for my formula for the normal earning ability of the body is based upon the principles employed in the sciences in determining the value or efficiency of any natural power. It was employed by Magnus in his mathematical formula for the normal earning ability of the eyes. My work has been to adapt these principles to the entire body by selecting and arranging the different systems and organs according to their development and associated functions, that all the essential parts of the body may be grouped under four units, which may be used as factors of the functional ability in a practical workable formula as readily as though the principles were applied to but one organ at a time.

For the success and approval of this work, I have quoted from one of the many letters which I have received, because Dr. Seaver, as he writes, has spent a large part of his life in studying the body, to develop, measure, and utilize it to the best advantage. He has written one of the best works on anthropometry and physical examinations in the English language, and therefore his opinion is an authority on this subject.

As to the method of determining the present economic value of a person, I have quoted from the highest English authority, and therefore, of the world, because the science of vital statistics owes its existence largely to English writers, the greatest of whom was Dr. Farr.

After admitting the principles of the methods and every step of the process taken in the solution of this problem are correct, it might be argued that the final result is not equitable because Mr. O'B. has obtained work in a woolen mill for the same wages he received at the time of the accident.

This argument would be too fallacious to need refutation when the history of the case and the conditions under which Mr. O'B. now works are taken into consideration. He must at the best, always take an inferior position. The current of electricity which passed through his body was sufficient to kill two men, and the bad effects may gradually develop, thus farther disabling him. This is no small consideration in the problem, but it is not taken into account in the result obtained. We have endeavored to be conservative in every step of the process, and believe the result is obtained in a manner equitable to all concerned.

One important datum is lacking in the absence of a record of an examination of the eyes before the accident, and, therefore, we are unable to assert positively that the conditions of his eyes, as found after the accident, was due to the injury, but we are confident that the position taken is fully justified by the history of the case, and the nature of the injury.

We have gone into the details of this case at considerable length, because it illustrates how well the formula is adapted to working out the remaining earning ability of a person when one or more of the units of the body has been damaged by injury or disease, and, therefore, it is a type of all such cases.

If Mr. O'B. had had a record of an examination of his eyes showing that they were normal prior to the accident, all doubt on this point would have been removed. This again shows the necessity of every person having a case record of his physical condition, for no one knows when he may meet with an accident and need it to determine just what the amount of the damage is from a given injury. If the history and examination revealed a suspicion that a part of a disability existed prior to the accident for which damages are claimed, and this should be, by further evidence in the case, established beyond a reasonable doubt, then the fact must be taken into consideration in determining the amount of the damages due to the accident. To avoid disputes and litigations every person should have a carefully made record from repeated examinations of his body.

This would be of great value to a person, not only in case of injury, but also in the treatment of any disease.

The progress of medicine is towards preventing, rather than curing diseases, and in order to make this practice more complete, the time is coming when physicians will be largely occupied in making these examinations and case records, and thereby preventing rather than curing diseases. There is nothing of more importance to be instituted in the science and practice of medicine for its welfare and advancement than the carefully made records of the physical and laboratory examinations of every person. To make them more effective they should be instituted when the child enters school, and be repeated at stated times during the whole period of school life. This would necessitate establishing a new officer, the school physician, not an inspector of the schools, but one who would take a child, analyze him, detect all abnormalties and in conjunction with the parents and other physicians correct them during school life, and thus have the body improved with the mind, that each may help the other to the fullest development. From these records data could be obtained which, when applied to the mathematical formula for the normal earning ability of the body, and worked out according to the principles on which it is constructed, would give the rating of a child, taking into consideration his functional ability on which his technical ability so largely depends, but which has been heretofore almost entirely neglected in rating him. With this work carried out during school life, it would soon demonstrate its own importance, by making these records of the highest value in the training of the mind and the body, the advancement of the race, for the promotion of health and the prevention of disease, and in furnishing data to determine damages to the body from injury or disease by the mathematical formula for the normal earning ability of the body, in a manner equitable to all concerned.

DISCUSSION.

Dr. H. V. Würdemann, Milwaukee, said that one could talk for hours and still not convince some people that mathematics can be applied to this question. Some definite standard is needed in court. To say that a person has lost one-half his visual acuity means nothing; it is a matter of dollars and cents and one should be able to state that a man has lost a certain per cent. of his earning ability, a certain amount in dollars and cents. Such studies as those of Farr and Magnus have demonstrated that mathematics may be applied to determining the functional ability of man to compete with his fellow. It has been demonstrated, mainly through the German observers, that there are definite visual factors which may be damaged, and which damage may have a definite influence on the earning ability. In court two questions arise: a question of fact and a question of opinion. If an opinion be generally accepted by any profession it has almost as much weight in court as a fact. We will not for many years reach a position in which these formulæ will be received as the general opinion of the profession, yet even now they have some weight. There is a remarkable similarity of results obtained by the method of Magnus and Würdemann to damages given in several hundred suits that he has studied; a remarkable similarity in the amount given empirically to that found by mathematical standards. Dr. Holt's paper goes very far into the future. It will be a long time before such an opinion will be favorably received by the general profession and accepted by courts and juries. He thought that the citation of the case of Mr. O'B. was rather unfortunate, inasmuch as he was able to earn practically the same amount after the accident as before. What we need now is statistics and each one can contribute to the literature one or more cases showing the amount of earning capacity after a certain accident. It is only by such evidence that we will be able ultimately to determine exactly the percentage of loss of earning ability following a given accident. At the Ophthalmological Congress at Lucerne three men were called on, one to represent France, one Germany and one the American and English, to get what evidence they could and endeavor to establish some standard whereby to determine the resulting loss from injury to an eye. In Great Britain the loss is placed at 50 per cent. for one eye. A man earning 28 shillings 4 pence a week got his 50 per cent. relief and in addition 38.3 per cent. from a fraternal society, so that it paid him to be sick. The Germans allow 33 1-3 per cent. insurance for loss of one eye. He did not think he could go as far as Dr. Holt until we have accumulated a great number of statistics on the subject. It is only by an accumulation of such statistics, where individuals suffering certain accidents have been damaged in a definite pecuniary way, that we can arrive at an opinion in the matter that will be received by the courts as a statement of fact.

Dr. L. Webster Fox, Philadelphia, said that these questions are of very great importance to ophthalmic surgeons located in manufacturing centers. Some system is needed by which an opinion can be formed as to the value of an injured eye, arm or leg. Unfortunately for statistics in America, accident cases are taken up by unscrupulous attorneys and fought on a contingent-fee basis, and many of these cases are settled out of the courts. In Philadelphia are very large manufacturing interests, and it is important to the ophthalmic surgeon that some set of tables be prepared in a manner in which he can use them for reference of value. At the Baldwin locomotive works 17,000 men are employed; the Medico-Chirurgical Hospital receives a large number of the accident cases; but by a system of their own they prevent the cases from getting into the courts. There are many other cases in which it is a difficult problem to settle the damages. Recently he saw a case in which both eyes were destroyed and the plaintiff received the sum of $10,000 from a sympathetic jury; the accident in this case was partly due to the man's own negligence. Now when an opinion is asked, the physician can at least give the courts an idea of the value of the earning ability of such an individual by referring to Holt's system of valuation, thereby giving a *pro rata* share of his loss. Each occupation, of course, is a law unto itself and differs in degree; some men receive $20 or $30 a week, others $10 or $15. He believes that the movement is a practical one and should be taken up by the association, for it lessens the power of a jury to determine the value of a lost eye in such cases.

Dr. Edward Jackson, Denver, said that a mathematical formula is simply a method of stating some fact. An enormous number of facts that we do not think of as having anything to do with mathematics can be stated in rigid mathematical formulæ. To study these facts in any way is to render them clearer in our own minds, and on this account he thinks we ought not to leave these formulæ to Dr. Holt or Dr. Würdemann, or any few men especially interested in the subject. The formulæ are not complete, and that is a reason for bringing them before the section. In order to complete them we must have observations made by a large number of the profession. These analyses of Dr. Holt have largely to do with functional ability. If we can get definite reports from actual cases, in which the earning ability before and after the accident has been ascertained, our estimate of the real impairment of economic ability will be better. Functional ability may contribute to various things, as the comfort and pleasure of the individual, etc., but in this connection it is with reference to productive work, and the actual facts can only be settled by the combined experience of the profession. Functional ability is the foundation of the whole subject and must be settled by our united statistics. Some day it will be settled in that way, and if the members of this section will consider the cases that come to their notice in the next year, or the next five years, with reference to this point, there will result a basis of observed facts which will make these formulæ of the greatest value.

Dr. E. E. Holt, Portland, Me., agreed with Dr. Jackson that the functional ability is the most important element in the problem, but he said further that, as he had shown in the discussion of the formula for the normal earning ability of the body, the functional ability of the body, however perfect, would be of no economic value without the technical and competing ability of the person to go with it and make it useful. It should be demonstrated that the economic value of man can be ascertained as readily as any of the values on which insurance, the first business of the world, is based. With these methods the economic value of a person at any age can be demonstrated to all interested parties, and then a standard has been established for a base on which to compute that person's economic loss when damaged from injury or disease. In a number of cases he has been consulted privately and has figured the problem out according to the methods here presented with so much satisfaction that the cases have been settled out of court. With standard methods of procedure to ascertain the economic value of a person at any age, according to his functional and his net earning ability, that person's present economic value can be readily determined; and, with the mathematical formula for the normal earning ability of the body, with the requisite data, that person's economic loss can be determined when he has been damaged, in a manner equitable to all concerned. Thus, in a given case, what is right and equitable can be ascertained; this is of very much more importance than collecting statistics of what is being done under present empirical methods.

Clinical Notes, New Instruments, Etc.

A NEW BABCOCK MILK TESTING BOTTLE.

ADAPTED FOR TESTING SMALL AMOUNTS OF MILK WITH THE AID OF THE ORDINARY URINE CENTRIFUGE.*

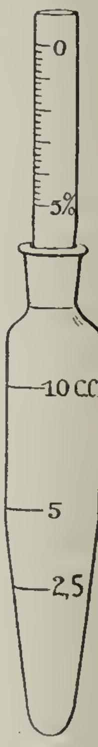
ROSS C. WHITMAN, A.B., M.D.
CHICAGO.

About a year ago, I demonstrated a method for the determination of fat in milk, adapted to human milk, and for general office purposes, before this society. Those who saw that demonstration may remember the difficulties experienced with the Babcock bottles then available. Indeed I doubt very much whether any one was stimulated to repeat the experiment. This fact has led me to devise a bottle which seeks to do away with the chief difficulties attendant on the use of those bottles. The regulation Babcock bottles may be used for office work, of course, but they involve the purchase of a special centrifuge large enough to hold them, and they call for an amount of milk (17.6 c.c.), which is sometimes difficult to obtain in the case of human milk. On the other hand, the bottles heretofore devised for office work are objectionable for one of two reasons. One form of bottle holds such a small amount of milk in proportion to the caliber of the neck, that the chance of error is great enough to reduce the test to a mere guess. The other form has a neck so small that it is extremely difficult to get fluids either into or out of it.

The bottles which I have devised (Fig. 1) have been compared repeatedly with the regulation large Babcock bottles, and have given identical results, so that I have no hesitation in stating that for clinical purposes they are perfectly reliable. They may be used to determine the fat content of human milk, fat being the most important constituent from the clinical standpoint, because it is the constituent which oftenest is at fault; or, in localities remote from a milk laboratory, for the same test in cow's milk.

MANUFACTURE AND USE OF THE BOTTLE.

Briefly the points to be observed in its manufacture and use are the following: The bottle is about 3.75 inches long, and of the shape to fit the ordinary aluminum centrifuge sheath. It is marked at three points indicating respectively 2.5, 5, and 10 c.c. These make it possible to get along without the corresponding volumetric pipettes. Into the neck of the bottle is ground a glass tube of such a length that when inserted in the bottle, bottle and tube measure not more than 5.5 inches in length, and the sheath must be long enough to allow the bottle to swing free in the jaws of the centrifuge arm. The tube above mentioned is calibrated to hold 0.25 c.c (i. e., 5 per cent. of 5 c.c.), which is divided into five major divisions, and each such major division is again divided into five parts. Bottles designed for testing cream have a tube calibrated to hold 0.75 c.c. (i.e., 15 per cent. of 5 c.c.), subdivided in the same way, so that each major division corresponds to 3 per cent. of fat when 5 c.c. of cream is used in making the test, and to 6 per cent. when 2.5 c.c. is used. A stout string tied about the neck of the bottle, and reaching beyond the sheath, will be found convenient in drawing the bottle out of the latter after use.



TECHNIC.

To test milk proceed as follows: Fill the bottle with milk to the mark 5, and then with sulphuric acid, sp. g., 1.82-1.83 (91 per cent.), to the mark 10. Mix carefully, being careful that the hot mixture does not spill on the hands or clothes. Place the bottle in the sheath and centrifugate for two minutes at a reasonably high speed. A power centrifuge, of course is convenient, but by no means necessary. Remove the bottle from the sheath and fill it to the base of the neck with hot water, insert the tube in the neck, and fill the latter to the top of the calibrated portion with hot water by means of a dropper with a fine point. Place the bottle in the sheath again, and recentrifugate for one or two minutes. On removing the bottle from the sheath to take the reading it will often be found that the column of fat has sunk so low in the neck, from cooling, that a reading can not be taken. If this is the case, set the bottle for a few seconds in a dish of hot water, watching it until the column of fat rises well into the tube, when the reading may be taken. In case the fat settles to a point below the lower end of the tube, a part of it may fail to enter the tube again when it is heated. One can easily protect himself, and if necessary correct any errors from this source, by the following simple procedure: After taking the first reading, place the finger over the upper end of the tube so as to close it, and remove the tube from the bottle. Discard the contents of the tube, wipe out the latter, return it to the bottle, and again fill it to the upper end, as before, with hot water; now centrifugate again, and add any fat thus found to the fat obtained at the first reading.

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*. Read at the March meeting of the Northshore Branch of the Chicago Medical Society.

For testing cream, the method is identical, except that the larger calibered tube is used. For creams containing above 15 per cent. butter fat, the bottle will not give a reading if 5 c.c. of cream is used. In this case, fill the bottle with cream to the mark 2.5, then with water to the mark 5, and finally to the mark 10 with acid, and proceed as before.

These bottles were made for me by Leitz, and may be obtained from him.

The following table, modified from Holland's "Medical Chemistry and Toxicology," will be found useful in judging the quality of a sample of milk:

Milk.		Sp. g.	Percentage of butter fat.	Proteids and Quality.
Normal average		1.031	3.5	
Healthy	variations	1.028—1.029	4.5-6	Normal (rich milk)
"	"	1.032—1.033	2.5-3	Normal (fair milk)
Unhealthy	"	Below 1.028	Above 5.0	Normal or slightly below
"	"	" 1.028	2.5-5	Low (poor)
"	"	" 1.028	Below 2.5	Very low (very poor)
"	"	Above 1.033	Above 5.0	Very high (very rich)
"	"	" 1.033	2.5-5	High
"	"	" 1.033	Below 2.5	Normal or nearly so.

A CASE OF CRETINISM WITH SPONTANEOUS IMPROVEMENT.

ELEANORA S. EVERHARD, M.D.
DAYTON, OHIO.

This case is reported because it is interesting and encouraging, in view of the slight tendency to spontaneous improvement in cretinism.

Patient.—A girl, aged 12.

Family History.—The father had chronic nephritis, in an advanced stage, when the child was born. On the maternal side the history is negative. There is no history of cretinism or mental defect. The patient is the youngest of four children. The sister has never been strong, but gives no history of organic lesions. One brother has asthma; a second brother is excessively nervous. Nine years elapsed between the birth of the second brother and the patient.

Previous History.—As an infant, the patient slept much and cried little. The first teeth were not markedly late in appearing, but were very irregular. The child walked at two and one-half years. The hair was stiff and straight. The skin easily roughened, with a tendency to eczema. The eyes were slightly oblique, so that friends called her a "little Jap." The abdomen was enlarged but not pendulous, the navel slightly protruding. The child easily became cold, even to blueness of skin. Bowels were either constipated or very loose. The appetite was fair. When a few months old the child had an abscess back of one ear. Later she had "ulcerated sore throat." Adenoid growths were removed at about the sixth year. No mental change followed. In the winter of 1903 she had pneumonia. The temperature was so low and the child so little ill that a physician was not called for several days. In 1904 she had measles.

At the sixth year the child was sent to kindergarten. In neither public nor private schools could she be taught. At the tenth year she could not even be depended on to go to school. She would linger on the way, not realizing that she was disobedient. Conversation was incoherent and irrelevant. She could not dress or care for herself. Menstruation began at about ten years and eight months, and from that time the periods have occurred at regular intervals, duration four days. There is no pain with the exception of an occasional headache. The child began to brighten intellectually and can now read in the second reader and wants to learn everything she sees done. Conversation is better and she is beginning to care for herself. The abdomen has receded.

Examination.—I first examined the patient in August, 1905; she was suffering from acute indigestion. Temperature was 99; pulse, 88; height, 4 ft. 7⅜ in.; weight, 85¾ lbs. While height and weight were normal, the patient presented the appearance of being short and broad. The hands, fingers, and feet, were broad; the abdomen was large; gait was somewhat awkward; the lower part of the face was heavy. The expression was one of curiosity, but of no intelligent interest. The skin was harsh and somewhat eczematous, though perspiring freely because of the midsummer heat. Back of the right ear and about the nostrils, the skin was red and moist. The hair was fairly soft and somewhat curly. The tonsils and pharynx were congested. The thyroid gland was very small.

The patient obeyed directions inaccurately, both because of lack of comprehension and because of inability to act. Conversation was irrelevant, but not incoherent. She was restless, constantly moving about. The urine was normal. The patient was able to come some distance to the office, alone, after the first few times, when she had learned the way. She takes cold easily.

Treatment.—Thyroid extract was prescribed, gr. ½ t. i. d., increasing every other day until grs. vi were taken. Later this amount was increased to grs. viii. At the end of seven weeks the child had grown a little over one inch and had gained two pounds in weight. The lower part of the face had become less heavy. The expression was one of interest rather than of curiosity. She obeyed directions more quickly and exactly and could remember messages. She talked more intelligently, sat quietly in the presence of others, and her teacher says that in two weeks there was a noticeable increase in her ability to memorize.

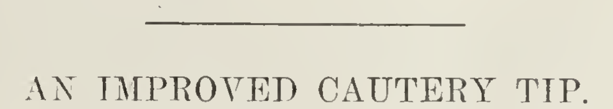
From the appearance of the child, as seen on the street, and the history, together with the conditions as found on examination, I draw the following conclusions:

The patient presented a case of cretinism, coincident with adenoid growths. With the beginning of menstruation, there was a marked spontaneous improvement, the rapidity of which was greatly increased under treatment with thyroid extract.

AN IMPROVED CAUTERY TIP.

OTIS ORENDORFF, M.D.
CANON CITY, COLO.

In cauterizing the inferior turbinate the success of the operation depends on the cut being deep and clean in order that the resulting cicatrix will produce sufficient contraction of the interturgescent tissues without destruction of the functions. When the action of a saw or bread knife is thought of, a glance at the illustration will at once suggest its utility. By use of very slight pressure and a little to and from motion this tip will bury itself into the tissues as if they were butter. In addition to the saw principle the form of the knife seems to retain the heat, permitting absolute control and preventing the distressing tearing and hemorrhage that frequently accompany the cautery operation. I apply the knife cold and do not remove it until again cooled. Any jeweller can remodel the ordinary tip to this shape.



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EXPERIMENTAL CANCER AND IMMUNITY.

During recent years a large amount of investigative work of the highest order has been devoted to problems connected with the etiology of malignant tumors, but the positive results apparently have been so meager that the general impression seems to be to the effect that little or no actual progress has been made. This disappointment, to a large degree, depends on the fact that our expectations were set too high, we were looking for the immediate solution of the great and fundamental question, namely, what is the cause of cancer? Gradually it has become clear that this question probably is not susceptible of immediate solution with our present methods of investigation, and more attention is now being given by the cancer institutes, cancer committees and individual investigators to the collection of masses of facts of various nature in order better to secure a broad basis for conclusions and indications as to promising lines of work. Thus, Ehrlich and his co-workers, as well as others (in this country Clowes and Gaylord) have studied certain transplantable tumors of animals, with the special object of learning to what extent, if any, processes of immunity play a part in cancer, and eventually, perhaps, help to introduce better therapeutic measures for human cancer.

The researches of Hanau, Moran, Leo Loeb, and particularly of Jensen, have shown that rats, and especially mice, are best suited for transplantation of carcinoma. During the last few years Ehrlich's institute in Frankfort has obtained no less than 230 mice with primary cancer, which, considering the relative infrequency of such growths in this species, represents an enormous material. It developed that all these tumor mice were females, mostly such as were used for breeding, and that the primary tumor in all cases was situated in the mamma. Transplantation of eleven different primary tumors have been carried out, and Ehrlich[1] points out that as the tumor passes from mouse to mouse—not all mice are susceptible at first, only a small percentage; hence 20 or 30 animals have to be inoculated each time—a definite increase in proliferative energy, or virulence, takes place so that in time a much larger percentage of inoculations take, sometimes even 100 per cent., while the growth of the tumors increases greatly in rapidity. In this way was obtained a most promising virulent material for experiments in immunity and healing.

Incidentally it may be noted that some of these "forced" carcinomas showed a spindle-celled or polymorphous sarcomatous development in the connective tissue, and in two such cases the sarcomatous cells eventually crowded out the carcinomatous[2] completely. Indeed, Haaland succeeded in destroying the carcinoma cells in a mixed tumor by heating the tumor tissue to 45° C., a pure sarcoma developing on the inoculation of the material so heated.

The relatively slight infectiousness of spontaneous mouse carcinoma may be taken to indicate that the normal mouse possesses certain defensive mechanisms which prevent further proliferation of the tumor cells unless these have acquired a specially high degree of virulence. It would follow that in spontaneous tumor formation the beginning of the cell change, called carcinomatous, may be quite the same in different animals and yet the subsequent course be widely divergent owing to the varying degrees of individual resistance. It is particularly the mechanisms concerned in this later phase of cancer growth that attracted Ehrlich, and special experiments were devised to give some light, if possible, on the questions involved. In the first place he found that rats are naturally immune to mouse carcinoma, and this he attributes to the absence in the rat of some substance necessary for the continued growth of the cancer cells, and not directly to antibodies, because the inoculated cells at first grow freely and then die out completely. Rats once so inoculated do not permit any growth of further inoculations and appear to have acquired an active immunity from the resorption of the material of the first inoculation.

In the case of mice, however, Ehrlich assumes that the further growth of cells that have undergone what we must be content with calling a cancerous change depends on the relative ability and avidity of such cells as compared with normal cells to absorb nutritive substances. (Expressed in the terms of the lateral chain theory one would say the number and the avidity of the proper cell receptors.) Excessive growth of the tumor cells must mean a relatively higher avidity for the necessary substances than is possessed by the surrounding normal cells and in the last instance cancer growth, according to this interesting hypothesis, which we now can not follow any further, may depend on a relative diminution of avidity of the receptors of the general organism, i. e., on constitutional condition. As experimentally transplanted cancers grow in virulence, the cell receptors may be assumed to grow in avidity. Whether cancer can ever be attacked with success therapeutically by directly influencing the conditions here spoken of as receptor-avidity is a question for the future. At present we naturally are more interested in the possible results of immunization, even though the earlier expectations from this line of work have not been realized because of the contradictory results of various investigators. Ehrlich chose the method of attenuated virus for his experiments, beginning with the inoculation of material from certain hemorrhagic mouse carcinomas which had proved to be least effective in causing growths on inoculation. Mice so inoculated prove perceptibly resistant to later inoculation of the most virulent material available. This immunity was apparent in from 7 to 14 days and persisted for weeks and months. Still more pronounced results were obtained in the case of animals in which for some reason or other primary inoculations with highly virulent material did not take. Sticker[3] reports that the spontaneous disappearance of readily transplantable sarcomatous tumors on the genitalia of dogs is succeeded by immunity to further inoculations. The immunity in Ehrlich's animals seemed equally effective against carcinoma and sarcoma and effective to some extent also against a transplantable mouse chondroma. Ehrlich ascribes this immunity, the demonstration of which seems to be the most important result of his work so far, to the formation of definite antibodies that act on various tumor cells, and he feels so encouraged with the results obtained that he proposes to work on further in this direction.

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[1] Zeitschr. f. ärztl. Fortbildung, 1906, iii, No. 7. See The Journal, page 1715 of the last volume.

[2] Apolant, Ehrlich and Haaland: Berl. kl. Wochenschr., 1906, No. 2.

In conclusion, it may be said that a most promising field for the investigation of cancers in mice has been opened and we must hope that in time the results may become applicable to human cancer.

THE KIDNEYS IN TUBERCULOSIS.

The most interesting feature of the second annual report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis in Philadelphia is the question of the condition of the kidneys in tuberculosis. The study was made in fifty-nine cases of advanced tuberculosis of the lungs which came to autopsy at the Phipps Institute and one private case in which the lung condition was practically cured. Altogether there were sixty autopsies carefully made. The present investigation is a continuation of a clinical study of the urine made three years ago by Dr. Flick, the director of the institute, and Dr. Joseph Walsh, in which tubercle bacilli were found in the urine in forty-four out of sixty cases of lung tuberculosis, the bacilli being carefully differentiated from other acid-fast bacilli by the use of alcohol in addition to Gabbet's solution. The previous investigation seemed to show that tubercle bacilli were almost constantly passing through the kidneys of consumptives whenever the affection was active. The idea of the present investigation was to determine how often the kidneys became affected from the constant presence of these pathologic agents in the circulation and excretory portions of the urinary tract.

The study was greatly facilitated and its thoroughness assured by the rule with regard to autopsies which is insisted on at the Phipps Institute. Patients who apply for treatment are told that in case of death an autopsy will be made in order that all possible information for the good of others may be secured. As a rule patients appreciate that such a condition is only a proper requital, a definite *quid pro quo,* for the medical attention, the nursing and the food that is provided for them. They appreciate, too, that it is not for the benefit of the physicians, but for the sake of other sufferers like themselves that the privilege of an autopsy is asked. The nearest relative of the patient signs a formal document giving the necessary permission, and autopsies are made in all interesting cases, which means practically all the patients who have been under treatment and observation for a sufficient time to enable autopsy records and clinical reports to be compared with each other for scientific purposes. This, we understand, is practically the only place in this country in which such a state of affairs obtains, and the results of the present studies of the kidneys in tuberculosis amply demonstrate its utility.

The kidneys in these sixty cases of tuberculosis were cut into very small pieces, about 150 in number, and after careful macroscopic study were then stained and studied with the microscope. From 12 to 100 microscopic sections were carefully examined. In the sixty cases, tubercles were found thirty-five times. These tubercles were all absolutely typical with caseation and giant cells. Besides these, three specimens showed accumulations of round cells resembling young tubercles, with miliary tubercles existing elsewhere in the body, so that the examiner was justified in considering them as probably tubercles. Counting these latter cases, then, tubercles were found in 63 per cent. of the cases. Heyn had previously found tubercles in the kidney twenty-one times in thirty-seven cases, about 57 per cent. It would seem, therefore, that it must be definitely accepted that considerably more than one-half of those suffering from pulmonary consumption eventually develop tuberculous lesions in the kidneys.

Besides these unmistakable tuberculous lesions, there were some other pathologic phenomena so common in the kidneys of these cases as to make it seem that the tuberculous process, whether through its toxins or by the direct influence of the bacilli, can produce other distinct changes in the kidney. The most common and the most interesting abnormalities were localized areas showing marked thickening of the interstitial tissue. These occurred thirty-eight times in sixty cases, just the same number as that of actual tubercles found. Sometimes these fibrous areas are seen on section as whitish or yellowish specks on the surface of the kidneys or almost immediately beneath the capsule. They resemble tubercles so much that they were more than once mounted and stained under this impression. Microscopically, they appeared to be healed or healing tubercles, though they did not show giant cells and only rarely a doubtful amount of caseation. In fifty out of sixty cases there was some thickening of the connective tissue of Bowman's capsule. In twenty-two out of sixty cases there was an accumulation of round cells immediately under the capsule. These represent young tubercles or localized fibrous areas.

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[3] Arch. f. kl. Chir., 1906, lxxviii, p. 773.

It is not surprising to find, then, that the investigators consider that tubercle bacilli are excreted in all cases of active tuberculosis. Usually they have been rendered less virulent by their passage through the circulation, but sometimes they cause kidney lesions and occasionally, even when the lungs heal, the morbid condition of the kidneys proves sufficient in the progress of the ailment to bring about a fatal termination. The most common clinical symptom of tuberculous nephritis in tuberculosis are hyaline and granular casts and tubercle bacilli in the urine. Less frequent symptoms are pains or aches in the lumbar region, albumin in the urine, edema, and looseness of the bowels which may or may not alternate with constipation. Rapid pulse is common when nephritis is present. Patients are much more easily fatigued than otherwise and there is sometimes unaccountable dyspnea. The most encouraging feature of the investigation lies in the fact that in some cases there are apparent evidences of a tendency to recovery. Some of the lesions even seem to have been healed completely. While tuberculosis of the kidneys must be looked for in all cases, therefore, its presence does not necessarily mean a bad prognosis.

MENTAL SYMPTOMS ASSOCIATED WITH ALCOHOLIC NEURITIS.

However warm the discussion as to the dietetic or medicinal value of alcohol, there is no difference of opinion with regard to the pronounced and profound toxic effects to which this substance is capable of giving rise. These may be insidious and appear especially in the liver, kidneys and vascular system, or they may be acute and by preference involve the nervous system. In the latter event, the cerebral cortex and the peripheral nerves suffer most commonly, as manifested by delirium tremens and polyneuritis, respectively. The factors that determine the one or the other set of phenomena are as yet unknown, and it is not rare for alcoholic neuritis to be associated with varied abnormal mental phenomena.

As a result of a study of 17 cases of alcoholic intoxication, in conjunction with an analysis of the literature of the subject, Dr. Isador Coriat[1] arrives at the conclusion that the accompanying mental disturbances may assume various forms, appearing as either a central or a peripheral palsy of one or more eye muscles, in the sense of an inflammation of the peripheral fibers of the various ocular nerves or changes in one of the numerous cell groups of origin of the oculomotor nerves in the central gray matter. Thus, there may result, on the one hand, ptosis or isolated paralysis of one of the eye muscles, or, on the other hand, complete ophthalmoplegia. The associated mental disturbance is to be attributed to involvement of the higher central neurons, and it may take the form of either delirium with marked allopsychic disorientation or a fabricating psychosis. On the other hand, degenerative changes in the posterior columns of the spinal cord and of their nuclei in the medulla may be associated with peripheral neuritis and give rise to symptoms suggestive of tabes dorsalis. The signs of peripheral neuritis may be absent, however, the lesion being pre-eminently central in distribution and consisting in parenchymatous degeneration of various systems and their cells and manifested clinically only as a terminal disorder with peculiar and prominent, but almost pathognomonic motor symptoms. Sometimes there is a combination of peripheral and central symptoms. There are, however, no sharply limited types, as cases of ordinary peripheral neuritis are nearly always associated with central lesions. The psychosis described by Korsakow and characterized by impaired retention, defective memory for the recent past, disorientation and confabulation, may occur with or without symptoms of peripheral neuritis, and, besides, it may be due to other factors than alcohol. It may arise out of a depressive or a stuporous state, an acute hallucinosis or an ordinary delirium tremens. At other times there is a delirious state strongly resembling delirium tremens, but of acute onset, with or without disorientation, impaired retention, defective memory for recent events and confabulation. The confusion, however, is usually deeper than that of delirium tremens, especially if associated with paralysis of the ocular muscles. The physical decay is extremely rapid and may end with the motor disorders of a terminal central neuritis.

At yet other times there is acute delirium of the type described by Korsakow, with isolated neuritic symptoms and progressing rapidly to recovery. True delirium tremens may be gradually transformed into a fabulating psychosis. Recovery is not complete, but a slight degree of mental deterioration persists, or the delirium subsides rapidly and leaves a slowly improving neuritis. If neuritic symptoms appear during the delirium there are always superimposed suggestibility and marked fabrications. A further group of cases exhibits a protracted course, with marked depressive effect, suicidal tendencies, strong religious ideas, episodes of great fear and anxiety and marked hallucinosis. At the onset or height of the disease signs of peripheral neuritis are absent, but during the protracted course there develops emaciation with diarrhea and frequently rigidity and twitching—signs of central neuritis. There may be a pure acute hallucinosis, entirely free from allopsychic disorientation, in which neuritic pains may form the basis of various delusional interpretations, analogous to the paresthesias of the alcoholic paranoiac states without neuritic symptoms. On the other hand, peripheral neuritis may be absent during the hallucinosis to appear later in connection with typical fabrication and disorientation. Under both these conditions the outlook for recovery is favorable. There occur also depressive delirious states of rapid course, with marked physical symptoms of polyneuritis, or there may exist a dreamy, hallucinatory confusion, but without fabrications or amnesia.

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[1] American Journal of Insanity, April, 1906, p. 571.

There may yet be a fabricating delusion of acute type not resembling delirium tremens and exhibiting striking features of difference from the psychosis described by Korsakow. Finally, there may be observed a group of cases resembling at first an alcoholic deterioration with marked defect of memory, pursuing a slow course, but with almost complete recovery parallel with the improvement in the physical signs.

THE DYSTROPHIES OF TABES DORSALIS.

The nutrition of the tissues has been supposed to be dependent on the integrity and healthy action of special trophic nerves and centers, disorder of which has been invoked to explain certain forms of wasting and destruction. Such structures, however, have never been actually demonstrated and their existence must still be considered problematical. On the other hand, there are reasons for believing that the changes referred to are attributable to derangement of function or alteration of structure in the ordinary nerves of motion and sensation. Some phases of this subject are discussed by Sir William R. Gowers,[1] in his customary illuminating manner, in the course of a lecture dealing with the dystrophies of tabes dorsalis, namely, arthropathy and perforating ulcer. In his opinion, the tissues possess an inherent vitality which is influenced by the state of nutrition of the nerves related to them. In cases of tabes dorsalis, as is well known, the nutrition of the sensory nerves becomes altered, as indicated by hyperesthesia and anesthesia. In consequence, it may be reasoned, alterations in the processes of nutrition will take place that result in the characteristic dystrophies mentioned. The morbid disturbances may be incited or intensified by slight traumatisms that escape observation by reason of the impairment of sensibility. Besides, the absence of pain permits of the continuance of conditions; avoidance or removal of which would lead to restoration to normal. Thus, it was found in a series of cases of perforating ulcer of the foot that healing took place merely by placing the patient at rest, keeping the ulcer clean and dressing it. A comparable good result might be anticipated in connection with tabetic arthropathy if appropriate treatment were instituted at an early stage of the disorder, the painlessness of which often causes it to be overlooked and, therefore, neglected.

THE PATHOLOGIC CAT.

The cat, it seems, has no legal standing. This has been decided by a Massachusetts judge, who calls it "the worst untamed animal in Christendom." One might suspect, indeed, from the tone of his remarks that he is one of that class so interestingly described by Dr. Weir Mitchell and more or less familiar to every one—the cataphobiacs. The cat, however, does stand in discredit to a certain extent in a sanitary light. The article from which we quote the opinion referred to contains an indictment of the cat by Dr. Hodge (of Clark University?) which may possibly have influenced the judge's decision. Dr. Hodge says that many contagious diseases are common to man and the cat, and the animal is, therefore, a dangerous source of contagion to the human species. Even if the animal itself does not contract the disease, it is one of the most common and likely means of spreading infection. Diphtheria, whooping-cough, grip, eczema and ringworm are mentioned as diseases that have been definitely proved to have been thus conveyed. It is even claimed that a cat bite is more dangerous than that of a dog, because of infectious matter in the teeth. It is hard, however, to see why any indictment of the cat on sanitary grounds is not equally valid against the other human pet, the dog, which is just as capable of carrying many diseases and from its more general popularity is perhaps more likely to do so. The reason why the cat possibly is more dangerous than the dog is that it is more of an indoor animal. Hence the advisability of doing away with it under certain conditions, i. e., when it has been exposed to, or in contact with, contagious diseases. The same policy is best, also, under the same circumstances with the dog, and an affectionate dog has an unpleasant habit—that is, unpleasant as regards contagion—of pawing over people, licking hands, etc., far more than the cat. Every animal that is domesticated by man has probably its diseases that it can communicate to its master. We possibly owe tuberculosis to cattle, to say nothing of owing hydrophobia to the dog, glanders and tetanus to the horse, trichina (and who knows what else) to the pig, and probably every other tamed animal has its malign gift to the human species. It is just as well, however, that the cat has no more legal standing than it has. It has the merit of being more easily sacrificed for sanitary reasons than most of the others, and it certainly does us good service in decimating and keeping down the increase of certain other more insanitary animals which we have involuntarily domesticated. So, while condemning it, it is well to remember that civilization would be more insanitary in some respects were it not for the cat.

THE TREATMENT OF NEURALGIA AND SPASMODIC TIC WITH DEEP INJECTIONS OF ALCOHOL.

Certain crude analogies may be traced between neuralgia and spasmodic tic, both being, as it were, expressions of irritation in sensory and motor nerves, respectively. Both, besides, exhibit a tendency to chronicity and often a notable resistance to treatment. Deep injections of various substances have been recommended at different times in the treatment of obstinate neuralgia and good results have from time to time been reported. A modification of this method that is considered an improvement has been employed for a period of two years by Dr. F. Ostwalt[1] in 60 cases of trigeminal neuralgia, some of many years' standing. After the mouth has been properly disinfected, a bayonet-shaped, hollow needle is introduced into the cocainized mucous membrane of the upper fornix of the vestibule on the affected side behind the alveolus of the wisdom tooth and passed through the submucous tissues to the three divisions of the fifth nerve as they emerge from the skull at the foramen ovale, the foramen rotundum and the sphenoidal fissure, respectively, and from twenty to forty minims of 80 per cent. alcohol containing grain 1/18 to grain 1/9 of cocain or stovain are injected slowly and intermittently in each situation. A single injection may be sufficient to afford permanent relief, although not rarely several injections may be required at intervals of from five to seven days. The technic appears rather difficult and requires a not inconsiderable degree of practice and skill for its successful execution. The operation is rather painful, but the severity of the pain may be mitigated by a preliminary injection of cocain or stovain, while in the case of timorous persons general anesthesia may be induced by means of chloroform or ethyl chlorid. Relapses have been observed in about one-third of the cases, but generally the pain was much less severe than in the original attacks. The special advantages claimed for the treatment are its freedom from danger and the fact that the patient may continue at work without interruption during its application. The same plan of treatment has been employed by Ostwalt in ten cases of histrionic spasm, the injections in this instance being made into the facial nerve at its point of emergence from the stylomastoid foramen. A considerable number of cases of sciatica and of neuralgia in other situations have also been subjected to the treatment with success.

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[1] Brit. Med. Jour., June 2, 1906, p. 1267.

[1] Lancet, June 9, 1906, p. 1605. See also The Journal, page 759 of the last volume.

THE DEFACEMENT OF NATURE BY NOSTRUM ADVERTISEMENTS.

After much tribulation and delay the Pure Food Bill has at last gone through the ordeal of the legislators in a fairly acceptable form, and we can score a victory for the people. It would be asking too much perhaps at the present time, after having won this great reform, to demand that an esthetic touch should be added. We can be thankful enough for the useful without the ornamental. It would be a blessing, however, if "patent medicines" didn't stare us in the face from every point of vantage throughout the land. The more striking the scenery the more it is defaced with flaring advertisements of various sorts, too often some nostrum or food preparation intended for popular use. The more striking and picturesque a spot the better does it suit the psychology of advertising to disfigure it. Under the leadership of the American Civic Association and other organizations, public indignation has successfully forced the removal of objectionable signs in a number of cities. The government has taken this question under consideration in regard to the utilitarian destruction of the picturesque in the matter of the preservation of Niagara Falls, and it would be well if the state and local governments could also go a little way on the same good road in preventing the disfigurement of natural scenery by nostrum and other advertisements.

Medical News

ARKANSAS.

New College Organized.—The College of Physicians and Surgeons of Little Rock has been incorporated by Drs. Joseph P. Runyan, William P. Illing, David C. Walt, Arthur E. Sweatland, Charles C. Stephenson, Joseph P. Sheppard, Beauregard W. Flinn, Charles R. Shinault, S. Paul Vaughter, Edwin Meek, Thomas E. Hodges, George M. D. Cantrell, William B. Hughes, W. B. Smith, Emmet N. Davis, Clinton P. Meriwether, Daniel R. Hardeman and Rezin W. Lindsey, with a capital stock of $100,000, of which $55,000 has been subscribed, to conduct a school for the teaching of medicine and surgery in all their branches; of pharmacy and dentistry; a training school for nurses, and to maintain and operate a sanitarium and hospital. The officers chosen are as follows: Dr. Charles R. Shinault, president; Dr. George M. D. Cantrell, vice-president; Dr. William P. Illing, secretary and treasurer, and Drs. Charles R. Shinault, William P. Illing, David C. Walt, Arthur E. Sweatland and Edward Meek, directors. The board of directors, at a meeting, July 14, elected Dr. Joseph P. Runyan, dean, and Dr. William P. Illing, secretary of the college. The directors also elected the following members of the faculty: Dr. Arthur E. Sweatland, professor of anatomy; Dr. Thomas E. Hodges, associate professor of anatomy and lecturer on osteology; Dr. S. Paul Vaughter, associate professor and demonstrator of anatomy; Dr. Beauregard W. Flinn, professor of physiology; Dr. Emmet N. Davis, professor of chemistry; Dr. Rezin W. Lindsey, professor of clinical medicine; Dr. George M. D. Cantrell, professor of physicial diagnosis and diseases of the chest; Dr. David C. Walt, professor of the theory and practice of medicine; Dr. Clinton P. Meriwether, professor of materia medica and therapeutics; Dr. Edwin Meek, professor of obstetrics; Dr. Daniel R. Hardeman, professor of diseases of children; Dr. William P. Illing, professor of mental and nervous diseases: Dr. C. Travis Drennen, professor of syphilology and dermatology; Dr. Charles C. Stephenson, professor of diseases of the eye, ear, nose and throat; Dr. Joseph P. Sheppard, professor of genitourinary diseases; professor of pathology, to be supplied: Dr. Joseph P. Runyan, professor of surgery; Dr. Charles R. Shinault, professor of gynecology; W. B. Smith, professor of medical jurisprudence; and M. E. Dunaway, professor of English and literature. The adjunct professors and clinical assistants will be supplied later.

ILLINOIS.

Pneumonia versus Consumption.—For 35 weeks, beginning with the week ended Nov. 4, 1905, and ending with the week ended June 30, pneumonia was assigned as the cause of 3,261 deaths, out of a total of 19,116 from all causes, while consumption caused only 2,250 deaths. Pneumonia caused 17.1 per cent. and consumption 1.8 per cent. of the total deaths during this period.

Chicago's Mortality.—During the week ended July 14, 498 deaths were reported from all causes, 27 more than for the preceding week, and 51 more than for the corresponding week of 1905. Acute intestinal diseases led the death causes with 68, followed by consumption with 58, heart disease with 40. violence, including suicide, and Bright's disease, each with 36. nervous diseases with 26, and cancer with 18.

Personal.—Dr. J. W. Fulwiler, Bloomington, has returned from Europe.——Dr. James B. Hundley, South Danville, is threatened with typhoid fever.——Dr. G. C. Harmon, Rantoul. is reported to be in a critical condition in the Julia F. Burnham Hospital, Champaign.——Dr. Charles E. Davis, Peoria. was taken suddenly ill from overwork and heat exhaustion July 10, and removed to St. Francis Hospital.——Dr. Carl E. Black, Jacksonville, has started for Europe.——Prof. Elisha H. Gregory, head of the department of anatomy in the Northwestern University Medical School, Chicago, has resigned.

IOWA.

Typhoid.—Within a radius of three blocks in West Waterloo eleven cases of typhoid are reported. The disease is traceable to the use of water from shallow wells.

Fined for Illegal Practice.—"Dr." B. B. Miller, Waterloo, found guilty of practicing medicine, surgery and obstetrics without state license, was sentenced, on June 25, to pay a fine of $300. Miller claimed that he gave no medicine, healing by the laying-on of hands and manipulation, the so-called "Weltmerism."

Resolutions Regarding Dr. Maxwell.—At the annual meeting of the Des Moines Valley Medical Association, June 28, resolutions were unanimously adopted regarding the death of Dr. John R. Maxwell, Keokuk.

Hospital News.—The gift of two building lots, valued at $1,000 each, and a subscription of $500 practically insures the building of the Oskaloosa Hospital this year, as the amount of subscription now in sight exceeds the $10,000 required.

Fined for Violation of Ordinance.—Dr. Frank J. Murphy, Sioux City, pleaded guilty, July 2, to the charge of violation of the city ordinance for the restriction and prevention of contagious diseases, in that he failed to report two cases of scarlet fever. He was fined the minimum amount of $10.

Personal.—Dr. Andrew R. Resner, Manning, has gone to Europe.——Dr. Charles B. Rentz, Sanborn, coroner of O'Brien County, has resigned and Dr. H. Scott has been appointed his successor.——Dr. and Mrs. William H. Hoyt, Sioux City, sailed on the *Republic*, July 14, for Liverpool, on a tour around the world.——Dr. Diely N. Pattison, health officer of Oelwein, has resigned and Dr. Cooney has been elected his successor.——Dr. Henry M. Templeton, health officer of Ames, has resigned.

KANSAS.

Smallpox.—Hutchinson reports eight cases of smallpox in one district of the city.——The danger of a smallpox epidemic at Independence has apparently passed. The last patient has been released from quarantine.

Meffert's Petition Refused.—The Kansas Medical Board of Examination and Registration, on June 12, by unanimous vote, refused to restore state license of Dr. William M. Meffert, Emporia, which was revoked by the board four years ago.

Commencement.—The forty-fourth annual commencement exercises of the University of Kansas School of Medicine were held June 4 in Lawrence, when a class of fifty-seven was graduated. Dr. Edward W. Schauffler administered the Hippocratic oath.

Census of Consumptives.—The secretary of the Kansas State Board of Health has been ordered by the board to make a complete census of the cases of tuberculosis in the state. All of these are to be recorded as to the stage of the disease, method of infection, habits of the patient, treatment, etc.

Contagious Diseases.—During May, 97 cases of tuberculosis were reported in the state, with 55 deaths; 60 cases of typhoid fever, with 6 deaths; 34 cases of diphtheria, with 8 deaths; 65 cases of scarlet fever, with 2 deaths; 251 cases of smallpox, with 1 death, and 154 cases of measles, with 2 deaths.

Personal.—Dr. Walter C. Van Nuys, for 2 years assistant superintendent of the State Hospital for the Insane, Topeka, has been selected by the trustees of the Indiana Village of Epileptics as medical superintendent.——Dr. Reginald H. Meade, Great Bend, has started for Europe.——Dr. Ida C. Barnes, Topeka, has recovered from her recent accident.——Dr. Clyde D. Blake, Ellis, has been made division surgeon of the Union Pacific system.

Hospital News.—The new St. Mary's Hospital, Emporia, was dedicated with impressive ceremonies June 13. On June 15 the Sisters of St. Mary's Hospital gave a banquet in honor of the physicians of Emporia and Lyon County and the city officials. ——A nervous-disease ward, 60x70 feet, is being erected in connection with Christ Hospital, Topeka, at a cost of about $8,500.——Plans have been prepared for a hospital building for Arkansas City, to cost $6,000.

KENTUCKY.

Gifts to Physicians.—Dr. T. H. Baker, the outgoing custodian of the postoffice of Louisville, who has entered the practice of medicine, was presented with a chest of silver from the postoffice employés.——The medical staff of Spears Memorial Hospital, Dayton, presented Dr. Garrison, retiring interne, with a handsome obstetric outfit.

Commencement.—The thirty-second annual commencement exercises of the Hospital College of Medicine, Medical Department of Central University of Kentucky, were held July 2. The announcement of the college was made by Dr. Lewis S. McMurtry, president, degrees were conferred on a graduating class of 94, and the doctorate address was delivered by Dr. Frederick W. Hinitt, president of the Central University of Kentucky.

Railway Surgeons Meet.—The first annual meeting of the Kentucky State Association of Railway Surgeons was held in Richmond May 29 and 30, under the presidency of Dr. Richard C. Falconer, Lexington. Dr. Clarence H. Vaught, Richmond, was elected president, Dr. Robert C. McChord, Lebanon, vice-president, and Dr. James B. Kinnaird, Lancaster, secretary and treasurer (re-elected). Frankfort was selected as the next meeting place.

Personal.—Dr. Thomas Hunt Stucky has resigned the chair of principles and practice of medicine and clinical medicine in the Hospital College of Medicine, Louisville, after twenty-four years' service in that institution. He has also resigned his connection with the Gray Street Infirmary. Dr. Stucky first entered the faculty as assistant demonstrator of anatomy, was then made professor of materia medica and therapeutics, and after six years was elected to the chair he has just resigned. He will probably be succeeded by Dr. Walter F. Boggess.——Dr. Wylie H. Forsythe, Lexington, who has been a medical missionary in Korea for two years, has returned home.

Hospital Corps for Home-Coming Week.—The hospital corps which had in charge the sick and injured during home-coming week, at Louisville, of which Dr. Henry E. Tuley was chairman, did excellent work and the perfection of its organization was notable. On each day a chairman and five physicians were on duty at the Armory building, assisted by two trained nurses. The hospital quarters were supplied with beds and supplies for emergencies. In addition hospital tents were located at Cherokee Park and at Central Park during the celebration at these places, and physicians and trained nurses were on duty. During the floral parade and on the occasion of the night pageant two ambulances were in line, with a full staff of physicians and emergency appliances.

Pictures in Newspapers.—At a recent meeting of the Jefferson County Medical Association, the following resolution was offered by Dr. Henry E. Tuley:

> Whereas, There is to appear in a certain newspaper the pictures of forty or fifty physicians, who, on the payment of a specified price, are to be grouped at the head of an article on the history of the medical profession in Louisville; and
>
> Whereas, This will exclude two-thirds of the members of the Jefferson County Medical Association, as well as some two hundred practitioners in the vicinage, thereby losing value as a fair representation of the present medical profession of Louisville, and causing discord in our midst; be it
>
> *Resolved*, That the Jefferson County Medical Association discourages the appearance of the said pictures in the souvenir edition of the paper before mentioned.
>
> Chas. W. Hibbitt, Dunning S. Wilson, Sidney J. Meyers, Adolph O. Pfingst, H. A. Davidson, Sam Myer, W. Hamilton Long, Irvin Abell, Henry E. Tuley, Bernard Asman, I. Lederman.

The question was referred to the judicial council for further consideration.

LOUISIANA.

Hospital for Lake Charles.—Plans have been accepted for the new hospital to be erected in St. Charles by the Sisters of the Incarnate Word, to cost $30,000.

Health Board Election.—The following have been elected as the health board of New Orleans: Dr. William T. O'Reilly, president; Dr. Oliver F. Ernst, Dr. William A. Gillaspie, Dr. William H. Robin and A. T. Wentworth.

House-Boat for Quarantine.—A house-boat has been prepared to be used at the mouth of the Mississippi to isolate crews from infected ports, and to enable fruit steamers to carry their perishable cargoes in charge of other crews through New Orleans, thereby avoiding delay.

Variola at Melville.—The report of smallpox at Melville has been much exaggerated. The medical inspector of the State Board of Health finds that the situation is well in hand. There are three foci of infection in the town, and thorough isolation and quarantine are being observed. The infection has been traced to a common source. All public gatherings have been prohibited.

Personal.—Dr. Joseph G. Stulb, New Orleans, sailed for Europe, May 20.——Dr. Theodore Engelbach, Grand Isle, has been appointed sanitary officer for the State Board of Health for that section of Jefferson Parish.——Dr. P. Jorda Kahrle has been appointed acting assistant surgeon U. S. P. H. and M.-H. Service, and assigned to duty at Puerto Cortez, British Honduras.——Dr. Norwood K. Vance, Shreveport, is seriously ill at New Orleans.

Precautions Against Yellow Fever.—As a precaution against possible yellow fever outbreak in New Orleans, the city and state boards of health announce that sixty city blocks are now under a searching system of inspection, and that the portions of New Orleans outside of this area are being closely watched by the co-operation of every physician in the city and the health board. The sixty city blocks under especial supervision are those in which yellow fever originated or was present last season.

Regulations for Pilots.—At a special meeting of the State Board of Health, June 22, the following resolutions were adopted regarding boarding of vessels from infected ports by river pilots:

> Be and it is hereby *Resolved*, By the Louisiana State Board of Health: That from and after the adoption of these resolutions it shall be unlawful for any river pilot, or any other person, the sea pilot and quarqantine physicians excepted, to board any vessel subject to quarantine inspection at the Mississippi River Quarantine Station, or any other station established by the Board of Health, at any point below the Pilot Town public school building on the Mississippi river.
>
> *Resolved*, That it shall be unlawful for any river pilot, or any other person, to board any vessel subject to quarantine coming into the Mississippi River or any of its outlets below said schoolhouse, and in no event until such river pilot or person has a line thrown to him by the bar or sea pilot in charge of said vessel, under the direction of the master of such vessel. That no river pilot or other persons shall be allowed to get on any vessel by means of any hook, hooks, lines or ladders attached to or thrown on said vessels, and that any such river pilot or person who may violate these regulations shall be guilty of a misdemeanor, and subject to the penalties hereinafter fixed. Be it further
>
> *Resolved*, That it shall be the duty of all bar or sea pilots in charge of vessels subject to quarantine to enforce these regulation, and that in case of their failure to do so they shall be guilty of a misdemeanor and subject to the fines and penalties hereinafter fixed. Be it further
>
> *Resolved*, That hereafter it shall be unlawful for any river pilot to board any vessel within the limits above prescribed until he has been designated by the master of the vessel as the pilot for said vessel, and the line of said vessel is thrown to him by the sea pilot in charge. Be it further
>
> *Resolved*, That the master of any vessel or any bar or sea pilot, or any river pilot, or other persons who may violate the above regulations or aid in their violation, or permit any violation of the above regulation, shall be guilty of a misdemeanor, and subject to a fine of not more than $100, or not less than $25, and imprisonment in the parish jail for thirty days for the first offense; and to a fine of not more than $250 and not less than $100 and sixty days' imprisonment in the parish jail for the second, or any subsequent violation; and that it shall be the duty of the resident physician of the Mississippi River Quarantine Station to enforce the above regulations by prosecution before the district court of Plaquemines Parish.

MARYLAND.

Baltimore.

Deaths by Violence.—During the first six months of 1906 there were 167 deaths by violence, 43 of which were due to suicide and 7 to homicide. There were 33 attempts at suicide and 770 minor accidents during the half year.

Maternity Hospital Report.—The University of Maryland Maternity Hospital reports that during the last year 685 cases of confinement were treated, 271 in the hospital and 414 in the out-patient department. The members of the senior class averaged twenty-five obstetric cases per member.

Faculty Changes.—Dr. William F. Lockwood has been made professor of principles and practice of medicine in the College of Physicians and Surgeons, vice Dr. Thomas S. Latimer, deceased.——Dr. John Ruhräh has been advanced from clinical professor of diseases of children to professor of therapeutics and clinical medicine, and Drs. Carey B. Gamble and Harvey G. Beck, associate professors, have been made professors of clinical medicine.

Johns Hopkins Appointments.—Dr. Arthur S. Loevenhart, now associate, has been appointed associate professor of pharmacology and physiological chemistry; Dr. William W. Ford, now associate, has been made associate professor of bacteriology and lecturer on hygiene; Max Broedel, now instructor, has been made associate professor of art in its relation to medicine; Dr. Arthur W. Meyer, now an assistant, has been made instructor in anatomy; Dr. George H. Whipple, now assistant, has been made instructor in pathology; and Dr. J. A. English Eyster, now assistant, has been made instructor in physiology.

MASSACHUSETTS.

Seniors Choose Profession.—Of 511 seniors in Harvard University this year, 24 have decided to study medicine.

Lawrence Will Analyze Waters.—The Lawrence Board of Health has voted to analyze all spring waters vended in the city, and to license the firms selling such waters.

Medical Student Dies.—Charles J. Conway, Millville, a first year student at Harvard Medical School, died at his home, June 27, from heart disease, aggravated by a dose of medicine taken to induce sleep.

Salary for Health Board.—The Chelsea board of aldermen has passed an ordinance providing for the payment of $300 a year to each member of the city board of health. The services of the members of the board have heretofore been rendered without charge.

Smallpox.—The steamship *Cymric*, which arrived from Liverpool July 15, had on board two persons affected with smallpox, and the 689 passengers and sailors were obliged to be vaccinated before the vessel was permitted to dock.——In New Bedford 75 persons are in quarantine in four houses, and 12 patients have been taken to the smallpox hospital at Clarks Point.

Convicted.—Dr. David H. Richmond, Brockton, on trial in the Plymouth County Court, charged with performing a criminal operation, was found guilty and sentenced, June 15, to imprisonment for not less than 6 nor more than 10 years.——Elizabeth E. Hartford, charged with circulating advertisements containing information regarding the performance of illegal operations, was sentenced on June 28 to serve an indefinite term in the woman's reformatory at Sherborn.

Personal.—Dr. Nathaniel P. Thayer has been appointed resident physician at the Long Island almshouse and hospital, vice Dr. Simon P. Cox, resigned.——Dr. Samuel H. Calderwood, Boston, has been made a member of the board of registration in medicine.——Dr. Edwin D. Hutchinson has been appointed town physician of Westfield.——Dr. Frederick W. Chapin, Springfield, was overcome by heat in the union station July 5.——Dr. Thomas B. Shea, health commissioner of Boston, has resigned, and will resume his position as chief medical inspector of the health department.

Commencement.—At the twenty-sixth annual commencement exercises of the College of Physicians and Surgeons, June 20, the announcement was made by the dean, Dr. Charles H. Cobb, that in order to come up to the standard recommended by the American Medical Association, the degree of doctor of medicine would be conferred only at the end of a five years' course, a year's work in the hospital, after leaving college, being required before receiving the degree. A class of 20 was graduated. In the absence of Hon. Joseph Bennett, the president, Dr. C. C. Farnham, Brockton, presented the diplomas to the graduating class.

Alumni Meet.—At the annual meeting of the Harvard Medical Alumni Association, June 26, the following officers were elected: President, Dr. Alfred Worcester, Waltham; vice-presidents, Drs. Frederick W. Borden, Ottawa, Ont., Richard C. Cabot, Boston, Edward F. Cushing, Cleveland, John M. T. Finney, Baltimore, Isadore N. Bloom, Louisville, Thomas F. Harrington, Lowell, Mass., Josiah N. Hall, Denver, Colo., Erasmus D. Leavitt, Butte City, Mont., George B. Shattuck, Boston, and Edmond Stevens, Cambridge, Mass.; secretary, Dr. David Cheever, Boston; and treasurer, Dr. William H. Prescott, Boston.——At the seventh annual meeting of the Tufts College Medical School Alumni Association a protest was made against the lack of consideration shown its wishes in making appointments to the faculty of the school. The following officers were elected: President, Dr. Thomas F. Greene, Boston; vice-presidents, Drs. Mary E. Gill, Boston, and Loretta F. O'Brien; secretary, Dr. William J. Sheehan, South Boston; assistant secretary, Dr. Edith M. Brooks, and treasurer, Dr. William B. Keeler, Boston.

MICHIGAN.

Physicians Upheld.—In the suit brought by Jan Bakker against Drs. D. Emmett Walsh and Ralph C. Apted, Grand Rapids, for administering chloroform to the plaintiff's son without his consent, has been decided by the Supreme Court in favor of the defendants.

Smallpox.—In Menominee 5 cases of smallpox are reported.——On July 7 the quarantine at Lowell, Mich., which was imposed on account of the epidemic of smallpox, of which 32 cases had been reported, was raised. The disease was of very mild form, and no fatalities occurred.

Commencements.—At the annual commencement of the University of Michigan, Department of Medicine and Surgery, Ann Arbor, June 27, a class of 68 was graduated.——On June 18 the annual commencement exercises of the American Medical Missionary College were held at Battle Creek, when a class of 22 received diplomas. The address of the evening was delivered by Dr. Howard A. Kelly, Baltimore, and the diplomas were presented by Dr. James H. Kellogg.

Personal.—Dr. Caleb A. Fuller has been appointed instructor in bacteriology in the University of Wisconsin, Madison.——Dr. Cressy L. Wilbur has been appointed by the Secretary of the Department of Commerce and Labor chief statistician for the division of vital statistics in the census bureau.——Dr.

Joseph B. Griswold, Grand Rapids, has been elected commander of the Michigan department of the G. A. R.——Dr. Howard A. Kelly, Baltimore, delivered an address before the Kalamazoo Academy of Medicine, June 21.——Dr. and Mrs. Lotan C. Reed, Grand Rapids, sailed for Europe June 30.——Dr. Milton P. White has been re-elected a member of the school board of Dowagiac.

MINNESOTA.

Diphtheria.—Diphtheria in virulent form has broken out in Ely, and thus far one death has resulted.

Unlicensed Practitioner Fined.—"Dr." H. Dean, who has been practicing in Northome for six months, was arrested, charged with practicing without a license, pleaded guilty, and was fined $50 and costs.

Personal.—Dr. and Mrs. Charles R. Ball, St. Paul, have returned from Europe.——Dr. Henry M. Bracken, St. Paul, has been re-elected secretary of the State Board of Health, and Dr. F. F. Wesbrook, Minneapolis, has been reappointed director of the laboratories of the board.——The portrait of the late Dr. Edwin D. Steel, Mankato, was presented to the Blue Earth County Medical Society at its regular meeting, July 7.

Hospital News.—W. H. Kelley has donated $10,000 for an addition to the Owatonna City Hospital.——The St. Louis County board has adopted a resolution bonding the county for $100,000, the proceeds to be used in the building of a county insane hospital.——The cornerstone of the new Bethesda Hospital at Crookston was laid July 4.——Two pavilions for the care of tuberculous patients are to be erected this summer on the grounds of the St. Peter State Hospital.

Entrance Requirements Increased.—Beginning with the college year 1907-1908, the entrance requirement to the Medical Department of the University of Minnesota will be two full years of college work. For several years the requirement for entrance has been one year of college work, but in view of the fact that nearly 60 per cent. of the present student body have had two or more years' college preparation, the regents felt justified in thus raising the standard for entrance.

University News.—The new laboratory building for the use of the College of Medicine and Surgery, University of Minnesota, and the State Board of Health, will be ready for work at the beginning of the school year in September. The building is fireproof, and 60 by 213 feet. Plans are also being prepared for a building for operative surgery and experimental pharmacy, and for the new university hospital, made possible by the recent bequest of $150,000 by the late Dr. A. F. Elliott.

Dr. Ritchie Resigns.—Dr. Parks Ritchie resigned as dean of the Medical Department of the University of Minnesota, St. Paul, June 9, and the regents have elected Dr. F. F. Wesbrook as his successor. On June 18 the faculty of the College of Medicine and Surgery, University of Minnesota, gave a banquet in honor of Dr. Ritchie, when President Northrup presented him with a loving cup as an expression of the warm regard of his colleagues and in token of his long service in the interests of the university.

State Society Meeting.—The Minnesota State Medical Association held its thirty-eighth annual meeting in Minneapolis June 20 and 21, under the presidency of Dr. Charles Mayo, Rochester, with more than 300 members in attendance. The house of delegates, at its second session, elected the following officers for the ensuing year: President, Dr. Harry A. Tomlinson, St. Peter; vice-presidents, Drs. Edwin Y. Chilton, Howard Lake; Fletcher W. Penhall, Morton, and Pierre C. Pilon, New Paynesville; treasurer, Dr. Richard J. Hill, Minneapolis; secretary, Dr. Thomas McDavitt, St. Paul; councilor, first district, Dr. Eugene A. Hensell, Alexandria; councilor, fourth district, Dr. Frederick A. Knights, Minneapolis; and alternate to the House of Delegates of the American Medical Association, Dr. John J. Eklund, Duluth. Duluth was selected as the place of the next state meeting, and the printing of the proceedings of the association was given to the *Northwestern Lancet* for another year. The association was the guest of the Hennepin County Medical Association at a reception in the Masonic Temple, and a banquet was also given in honor of the association at Lake Minnetonka.

MISSOURI.

Commencement.—At the annual commencement exercises of the University of Missouri Medical Department, held at Columbia, June 6, a class of 8 was graduated.

Anti-Spitting Ordinance.—The health officer of Kansas City has instructed the sanitary inspectors to arrest persons spitting on the sidewalks in violation of the ordinance. The punishment for this offense under the new ordinance is a fine of from $5 to $25.

Resolutions Regarding Dr. Spaulding.—At a special meeting of the Jackson County Medical Society, Kansas City, resolutions were unanimously adopted setting forth the loss by the society, city, county and state in the untimely death of Dr. Charles L. Spaulding.

Personal.—Dr. Frank J. Lutz, professor of surgery in the medical department of the St. Louis University, has resigned.——Drs. Eugene J. Neville and Willard Bartlett, St. Louis, have been operated on for appendicitis and both are reported convalescent.——Dr. A. W. Kampschmidt has been appointed anesthetist in Parker Memorial Hospital, Columbia.——Dr. Valdemar Koch, assistant professor of physiologic chemistry in the University of Missouri, has resigned to accept a position as assistant professor in pathologic chemistry in the University of Chicago.——Dr. George Halley, Kansas City, recently suffered a cerebral hemorrhage while at Eureka Springs, Ark.——Dr. Daniel M. Shoemaker has qualified as assistant bacteriologist in the St. Louis Health Department.——Dr. Charles R. Woodson has been reappointed superintendent of State Hospital No. 2, St. Joseph.——Dr. B. C. Kern, former city physician at the City Hospital, St. Louis, has been appointed chief physician at the poorhouse to succeed Dr. John M. McKeage, who has been appointed assistant chief physician at the same institution.

NEBRASKA.

Ordered to Resign.—Dr. J. M. Alden, superintendent, and Dr. F. S. Nicholson, assistant superintendent, of the State Hospital for the Insane, Norfolk, were ordered by the governor on July 12 to vacate their offices, but refused to obey the order. The governor will appeal to the courts.

Commencement.—At the annual commencement exercises at the College of Medicine of the University of Nebraska, Omaha, a class of seven was graduated. Dr. James Carroll, of the Army Medical Museum, Washington, delivered the commencement address on "The Microscope in Medicine." Dr. Henry B. Ward, dean of the college, administered the hypocratic oath.

Personal.—Dr. James L. Greene, president of the Nebraska State Medical Society, formerly assistant physician in the Norfolk Hospital for the Insane, and since 1901 superintendent of the Nebraska Hospital for the Insane, Lincoln, who was recently appointed superintendent of the Illinois Eastern Hospital for the Insane, Hospital, was the guest of honor at a dinner given by the medical profession of the state, July 14, at the Lincoln Hotel. Dr. Melchert H. Garten acted as toastmaster and thirty representatives of the Nebraska profession responded to the toast, "Dr. Greene, His Work in Nebraska and His Success at Kankakee." Dr. Greene made a suitable response.——Dr. John T. Hay, assistant superintendent of the Nebraska Hospital for the Insane, Lincoln, has declined the appointment as superintendent of the asylum at Norfolk, to which he was recently appointed, pending the removal of Dr. Alden. On July 9 Dr. Hay was appointed superintendent of the Nebraska Hospital for the Insane, Lincoln, vice Dr. James L. Greene, resigned.

NEW YORK.

New York City.

Bequest.—Under the will of the late George J. Laughton, the Brooklyn Home for Consumptives is to receive $3,000.

Hebrew Sanitarium.—The new sanitarium for Hebrew children at Rockaway Park will be dedicated July 22 by Acting Mayor McGowan.

Detained at Quarantine.—On the arrival of the steamship *Mexicao* from Havana July 10, 122 passengers were conveyed to Hoffman Island. It cannot be learned whether this is on account of a contagious disease, or in accordance with the new regulations which aim to prevent the landing in New York of any passenger who left a Cuban port less than five days previous to the time of the ship's arrival here.

Hospital Ordinance Vetoed.—The acting mayor has vetoed the proposed ordinance providing that patients brought to the hospitals in ambulances, public or private, must be admitted, and providing a penalty of $100 for violations. It was claimed that there was no legal authority for the passage of this ordinance and it could not influence many of the hospitals in New York City, as they were organized under state laws.

Personals.—Dr. and Mrs. Philip H. Embury and Dr. and Mrs. Valdemar Sillo sailed for Hamburg on the *Pennsylvania*, July 14.——Drs. Condict W. Cutler and John A. Jenkins sailed for Glasgow on the *Columbia*, July 14.——Dr. Gordon Hale sailed for Antwerp on the *Zeeland*. July 14.—Dr. Robert J. Carlisle returned on the *Campania*, July 13.——Dr. Darlington, who was badly injured in a runaway at Otisville has been removed to the seashore and is making steady progress toward recovery.

Contagious Diseases.—There were reported to the sanitary bureau of the Department of Health for the week ended July 7, 370 cases of measles, with 19 deaths; 343 cases of tuberculosis, with 161 deaths; 220 cases of diphtheria, with 27 deaths; 103 cases of scarlet fever, with 6 deaths; 45 cases of typhoid fever, with 10 deaths; 36 cases of whooping cough, with 4 deaths; 27 cases of cerebrospinal meningitis, with 16 deaths; and 28 cases of varicella. A total of 1,172 cases and 243 deaths.

PENNSYLVANIA.

Typhoid in Phenixville.—An epidemic of typhoid fever has broken out in Phenixville, where there are about 30 cases. It is said that the high price of ice has led to the use of a number of wells in the town, and that to this is partly due the outbreak of the disease.

Asylum Inspected.—The annual inspection of the State Hospital for the Insane, Wernersville, was conducted on July 9 by the Council's Committee on Health and Charities. Dr. W. M. Late Coplin of the health department, Dr. Henry Sykes, chief resident physician at the Philadelphia Hospital, and Assistant Director Kerns accompanied the committee to study the conditions at the state hospital, in order to apply the knowledge thus gained to perfecting the system at the Philadelphia Hospital.

Philadelphia.

Unwholesome Meat Destroyed.—As the result of the crusade inaugurated by the Board of Health against unwholesome meats, about 9,000 pounds were condemned and destroyed by the direction of the health authorities. Besides this amount 11,000 pounds were also found unfit for food.

Hydrotherapy of Insane.—It is stated that a modern system of hydrotherapy for the treatment of the indigent insane will be installed in the Philadelphia Hospital, and as a result of the overcrowded condition of the present insane department of the hospital, plans are being made for the erection of a new hospital in the country outside the city. The present building, erected to accommodate 800 patients, now contains more than twice that number.

Medical Inspection.—The report of the division of medical inspection of the bureau of health for the month of June shows that the number of inspections made, excluding schools, aggregated 4,966; that 823 fumigations were ordered, and 27 cases were presented for special diagnosis. The inspectors made 5,088 visits to the schools and excluded 271 children from attendance; took 269 cultures, gave 163 injections of antitoxin, and made 340 vaccinations.

Health Report.—The total number of deaths reported for the week reached 539. This is a decrease of 112 from the number reported last week, and a decrease of 9 from the number reported in the corresponding period of last year. The principal causes of death were: Typhoid fever, 15; measles, 3; pertussis, 11; diphtheria, 4; consumption, 64; cancer, 16; apoplexy, 12; heart disease, 35; acute respiratory disease, 34; enteritis, 125; appendicitis, 3; Bright's disease, 35; suicide, 8; accidents, 31; and marasmus, 17. There were 128 cases of contagious disease reported, with 19 deaths, as compared with 129 cases and 15 deaths in the preceding week.

TENNESSEE.

Commencement.—Knoxville Medical College graduated a class of five recently. Rev. J. M. Ewing delivered the commencement address.

College Soon Ready.—The building of the College of Physicians and Surgeons, Memphis, which is being constructed opposite the city hospital on Madison street, will be ready for occupancy about September 1. The building is three stories in height, of brick, stone and terra cotta construction, and will cost about $60,000.

Sentenced for Malpractice.—In the case of Dr. Yost Safford Troyer, Memphis, charged with the murder of Mrs. F. A. Parks, Cleveland, Miss., by an illegal operation, the Supreme Court is reported to have affirmed the decision of the lower court sentencing the defendant to ten years in the penitentiary.——Dr. John L. D. Walker, Chattanooga, charged with criminal malpractice, is reported to have been sentenced to confinement for eleven months and twenty-nine days in the county workhouse.

Elections.—At the annual session of the Middle Tennessee Medical Association at McMinnville, May 18, Dr. Lynn B. Graddy, Nashville, was elected president and Dr. William G. Frierson, Shelbyville, vice-president.——The West Tennessee Medical and Surgical Association held its annual meeting in Jackson May 10 and 11. The following officers were elected: Dr. George W. Penn, Humboldt, president; Drs. G. Weldon Oliver, Medina, and Jefferson D. Hopper, Andrew Chapel, vice-presidents; and Dr. Isaac A. McSwain, Paris, secretary (reelected).

Personal.—Dr. Charles P. McNabb, dean of the faculty and president of the board of directors of Tennessee Medical College, Knoxville, has resigned, and Dr. Michael Campbell, professor of mental and nervous diseases in the institution and superintendent of the Eastern Hospital for the Insane, has been elected dean. Dr. McNabb will still hold the chair of theory and practice of medicine and clinical medicine.——Dr. Edgar H. Ford, Coal Creek, has been ill with appendicitis.——Dr. Newton F. Raines, Raines Station, has been elected president of the Shelby County Board of Health and jail physician, vice Dr. Frank S. Raymond.——Dr. William B. Rogers has resigned as president of the Memphis Board of Health.——Dr. Philander D. Sims, on June 1, completed the fiftieth year of his professional residence in Chattanooga.

TEXAS.

New Hospitals.—A sanitarium has recently been completed at Fort Worth by Dr. Frank D. Thompson at a cost of about $30,000.——Drs. Kossuth F. and Edward Purdy have established a sanatorium at Houston Heights.

Hospital News.—The Missouri, Kansas and Texas Railway has arranged that Waco shall be the head of the hospital system in Texas for the road. The Providence Sanatorium has been selected as the hospital, and Drs. James W. Hale and William O. Wilkes have been appointed surgeons in charge.

New Building for Insane Hospital Opened.—The second new building at the North Texas Hospital for the Insane, Terrell, was opened June 28. The building is intended for white male patients exclusively, and will accommodate 250. The third additional building will be ready in a few weeks, and will furnish accommodations for 500 additional patients.

Warning Against Yellow Fever.—Dr. George R. Tabor, state health officer, has issued a warning regarding the prevention of yellow fever, in which he states that yellow fever now prevails in almost all tropical countries; that, notwithstanding the prevalence of the disease, Texas was free of fever last year, and that it can be kept free by preventive sanitary measures. He summarizes in these words: "No mosquitoes, no yellow fever, no quarantine."

Personal.—Dr. John R. Frazier has been made city physician of Fort Worth.——Dr. Ashel B. Gardner has been elected city physician of Denison.——Dr. James E. Thompson, Galveston, has been elected vice-president of the Texas Academy of Science.——Dr. Joseph Gilbert, Austin, has been appointed resident physician and surgeon at the Texas Agricultural and Mechanical College, beginning September 1.——Dr. John H. Dean, Waco, has been appointed professor of neurology in the Baylor University College of Medicine, Dallas.

Medical Officers Examined.—A medical board, consisting of Col. George R. Tabor, Austin, surgeon general, and Majors Billie E. Ellis, Paris and Thomas V. Fryar, Corsicana, surgeons, Texas National Guard, convened at Austin July 2 and examined Captains Scurry L. Terrell, Dallas, and Robert F. Miller, Sherman, for promotions to majorities; Lieutenants Robert L. Dinwiddie, San Antonio, and Herbert F. Sterzing, Austin, for promotion to captaincies, and Dr. W. L. Robinson, Dawson, for admission to the medical department of the national guard.

College News.—The University of Medicine and Surgery of Fort Worth has been incorporated with a capital stock of $5,000.——The commencement exercises of Galveston Medical College, Medical Department of the University of Texas, were held May 31, when a class of thirty-three were graduated. The address to the graduating class was delivered by Dr. Alfred E. Thayer, professor of pathology, and President Houston conferred the degrees.——The third annual commencement of Southwestern University Medical College, Dallas, was held May 5, when diplomas were presented to the graduating class by Dr. John O. McReynolds. The address to the graduates was delivered by Rev. Hubert D. Knickerbocker.

VERMONT.

Personal.—Dr. Arthur O. Morton has been made health officer of St. Alban, vice Dr. Alphon A. Claflin, term expired.——

Dr. Halford R. Minor, Rutland, has been appointed health officer vice Dr. Edgar B. Moore.——Dr. Edwin Porter, Northfield, has returned from California.

Commencement.—At the annual commencement exercises of the University of Vermont Medical Department, Burlington, June 27, degrees were conferred on a class of forty-seven by President M. H. Buckham of the university.

Must Report Contagious Diseases.—Dr. Henry D. Holton, secretary of the State Board of Health, has issued an order that all physicians who fail to report cases of communicable disease to him shall be prosecuted. During 1905 only 21 cases of typhoid fever were reported to the health officers, while 77 positive diagnoses were made by the state laboratory.

VIRGINIA.

Smallpox.—Nine cases of smallpox have been discovered on Crab Run between Monterey and McDowell. Quarantine has been established and rigid measures are being employed to stamp out the disease.

New Hospital Building.—Plans have been made for the Norfolk Protestant Hospital, replacing the structure recently burned. The building is to be of brick and frame construction, and will cost about $50,000.

Personal.—Dr. Rawley W. Martin, Lynchburg, president of the State Board of Medical Examiners, was presented with a handsome silver loving cup by the board, June 19. Dr. Herbert M. Nash, Norfolk, made the presentation address.——Dr. Walter A. Warfield has been chosen successor to the late Dr. William R. Purvis as city physician of Alexandria.——The new board of health of Richmond organized July 3 and elected Dr. William T. Oppenheimer permanent president of the board. Drs. M. D. Hoge and Ramon D. Garcin are the other medical men on the board.

WEST VIRGINIA.

Hospital Annex Nearly Ready.—The annex of the Wheeling Hospital, which is nearly ready for occupancy, will increase the capacity of the hospital by 60.

Physicians versus Editors.—Physicians of Tucker, Randolph and Barber counties adopted resolutions and notified the newspapers that hereafter they should not publish the names of physicians in any way that might be regarded as contrary to professional ethics. Several of the editors to whom notices were sent are reported to have answered that they will do business as they see fit, and will publish the names of physicians whenever they think proper.

State Society Meeting.—The thirty-ninth annual meeting of the West Virginia State Medical Association was held at Webster Springs June 20, 21 and 22, under the presidency of Dr. Spencer S. Wade, Morgantown. The address of welcome to the society was delivered by Mayor H. C. Thurman. It was decided to establish a state medical journal, and the following committee was appointed to work out the details and plans: Dr. Samuel L. Jepson, chairman, and Drs. Louis D. Wilson and John L. Dickey, all of Wheeling. The following officers were elected: Dr. William W. Golden, Elkins, president; Dr. Vincent T. Churchman, Charleston, first vice-president; Dr. Henri P. Linsz, Wheeling, and Dr. Arthur O. Flowers, Clarksburg, councilors; Dr. Timothy L. Barber, Charleston, treasurer, and Dr. Thomas W. Moore, Huntington, secretary. The meeting was most harmonious, many very meritorious papers were presented, and the benefits of organization were clearly to be seen.

WISCONSIN.

Hospital Opened.—The new Mercy Hospital, Stevens Point, is now open to receive patients. It has accommodation for 18 patients.

Personal.—Dr. Luther A. Potter has been elected president of the Board of Education of Superior.——Dr. Frank J. Lambeek, Kewaskum, has gone to Europe.

Anti-Spitting Crusade in La Crosse.—The La Crosse County Medical Society is responsible for an ordinance prohibiting spitting on the sidewalks of the city, and providing a fine of $10 for violation of the ordinance.

Chiropractics Extradited.—E. J. Whipple and G. W. Johnson, chiropractics, charged with violating the state law by practicing medicine without a license, have been returned to La Crosse from Minnesota, on requisition.

College Transfer.—The real estate and equipment of the Wisconsin College of Physicians and Surgeons has been transferred to a board of trustees, to place the institution on a purely educational basis. The college officers selected were: President of faculty, Dr. A. Hamilton Levings; secretary, Dr. Lorenzo Boorse; and dean of the medical department, Dr. William H. Washburn, all of Milwaukee.

Acquitted.—John Thill, an herb doctor of Somerset, who was charged with practicing as a physician without a license, has been found not guilty.——The case against Dr. Peter Tuntas, Milwaukee, charged with practicing medicine without a certificate, was dismissed June 8.——Dr. F. W. Epley, New Richmond, charged with malicious prosecution by Mrs. Julia King of Somerset, was acquitted June 29.——Dr. George T. Dawley, New London, charged with performing a criminal operation, was tried at Clintonville June 27 and the case dismissed.

Smallpox.—A Wauwatosa family, afflicted with smallpox, is reported to have gone to Pewaukee lake for the summer. The health officer of Milwaukee has notified the health officer of Wauwatosa that unless the family is ordered back and the quarantine order properly enforced he would declare a quarantine against the entire city of Wauwatosa. A deputy has been sent to bring back the infected family.——An Oconomowoc physician who sent a smallpox patient to Milwaukee in violation of the state law, explained to the local health department that he was ignorant of the law, and that he had told the man to go directly to the pest house and not to the city hall.

GENERAL.

Origin of the Cholera Epidemic in Manila.—Chief Quarantine Officer Heiser, in *Public Health Reports*, states that it is believed that the source of the cholera reinfection which occurred in the City of Manila has been definitely traced. It appears that at the Manila and Dagupan railway station a pail system was maintained, the contents of which were dumped, contrary to law, into a nearby canal. It is believed that one of the passengers arriving from a province in which cholera is present, used one of the pails at the railroad station, and that his dejecta contained cholera spirilla. The first cases that made their appearance occurred among persons who resided on the streets that ran along either side of the canal. A bacteriologic examination made of the samples of water taken at several places near the place where the fecal contents were emptied showed that cholera organisms were undoubtedly present. The persons who contracted cholera in all probability used this canal for washing purposes and thereby indirectly infected their food. It is furthermore believed, Dr. Heiser states, that the few cases which occurred in the immediate neighborhood, but not on the streets referred to, can be accounted for by assuming that some Chinese truck gardeners gathered some of the fecal matter in question and used it for sprinkling the vegetables. This latter assumption is strengthened by the fact that a substance which strongly resembled human fecal matter was found in the sprinkling cans of the Chinese gardeners. The nuisance was immediately abated, and after a heavy rain had washed the esteros clean no further cases of cholera occurred along the streets in question. The one or two isolated cases which have occurred since in the neighborhood are attributed to vegetable infection.

CANADA.

British Medical Association—Toronto Meeting.—The preliminary program for the seventy-fourth annual meeting of the British Medical Association, to be held at Toronto, August 21-25, under the presidency of Dr. R. A. Reeve, of Toronto, speaks as follows concerning what it calls some interesting features of the place of meeting:

> It is the largest city in the leading province of the leading colony of the leading empire of the world.
>
> It is the leading agricultural center in the empire, and in it is held annually the largest agriculture and arts fair.
>
> It is the greatest fresh water city in the empire, and is within easy access of Niagara Falls, Hamilton, Rochester, Kingston, the Thousand Islands, and elsewhere, by steamer. It is the most temperate city in the English speaking world. It has the finest choir in America. It is the educational center of Canada.

An analysis of the program is interesting. There are thirteen sections. The number of papers to be read before each section varies from ten to thirty. It is especially notable that a large number of physicians from the United States are to take part in the proceedings, both to read papers and to open discussions. In the section on anatomy thirty papers are listed. Twenty-three of these will be read by men residing in the United States. Of ten papers to be presented before the section on dermatology, all but three are credited to the United States. In the section on laryngology and otology sixteen papers are listed, nine of these coming from the United States. The same thing is true of all the other sections, with the exception of the section on surgery, in which one of twelve papers is contributed by a surgeon from the States, and the section on state medicine, in which two out of twelve papers are credited to the United States. Of the whole number of papers to be read at this meeting, 133 are accredited to members of the British Medical Association and 114 to members of the profession of this country. The address in medicine will be delivered by Sir James Barr on "The Circulation Viewed from the Peripheral Standpoint." Sir Victor Horsley will deliver the address in surgery on "The Technic of Operations on the Central Nervous System." The address in obstetrics will be delivered by Dr. W. S. A. Griffith.

FOREIGN.

Retirement of Rindfleisch.—Professor von Rindfleisch retires from the chair of general pathology in the University of Würzburg with the current semester. His seventieth birthday is approaching, December 15.

Luethje Succeeds von Noorden.—Professor Luethje, of Erlangen, has accepted a call to the University of Frankfurt a. M., to succeed von Noorden, who goes to the University of Vienna, as already mentioned.

Narath to Take Czerny's Chair at Heidelberg.—It is announced that Professor A. Narath, of Utrecht, has accepted the call to Heidelberg to the chair of surgery left vacant by Czerny's retirement to devote himself to the new Institute for Cancer Research. Narath was born in Vienna and is now 41. He served as assistant to Billroth and to Gussenbauer until he went to Utrecht in 1896.

Russian Physicians in the Douma.—The *St. Petersburg. med. Wochft.* states that a physician just returned from a period of banishment to Orenburg was elected at once to the Russian Douma, making the twenty-ninth physician now elected to that body. Dr. Z. Schabad, of Wilna, who was banished to Archangel for three years, has been permitted to leave the country for his term of banishment. Seven other physicians who have been banished for a term of years are also mentioned by name.

Treatment of Cancer with Glycolytic and Pancreatic Ferments.—R. Odier, of Geneva, Switzerland, has been treating cancer on the basis of the destruction of the glycogen which seems to be indispensable to the progress of a malignant growth. A number of authors have pointed out that the more progressive the cancer the more abundant will glycogen be found in it, and especially in the younger proliferating portions of the growth. By destroying the glycogen he hoped to remove the conditions necessary for the further growth of the neoplasm. He thinks that even the most radical removal of a cancer can not insure against recurrence unless the diathesis is modified at the same time. He found that in cases of spontaneous tumors on animals the production of glycolytic and pancreatic ferments was exceptionally small, while the specific gravity of the blood was abnormally high. Injecting such animals with glycolytic and pancreatic ferments, the proportion of glycogen in the cancers dropped from 4 and 6 per thousand to a maximum of 0.03 per thousand, and their growth was arrested. Among the animals tested were two horses and two sheep with spontaneous sarcomas and fifteen dogs and four rats with spontaneous carcinomas. He has had five dogs, two rats and one horse under observation from nineteen months to four years. In every instance there was a local febrile reaction, and the growth of the cancers was then apparently arrested. They have remained stationary during the entire period since. The *Presse Médicale*, June 30, contains the report of Odier's research as presented to the local medical society.

German Association to Promote Material Interests.—The sixth annual assembly of the Leipziger Verband was held at Halle, June 21, with the president and founder of the association, Dr. Hartmann, of Leipsic, in the chair. The aims and workings of this organization have been frequently mentioned in THE JOURNAL, as, for instance, on page 1436 of volume xlii, 1904. The official name of the association is the Verband der Aerzte Deutschlands zur Wahrung ihrer wirtschaftlichen Interessen. It now has a membership of 18,723 physicians and reports a successful year. It assisted the physicians involved in conflict with the sickness insurance societies at Königsberg and Münster and in minor disputes in 127 smaller places. Defeat was sustained in three comparatively small places, but in the others matters were either settled satisfactorily or are still pending. The free bureau of information and employment conducted by the society reported that it had aided in satisfactory arrangements, providing physicians with substitutes or representatives, in 1,286 cases, assistants in 518 and medical practices in 354. It was announced at the meeting that the medical officers connected with the government railroads had been officially requested to resign from the Leipziger Verband, which aroused much protest. The association has taken up this year the complaints of the medical officers on German ships and is now striving to obtain better conditions for them. Another point agreed on was the necessity for postgraduate and undergraduate lectures and training in social medicine, the relations between the physician and his confrères as well as with the public in general, the state, etc. The Verband was instrumental in having a course of this kind delivered at Berlin this spring, as described in these columns on page 372 of the last volume. The association presented lately about $5,000 to aid the district physicians in Austria in their appeal for juster remuneration from the state, as mentioned in these columns last March.

VIENNA LETTER.

Rejected Government Department of Hygiene.

The present Austrian house of parliament, which numbers not more than eleven medical men among its 425 members, has declared its promedical sentiments by a bill brought in recently requesting the establishment of a special ministry for affairs dealing with hygiene and public sanitation. At present such matters are referred to the local magistrates and boards, and a uniform handling of these affairs was not possible on account of the lack of a central directing mind. The government did not accept the bill, rejecting it partly on account of the expense and partly on account of the interference with the rights of independent bodies. Although many influential members, among others the dean of the Vienna University, spoke in favor of the bill, and although the advantages of such an institution were made clear by figures, the government majority was 22, and the ministry is, at least for the present, out of the question.

A Tax on Prescriptions.

In order to obtain the funds necessary for a substantial strengthening of the institution for the orphans and widows of medical practitioners, a sort of tax has been proposed by the central medical board of Vienna. A prescription in Austria has to be signed by a qualified practitioner, holding the diploma of M.D., and to be dispensed only by certain apothecaries, who are responsible for the quality of the drugs sold by them. The tax proposed is to be levied in such a way that the apothecary affixes a stamp of the value of one-third of a cent to the prescription, charging it in the price of the medicine, the stamps to be obtained by the thousand from the central medical board of the different states in Austria. It is calculated that such a tax would bring in, in Vienna alone, about $12,000 a year, or about $150,000 a year throughout the empire. The plan has met with violent opposition from certain classes of the population, chiefly certain druggists and quacks. The legislature has not yet taken the matter up, but undoubtedly this or a similar scheme will be found advisable, as the condition of the profession requires urgently the aid of the state, as well as of the public.

Lead Poisoning by Means of Soldered Water Pipes.

The board of health published recently the details of a limited epidemic of lead poisoning which occurred last year in Vienna. It appears that within a short period 720 persons presented the typical symptoms of lead poisoning. As they sought medical help at various places, it took a long time before it was found out that all these patients lived in the same block of houses in the center of a densely populated district. When the health office learned of the epidemic a search for the source of contamination was instituted and the explanation was found in a repaired water pipe. The block of the infected houses had been erected only recently, and when the branch water pipe supplying the new block was connected with the main pipe some careless workman employed soldering matter containing 78 per cent. of pure lead. The quantity of lead coming into the water was very small, about .003 grams (½ gr.) within twenty-four hours, the length of the lead-covered inner surface of the pipe was about 12 cm., but this was sufficient to produce, after the continuous use of this water for drinking purposes for many months, the symptoms of lead poisoning: colic, radial neuritis, paleness and the line on the gums. It is the first instance of contamination of the Vienna water, which is among the best, if not the very best in itself, of all the drinking waters of large towns, being derived from the glaciers and snow fields of the mountains. It is brought a distance of about ninety miles through aqueducts, and has always a standard of from 18 to 25 microbes in the cubic centimeter.

Insurance Fees and Lodge Practice

Societies Take Action.

MINNESOTA STATE MEDICAL ASSOCIATION.

At the annual meeting of this association, held June 19, 1906, the folowing resolutions were unanimously adopted:

Resolved by the House of Delegates of the Minnesota State Medical Association, in regular convention assembled, That we hereby pledge ourselves to exercise skill and care in all examinations for life insurance companies.

Resolved, That we hereby pledge ourselves to adhere strictly to the following schedule of fees for life insurance examinations: A minimum fee of $5.00 for each and every ordinary examination, including chemical analysis of the urine; a minimum fee of $10 for each and every examination where a microscopic examination of urine, sputum or other secretion is required; a minimum fee of $3 for each certificate of health for renewal of lapsed policies.

Resolved, That we do not believe any examination for life insurance is complete without the examination of the urine of the applicant, and we are unwilling to make any recommendation on an incomplete examination.

Resolved, That these resolutions shall go into effect and be morally binding on the members of the Minnesota State Medical Association on and after thirty days subsequent to their adoption.

Resolved, That the secretary shall within said time send a copy of these resolutions to every insurance company doing business within the State of Minnesota.

NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY (TENN.) MEDICAL SOCIETY.

Dr. Holland M. Tigert, Nashville, secretary of the Nashville Academy of Medicine and the Davidson County (Tenn.) Medical Society, writes that the following resolutions were adopted by that body at a meeting held July 3, 1906:

Resolved, That it is the sense of the Nashville Academy of Medicine and the Davidson County (Tenn.) Medical Society that examination for old-line life insurance companies should not be made for a less fee than five dollars ($5); and, further,

Resolved, That a copy of these resolutions be sent to the secretary of the Tennessee State Medical Association and to The Journal of the American Medical Association.

OTHER SOCIETIES.

Similar resolutions were passed by the New Jersey State Medical Society, the San Benito County (Cal.) Medical Society, and the Orange Mountain (N. J.) Medical Society.

Correspondence

The American Medical Directory.

New York, July 7, 1906.

To the Editor:—If any further argument were needed in favor of the publication of a register of physicians of the United States by the authority and under the supervision of the American Medical Association, such argument would be found in a contemplation of "Polk's Medical Register and Directory," a copy of the ninth revision of which was received a few days ago. I do not refer to its numerous errors of omission and commission; they may perhaps be unavoidable in a directory of national scope. I do not even refer to its numerous absurdities, such as, for instance, the inclusion of a journal for the laity and of a distinctly antimedical character, a journal that considers physicians and surgeons something worse than thieves and murderers, in the list of medical journals; or the putting of quack societies, trying to disrupt the medical profession of America, in the list of "medical associations." But I do refer to the numerous objectionable advertisements with which the book is filled and which must prove an eyesore to every ethical physician, who at present—for the lack of any other—is obliged to consult that directory. It is certainly unpleasant to have to be confronted on the top of every few pages with either antikamnia or the Keeley cure. It was hoped that the agitation which has been going on for the past two or three years, and of which the publishers of that directory can not fail to be cognizant, would induce them to purify this volume of at least the most objectionable advertisements; but apparently lay publishers can not be expected to get into sympathy with the attitude of the ethical part of the medical profession.

I for one would not have ordered a copy of the directory had I thought that the antikamnia advertisement would be repeated in it about 200 times. We will all welcome the appearance of the American Medical Directory, a truly authoritative register, free from the names of quack physicians, fake sanitariums, humbug "cures" and fraudulent medicinal preparations.

William J. Robinson, M.D.

The Finances of the American Medical Association.

Oil City, Pa., July 9, 1906.

To the Editor:—The *New York Medical Record*, June 30, contains an editorial on "The Finances of the A. M. A." After a statement relative to the Boston session being the most remarkable in the history of the Association and the general prosperous condition, due credit is given to the "secretary-editor, to whose genius for organization this increase is largely owed," etc. It then goes on with a jumbled statement of facts and fancies which bear unmistakable evidence of having for its purpose the creation of a feeling of dissatisfaction among the American Medical Association members. Having a personal acquaintance with not a few of the trustees of the Association, whose integrity is beyond reproach, I hope that none of our members will take the *Record's* article seriously. I have been a member of the American Medical Association long enough to appreciate and to understand its spirit, and The Journal which comes to my desk weekly is compensation far in excess of the paltry five-dollar annual fee.

To quote: "There may be no 'ring' or 'clique,' in the evil acceptation of the terms, but there is want of frankness on the part of those who control the Association which is disquieting and tends in these days of 'graft' to arouse grave suspicions."

Let the work of those who are in control of the American Medical Association answer whether or no there has been a "ring" or "clique" and whether "in these days of graft" there was not a whole lot of graft refused. If there is any despicable mode of warfare it is the throwing of a bomb into a peaceful camp with the hope of changing order and discipline into chaos. It seems to me the *Record* should turn its attention to cleaning its advertising pages rather than to the making of such insinuations.

John C. O'Day, M.D.

Atropin and Strychnin Combined a Specific for Seasickness.

Sinclair, Ill., July 16, 1906.

To the Editor:—In The Journal, June 23, 1906, is an interesting article with the above title by Brig.-Gen. Alfred C. Girard, M.D., late assistant surgeon-general, United States Army, San Francisco. The essence of the report is that a prescription containing atropin sulph. gr. 1/120 and strychnin sulph. gr. 1/60, combined in a solution for hypodermic administration, to be repeated, if necessary, is a specific for seasickness. Dr. Girard describes a number of cases to show the value of this prescription, but, as he says nothing as to the origin of the formula, the inference will naturally be that he is the originator of the valuable combination. But he is not the author of it. The formula was published in the *Medical World*, September, 1894, and is from the *New York Medical Journal*, Dec. 9, 16, 23, 30, 1893, and is credited to Dr. W. N. Skinner, an experienced ship surgeon. I have used the same drugs for some time, although I have gradually increased the amount of strychnin much above the original as given by Dr. Skinner. Still, I call it the Skinner prescription, for he it was who first gave the world the idea, and if we see fit to vary the proportions it does not detract from the credit belonging to Dr. W. N. Skinner.

William Walter Crane, M.D.
Formerly Acting Assistant Surgeon, United States Army.

Malaria in High Altitudes.

Topia, Durango, Mexico, July 2, 1906.

To the Editor:—I wish to go on record in The Journal as absolutely and unqualifiedly refuting the seemingly well established statement that malaria can not exist in high altitudes.

Topia is situated on an elevated plateau at the head of a quebrada, which descends westward to the Gulf of California. The altitude is 5,900 feet above sea level. The topography of the locality does not permit of water standing or becoming stagnant, and it is pretty truthfully said that there have not existed a dozen mosquitoes in the place in that many years. Notwithstanding these facts the malarial plasmodium exists in abundance, as has been absolutely proven by microscopic examinations and corroborated by therapeutic tests made by Dr. S. McGibbon in dozens of cases and by therapeutic tests made by me in several cases of intermittent chills and fevers. Many of these tests have been made in cases of children who have never been outside of Topia, and others in adults who for months had not been outside of the place. Dr. McGibbon found the plasmodia in the blood of fleas, which were allowed to bite malarial subjects, and he advances the very plausible explanation that in this place fleas are the transmitters of the disease.

J. A. King, M.D.

Reciprocity and Qualifications as Viewed by the Illinois Board.

Detroit, July 12, 1906.

To the Editor:—In The Journal, July 7, I note the information, under State Boards of Registration, that the Illinois State Board of Health has withdrawn from membership in the American Confederation of Reciprocating, Examining and Licensing Medical Boards; I also note the so-called "Reciprocity Resolutions" passed June 20 by the Illinois board. This act of withdrawal from the confederation (together with the resolutions adopted) is not only distinctly peculiar and original, but will be of more than passing interest to members of state medical boards and to the profession generally.

Under date of Feb. 27, 1906, I, as secretary of the American Confederation, received a letter from Secretary Egan of the Illinois State Board of Health protesting against the prerequisite qualification of the confederation which provided for proof of membership in the county, state or national medical organization as evidence of good moral character. He also protested against the provision in Qualification No. 1, for a supplemental examination, in case the scope of the prior state board examination was defective, and the requirement of a year's practice subsequent to the date of the license on which endorsement was sought.

At the Columbus meeting of the confederation the prerequisite credential complained of was amended as follows, and made purely elective. The former prerequisite was not in any sense mandatory but advisory:

> Prerequisite Credential, as Amended May, 1906.
>
> As a prerequisite to reciprocal registration the applicant therefor shall file, in the offices of the boards of the state of which he is a licentiate and of the state where reciprocal registration is sought, such evidence of good moral and professional character as may be demanded by said boards, and such evidence, at the discretion of either board, may include proof of membership in a recognized medical society, and such membership may be considered in connection with the other evidences of character presented.
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> Qualification 1.
>
> A certificate of registration showing that an examination has been made by the proper board of any state, on which an average grade of not less than 75 per cent. was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the state where reciprocal registration is sought, may be accepted in lieu of examinations, as evidence of qualification. Provided, that, in case the scope of said examination was less than that prescribed by the state in which registration is sought, the applicant may be required to submit to a supplemental examination by the board thereof in such subjects as have not been covered.
>
> Qualification 2.
>
> A certificate of registration, or license issued by the proper board of any state, may be accepted as evidence of qualification for reciprocal registration in any other state. Provided, that the holder of such certificate had been engaged in the reputable practice of medicine in such state at least one year, and also provided that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the state in which reciprocal registration is sought, and that the date of such diploma was prior to the legal requirement of the examination test in such state.

The year's practice requirement was also eliminated from Qualification No. 1, but it was impossible to drop the supplemental examination provisions in Qualification No. 1, because of the fact that it provides for the recognition of, and the remedy for, inequality of state board requirements and may be properly called the "saving clause" of the qualification in question.

If the Illinois requirements are higher than those of other states it furnishes a protection; if lower, it gives her an advantage. Its elimination, therefore, would furnish a reason for the withdrawal of the Illinois board, but its retention should furnish a very strong incentive for the continuance of her membership.

Qualification No. 2, the method by which the older men in the profession, those practitioners, graduates of reputable medical colleges, who obtained licenses prior to the requirement in their state of a board examination, were provided for in reciprocity, was also a subject of protest by the secretary of the Illinois board, but as this qualification is not a compulsory one, although adopted by fifteen states out of the twenty-two states reciprocating, it could furnish no material reason for objection by the Illinois Board of Health, unless, perhaps, the board was looking for trouble and an excuse for withdrawal.

The standards, qualifications and regulations adopted by the American confederation are merely suggestive and intended as a guide and in the interests of uniformity, rather than mandatory, and boards holding membership, in considering the same, should have at least the qualification of broadness and should show some slight evidence of a judicial temperament, remembering that they represent a state rather than a base ball organization.

The following is a quotation from Secretary Egan's letter protesting against the qualification of membership in a county, state or national medical organization as proof of good moral character and which in the prerequisite complained of was purely an optional requirement:

> A word in conclusion in regard to Qualification A (Prerequisite Credentials), which, I believe, at one time was qualification No. 3. There is nothing in the law regulating the practice of medicine in Illinois which, even by implication, would warrant the Illinois State Board of Health in refusing to admit to examination an applicant who failed to present with his application:
>
> "(a) Satisfactory evidence that he had been, for at least one year, a member in good standing of the county, state or national organization of the school or system of practice to which he belongs."
>
> "(b) A certificate of recommendation issued to him by vote, at a regular meeting of the society in which his membership originated, that he is worthy of registration anywhere," (*and such certificate of recommendation may be treated as part of such application and considered in connection with the other evidence presented.*)

[The words italicized were omitted by Dr. Egan.]

> It follows, consequently, that the Illinois State Board of Health could not if it would impose these requirements on applicants for reciprocal registration.
>
> These requirements are too absurd to be discussed even in the abstract. Their unconstitutionality is obvious. There is no court of competent jurisdiction in this broad land of ours which would not, on application, issue a permanent injunction restraining any board organized under the laws now in force from Maine to California from endeavoring to enforce them. I say this with a full realization of the fact that in many other states the act of reciprocity is entirely voluntary.

As evidence of the sincerity and consistency of Dr. Egan's protest as quoted above, the following reciprocity resolutions passed by the Illinois State Board of Health, June 20, 1906, are quoted:

> 2. *Resolved*, That the application of a physician for a state certificate based on a license issued, after examination, by a state board with which the Illinois State Board of Health sustains reciprocal relations, must be accompanied by letters of recommendation with regard to the moral, professional and ethical character of the applicant:
>
> (*a*) From at least two members of the state board of examination issuing the original license, who shall certify that they have personally known the applicant for one year or more; or
>
> (*b*) From a state, district, county or city medical society in the state from which the applicant comes; or
>
> (*c*) From at least two of the duly elected officers of such state, district, county or city medical society, who shall certify that they have personally known the applicant for one year or more; or
>
> (*d*) From at least two physicians approved by the state board of health, who are of national reputation, and who reside in the state from which the applicant comes, and who shall certify that they have personally known the applicant for one year or more; and
>
> (*e*) From at least two reputable physicians, approved by the state board of health, of the county in which the applicant has resided.

Under requirement *b*, as above, compared with the prerequisite of the American confederation complained of, and also compared with the present prerequisite, as amended, I would respectfully ask Dr. Egan to demonstrate to the readers of The Journal wherein lies the material distinction. He pronounces the prerequisite as unconstitutional and states that a court of competent jurisdiction, if applied to, would issue a permanent injunction restraining its enforcement, and yet the Illinois board, having the advantage of Dr. Egan's legal opinion, withdraws from the confederation as a protest against the prerequisite and immediately afterward subscribes to a like qualification.

Under requirement *d*, I would ask Dr. Egan the method by which he measures a physician of "national reputation"—would he consult the newspapers who publish photographs of hese eminent gentlemen, or would he insist that the genlemen in question should have obtained their licenses through board examination? As his board denies the rights of eciprocity to all physicians who have not obtained their icenses through a state board examination I take it that only he former class could be considered eligible to qualify as physicians of national reputation. I would then ask him how many physicians there are of national reputation who have passed state board examinations? As the law requiring such xaminations has been in force in Illinois since 1899, and subequent to this date in nearly all of the other states, thereore, the requirement of a national reputation must have necessarily been acquired during a period of not more than seven years of practice. · In the case of a licentiate who has qualified for reciprocity otherwise than by the state examination method we would have the unqualified recommending the qualified.

The following reeiprocity (?) resolution was also adopted by the Illinois board:

> *Resolved,* That the Illinois State Board of Health will accept in lieu of the examination provided for in Section 2 of the "Act to Regulate the Practice of Medicine in the State of Illinois," approved April 24, 1899, satisfactory evidence of an examination at least equivalent to that exacted by the rules of the Illinois State Board of Health, successfully passed in the United States Army, the United States Navy or the United States Public Health and Marine-Hospital Service, by a surgeon in the service of the United States at the time of making application for a s'ate certificate to practice medicine in the state of Illinois.

The Illinois State Medical Act, Section 7, provides as folows:

> And this act shall not apply to surgeons of the United States Army, Navy or Marine-Hospital Service in the discharge of their official duties.

It is presumed, therefore, that it is within the authority only of the legislature, to grant such exemptions to the act which requires all applicants for license to possess certain qualifications which include a diploma from a reputable medical college and the successful passing of an examination before a state board. The Illinois State Board of Health, however, rises to the occasion, usurps the authority of the state, passes its own state law and grants greater privileges to a set of men than the act creating the board. This is, certainly, an anomaly in state board administration and should be adopted by other state boards, as it will relieve them of the necessity of going to the state legislature for amendments to their act.

It is not possible to shoulder this action of the Illinois board on a reciprocity clause from the fact that the Illinois board's act has no reciprocity in it, and also it is presumed that the Army, Navy and Marine-Hospital boards will not reciprocate the act of the Illinois board by making the licentiates of Illinois army, navy and marine-hospital surgeons.

Will Dr. Egan kindly furnish your readers with an opinion relative to these resolutions from the standpoint of reciprocity and its constitutionality.

In conclusion I would state that the Illinois board has always been held by members of the confederation as a more or less turbulent and wayward sister, subject to occasional disturbed periods, but nothing more serious has been suspected. Her recent symptoms, however, suggest certain degenerative processes, therefore, operative procedure seems indicated. The treatment advocated by the Illinois State Medical Society of the excision of the medical registration function from the public health department in Illinois, to my mind, is the only method promising a radical cure. B. D. Harison.

Marriages

Percy F. Kearney, M.D., to Miss Kissick, both of Bismarck, N. D., recently.

Edward Y. Eberle, M.D., to Miss Lilly T. Everitt, both of Brooklyn, July 3.

Edward F. Hilferty, M.D., to Miss Sara Keyser, both of Philadelphia, June 30.

Joseph K. Phipps, M.D., to Miss Ida V. Anderson, both of Grant City, Mo., June 27.

Charles W. Yarrington, M.D., to Miss Bessie Kratz, both of Calumet, Mich., June 30.

John Kirtland Tressel, M.D., to Mrs. Mary Cena Spade, both of Allinace, Ohio, July 11.

Patrick Hamilton Lloyd, M.D., to Miss Alice Eloise Smith, both of Scotland, Md., July 10.

Charles Joshua Keller, M.D., to Miss May Theodora Gernand, of Baltimore, July 14.

Laurence C. Cook, M.D., Webb City, Mo., to Miss Elizabeth Armstrong, Neosho, Mo., July 2.

James B. Bright, M.D., Russellville, I. T., to Miss Bessie Hughett, of Bentley, Ill., July 4.

Arthur W. Rogers, M.D., Milwaukee, Wis., to Miss Theresa Limberg, of Evanston, Ill., July 3.

William S. Frost, M.D., Lily, S. D., to Miss Maude M. Bartleson, of Minneapolis, June 26.

Walter H. Simmons, M.D., Fordyce, Ark., to Miss Lydia A. Cook, of Hot Springs, Ark., July 3.

Andrew J. Stevens, M.D., Malden, Mass., to Miss Catherine C. Frost, of Melrose, Mass., recently.

Henry W. Clausen, M.D., St. Louis, to Miss Adolphina Margraf, at St. Charles, Mo., July 2.

John F. Miller, M.D., Andover, S. D., to Miss Gertrude L. Schuster, of Naperville, Ill., June 26.

Gardner C. Johnson, M.D., Liverpool, Ohio, to Miss Agnes G. Niehoff, of Horricon, Wis., June 25.

Charles Benjamin Fuller, M.D., Waltham, Mass., to Miss Alice C. Lawrence, of Boston, recently.

Harry F. Wagenseller, M.D., Derry Church, Pa., to Miss Bessie Ulrich, of Selinsgrove, June 20.

William M. Oates, M.D., Bridgeport, Ohio, to Miss Isabelle E. McEachen, of Columbus, Ohio, June 27.

George Ewart Wilson, M.D., Palmerston, Ontario, to Miss Bessie C. Pearson, of Granton, Ontario, July 4.

Ernest P. Roop, M.D., Camden-on-Gauley, W. Va., to Miss Rosa May Fox, of Spring Hill, W. Va., June 30.

Ransom J. Jones, M.D., Crawford, Miss., to Miss Mildred Virginia Whitehead, of West Point, Miss., June 20.

Charles R. McLean, M.D., Ewa, Hawaii, to Miss Anna Elizabeth Potts, of Wilkesbarre, Pa., at Honolulu, June 16.

Deaths

John William Bullard, M.D. Northwestern Medical College, St. Joseph, Mo., 1883; Missouri Medical College, St. Louis, 1887; Jefferson Medical College, Philadelphia, 1893; a member of the American Medical Association, formerly president of the Nebraska State Medical League, secretary of the Council of the Nebraska State Medical Society, a member of the American Academy of Ophthalmology and Oto-Laryngology, Western Surgical and Gynecological Association, and Pawnee County Medical Society, one of the leading practitioners of Nebraska, died at his home in Pawnee City, July 2, from carcinoma of the stomach, after an illness of several months.

Albert H. Holliday, M.D. Toronto University Medical faculty, 1889; president of the Grand Traverse Medical Society; a member of the American Medical Association and of the Michigan State Medical Society; a specialist in diseases of women and children, died at his home in Traverse City July 6, from cerebral hemorrhage, after an illness of a few hours, aged 47. At a special meeting of the Grand Traverse Medical Society July 6, resolutions were passed relative to the death of Dr. Holliday.

Frederick H. Leet, M.D. Medical Department of Western Reserve College, Cleveland, 1858, one of the oldest practitioners of Mercer County, Pa., assistant surgeon of the Fifty-seventh Pennsylvania Volunteer Infantry in the Civil War, died at his home in Greenville, Pa., June 23, from injuries sustained in a fall, in which he fractured his hip, a few days before, aged 84.

John F. Shackelford, M.D. Medical College of Georgia, Augusta, 1850; Medical College of the State of South Carolina, Charleston, 1860; in 1895 a member of the City Council of Columbus, Ga.; assistant surgeon in Pickett's division of the Army of Northern Virginia during the Civil War, died at his home, June 17, after an illness of a year, aged 70.

David B. Horton, M.D. University of Buffalo (N.Y.) Medical Department, 1874; some-time president of the Wayne County (N. Y.) Medical Society; died in his office in Wolcott, N. Y., July 9, from the effects of carbolic acid, taken with suicidal intent. He had recently suffered a cerebral hemorrhage, and had been despondent by reason of this.

R. S. Coleman, M.D. University of Tennessee, Medical Department, Nashville, 1899; health officer and medical referee of Calloway County, Ky., for many years and a member of the Kentucky State Medical Association and of the Caldwell-Lyon Medical Society, died at his home in Princeton, Ky., from paralysis, July 13, aged 75.

William Richard Keyes, M.D. University of Vermont, Medical Department; Burlington, 1898; milk inspector for the village of Glens Falls, N. Y., a member of the local county and state medical associations, consulting oculist to Parks Hospital, died at his home in Glens Falls, June 22, from tuberculosis, after a long illness, aged 42.

Willis Sims Horne, M.D. Atlanta (Ga.) Medical College, 1895; a member of the Brazos Valley Medical Society, contract surgeon in the U. S. Army, serving in the Philippines for two years, died at the home of his mother in Marlin, Tex., from septicemia, after an illness of six days, January 23, aged 31.

Samuel Rutherford Millen, M.D. Rush Medical College, Chicago, 1882, for nearly twenty-five years a practitioner of Clarinda, Iowa, a member of the Clarinda School Board, coroner and a member of the examining board for Page County, died suddenly in Bigelow, Mo., June 19, from heart disease, aged 52.

John Andrew Harvey, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1875; a veteran of the Civil War; sheriff of Schuyler County, Ill., in 1876; the oldest practicing physician of Rushville, Ill., died at his home in that place, July 7, from cerebral hemorrhage, after an illness of four days, aged 71.

Julia Wallace Russell, M.D. Woman's Medical College of the New York Infirmary, 1877, one of the first women physicians of New Hampshire and one of the prime movers and founders of the New Hampshire Memorial Hospital for Women and Children, Concord, died in that institution, July 1, aged 62.

John Montague Mahr, M.D. Eclectic Medical Institute, Cincinnati, 1867; hospital steward during the Civil War; representative from Labette County in the Kansas Legislature in 1870-1871, and postmaster of McCune for several years, died at his home in that city from malignant disease, June 26, aged 61.

George H. Spafford, M.D. Albany (N.Y.) Medical College, 1859, assistant surgeon of the Sixteenth Vermont Volunteer Infantry during the Civil War, a member of the Pension Examining Board and school director, died at his home in Cavendish, Vt., June 18, after an illness of six months.

Dumont Garey, M.D. University of Louisville, Medical Department, 1899; a member of the American Medical Association and secretary of the Floyd County (Ind.) Medical Society, died at his home in New Albany, Ind., July 7, from typhoid fever, after an illness of two weeks, aged 51.

Harry A. Eberle, M.D. McGill University Medical Department, Montreal, 1876, formerly of Webster City, Iowa, and for several years thereafter a surgeon in the army, died at his home in Greensboro, N. C., July 5, from spinal paralysis, after an illness of more than two years, aged 62.

J. Irvin Boone, M.D. University Medical College of Kansas City, 1903, secretary of the Chickasha (I. T.) Academy of Medicine, a member of the Central Oklahoma Medical Society, died at Chickasha, June 2, from hemorrhagic smallpox, June 10, after an illness of two weeks, aged 35.

Carl Henry Kehnroth, M.D. University of Erlangen, Germany, 1860, a lieutenant in the British Army during the Crimean War and for many years a teacher of languages in New York City, died in the French Hospital, New York City, July 2, from nephritis, aged 70.

John E. Conlan, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1878, of Munith, Mich., died at the City Hospital, Jackson, Mich., June 30, from complications following an operation for the removal of gallstones a week before, aged 57.

Arthur F. Baldinger, M.D. Homeopathic Hospital College, Cleveland, 1889, of Cleveland, Ohio, professor of obstetrics in the Cleveland Homeopathic Medical College, died at the Cleveland State Hospital, July 7, from cerebral hemorrhage, after an illness of two years.

William Boone Clarke, M.D. Medical College of the State of South Carolina, Charleston, a Confederate veteran, for more than forty years a practitioner of medicine, died at his home in Marks, Miss., June 3, from paralysis, after an illness of four months, aged 73.

Frank Ewing, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1870, a veteran of the Civil War, died suddenly in his dooryard at Ottawa, Ohio, June 30, from heart disease, from which he had suffered for twenty years, aged 63.

John W. Reilly, M.D. Bellevue Hospital Medical College, New York City, 1881, at one time a member of the Sangamon County (Ill.) Pension Board, died at his home in Springfield, June 27, from rheumatism of the heart, after a long illness, aged 47.

J. F. Jordan, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1894, a member of the American Medical Association and one of the prominent citizens and practitioners of South McAlester, I. T., died in a sanitarium at Dallas, Tex., July 2.

Palmer C. Cole, M.D. Harvard University Medical School, Boston, 1858; a surgeon in the army during the Civil War; first president of the New York Harvard Alumni Association, died suddenly at his home in New York City, July 4, aged 71.

Daniel Boone Clarke, M.D. Georgetown University, Medical Department, Washington, D. C., 1857, never a practitioner of medicine, died at his home in Washington, June 3, from intestinal obstruction after an illness of one week, aged 81.

Thomas McCracken, M.D. College of Physicians and Surgeons, Chicago, 1886, of Puyallup, Wash., was struck by an engine while going along the railway track near that place, thrown under the wheels and instantly killed, April 11.

Carl Dio Perry, M.D. Cooper Medical College, San Francisco, 1903; president of the Fresno County Medical Society, died at his home in Fresno, Cal., June 28, from tuberculosis of the kidneys and intestines, after a prolonged illness, aged 38.

Henry Booth Kendall, M.D. Ecole de Medecine et de Chirurgie, Montreal, Quebec, a member of the American Medical Association and of the Brown County (Wis.) Medical Society, died at his home in Menasha, Wis., July 2, aged 53.

Theodore De Mont Kellogg, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1874, health officer of San Bernardino County for many years, died suddenly at his home in Chino, Cal., July 4, from heart disease, aged 61.

Harry W. Garrett, M.D. University Medical College of Kansas City, 1899, a practitioner of Dodge City, Kan., died at the home of his father in Orwigsburg, Pa., July 8, from tuberculosis, after a prolonged illness, aged 32.

Charles C. Smith, M.D. University of Vermont, Medical Department, Burlington, 1865, a veteran of the Civil War, twice state representative and once state senator, died at his home in Gaysville, Vt., June 19, aged 76.

Jacob Mytinger Gemmill, M.D. Jefferson Medical College, Philadelphia, 1870, a member of the American Medical Association, died suddenly from dilatation of the heart at his home in Tyrone, Pa., July 3, aged 56.

John Peter Schmitz, M.D. California Medical College, San Francisco, 1881, for many years professor of physiology and nervous diseases in that institution, died at his home in San Francisco, July 4, aged 72.

Thomas F. McCreary, M.D. Bellevue Hospital Medical College, New York City, 1866, a retired physician, local preacher and prominent farmer of Dickson, Tenn., died at his home, June 27, from heart disease.

Charles C. Gordon, M.D. Hospital College of Medicine, Louisville, 1894; St. Louis College of Physicians and Surgeons, 1896, of Highland, Ill., died at the home of his father in Pocahontas, Ill., July 11.

James M. Gelwix, M.D. Jefferson Medical College, Philadelphia, 1866, died at his home in Upper Strasburg, Pa., July 11, from paralysis agitans, after an illness of thirteen years, aged 62.

Frank Richard, M.D. Miami Medical College, Cincinnati, 1873, of West Point, Iowa, died at Mercy Hospital, Burlington, June 29, from senile debility, after a protracted illness, aged 81.

George W. Birch, M.D. Medical Institution of Yale College, New Haven, Conn., 1858, a member of the Connecticut Medical Society, died at his home in Stamford, Conn., July 4, aged 75.

J. Fletcher Grimes, M.D. Cincinnati College of Medicine and Surgery, 1800, died from septicemia, due to an operation wound, July 9, at his home in Winton Place, Cincinnati, aged 40.

Ezra B. Bemiss, M.D. New York Homeopathic Medical Colege and Hospital, New York City, 1886, died suddenly from heart disease at his home in Newark, N. J., July 11, aged 43.

Joseph L. Howell, M.D. University of Buffalo (N. Y.) Medcal Department, 1898, died at his home in Avoca, N. Y., July 9, from typhoid fever, after an illness of two weeks, aged 38.

William H. Holroyd, M.D. College of Physicians and Surgeons, Baltimore, 1884, and a practitioner of Athens, W. Va., since that time, died at his home in Athens July 4, aged 44.

Samuel George Dailey, M. D Medical College of Georgia, Augusta, 1853, died at his home in Kenedy, Tex., March 13, from Bright's disease, after an illness of ten days, aged 73.

David Jeffries Appleby, M.D. College of Physicians and Surgeons, Baltimore, 1872, died at his home in Tyrone, Pa., July 3, from uremia, after an illness of three weeks, aged 57.

William C. Doran, M.D. Detroit College of Medicine, 1903, died suddenly from the effects of poison, taken, it is supposed, accidentally, at Leland, Idaho, June 17, aged 27.

Joseph B. Hosken, M.D. University of Michigan, Department of Medicine and Surgery, 1875, died suddenly at his home in Grand Rapids, Mich., July 10, from acute indigestion.

William P. Andrew, M.D. Indiana Medical College, Laporte, 1843, a clergyman, lawyer and physician, died suddenly at his home in Laporte, Ind., May 18, aged 97.

Charles M. Ebert, M.D. Jefferson Medical College, Philadelphia, 1860, fell downstairs at his home in Mauch Chunk, Pa., and died instantly, aged 84.

Isaac Rivas, M.D Medical School, City of Mexico, 1857, for many years Mexican consul in San Francisco, died at his home in that city, July 9, aged 72.

Lubie McGee, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1901, of Zona, La., died in a sanitarium in New Orleans, July 4, aged 32.

William Wallace Skinner, M.D. Rush Medical College, Chicago, 1891, of Peoria, died at the home of his daughter in that city, June 17, aged 71.

Franklin W. Bigony, M.D. Jefferson Medical College, Philadelphia, Pa., 1852, died at his home in Montgomeryville, Pa., June 23, aged 103.

Silas Fulton Edgar, M.D. Pulte Medical College, Cincinnati, 1874, died from heart disease at his home in Zanesville, Ohio, July 10, aged 71.

Benjamin Otis Hester, M.D. University College of Medicine, Richmond, Va., 1896, died at his home in Haskell, Tex., June 23.

Barnett C. Walter, M.D. Jefferson Medical College, Philadelphia, 1859, died at his home in Dry Land, Pa., July 11, aged 74.

E. A. Jones, M.D. Missouri Medical College, St. Louis, 1874, died at his home in Cosby, Mo., June 26, from gastric disease.

Cyrus Doggett, M.D. Medical College of Virginia, Richmond, 1861, died at his home in Fincastle, Va., July 2, aged 65.

Josiah S. Richardson, M.D. (examination, Minnesota, 1883), died at his home in Perham, Minn., July 4.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A SAN FRANCISCO PHYSICIAN'S EQUIPMENT.

X. D. writes: "In the recent San Francisco 'chill and fever spell' I received my share, for all I saved was my bow-legged dachshund, an obstetric forceps, and an umbrella, which I had forgotten at a patient's house a few days before the 'quake' came. Wasn't I lucky? I do remarkably well now. I made already fifty cents since. I leased a two story seven-room house (on credit) for 5 years, and my office outfit consists of a borrowed table and chair and an empty wooden box which I picked up on the street. In my parlor I have now two of them so my patients can sit down. I am now in the business center of the town. Am I not stylish?"

RECIPROCITY WITH TEXAS AND GEORGIA.

Georgia, July 10, 1906.

To the Editor:—1. What states reciprocate with Georgia? 2. With Texas?

Answer.—Texas reciprocates with Georgia. 2. Georgia, Indiana, Iowa, Nevada, New Jersey and Virginia reciprocate with Texas.

PRIZE FOR HOSPITAL PLANS AT ST. LOUIS FAIR.

A correspondent informs us, concerning the inquiry in The Journal last week, page 135, that at the World's Fair at St. Louis a gold medal was awarded to Dr. A. J. Ochsner and Mr. M. J. Sturm, Chicago, for hospital plans for a general hospital for a large city, one for a hospital for contagious diseases, one for an obstetric hospital and one for a hospital for small towns.

THE STUDY OF GYNECOLOGY AND OBSTETRICS IN GERMANY.

Dr. J. L. S. asks: "What is the best foreign school of gynecology and obstetrics and what would be the expenses for two persons, man and wife, for a year or eighteen months, including all travelling and living expenses, with books, etc. Would you advise a course in German."

Answer: As our questioner asks about a course in German we assume that he has in mind when speaking of foreign schools those of Germany or Austria. A knowledge of German sufficient to understand the lectures and ordinary conversation is essential. It is true that in Vienna and Berlin there are a few assistants who give courses in English, but they are limited and ignorance of the languages is a handicap that should be removed as soon as possible. Any one with a limited knowledge of German who goes to Germany to study should at once secure a teacher and devote several hours a day to securing a working knowledge of the language.

The largest available opportunity for obstetric observation is in Vienna. The gynecologic cases in that city are also numerous and fairly accessible. With proper introductions it is probably the most satisfactory place for an American for work the whole year round. Vacation courses are given in other places, and especially in Berlin for four to six weeks, in September and October before the beginning of the winter term, that are especially adapted to practitioners, and furnish a large amount of well laid out work. In Berlin also one may see much gynecologic work and some obstetric. Prof. v. Winckel, of Munich, and Professor Leopold, of Dresden, have for years admitted some Americans to a certain amount of work in their hospitals as voluntary assistants. The possibilities of securing such a place can be determined by writing to these men. Of course a good knowledge of German would be necessary. The clinic in Prague is large, and for many years it has been a favorite school for Americans. The Heidelberg clinic is smaller, but its director, Prof. v. Rosthorn, who visited America this year as the guest of the American Medical Association, always welcomes Americans and gives them every possible opportunity. It is frequently a good plan for an American making his first trip to Europe to spend some time in a smaller place and learn the German ways and then to go to the larger schools. The cost of living in Germany is considerably less than in America. One can live in a very good pension or boarding house for $25.00 a month. If one wishes to rent rooms and keep house the expense could be made much less than here. The pay of servants is about one-fourth or one-fifth of what it is in most American cities. Railroad traveling is also about one-half as expensive as on American roads. The tuition in the universities is small. On the other hand, if a foreigner wishes to take many special courses he must expect to pay liberally for them.

State Boards of Registration

COMING EXAMINATIONS.

Pennsylvania State Board of Medical Examiners, Haddon Hall, Atlantic City, New Jersey, July 30. Secretary, Joseph H. Willetts, Westinghouse Building, Pittsburg.

Nevada State Board of Medical Examiners, Carson City, August 6. Secretary, S. L. Lee, Carson City.

Nebraska State Board of Health, State House, Lincoln, August 8-9. Secretary, Geo. H. Brash, Beatrice.

Missouri State Board of Health, St. Louis, August 8-9. Secretary, J. A. B. Adcock, Warrensburg.

California State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco. *(Applications must be in August 4.)

Increased Requirements in Illinois.—At its meeting held in Chicago, June 20, 1906, the State Board of Health voted to adopt the following as the minimum preliminary entrance requirement to the study of medicine. This standard was adopted by the National Confederation of State Medical Examining and Licensing Boards at Boston, June 4, 1906:

1. A high school diploma from a recognized high school, or its equivalent in the form of a certificate showing that the applicant has passed a satisfactory examination in all branches usually em-

braced in the curriculum of a four-year high school course, said certificate to be either issued or passed on by some designated state official, such as the superintendent of public instruction, and not by any one connected with any medical college.

2. Satisfactory documentary evidence of having completed at least one year of not less than nine months of work in chemistry, biology, physics and languages in either a recognized institution of learning chartered to confer liberal degrees or in a recognized medical college having a special additional year devoted exclusively to the above subjects, this requirement to apply to all students matriculating after Jan. 1, 1910.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending June 30, 1906:

Woodruff, Chas. E., surgeon, will proceed from Plattsburg Barracks, N. Y., to Mount Gretna, Pa. (via Headquarters Department of the East, Governor's Island, N. Y., to consult with the chief surgeon), for duty in connection with the encampment at that point.

Ashford, B. K., asst.-surgeon, will accompany E and H, 2d Battalion Engineer Troops, from Washington Barracks, D. C., to Mount Gretna, Pa., for duty during the encampment at that point.

Nelson, Kent, asst.-surgeon, will accompany F and G, 2d Battalion Engineer Troops from Washington Barracks, D. C., to Chickamauga Park, Ga., for duty during the encampment at that point.

Ekwurzel, Geo. M., asst.-surgeon, will proceed to Fort Slocum, N. Y., for temporary duty, and on its completion will return to temporary duty at Fort Hamilton, N. Y.

Rhoades, Thos. L., asst.-surgeon, left West Point, N. Y., on seven days' leave of absence.

Pyles, W. L., asst.-surgeon, left Jefferson Barracks, Mo., en route with recruits to Fort Wright, Wash.

Le Wald, Leon T., asst.-surgeon, left Fort Slocum, N. Y., en route with recruits to Fort Wright, Wash.

Grissinger, J. W., asst.-surgeon, will, on the expiration of leave of absence, proceed to Mount Gretna, Pa., for duty during the encampment at that point.

Baker, David, asst.-surgeon, on the abandonment of Fort Niobrara. Neb., ordered to Fort Bliss, Texas, for duty.

Hartsock, F. M., asst.-surgeon, relieved from duty at Fort Bliss. Texas, and ordered to New York City for duty as attending surgeon and examiner of recruits and as medical superintendent of the Army Transport Service in that city.

Wilson, Wm. H., asst.-surgeon, relieved from duty in New York City, N. Y., as attending surgeon and examiner of recruits, and as medical superintendent of the Army Transport Service, and ordered to Fort Hamilton, N. Y., for duty.

Cox, Walter, asst,-surgeon, granted leave.of absence for two months

Ekwurzel, Geo. M., asst.-surgeon, assignment to temporary duty at Fort Slocum, N. Y., is revoked.

Wales, Phillip G., surgeon, granted four months' leave of absence to take effect on arrival in the United States.

Lyster, Theo. C., asst.-surgeon, detailed as a member of examining board to meet at Ancon, Canal Zone, Isthmus of Panama, for the examination of medical officers to determine their fitness for pro motion or advancement.

Crabtree, Geo. H., asst.-surgeon, will report in person. August 1, 1906. to Col. William C. Gorgas. assistant surgeon general, president, examining board. Ancon, Canal Zone, Isthmus of Panama, for examination to determine his fitness for advancement.

Smith, H. M., first lieutenant, asst.-surgeon, Aug. 27, 1906; Bartlett, C. J., first lieutenant, asst.-surgeon, Aug. 27, 1906; Eastman, W. R., first lieutenant, asst.-surg., Sept. 20, 1906; and Hall, Jas. F., first lieutenant, asst.-surgeon, Sept. 20, 1906, will report in person on the dates specified, to Lieut.-Col. Geo. H. Tornew, deputy surgeon general, president, examining board at Army General Hospital, Presidio of San Francisco, for examination to determine their fitness for advancement.

Borden, Wm. C., surgeon, left Army General Hospital, Washington Barracks, D. C., on ten days' leave of absence.

Miller, R. B., first lieutenant; Ragau, Chas. A., first lieutenant; Metcalfe, R. F., first lieutenant; Rich, Edwin W., first lieutenant; Boyer, Perry L., first lieutenant, and Phalen, James M., first lieutenant, will report in person on Sept. 20, 1906, to Major Wm. H. Arthur, surgeon, president, examining board at Army Medical Museum Building, Washington. D. C., for examination to determine their fitness for advancement.

Raymond, Thos. U., surgeon; Purviance, Wm. E., surgeon, and Bratton, Thos. S., asst.-surgeon, appointed members of a board of officers to meet at Manila, P. I., for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement.

Jean, Geo. W., asst.-surgeon, ordered to report in person to Major Thomas U. Raymond, surgeon, president, examining board, Manila, P. I., on Sept. 3, 1906, to determine his fitness for advancement.

Dutcher, B. H., asst.-surgeon, relieved from further temporary duty with Co. A, Hospital Corps, General Hospital, Washington Barracks, D. C., and will proceed to San Francisco, and take the first available transport sailing for the Philippine Islands, and on arrival at Manila, report in person to the commanding general, Philippines Division, for assignment to duty.

Kuhn, Charles F., contract surgeon. returned from San Francisco, to his proper station, Fort Lawton, Wash.

Pomeroy, William H., contract surgeon, granted leave of absence for one month.

Rietz, Hugo C., dental surgeon, left Fort Wayne, Mich., for his proper station, Fort Sheridan, Ill.

Wolven, F., Homer, dental surgeon, ordered from Fort Warren, Mass., to Fort H. G. Wright, N. Y., for duty.

Bailey, Edward, contract surgeon, left Fort Wright, Wash., on leave of absence for four months.

Johnstoue, Ernest K., contract surgeon, ordered from Chicago to San Francisco, for duty in the Department of California.

Sanford, Joseph L., contract surgeon, granted leave of absence for one month in the United States.

Cutliffe, William O., contract surgeon, granted leave of absence for three months in the United States.

Shellenberger, James E., contract surgeon, ordered, on the abandonment of Fort Ringgold, Texas, to Fort Brown, Texas, for duty.

Pinkston, Omar W., contract surgeon, ordered from Kansas City, Mo., to the Military Prison, Port Leavenworth, Kansas, for temporary duty.

Newton, Ralph W., contract surgeon, ordered from San Francisco, to Barre, Vt., for annulment of contract.

Slater, Ernest F., contract surgeon, left Fort Hancock, N. J., and arrived at Fort Adams, R. I., for temporary duty.

Adair, George F., contract surgeon, left Fort Wadsworth, N. Y., and arrived at Fort Slocum, N. Y., for temporary duty.

Hutson, T. Ogier, contract surgeon, arrived at Fort McPherson, Ga., for duty.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 14, 1906:

Edger, B. J., Jr., asst.-surgeon, reports arrival at Fort Sam Houston, Texas, on detached duty, from Fort Brown, Texas.

Wakeman, Wm. J., surgeon, left Fort Thomas, Ky., with troops en route to Camp of Instruction, Fort Benjamin Harrison, Ind.

Marrow, Chas. E., asst.-surgeon, left Fort Monroe, Va., en route to Fort Myer, Va., for duty with Squadron, 13th Cavalry, Camp of Instruction, Mount Gretna, Pa.

Jones, Percy L., asst.-surgeon. left Fort Preble. Maine, en route to Fort Ethan Allen, Vt., for duty with artillery from that post at Mount Gretna, Pa.

Webber, Henry A., asst.-surgeon, left Fort Banks, Mass., en route to Plattsburg Barracks. N. Y., for duty with the Fifth Infantry, at Mount Gretna, Pa.

Mason, Charles F., surgeon, left Surgeon General's Office, Washington, D. C., on thirty days' leave of absence.

Gandy, Chas. M., surgeon, in addition to his present duties is detailed as professor of military hygiene at the U. S. Military Academy, West Point.

Carroll, James, asst.-surgeon, detailed to represent the Medical Department of the Army at meeting of the British Medical Association at Toronto, Canada, August 21 to 25, 1906.

Scott, Geo. H., asst.-surgeon, leave of absence extended one month.

Smart, Robert, asst.-surgeon, left Fort Myer, Va., en route to Chickamauga Park, Ga., for duty.

Dutcher, B. H., and Woodbury, F. T., asst.-surgeons, left San Francisco, on the *Sheridan* en route to Manila, P. I.

Fuller, Leigh A., asst.-surgeon, granted 14 days' leave of absence, to take effect on his being relieved from duty at Fort Clark. Texas.

McCaw, W. D., surgeon, left Surgeon General's Office on leave of absence to July 15, 1906.

Whitcomb, C. C., asst.-surgeon, left Fort McKinley, Maine, en route to Fort Ethan Allen, Vt., for duty with troops to and at Mount Gretna, Pa.

Whitmore, E. R., asst.-surgeon, left Fort Jay, N. Y., with troops for duty at Mount Gretna, Pa., arriving at Mount Gretna, same date.

Kneedler, Wm. L., surgeon, retired from active service on account of disability incident thereto.

Cox, Walter, asst.-surgeon left Fort Reno, O. T., en route to Fort Riley, Kansas, with second Battalion, 30th Infantry.

Foster, Douglas E., dental surgeon, ordered from Oklahoma City, Oklahoma, to the Philippines Division for duty.

Myers, William H., contract surgeon, ordered from Lynn Grove, Kentucky, to Washington Barracks. D. C., for duty.

Henning, Oswald F., contract surgeon, ordered from Chicago, to Fort Sheridan, Illinois, for duty.

Tuttle, George B., contract surgeon, relieved from temporary duty in the Department of California, and ordered to Fort Columbia, Washington, for duty.

Wing, Franklin F., dental surgeon, left Fort Meade, S. Dak., and arrived at Fort Riley, Kansas, for duty.

Hogan, David D., contract surgeon, arrived at Fort Hamilton. N. Y., for duty.

Koyle, Fred T., contract surgeon, returned to Fort McDowell, Cal., from temporary duty at Fort Mason, Cal.

Brown, Wilmont E., contract surgeon, granted leave of absence for three months.

Newton, Ralph W., contract surgeon, granted leave of absence for two months.

Pomeroy, William H., contract surgeon, left Springfield Armory Mass., on leave of absence for one month.

Lemmon, Robert, contract surgeon, left Fort Warren, Mass., and arrived at Fort McKinley, Maine, for duty.

Wolven, F. Homer, dental surgeon, left Fort Mansfield. R. I., and arrived at Fort Trumbull, Conn., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 14, 1906:

Iden, J. H., P. A. surgeon, to duty with Marines at Camp Elliott, Panama.

Smith, W. B., asst.-surgeon, detached from U. S. R. S. *Hancock* and to examination for promotion, July 16, 1906, and then to wait orders.

Pease, T. N., asst.-surgeon, to examination for promotion, July 16, 1906, and thence to U. S. R. S. *Hancock*.

Dorsey, B. H., asst.-surgeon, detached from U. S. R. S. *Lancaster* and to examination for promotion, July 16, 1906, then to wait orders.

Wise, A. H., surgeon, acting asst.-surgeon, detached Navy Yard. Washington, D. C., home and granted leave until expiration of appointment, July 14, 1906.

Guest, M. S., surgeon, detached from Naval Training Station, Newport, R. I., and to the U. S. S. *Tennessee*.

Brownell, C. DeW., surgeon, detached from Naval Recruiting Station, Providence, R. I., and to Naval Training Station, Newport, R. I., and additional duty on the *Constellation*.

Bucher, W. H., surgeon, detached from Naval Medical School and to Naval Recruiting Station, Providence, R. I.

Smith, H. L., acting asst.-surgeon, appointed an acting assistant surgeon in the Navy from July 5, 1906.

Payne, J. H., Jr., P. A. surgeon, detached from U. S. S. *Nashville* when out of commission, home and wait orders.

Butts, Heber., asst.-surgeon, ordered to the U. S. Naval Academy, Annapolis, Md.

Raison, T. W., asst.-surgeon, ordered to the U. S. Naval Hospital, Norfolk, Va

Hoehling, A. A., medical director (retired), detached from Naval Medical Examining Board, Washington, D. C., and to his home.

Public Health and Marine-Hospital Service.

List of changes of station and duties for commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending July 11, 1906.

Sawtelle, H. W., surgeon, granted leave of absence for two months from July 5, 1906, on account of sickness.

Rosenau, M. J., P. A. surgeon, granted leave of absence for three days from July 8, 1906, under Paragraph 189 of the Regulations.

Stausfield. H. A., P. A. surgeon, granted leave of absence for one day, July 4, 1906, under Paragraph 191 of the Regulations.

Schereschewsky, J. W., P. A surgeon, granted leave of absence for two days, from June 28, 1906, under Paragraph 191 of the Regulations.

Roberts, N., asst.-surgeon, relieved from duty at Fort Stanton, N. M., and directed to report at the Bureau, Washington, D. C., for temporary duty in the Hygienic Laboratory.

Smith, F. C., asst.-surgeon, granted leave of absence for seven days.

McConnell, E. F., acting asst.-surgeon, assigned to duty at Banes, Cuba.

Rodman. J. C., acting asst.-surgeon, granted leave of absence for ten days from June 29, 1906.

Smyth, F. R., acting asst.-surgeon, granted leave of absence for five days from July 3, 1906.

Stuart, A. F., acting asst.-surgeon, granted leave of absence for twenty-one days from July 9, 1906.

Walker, T. D., acting asst.-surgeon, leave of absence granted for eight days from June 8, 1906, amended to read six days from June 5, 1906.

Gibson, R. H., pharmacist, granted leave of absence for four days.

Brown, F. L., pharmacist, relieved from duty at Pittsburg, Pa., and directed to proceed to Baltimore, Md., reporting to the medical officer in command for duty and assignment to quarters.

McKay M., pharmacist, relieved from duty at Washington, D. C., and directed to proceed to Savannah, Ga., via Cincinnati, reporting to the medical officer for duty.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service, during the week ended July 13, 1906:

SMALLPOX—UNITED STATES.

California: Stockton, June 1-30, 1 case.
Florida: Jacksonville, June 23-July 7, 2 cases.
Georgia: Augusta, June 25-July 9, 6 cases.
Illinois: Galesburg, June 23-July 7, 27 cases, 1 death.
Louisiana: New Orleans, June 23-July 7, 12 cases, 2 deaths.
Maine: Houlton, July 6, 1 case.
Massachusetts: New Bedford, June 30-July 7, 5 cases.
Missouri: St. Louis, June 30-July 7, 3 cases.
Nebraska: Omaha, June 8-30, 7 cases.
New York: New York City, June 23-30, 3 cases.
Ohio: Cincinnati, June 29-July 6, 1 case.
Oklahoma: Oklahoma City, June 8-July 7, 19 cases, 1 death.
Tennessee: Knoxville, June 23-30, 1 case (imported). Memphis, June 23-July 7, 5 cases.
Wisconsin: Appleton, June 23-30, 1 case; La Crosse, June 23-30, 2 cases; Milwaukee, June 29-July 7, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, May 12-26, 5 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, May 19-June 2, 8 cases.
Brazil: Rio de Janeiro, May 27-June 10, 1 case.
Canada: Toronto, June 16-30, 3 cases.
France: Paris, June 16-23, 13 cases.
Gibraltar: June 10-24, 5 cases, 1 death.
Great Britain: Hull, June 16-23, 1 case; London, June 16-23, 7 cases.
India: Bombay, June 5-12, 8 deaths; Calcutta, May 26-June 2, 40 deaths; Karachi, June 3-10, 10 cases, 3 deaths; Madras, June 2-8, 2 deaths; Rangoon, May 26-June 2, 12 deaths.
Italy (general): June 14-21, 14 cases.
Russia: Odessa, June 9-23, 15 cases, 1 death; St. Petersburg, June 2-16, 8 cases, 4 deaths.
Spain: Barcelona, June 10-20, 5 deaths; Seville, May 1-31, 53 deaths.

YELLOW FEVER.

Costa Rica: Limon, June 23, 1 case.

CHOLERA—INSULAR.

Philippine Islands: Manila, May 12-26, 4 cases, 4 deaths; provinces, May 12-26, 39 cases, 28 deaths.

CHOLERA—FOREIGN.

India: Bombay, June 5-12, 21 deaths; Calcutta, May 26-June 2, 41 deaths; Madras, June 2-8, 2 deaths; Rangoon, May 26-June 2, 2 deaths:.

PLAGUE.

Brazil: Rio de Janeiro, May 27-June 3, 1 case, 1 death.
Egypt: Alexandria, June 15-21, 2 cases, 2 deaths; Beni Souef Province, June 18, 1 case; Garbeih, June 16, 1 case, 1 death.
India: General, May 12-19, 13,061 cases, 11,783 deaths; May 26-June 2, 7,888 cases, 7,027 deaths; Bombay, June 5-12, 106 deaths; Calcutta, May 26-June 2, 57 cases; Karachi, June 3-10, 69 cases, 63 deaths; Rangoon, May 26-June 2, 53 cases.
Peru: General, June 9, 4 cases; Lima, June 2-9, 1 case.

Book Notices

The Physical Examination of Infants and Young Children. By T. W. Kilmer. M.D. Illustrated with 59 half-tone engravings. Cloth. Pp. 86. Price 75c net. Philadelphia: F. A. Davis & Co., 1906.

This work treats of many points in the examination of infants generally overlooked in the larger text-books. Kilmer mentions the different types of children and the ways of handling each. The causes of a baby's cry are enumerated with the means of distinguishing them. The various steps in a physical examination—mensuration, palpation, examination of eyes and ears, etc.—are given, and each step is shown in illustrations. The book should be of value to every general practitioner and especially to the recent graduate.

Pathology, General and Special, for Students of Medicine. By R. T. Hewlett, M.D., M.R.C.P., D.P.H., Professor of General Pathology and Bacteriology in King's College, London; Lecturer on Bacteriology, London School of Tropical Medicine, etc. Cloth. Pp. 540. Price, $3.25. Philadelphia: P. Blakiston's Son & Co., 1906.

Hewlett's book is a small volume designed especially for the use of students, to whom it should prove useful as an introduction to the study of pathology. The ground is well covered and the discussion of the various subjects, especially of those under the heading of "General Pathology," is up to date and yet conservative. The tone is not offensively dogmatic, but rather suggestive and stimulating. On this account this book should find favor with teachers who feel that they must recommend to their students a given book of small size.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By H. W. Stelwagon, M.D., Ph.D., Fourth Edition. Thoroughly Revised. 258 Illustrations and 32 full-page lithographic and half-tone plates. Cloth. Pp. 1136. Price, $6.00 net. Philadelphia: W. B. Saunders & Co., 1905.

This work has been revised, many illustrations have been added and redundant matter has been deleted. The subject-matter is well arranged and clearly presented. Considerable space is devoted to treatment, many valuable prescriptions are given. While the symptoms and differential diagnosis of syphilis receive much attention, no mention is made of the *Spirochœte pallida*, the now generally accepted cause of syphilis. The illustrations are excellent.

Consumption, Its Relation to Man and His Civilization. Its Prevention and Cure. By J. B. Huber, A.M., M.D., Fellow of the New York Academy of Medicine; Member of the National Association for the Study and Prevention of Tuberculosis. Cloth. Pp. 536. Price, $3.00 net. Philadelphia: J. B. Lippincott Co., 1906.

Dr. Huber's book deals with tuberculosis from a broad point of view and contains a mass of information concerning all phases of human tuberculosis of especial interest to intelligent persons in general, whether medical or non-medical. It should have a wide circulation among all who are interested in tuberculosis, and is just such a book as the physician has frequent opportunity to put into the hands of laymen for purposes of instruction and also guidance. The most technical matters are put for the most part in appendices. The general considerations, the specific cause, predisposition, the sociologic factors, the rôle of the home, prevention, cure, sanatoria, various governmental and non-governmental activities—to mention the general scope of the principal parts of the book—are discussed in such form and language as to be comprehended readily and to interest intelligent persons of all kinds. The author's object is to enlist economic, legislative, sociologic and humanitarian forces in the fight against tuberculosis, which can not be successfully carried on by medical science alone and unaided. Practitioners and students of medicine will find that it will broaden their interest in and conception of tuberculosis to read this book, which is heartily commended to physician and layman alike.

Collected Studies on Immunity. By Prof. P. Ehrlich, Privy Councilor and Director of the Royal Institute for Experimental Therapy, Frankfürt, Germany, and by his Collaborators. A Chapter written expressly for this Edition by Prof. Ehrlich. Translated by C. Bolduan, First Edition. Cloth. Pp. 586. Price, $6.00. New York: John Wiley & Sons, 1906.

An extended review of the subject-matter in this volume does not seem necessary. The original was published in 1904 and Dr. Bolduan's translation includes some recent contributions from Professor Ehrlich's institute as well as a new special chapter by Professor Ehrlich himself. The translation appears to be very satisfactory. The original volume was highly welcome to the numerous workers in the field of immunity, and the present translation places the experimental investigations that form the basis of Ehrlich's genial lateral chain theory of immunity within the ready reach of physicians and others who prefer to use the English language. It goes without saying that the book is indispensable to any such who may desire to go to the original sources in their study of fundamental problems in immunity. The chapters on technic will prove useful to many, even to those who can not themselves make illustrative experiments, because by reading these chapters one gets a much better and clearer understanding of the manner in which the results discussed elsewhere were obtained.

Clinical Applied Anatomy, or the Anatomy of Medicine and Surgery. By Charles R. Box, M.D., B.S., B.Sc., M.R.C.P., F.R.C.S., physician to out-patients of St. Thomas's Hospital, and W. McAdam Eccles, M.S., F.R.C.S., Assistant Surgeon, Joint Lecturer on Anatomy and Demonstrator of Operative Surgery at St. Bartholomew's Hospital. Illustrated by 45 plates, of which 12 are colored, and 6 figures in the text. Cloth. Pp. 471. Price, $4.00. Philadelphia: P. Blakiston's Son & Co., 1906.

The title of this work would be misleading if one's opinion were formed by the contents of other "applied anatomics" that have recently appeared, for it is not a work on anatomy as such, nor does it attempt to go into the applied anatomy of surgical operations. One is rather struck at first on seeing the applied anatomy of measles, tetanus, tapeworm, filariæ, etc., described along with that of tumors, fractures, heart disease, spinal cord lesions, etc., but the idea of the authors has been to point out in a practical clinical way the relations of anatomy to the various diseases, and to show the great value of a knowledge of anatomy in diagnosis and treatment. In this respect it differs from most applied anatomies, and the change is a desirable one and one that can be commended, as but too frequently this most fundamental branch of our science is too much neglected. The work will bear close study and will yield much of value in return.

The Operating Room and the Patient. By R. S. Fowler, M.D., surgeon to the German Hospital, Brooklyn, New York. Fully Illustrated. Cloth. Pp. 172. Price, $2.00 net. Philadelphia: W. B. Saunders Co., 1906.

This little work is especially adapted to the use of internes and nurses. In plain and concise terms it describes the paraphernalia and arrangement of the operating room, and gives detailed information in regard to the sterilization and preparation of dressings, solutions and other accessories of the operating room. The preparation of the patient for operation, his various positions on the operating table, and the dressing of the wound after completion of the operation are adequately described. The chapter on anesthesia should prove valuable to the beginner. The after treatment of surgical cases is carefully described. The accidents following operation are enumerated and their treatment considered. It is to be regretted that the subject of post-operative shock has been somewhat slighted. As this is one of the most important of the accidents following operation, and one which demands instant and energetic treatment the lack of a description of the modern methods of meeting this emergency is conspicuous. The closing chapter, which gives a tabulated list of the instruments, sutures, dressings, etc., necessary for a large number of the common operations, should prove especially valuable to the operating-room nurse.

Walter Reed and Yellow Fever. By Howard A. Kelly, M.D., Professor of Gynecologic Surgery, Johns Hopkins University. Cloth. 12mo. Twelve half-tone illustrations. Pp. 293. Price, $1.50 net. New York: McClure, Phillips & Co., 1906.

No book will be more welcome than this biographical sketch of the man to whom the world is indebted for the greatest medical discovery since that of anesthesia—the knowledge of the direct cause and means of prevention of yellow fever. Born in 1851 in Virginia, Walter Reed graduated third in his class, before he was 18 years of age, from the Medical Department of the University of his native state. From this time on Reed's life was one of continual struggle, for his ambition was always stimulating him to prepare himself still better for what he realized, in an unusual degree, to be the grave responsibilities of the profession he had chosen. In a year after his graduation in medicine in Virginia, he had earned and obtained an M.D. degree from Bellevue Hospital Medical College. Then he became attached to several hospitals of New York and Brooklyn, and later received the appointment as district physician of one of the poorest districts in New York. At 22 he had become one of the five inspectors of the Brooklyn Board of Health. Thus his work was of the non-productive kind, financially, but it was the kind that made for self-improvement in that which would make him a better physician. Finally his ambition led him to try for a position as army surgeon, and for months he bent all his energies to prepare himself for examination for that service, and in 1875 he received his commission as assistant surgeon in the U. S. Army. The next year he was sent to Arizona, and for years suffered the hardships of a surgeon at a frontier post. In 1889, after being stationed at various posts, west, east and south, he was ordered to Baltimore; and this was the beginning of that new life and higher ambition which led him on to the great work that has made his name known the world over. Here he came under the influence of Dr. Welch and others connected with the new departure in scientific medical training at Johns Hopkins Hospital, an influence that stimulated him for the rest of his life.

But the personal life of Dr. Reed occupies but a minor portion of the book; the history of yellow fever in the past, the discussion of the various theories concerning its propagation and its contagiousness and non-contagiousness, an account of some of the important epidemics of yellow fever, the discoveries regarding the rôle of mosquitoes in the transmission of malaria, and, in brief, a summary of the important work and discoveries which led to the undertaking in Cuba, occupy more space than does that which is devoted to the life of Reed. The experimental work of Reed and his fellows on yellow fever in Cuba is, of course, covered thoroughly. A chapter is devoted to a brief account of the life and work of Drs. James Carroll, Aristides Agramonte and the lamented Jesse W. Lazear, the associates of and co-workers with Reed in the yellow fever investigation.

To the physician or the layman who is desirous of obtaining a concise history of the discovery of the cause of yellow fever, and of the men connected with the discovery, we recommend this volume. It is as interesting as a novel, for while the subject necessarily includes much that is scientific, the author has presented the matter in a manner that is easily comprehended, even by those who know nothing of medicine.

Carbohydrate Metabolism (A Course of Advanced Lectures in Physiology delivered at the University of London, May, 1905), with an Appendix on the Assimilation of Carbohydrate into Proteid and Fat, Followed by the Fundamental Principles, and the Treatment of Diabetes Dialectically Discussed, by F. W. Pavy, LL.D., F.R.S., Honorary Physician to King Edward VII Hospital; Consulting Physician to Guy's Hospital. Cloth. Pp. 131. Price. $2.40. Philadelphia: P. Blakiston's Son & Co., 1906.

These lectures are largely devoted to an exposition of Pavy's original views concerning carbohydrate metabolism. He opposes vigorously the generally-accepted doctrine, developed from Bernard's researches, that glycogen represents a resting stage in the metabolism of sugar. Glycogen, according to Pavy, is not normally converted again into sugar; indeed, he considers that carbohydrates do not normally enter the circulation from the intestine, but are converted by the lymphocytes into proteid and by the intestinal epithelium into fat. It can not be said that the discussion of the topic in this book is either strikingly lucid or convincing. Although Pavy has now, for some time, been urging his views, they are not generally accepted by physiologists and chemists as having overthrown the long-established view that glycogen is converted normally into sugar whenever the quantity in the blood has been reduced below normal through its combustion in the muscles and other active tissues. Thus Macleod, in a recent review of the theories of carbohydrate metabolism and glycogenesis ("Recent Advances in Physiology and Biochemistry," page 337), discussing Pavy's hypotheses, sums up his conclusions tersely as follows: "The balance of evidence stands in favor of Bernard's theory."

Practice of Gynecology, In Original Contributions, by American Authors. Edited by J. Wesley Bovée, M.D., Professor of Gynecology, George Washington University, Washington, D.C. Illustrated with 382 Engravings and 60 full-page Plates. Cloth. Pp. 836. Price, $6.00 net. Philadelphia: Lea Brothers & Co., 1906.

The seven contributors to this volume are the editor, J. Wesley Bovée, Washington; J. Riddle Goffe, New York; G. Brown Miller, Washington; Geo. H. Noble, Atlanta, Ga.; Benj. R. Shenck, Detroit; Thomas J. Watkins, Chicago; and X. O. Werder, Pittsburg. The advantages of the collaboration of a number of original workers in securing a breadth of view not obtainable in the work of a single author, is referred to by the editor in his preface and demonstrated in certain parts of the book. Thus the discussion of lacerations of the perineum and the description of the old and the new methods of repair by Noble is a credit to the book and a good example of the advantage of leaving special subjects to those who have given them special study. The same may be said of the chapters on fistulas by Noble, of the vaginal method of operation by Goffe, and of his description of the method of shortening the uterosacral ligament and of the discussion of infections of the tube by Watkins. Most of the other subjects are well presented, although not always showing, perhaps, such special original work.

The recent works on operative gynecology, both in English and German, have presented the technic of operations so well and in such detail and with such wealth of illustrations that a general work on gynecology like this one, which does not attempt to compete with them in description of operative technic, is put to some disadvantage. Those who are familiar with these elaborate illustrated special monographs or special operative treatises may be at times somewhat disappointed to find here very meager descriptions or only allusions to important operative proceedings. This lack of fullness is due of course to the limits that have been set by the editor and publisher, who have evidently planned a work that shall be a text book for students as well as a short handbook for the practitioner of medicine. It is a question if the time has not come for the production in this country of a more complete and comprehensive handbook of gynecology that can be brought into favorable comparison with the German handbook of Veit, published about ten years ago. No one doubts the ability of the editor of this system and his collaborators, co-operating with other American workers in this field, to accomplish this task. With such an ideal in mind one is a little disappointed to notice the meager treatment and even the absence of a discussion of certain phases of the most important subjects. The absence of a chapter on the affections of the pelvic connective tissues, to which is given 200 pages in Veit's book, is an example of the disadvantages of a book like the one under consideration when compared with one not so restricted in its scope. Likewise the 35 pages given to cancer of the uterus, when contrasted with the 310 pages in Veit, leaves necessarily many of the questions of this important subject untouched. Similar criticism could be made of the treatment of the other tumors and also of the brief chapter on the technic of abdominal operations. These remarks are suggested by the preface of the editor, who intimates that the work contemplates a more comprehensive treatment of the subjects than is to be expected in an ordinary text book. The breadth of view which he aims at is generally obtained, but a satisfactory comprehensive treatment can be secured only by expanding the plan and utilizing all the resources which lie at his command and which the experienced generous publishers could well supply.

Within the limits set by the editor the work is as a whole interesting and commendable and in its execution a credit to the publishers. Because of its practical as well as its scientific character it should prove a popular text book for students and a valuable concise handbook for the general practitioner.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

(*Continued from page 143.*)

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago, Professor and Head of the Surgical Department, Rush Medical College.
CHICAGO.

Mozambique, East Coast of Africa, June 2, 1906.

DAR-ES-SALAAM.

Dar-es-Salaam is the capital of German East Africa. Its present population is 50,000, among which there are 500 Germans and many Arabs, East Indians and Goanese. The Goanese are preferred as employés in government offices and the Arabs and East Indians are engaged in business. The city has excellent streets and the public buildings are solid structures which would do credit to any of the smaller cities in Germany. The Roman Catholic cathedral and the protestant church are ornaments to the city and do credit to the denominations they represent. The government school for children, the protestant mission, the hospitals, park, botanical gardens, club house, and the weekly paper published in German, speak well for the intellectual life of the small German population, and serve as useful object lessons for the natives. The harbor is excellent, land-locked, and large enough for as extensive a commercial fleet as will ever enter this port, even if the city should eventually reach the size and importance now prophesied by its most enthusiastic citizens. The railroad now under construction will open up, in a short time, a vast territory in the interior of the colony. The part of the city occupied by the natives has wide, straight, well-kept, clean streets, and is well policed. The Swahili, the real owners of the land, are looked on with mistrust, and this feeling will not be remedied until the natives in the interior lay down their arms for good and submit to the inevitable. Krupp guns and breech-loaders against spears and arrows will eventually make these savages abandon all hope of continuing to think, live and act as they have done for unknown centuries, and they will have to submit to the yoke of a foreign, newly-organized administration, backed and supported by the imperial government of Germany. The sanitary conditions of the city are being improved rapidly and its present comparative healthfulness is attracting an increasing number of new comers from Germany, among them men of means and enterprise. The water supply is obtained from wells, and from these the water is pumped into a large reservoir which supplies all parts of the city. A system of sewerage is contemplated. As in all coast cities petroleum furnishes the light.

HOSPITALS OF DAR-ES-SALAAM.

The Government Hospital of this city is without question the finest and most complete hospital in all Africa (see illustration). It is an object lesson which it would be well for other nations who assert a claim on African soil and natives to study and imitate. The Germans take just pride in this magnificent institution. The government expended at least $100,000 in building it, and provides ample means for its maintenance. It is located on the sea coast about a mile from the business center of the city. A broad palm-lined chaussée passing through a park-like part of the city, dotted here and there with handsome residences and skirting the missionary station, terminates at the boundary of the hospital grounds which are tastefully laid out and ornamented with trees, shrubs and a profusion of flowers indigenous and imported, which, owing to their great variety, charm the eye throughout the entire year.

The architecture of the hospital is massive and the style somewhat unique. The style is decidedly German, but adapted to this climate. The main building is two stories high and its different parts are connected by arched, columned galleries.

The mortuary chapel and laboratory are separate buildings. The interior corresponds in beauty of design and comfort with the external aspects of the building. The private rooms are large and well, even luxuriously, furnished. The director's apartments, in a separate building, connected by a roofed corridor with the hospital, are a picture of comfort and elegance such as we would look for in vain in any of our hospitals.

Dr. Exner, a staff surgeon of the German army, is the present director or chief of the hospital. He is a scientist as well as a surgeon of more than average ability. Like all other military surgeons stationed on the coast whom I have met, he was very courteous and took great pains to show and explain the workings of the institution and to describe the nature of the diseases of the patients under treatment. He is the recognized surgeon of German East Africa. One assistant and five trained female nurses assist him in his work. The operating room is modeled after those of the Eppendorf Hospital, Hamburg, and is well supplied with instruments and appliances for strict surgical asepsis. Blood examinations and prophylactic treatment of malaria are carried on here on a large scale, the actual work being done largely by the trained nurses, who are very skilful in the use of the microscope, and assiduous in their work to give the blacks the benefit of science so recently planted in African soil.

Government Hospital at Dar-es-Salaam; German East Africa, seen from the seaward side.

The hospital is devoted to the care of sick Europeans, although the better class of Eurasians and Goanese in the employment of the government are admitted. Capacious and imposing as the hospital is, it can accommodate only 38 patients. In pondering over this the idea occurred to me that as far as the welfare of the blacks is concerned, which the government ostensibly has in view, it would have been better to have expended less money on this building and more on the hospital for the blacks, which leaves much to be desired. The kitchen is in a separate one-story addition, connected with the hospital by an open but covered corridor. It is presided over by one of the nurses, but the work is done by young black men dressed in garments which cover only a small part of their coal-black bodies. One of the interesting features of this hospital is the large, separate one-story building devoted to malaria patients. These patients are practically in quarantine until their blood is free from malaria parasites, microscopic examinations being made at intervals of a few days. All windows and entrances are guarded with fine-meshed aluminum screens. Iron and brass screens were found useless, as these metals are speedily destroyed in this climate, but aluminum has stood the test well, the only objection to it being the greater expense. A number of patients suffering from chronic malaria were under treatment, including a few Hindus and Goanese. A European was confined to bed and very ill with black-water fever. The urine collected in a vessel was deeply stained, almost black, with the coloring material set free by the dissolution of the red corpuscles of the blood as the result of a neglected case of malaria. Officers and civil government officials and their families are admitted free. Private citizens who have means pay nine marks a day.

The laboratory is well equipped for all kinds of bacteriologic research. As the hospital faces the Indian ocean, the patients receive the benefits of the soothing and cooling sea breeze.

Staff Surgeon Dr. Meixner is at the head of the sanitary department of the whole colony, and directs his work from Dar-es-Salaam.

SCIVA-HADJI HOSPITAL.

This is the hospital for the blacks, located opposite the barracks of the native troops. It consists of a number of one-story stone and cement cottages, arranged around a square, and has accommodation for 100 patients. It is the hospital to which all black soldiers are sent in case of wounds, injuries or disease. The government contributes annually 5,000 rupees toward its support. This small allowance renders the utmost economy a matter of stern necessity. Dr. Gross of the German army is surgeon-in-chief, and is assisted by a lieutenant surgeon, three white men of the hospital corps, and a number of native helpers. Although women furnish no small part of the patients in this hospital, there is no special provision made for their nursing. The furnishing of this hospital is in strong contrast with the one I have just described, being primitive and defective. There is no operating room. If an operation must be performed it has to be done in one of the wards and the instruments must be brought from the outside as there are none here. I found here a number of old gunshot wounds. In one case a severe infection made it necessary to amputate below the knee joint; in another case a bullet was recently extracted from a suppurating knee joint and the patient was on the way to recovery with an ankylosed knee joint, but with the limb in a useful position.

REGULATION OF PROSTITUTION.

In one of the female wards were about fifteen public women who are detained here until they recover from their loathsome diseases, when they are given a certificate to that effect, and return to their former business. These women stood in a row when we entered the ward and their bold unconcerned attitudes and behavior showed that they were no novices. If a soldier contracts a venereal disease he is compelled to give the name and address of the woman who is responsible for his condition. The police is then ordered to seize her and bring her to the hospital for treatment, where she is detained until cured. This quasi regulation of prostitution is a military necessity in this country and undoubtedly is useful in preventing an alarming spread of venereal diseases. These diseases are very common among the native troops and are widely diffused among the blacks all along the coast. The sick prisoners are also cared for here without any special precautions to prevent their escape.

None of the physicians of Dar-es-Salaam has encountered a case of carcinoma, with the single exception of the case of carcinoma of the stomach previously alluded to, nor has a case of appendicitis been found in the blacks, and as this experience is in accord with that of all physicians on the east coast of Africa, we must take it for granted that the negroes of Equatorial Africa are practically immune. Beriberi is occasionally seen and frequently seriously affects muscle power, simulating locomotor ataxia. A case of this kind was in the hospital under treatment at the time of my visit. Pulmonary tuberculosis is on the increase, while surgical tuberculosis is almost unknown. Several anopheles caught in the ward that morning were under glass for future microscopic examination. A very large percentage of the patients now under treatment is afflicted with chronic malaria. The blacks never suffer from black-water fever. This complication of neglected malaria affects exclusively the foreigners and especially the Europeans.

Ankylostomiasis is very common. Treatment with thymol has proved very unsatisfactory, owing to the frequency with which relapses take place, and at present eucalyptus oil, praised highly by a Dutch physician, is on trial, but its place will soon be taken by beta naphthol, a safer, more effective and less disagreeable drug. Dysentery of a comparatively mild type occurs here as in all other places along the coast. Rheumatism is almost unknown among the natives. Children frequently suffer from diarrhea in consequence of faulty feeding, and as the parents often fail to provide medical aid, the mortality from this disease is considerable.

(To be continued.)

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Academy of Ophthal. and Otolaryn., Detroit, Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE.

Seventeenth Meeting, held in New York, May 23, 1906.

The President, Simon Flexner, in the Chair.

Analogies Between Phosphorized Fats Obtained from Brain and Kidney.

During investigations of alcoholic extracts of kidneys Dr. Edw. K. Dunham has been led to infer that substances closely related to the lipoids derived from the brain may be obtained by similar methods from the kidney. Extracts of finely-divided renal tissue, freed from obvious fat, made with hot 85 per cent. alcohol, yield a precipitate on cooling which contains a variety of lipoids, while certain others remain in solution. For convenience those lipoids which are relatively insoluble in cold alcohol may be classed as the "protagon" group and those not precipitated on chilling as the "lecithin" group. A preliminary purification of the "protagon" group was effected by treating the crude precipitate with benzol, which left a small residue undissolved. From the concentrated solution in benzol a powdery precipitate was formed on the addition of a mixture of acetone and rhigolene and became pure white when repeatedly washed with the latter mixture, in which it was nearly, if not wholly, insoluble. This precipitate was soluble in hot 85 per cent. alcohol, from which it separated in discoid crystals on cooling the solution. It contains 2.869 per cent. of phosphorus and 3.125 per cent. of nitrogen.

A portion of this precipitate was dissolved in hot 85 per cent. alcohol and an alcoholic solution of lead acetate added in excess. The mixture was boiled and filtered while hot. On cooling a heavy white crystalline precipitate formed. This was removed by filtration and recrystallized from 85 per cent. alcohol four times. The white crystalline powder so obtained was analyzed. The solubilities and reactions of this substance correspond to sphingomyelin. On hydrolysis with barium hydrate this substance from the kidney yields ammonia, trimethylamin, a substance reducing Fehling's solution, and apparently an acid forming a barium salt which is insoluble in a mixture of absolute alcohol and ether. These cleavages are analogous to those observed on hydrolysis of sphingomyelin.

A portion of the lead-free substance was dissolved in hot 85 per cent. alcohol and precipitated with cadmium chlorid in alcoholic solution. The precipitate was removed by filtration, redissolved in 85 per cent. alcohol and kept at 30 C. over night. This procedure separates kerasin from sphingomyelin.

The percentages of cadmium chlorid found in the similar products from the kidney fall within these limits, and the percentage of cadmium and chlorin are in close accord with the assumption that the cadmium is present as chlorid, indicating that the salt is an addition product. The acetone-rhigolene mixture used in the preliminary purification of the "protagon" group contains substances which possess solubilities similar to those of kephalin and myelin, both before and after precipitation with lead acetate. But these substances have not yet been obtained in sufficient quantity for satisfactory purification. They appear, however, to contain more phosphorus (over 4 per cent.) and less nitrogen (about 1 per cent.) than the analogue of sphingomyelin already considered, and these characters are also in harmony with analyses of kephalin, myelin and sphingomyelin.

Still other compounds containing phosphorus, nitrogen and fatty acids have been obtained from the renal extracts and appear to be analogous to substances derived from the brain.

The Toxicity of Indol.

A. N. Richards and John Howland made these experiments as a part of a study of the etiologic factors in recurrent vomiting in children. At the beginning of these seizures there were signs of diminished oxidation (increased elimination of uric acid, neutral sulphur, lactic acid, aceton bodies) and an abnormally intense indican reaction. It is believed that failure to oxidize completely substances of the type of indol results in the production of distinct mental symptoms and in the partial excretion of the substances into the gastrointestinal tract. The disturbance induced by such substances is capable of producing nausea and vomiting.

Formation of Urea.

L. B. Stookey and A. S. Granger found that subcutaneous injection of liver extracts (dog) led, in the dog, to an increased elaboration of nitrogenous end-products into urea. Liver extracts which had been heated to 55° were not found to possess this stimulative action. These results might indicate an enzymatic formation of urea. Further experiments are in progress.

Effects on Embryonic Development of the Roentgen Rays Acting on the Spermatozoa of the Toad Previous to Fertilization.

Dr. C. R. Bardeen said that experiments have shown that spermatogenesis may be inhibited by exposure to the Roentgen rays or radium. The direct action of the rays on the spermatozoa has not been studied. It occurred to Bardeen that it would be interesting to see if spermatozoa could be injured by the *x*-rays, and, if so, what the effect would be on the development of ova fertilized by spermatozoa thus injured. During the short breeding season of the toads he collected daily several pairs of toads, separated the males from the females and from the males got enough sperm to make a slightly cloudy suspension in water. This suspension he divided into two parts, one of which was kept for control, while the other was exposed for from an hour and a half to two hours and a half to powerful Roentgen rays. He then opened several of the females, until, when possible, he found one in which the eggs seemed abundant and ready to be discharged. He removed two short strings of eggs and divided each string into two parts; one part he placed in the control dish, the other in that which had been exposed to the rays. After about fifteen minutes he placed each string in a separate dish of water. Several of his experiments proved of negative value, either because not even the spermatozoa of the control dish proved capable of fertilizing the eggs, owing to the time which had elapsed since the removal of the sperm from the male, or because none of the females had happened to have ova in the right condition to be fertilized. The thoroughly successful experiments, owing to the short season of mating, were few in number, but they were convincingly positive. All eggs fertilized by the control spermatozoa developed normally. Only one egg out of between fifty and a hundred fertilized by the exposed spermatozoa developed at all normally. All the others showed marked defects in development.

The author's results may be briefly summarized as follows: 1. The spermatozoa of the common toad retain power of movement and fertilization for from one-half to nearly three hours in a dish of lake water at room temperature. On hot days they die sooner than on cool days. 2. Spermatozoa when under exposure of Roentgen rays die sooner than when not thus exposed. 3. When spermatozoa are exposed to the rays so long that very few are capable of fertilizing ova, the eggs thus fertilized usually do not develop into larvæ, but they may do so. 4. When spermatozoa have been exposed for a considerable period to the rays and yet are still capable of fertilizing a considerable proportion of eggs placed in the same dish, the eggs develop at first apparently normally, but beyond the gastrula stage the development becomes retarded and the resulting larvæ are markedly deformed. These deformities are quite varied. In one larva, for instance, a considerable part of the central nervous system and the gills were undeveloped on one side, while the abdominal viscera were developed only on that side. In another the central nervous system was abnormal on both sides and the alimentary canal quite defective. Considerable further study is necessary to determine accurately the nature of all the abnormalities present in the various monsters he has preserved. Apparently all are defect abnormalities.

From the results obtained it may be concluded: 1. That nuclear material may be so influenced by exposure to the Roentgen rays that after a latent period it will call forth marked abnormalities in development. 2. That injury to spermatozoa capable of fertilizing ova may cause the development of monsters from the ova thus fertilized.

A Vago-esophageal Reflex.

Drs. S. J. Meltzer and John Auer discovered that in dogs a tetanic contraction of the entire esophagus can be caused by reflex ways. When the vagus is cut in any part of the neck an electric stimulation of its central end causes a prompt longitudinal and circular contraction of the entire esophagus, which lasts as long as the stimulation continues. Particulars and other interesting facts connected with this observation will be reported later.

Ion Compounds, with Exhibition of Products.

Dr. William J. Gies, about five years ago, found that "when the electric current is passed through neutral or alkaline mucoid solutions (consisting of sodium or calcium salts of mucoids) turbidity results within a short time and flocks eventually form and can be filtered off. This observation was included in a preliminary report of work then in progress. Shortly afterward, in preparing material for work in another connection, the author precipitated from an alkaline solution (Na_2CO_3) of mucoid, with the aid of acetone after failure with alcohol, a water-soluble compound—apparently sodium mucoid. The author has lately prepared calcium, sodium, potassium and ammonium salts of mucoid by the following process: The glucoprotein was obtained in slightly alkaline solution. This solution was dialyzed until neutral and then was poured into a large excess of 95 per cent. alcohol, by which treatment the mucoid was immediately precipitated. Initial purification was effected by resolution dialysis and reprecipitation. The products were rendered anhydrous by treatment with absolute alcohol and ether. The comparatively pure salts thus prepared are light snow-white powders. They dissolve in water very readily. The concentrated solutions resemble mucus. The solutions are neutral to litmus and acid to phenolphthalein. Ammonium compounds have been prepared that were acid to litmus also. It is very probable that the mucins in the secretions occur in the form of such salts as Muller has already suggested. Yeast nucleoprotein has also yielded similar products. Presumably other nucleoproteins will do so also. Gies believes these observations clear the way for important discoveries connected with the glucoproteins, nucleoproteins, proteinates and similar protein products. Numerous studies in this connection were suggested in the oral communication to the society and are proceeding with the co-operation of the workers in the author's laboratory.

Some Facts Showing that Phrenosin and Cerebron Are Practically Identical.

Dr. William J. Gies is convinced that Thudichum's phrenosin, Gamgee's pseudocerebrin, Parcus' cerebrin, Kossel and Freytag's cerebrin, Thierfelder's cerebron and Koch's cerebrin are practically the same. Of the products referred to, phrenosin and cerebron have been subjected to the most thorough study. Each has been found to yield, on hydrolysis with dilute surphuric acid, apparently the same proportions of a sugar (galactose), a nitrogenous base (sphingosin) and a peculiar organic acid.

Electrical Annunciator for Use in Metabolism Experiments.

William H. Welker described an annunciator which consists of two square boards 4½x4½x¾ inches securely fastened together with a piano hinge on one side and kept apart by a spring perpendicularly arranged at the opposite side in such a way as to permit slight pressure to force the surface of the boards together. The spring can be adjusted so as to increase or decrease, within considerable limits of weight, the amount of force (weight) required to bring the boards in contact. In the opposed surfaces of the boards platinum electrodes (plate and points) are so placed that perfect contact between them is effected when the boards are brought together and the circuit is closed. The electrodes connect with binding posts on the hinged side. A small dry cell is used. The entire apparatus, including bell attachment, may be placed on a surface 5x8¼ inches. The bell employed directly with the apparatus is a small one, with delicate musical sound. Its ringing does not disturb the animal. It is obvious, of course, that the apparatus may be connected with a bell in a room some distance from that in which the animal is kept. The apparatus may be adjusted to announce a volume as small as 1 c.c. and may be made in larger sizes to announce the deposit of masses of any desired weight.

Presence of Albumin in Bile.

William Salant carried out experiments on dogs, each of which was under ether anesthesia, with temporary biliary fistula. The neck of the gall bladder in each case was ligated previous to the introduction of a cannula into the common bile duct. The bile was collected and tested for albumin according to Brauer's method. Either amyl alcohol or ethyl alcohol or a mixture of the two was injected into the stomach or small intestines. The bile collected was tested for albumin. The results obtained were not uniform. Distinct cloudiness on boiling appeared in the bile of one experiment before and after poisoning with amyl alcohol. On the other hand, in another experiment the bile remained perfectly clear on boiling before and even after injection of amyl alcohol. After the administration of small quantities of amyl alcohol, 5 c.c., etc., there was no albumino-cholia. Only after the injection of 20 to 30 c.c. did the bile become distinctly cloudy on boiling after slight acidification with acetic acid. In none of the experiments carried out as indicated were more than traces of albumin found in the bile. One experiment, however, on a dog poisoned with ricin was an exception. The dog received two subcutaneous injections of ricin, 1 mg. per kilo, in three days. He was found dead the day after the last injection. The bile removed from the gall bladder showed the presence of a considerable quantity of albumin. It seems probable, therefore, that the albumino-cholia after poisoning with ethyl or amyl alcohol, as observed in animals with permanent fistulas, might have been due to irritation of the bladder and only perhaps slightly to lesions in the liver. The question whether albumin passes more readily into the bile than it does into the urine was also studied. The results in every instance examined showed considerable quantities of albumin in the urine after poisoning with amyl alcohol.

AMERICAN ACADEMY OF MEDICINE.

Thirty-first Annual Meeting, held in Boston, June 2 and 4, 1906.

The President, Dr. Donly C. Hawley, Burlington, in the Chair.

Report of Committee to Investigate Comparative Value of First Degree in Medical Colleges.

Dr. Charles McIntire, chairman of the committee, quoted from an article in the *Bulletin* of the University College of Medicine of Virginia by Mr. William B. Miller, proctor, which shows that the movement for an educated medical profession has been recognized by legislation and that a kind of uniformity as to its extent has been determined practically for all the states by the far-reaching legislation of a few states. The problem now presented is how to secure a recognized uniformity commanding confidence and meeting with universal acceptance and co-operation. The committee formulated the following propositions: That in the discussions of the proper preparation in the practice of medicine the necessities of the preliminary education should be separated entirely from the requirements of the technical preparation; that a liberal education depends more on the way in which a subject is taught than on the subject itself. The universities should be the guardians of the American educational system and maintain the line of demarcation in its academic distinctions. The committee is of the opinion that the courses should be so arranged as to consume less time than they do at present, certainly for bright students. A solution of the conditions is not attempted, but the suggestion is made that the report be sent to a number of educators with a request for opinions and suggestions and that a report be drafted on the replies and presented to the academy.

Maturation and Senility.

DR. A. L. BENEDICT, of Buffalo, referred to the different rates of maturation and senescence in animals and human beings and spoke also of cretinism and geromorphism. The variation of death rate and longevity for the sexes received full consideration. Other factors considered were physical definition of senility; diseases characteristic of extremes of life; essential identity of apparently widely different diseases, as apoplexy and diabetes; difference of diseases called by the same name, when occurring at early and late age. Inquiry was made whether old age is a cause of death; whether senility is distinct from the sum of cumulative pathologic processes, accidentally but practically inevitably encountered; whether a given degree of physical senility, as ordinarily estimated by years, is characterized by a corresponding degree of histologic degeneration. Capacity for mental work in relation to maturity and senility was considered, inquiring whether or not it depended on previous intellectual acquisition or exhaustion, or on essentially physical conditions of the brain.

DISCUSSION.

DR. J. W. GROSVENOR asked the author to give a definition of the term "senility." He had been unable to find a good definition of the word.

DR. T. J. SEARCY, Alabama, thought the natural processes of senility were illustrated in the process of the mental development of the person from childhood to old age. The senescence of a man, he thought, began with his acquiring ability; how soon it sets in and how soon the stage of senescence called dotage begins and how it differs in individual persons were regarded as interesting questions. Some men of 50 are as far advanced in the failure of mental ability as some at 80. This differs according to the tone of the system.

DR. CASEY A. WOOD, Chicago, remarked that one of the processes seen with advancing age is the change in the smaller vessels, and that only in the fundus of the eye could this be demonstrated. Some of the organic changes in the eye take place at the twenty-fifth year of age. In almost all persons past the fiftieth year these changes are present.

DR. LEARTUS CONNOR, Detroit, spoke of the difficulty of differentiating the natural changes in the eye due to advancing age and processes of disease.

DR. WOODS HUTCHINSON, Redlands, Cal., thought the tendency of the Anglo-Saxon race was to cling to life rather than to use every endeavor to make the most of it, being willing for old age to come as rapidly as it would.

DR. A. H. TUTTLE spoke of his studies of the life history of small sea animals, his observation of the development of the eggs in the sea water and under artificial means. According to change in environment there was marked change in the development of the animals and the production of monstrosities of all kinds. These changes, he felt, had a certain significance in connection with the development of malignant disease and especially of cancer. The changes of senility also had a certain bearing on the subject.

DR. JAMES A. SPALDING, Portland, Maine, related an instance in which there was a difference of fifty-eight years and ten months between the age of the first child of a given father and the last. He thought the study of the eye in old age offered a clew to the other conditions going on in the human frame, and therefore of interest in the study of senility. When one ceased to be useful and his friends had all gone long before, he thought it scarcely worth while to study to prolong life.

DR. WOODS HUTCHINSON thought the work of the profession was to make life more vigorous during its existence rather than to make it last longer. He would drive the machine as fast as possible while it lasted, and then to the scrapheap.

DR. FREDERIC H. GERRISH, Portland, Maine, thought that for every one old age was ever a receding point. In his early teaching career he had determined that when he reached the age of 60, if then teaching, he would resign, believing that schools were injured by retaining in the faculty men who had passed their prime. He thought it of immense practical value that young men likely to hold teaching positions should recognize the fact that they are not good judges of their own capacities when they get into the fifties and sixties.

DR. WILLIAM R. WHITE, of Providence, R. I., thought Dr. Hutchinson's theory would not work out satisfactorily in practice. The machines, instead of going readily to the scrapheap, were converted into neurasthenics, hemiplegics and other variously affected persons filling the asylums and institutions.

(To be continued.)

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Twelfth Annual Meeting, held in Kansas City, Mo., June 11-13, 1906.

The President, DR. J. A. LOGAN, Kansas City, Mo., in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Wendell C. Phillips, New York; vice-presidents, Eastern Section, Dr. C. G. Coakley, New York; Middle Section, Dr. J. M. Ingersoll, Cleveland, O.; Western Section, Dr. W. C. Bane, Denver; Southern Section, Dr. J. M. Ray, Louisville, Ky.; secretary, Dr. Thomas J. Harris, New York; treasurer, Dr. Ewing W. Day, Pittsburg, Pa.

Endothelioma of Throat.

DR. J. A. LOGAN, Kansas City, Mo., had the patient under observation for about twenty-four days. When first seen the tonsil was the size of an English walnut and was filled with débris. Under x-ray treatment the growth has been reduced in size about one-fourth, after about eighteen treatments. The patient has also been given potassium iodid, up to 240 grains a day, but the use of the iodid was discontinued because it did not seem to do any good.

DISCUSSION.

DR. R. LEVY, Denver, thought that a radical procedure was indicated at once, the patient being in good physical condition. He has no faith in the curative properties of the x-rays.

DR. E. W. DAY, Pittsburg, Pa., also advised a radical operation. He cited three cases of sarcoma of the tonsil which had remained cured, twelve years, six years, and thirteen months, respectively. Every gland was removed in these cases, also a considerable portion of the tongue.

DR. J. BECK, Chicago, a year ago operated on a similar case and there is at the present time but a slight recurrence. He thinks radical treatment the only solution in these cases.

DR. M. A. GOLDSTEIN, St. Louis, has had two cases, one of endothelioma of the fauces and the other sarcoma of the tonsil, both of which seemed to react nicely to the x-rays given daily at first and then applied on alternate days for a month. He applies the rays directly to the part involved.

Middle Ear Suppuration as a Cause of Retropharyngeal Abscess.

DR. EDGAR M. HOLMES, Boston, thinks that retropharyngeal abscess in the adult, from any cause, is rare; that middle ear disease rarely advances forward, but is occasionally the cause of retropharyngeal abscess; that when it has occurred thorough removal of granular and necrotic material is indicated, and a free incision through the pharyngeal wall, index finger placed in cavity to act as guide in using small aural curette. This proceeding is followed by permanent recovery. The external routes of attack are available, but all of them, with the exception of removing the condyle of the jaw, offer little opportunity to inspect or attack the bone which is diseased.

DR. E. B. DENCH, New York, reported a case in which a 14 year old girl had been operated on for chronic middle ear suppuration, and after the operation she developed a temperature. Nothing was found in the throat. She was operated on again but died on the table from a cerebellar abscess which had not been diagnosed.

DR. F. E. MILLER, New York, reported two cases in infants, where quinsy and retropharyngeal abscess was present. The children almost succumbed after the lancing. A probe was later passed to where the tonsil has been. The ears had been examined, but had proven negative.

Infective Thrombosis of the Sigmoid Sinus.

DR. H. BERT ELLIS, Los Angeles, reported a case in which he resected the internal jugular, with the resultant recovery of the patient.

DISCUSSION.

DR. E. B. DENCH, New York, had seen a similar case in which there was a sudden rise in temperature. A thrombus extending to the jugular was found. Iodoform packing was put in to prevent infection from the broken down thrombus. The patient recovered.

DR. E. M. HOLMES, Boston, reported the case of a boy who had had headache for two days; he had had ringing in the ears for eleven years; temperature was normal. The ear had discharged a small amount of pus, but there was no tenderness or enlarged glands. The only marked symptom was a subnormal pulse, ranging from 42 to 50. When the mastoid was opened the cells were filled with granular tissue and the lateral sinus wall was of a darkish blue color and filled with pus. Before opening the sinus the jugular was tied and the upper portion dissected out, but there was still a dark appearance of the inner wall of the sinus. Incision was made and pus was evacuated. The patient at the present time is doing well.

Cause of Vocal Nodules.

DR. FRANK E. MILLER, New York, thought these nodules could be produced by means of infection of the tonsils and perverting the action of the thyro-arytenoideus externus muscle.

DR. D. BRADEN KYLE, Philadelphia, said that the singer's node was a tumor, but not a neoplasm. A cellular change occurs in the swelling. He thinks that it is an inflammatory process.

DR. J. A. STUCKY, Lexington, Ky., said that he has seen many singers' nodules and his experience has taught him that the less he treated the larynx the better for the patient. The cord should be given rest and the nodule will disappear. He relies on diet in connection with rest and no local treatment.

DR. G. HUDSON MAKUEN, Philadelphia, objected to the term singer's nodes as they occur in people who do not sing. He has seen them occur in a man who used the phone constantly.

Function of the Accessory Cavities of the Nose.

DR. J. M. INGERSOLL, Cleveland, said that the accessory sinuses of the nose in the lower animals are developed in connection with the olfactory portion of the nose. In animals which have an acute sense of smell, the olfactory (ethmoidal) turbinals exhibit a tremendously intricate development and the accessory sinuses are correspondingly more highly developed and all of them contain olfactory turbinal tissue. Their function is to conduct inspired air more directly over a large surface of the olfactory turbinals, which would not otherwise be exposed to air, except by diffusion, and thus the accessory sinuses increase the acuteness of the sense of smell. In those animals in which the sense of smell is not acute, the olfactory turbinals have degenerated and receded from the accessory cavities. The cavities are left with comparatively smooth walls, their openings into the nasal fossæ contract and their functional activity is lost. In man the accessory cavities are almost completely shut off from the nose, their functional activity ceases, and they remain as rudimentary structures.

Three cases of Laryngeal Neoplasm.

DR. C. W. RICHARDSON, Washington, reported one case of neoplasm in the larynx noted from six months to the ninth year of life, and now disappearing. The second was a multiple papilloma in an adult; and the third a laryngeal carcinoma, in which he had performed laryngectomy. The patient, who was 72 years old, died on the morning of the fifth day of collapse. In this case the growth seemed to be localized and the outlook seemed very promising, yet the outcome was not favorable. Complete laryngectomy does not offer a very favorable result in the aged. He believes that the operation devised by J. Solis-Cohen is indicated in these cases.

DR. F. E. MILLER, New York, thought that in cases of papilloma in children a continuous spray of Thiersch solution, four or five times daily, increasing its strength will improve the condition. He thinks all these cases finally come to tracheotomy and thyrotomy.

DR. H. W. LOEB, St. Louis, has seen several cases of carcinoma of the larynx which had been operated on. One patient is living. Another patient had been comfortable for a year. A second operation was performed and the patient died. Another patient was operated on two and and one-half years ago and has been well since. His trachea is stitched to his skin. The next patient was operated on and proved to be atypically tubercular. He died two weeks after operation. The next patient had a large carcinoma for which he had been treated five months. All structures were dissected from the larynx and the tracheal wound was attached to the neck wound, and one week later he had a slight hemorrhage. He had an embolism which probably originated in the jugular. The doctor thought it wise in considering carcinoma to look at the statistics of Szenziac. It seems that carcinoma remains intrinsic a long time and does not affect glands external to the larynx. If the patient can be brought through the operation without serious results, he has a fair chance for recovery.

Results Obtained From Operation for Chronic Purulent Otitis Media.

DR. EDWARD B. DENCH, New York, said that certain questions had arisen regarding the technic of the operation. First, the advisability of primary grafting; second, the advisability of secondary grafting at the end of five to ten days after the primary operation; third, the advisability of the introduction of grafts through the canal; and fourth, anomalous methods of healing after skin grafting. He thought grafting advisable at all times; convalescence is shortened if it is employed.

DR. NORVAL H. PIERCE, Chicago, thought the tests for change in audition ought to be carried out; first the whisper test, then low sounds, then bone conduction and lateralization, and then Renne test to see if the stapes is ankylosed. Then the condition of the auditory nerves should be ascertained. When no ankylosis of the stapes is found and there is no nerve involvement, audition has been improved. It is necessary to insist on the exact test being made before operation, then one can ascertain if the operation increases or decreases audition.

DR. W. C. PHILLIPS, New York, spoke of the fatalities attending the radical operation for chronic suppuration of the middle ear. He emphasized the fact that while the fatalities are few and they have no special connection with the disease, yet they do occur.

DR. KASPAR PISCHEL, San Francisco, remarked that the author has said the patients return complaining of the occurence of suppuration. They think or say the operation did them no good. It seems to be the breakdown of the poorly nourished integument. He has devised a flap which furnishes a good skin and permits of the immediate closure of the wound. The original cut is made behind the lobe, and the skin from the posterior wound as far as the high line of the flap is turned in to cover the upper wall and the upper part of the posterior wall. The lower part is covered by the flap, and the ridge of the facial nerve is covered by skin flap. In order to make it heal the superficial layers are removed with a cataract knife. This is closed up and the upper part covered with healthy skin.

DR. E. B. DENCH said that he had exposed the facial nerve three-fourths of an inch and when it was picked up there was no response to mechanical stimulation, but two years later there was perfect control. Provided there is no division, there is not limit as to the time when the function may be restored.

(To be continued.)

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held June 11, 1906.

The President, DR. J. E. GREIWE, in the Chair.

Surgical Treatment of Indigestion.

DR. EARL HARLAN said that the term intestinal indigestion is a misnomer. It includes all those cases of indigestion in which the causative lesion is located within or along the large or small bowel. It is characterized by the following symptoms and conditions: Sour stomach, periodical nausea and vomiting, headaches, nervousness, obstinate constipation or persistent diarrhea (the latter when not due to a specific germ), recurrent attacks of diarrhea and constipation with more or less peritoneal soreness or tenderness; persistent abdominal distress or discomfort dependent on the almost continual presence of gases or fecal deposits at some particular locality. He ascribes all of these conditions in the beginning to a lowered tone of the peritoneum, produced by various irregularities of diet and modes of living. The cause of this condition where it has become chronic, lasting for months and in some cases years, and where it resists medical treatment, he ascribes to pathological or mechanical conditions within the abdominal cavity, which produce a partial obstruction of the bowel, which in time leads on to the more grave and dangerous condition of acute obstruction. Among lesions which produce this condition of intestinal indigestion are dislocated kidney, prolapse of the anterior border of liver, acquired multiple diverticulitis with mesenteritis, adhesions of the omentum, or lymphatic rings of constriction, appendiceal irritations and congestions which produce symptoms simulating those of appendicitis (the latter usually produced by kidney dislocations), ulcer of the colon, concretions in the appendix, uterine retroversions and adhesions about the pelvic organs, and any pathological or mechanical condition which will partially obstruct the proper drainage of the bowel. In proof of his assertions he cited cases on which he has operated for divers conditions, the operation being necessitated by the development of acute conditions of obstruction, and which he has had the opportunity to trace or observe for several years prior to operation.

In the treatment of lesions of the first class he advocates ileocolic anastomosis or ileocolic anastomosis with resection of the colon in cancerous conditions. He cited various authors who have resected parts or nearly all of the colon, with an accompanying ileocolic anastomosis to prove that the colon is a digestive adjunct, whose services can be dispensed with when necessary. Ileosigmoidostomy after the method of Coffey, is the choice in these cases. In treating the second class of cases he advocates careful and painstaking methods of diagnosis in order that the obstructive lesions located outside the bowel, may be removed before the development of grave conditions. Kidney displacements should be corrected, the appendix removed in recurrent appendiceal irritations with slight appendiceal and cecal colic, and early operative procedure instituted in all of the above named mechanical obstructions, before the development of pathologic inflammatory processes of the bowel. He does not advocate the methods of treating obstinate colonic irritations by colostomy or appendicostomy, but prefers the internal anastomosis of the bowel. The principle which should obtain here is the same as that which obtains in the treatment of gastric ulcer by gastroenterostomy, e. g., the securing of rest and free drainage through the unobstructed lumen of the bowel.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Gastric Neurosis (Nervous Dyspepsia).

In considering the diagnosis of this form of gastric disturbance, M. Gross, in the *New York Medical Journal*, states that the subjective complaints of the patients are very capricious and changeable and anything but decisive in character. The complaints of hyperesthesia, which are in many instances not due to disturbances of secretion, the changeable appetite, constipation alternating with diarrhea, general feeling of depression, insomnia, and general tendency to fatigue, are the symptoms mostly given by these patients. The pain of which they complain is a diffuse one, and at times has no connection whatever with the digestion of food; at other times the food may be the cause of it. Vomiting may be associated with this condition, and is not infrequently attributed to a spasm of the pylorus. He bases the diagnosis of the disease on the history given, the jumping and uncertain character of the affection, together with the inconstancy of the secretion and motility of the stomach. In speaking of the therapeutics of this disease he states that one must constantly keep in mind the fact that he is dealing with patients whose imagination and will-power are easily influenced in undesirable directions. Consequently, it is necessary to resort to demonstrations which will convince the patient that the functions of the stomach are practically normal. This can be done only by a thorough and painstaking examination, with that degree of positiveness that will demand the confidence of the patient. In many instances it is necessary to remove patients to entirely new surroundings, away from their friends and former acquaintances, after which a slow and gradual progress will take place. In all cases patients should be forbidden to talk about their condition. The physician should lay down definite specified rules as to the mode of living and diet which should be followed, and it will make a much greater impression if these directions are given the patient in writing. In cases of extreme hyperesthesia, poultices may be applied with advantage, associated with warm hip baths. Insomnia can often be relieved by warm baths, followed by lukewarm douches or by cold friction before retiring. Other beneficial hydropathic measures are sponge baths and cold dressings. The condition of the intestine must be considered along with the disturbances of the stomach, and in this connection Gross speaks against any success following treatment by electricity. However, he recommends general massage as a good adjuvant. He condemns medicinal preparations as doing more harm than good, in the majority of cases. To relieve the nausea menthol valerianate, administered on sugar, is sometimes of value. Bismuth will often relieve the hyperesthesia, though occasionally it may be necessary to give small doses of cocain. [Cocain, however, must be used with great caution.] Of the other medicinal preparations he recommends arsenic, given subcutaneously, as one of the best preparations to relieve the depressed as well as the excited conditions in these individuals.

Medical Treatment of Gallstones.

In considering the medical treatment of gallstones, R. W. Wilcox, in an abstract in the *Boston Medical and Surgical Journal*, states that the treatment of cholelithiasis depends on the regulation of congestions and inflammations in the portal system, and associated organs, together with local antisepsis. He speaks in this connection as to the necessity of prohibiting the use of alcohol, the proper regulation of the diet, and exercise. Of medicinal preparations Wilcox prefers salicylic acid as a cholagogue, because of its biliary and intestinal antiseptic effect. Sodium glycocholate is another preparation of which he speaks as being a most satisfactory one; as in case of salicylic acid, the acid sodium oleate is excreted by the epithelium of the bile ducts, which assists in disinfection. He recommends the following combination as very efficient in the treatment of gallstone disease:

℞. Acidi salicylici.		
Acidi sodii oleatis, āā	grs. iss	|09
Phenolphthalein	gr. i	|06
Menthol	gr. ¼	|018

M. Ft. pilulæ, No. iv to viii. Sig.: One pill once or twice daily, followed by a full glass of water.

The phenolphthalein, according to the author, is a safe and prompt laxative, as well as a very efficient antiseptic to the alimentary tract. The conclusions of Wilcox are that gallstone disease is not purely a disease due to a foreign body, but that the primary trouble is in the liver, which is not properly functionating. The actual removal of the stones does not cure the patient, as has been demonstrated by surgery. Consequently, the commencement of this treatment consists in removing the cause of the disease, which is a physician's duty, as it is the congestions and inflammations in the region of the portal system that require treatment, together with the bile ducts and gall bladder, which are in a catarrhal state, and consequently tend to the formation of faulty bile.

Pertussis.

The following combinations are recommended by Yeo in the treatment of pertussis:

℞.	Pulv. bellad. rad	gr. iss		09
	Quin. sulphatis	gr. viii		50
	Sacchari albi	ʒ ss	2	

M. Ft. chart. No. x. Sig.: One powder three times a day.

As a spray the following may be used for children over six years of age:

℞.	Cocainæ hydrochlor	gr. x		65
	Potassii chloratis	gr. iii		20
	Aquæ grad	℥ iss	45	

M. Sig.: To be sprayed into the throat twice a day.

As an insufflation, introducing it into the larynx by means of a glass tube curved at one end, the following is of value as an antiseptic and germicide:

℞.	Pulv. benzoini.			
	Bismuthi salicylatis, āā	gr. lxxv	5	
	Quin. sulphatis	gr. xv	1	

M. Ft. pulvis. Sig.: A few grains to be used as an insufflation into the larynx once daily.

Dr. Norman Bridge recommends the following combination for local application in a similar manner:

℞.	Quininæ hydrochloridi	gr. x-xx	.65-	30
	Sodii bicarb.	gr. xx	1	30
	Pulv. acaciæ	ʒiii	12	

M. Ft. pulvis. Sig.: A few grains to be insufflated into the throat two or three times a day.

Internally one of the following combinations may be employed:

℞.	Chloralis hydratis	gr. xv-xlv	1-3	
	Potassii bromidi	gr. lxxv	5	
	Syrupi aurantii	ʒ iii	12	
	Aquæ distil	℥ii	60	

M. Ft. mistura. Sig.: One teaspoonful in water every two hours. The dose must be varied according to the age of the patient.

Or,

℞.	Sodii benzoatis	gr. lxxv	5	
	Syr. aurantii	℥i	30	
	Aquæ q. s. ad	℥ iv	120	

M. Sig.: From one teasponful to a tablespoonful every hour in water, depending on the age of the patient.

Or,

℞.	Acidi carbolici	gr. xv	1	
	Spiritus vini rectif.	m. xv	1	
	Tinct. iodi	m. x		65
	Tinct. belladonnæ	m. xxx	2	
	Syr. simplicis q. s. ad	℥ ii	60	

M. Ft. mistura. Sig.: One teaspoonful every two hours, between one and two years of age; half of the quantity diluted with water for infants under one year of age.

Or,

℞.	Extracti cannabis ind	gr. xii		75
	Extracti belladonnæ	gr. vi		40
	Spts. vini rectif.			
	Glycerini āā	ʒ iss	6	
	Aquæ q. s. ad	℥ iii	90	

M. Ft. mistura. Sig.: One-half teaspoonful to two teaspoonfuls for a dose, according to the age, night and morning. (Not to be given to children under eight months old).

When there is a profuse secretion from the air passages the following combination is of value:

℞.	Extracti belladonnæ	gr. viii		50
	Extracti conii	gr. iii		20
	Acidi tannici	gr. v		30
	Infusi senegæ	℥ ii	60	
	Aquæ feniculi	℥ i	30	
	Syr. aurantii flor. q. s. ad	℥ iv	120	

M. Ft. mistura. Sig.: Two teaspoonfuls every two hours in water.

As a syrup the following may be given:

℞.	Extracti belladonnæ	gr. iii		20
	Syr. aurantii	℥ ii	60	

M. Ft. mistura. Sig.: One teaspoonful night and morning.

As a liniment to the chest the following combination is recommended:

℞.	Olei eucalypti			
	Linimenti camphoræ, āā	℥ ii	60	
	Olei cajuputi	℥ ss	15	
	Olei menth. pip	ʒ ii	8	

M. Ft. linimentum. Sig.: To be applied locally to the chest.

In older individuals an antiseptic gargle is of value. For this purpose the following combination containing lactic acid is recommended:

℞.	Acidi lactici	ʒ ii	8	
	Syr. aurantii	℥ i	30	
	Aquæ q. s. ad	℥ viii	240	

M. Sig.: To be used as a gargle two or three times a day.

Inhalations must not be overlooked in the treatment of whooping cough. They may consist of vapors of creosote, some tar preparation, or turpentine, which tend to lessen the severity and frequency of the paroxysms. Some authorities maintain that the alkalinity of the body fluids must be preserved, and consequently they recommend sodium bicarbonate in moderate doses, or the alkaline mineral waters, together with milk, as the chief article of diet.

Medicolegal

Non-Expert Evidence Where Insanity Is Defense to Crime.

The Supreme Court of Nebraska holds, in Reed vs. State, that insanity can not be proved by hearsay or reputation, and it is proper to exclude such evidence. The rule permitting non-expert witnesses to testify as to the sanity or insanity of one whose legal accountability is the sole matter in issue does not allow such witnesses to testify that at a certain date such party knew the difference between right and wrong of the act at that time committed by him. The opinions of non-expert witnesses on the question of the insanity of one charged with a criminal offense are entitled to little or no regard, unless supported by good reasons founded on facts which warrant them. From such opinions and the facts stated to support them, it is the province of the jury to draw their conclusions as to the sanity or insanity of the defendant.

Duty as to Providing Nurses for Quarantined Persons.

The Supreme Court of Michigan says, in the case of Rohn vs. Osmun and others, that Section 4424 of the Compiled Laws of that state, as amended in 1903, reads, in part as follows: "When any person coming from outside the county or residing in any township, city or village within this state, shall be infected or shall lately before have been infected with a dangerous, communicable disease, the board of health of the township, city or village where such person may be shall make effectual provisions in the manner in which they shall judge best for the safety of the inhabitants and they may remove such sick or infected to a separate house if it can be done without danger to his health, and shall provide nurses and other assistance and necessaries, which shall be at the charge of the person himself, his parents or other persons who may be liable for his support if able." If the statute be literally construed, it might be said that the duty to provide a nurse in every case in which a person is quarantined is not only positive, but that more than one nurse must be employed as the phrase is used. This construction would be so unreasonable as to suggest that it should not be adopted except on necessity. The court thinks that the employment of the phrase "nurses" in the statute indicates a legislative intent that the board should, in the general exercise of its powers, under this section, employ nurses, and implies a discretion as to number and occasion. It is to be noted that the power to isolate is not limited to those who are at the time infected, but includes such as shall lately before have been infected. It is hardly conceivable that the legislative intent was that such convalescents should be supplied with nurses. The reasonable construction is that which gives authority to the board to decide on the necessity and to employ such nurses as they shall deem necessary. The duty thus reposed in the board is a quasi judicial power. The neglect of such a duty does not entitle a party injured by such neglect to an action for damages, so long as the officer is acting within his jurisdiction and is not guilty of an invasion of private rights, and is not acting from corrupt motives.

Good and Bad Bases for Expert Testimony.

The Supreme Court of Kansas says of a physician who was a witness in Federal Betterment Co. vs. Reeves, a personal injury case brought by the latter party, that the witness was an expert, who, under the rules of evidence, might give his opinions based either on facts testified to by others, or on hypothetical questions put to him, or on an examination of the patient; but he could not testify to conclusions arrived at from the history of the case given him by the patient or others. Such testimony would be as completely within the rule against hearsay evidence as if sworn to by one not an expert. Nor can a physician give his opinion based partially on what he has been told of the case, and partially on what information he obtained by an examination of the patient. A physician may testify to the condition of the patient as he found him, whether suffering from pain, and to utterances or exclamations of pain, and he may also give the patient's statement as to the location of the pain causing such exclamations; and this, because it can be said to be a part of his examination.

Non-Mailable Books.

The United States Circuit Court of Appeals, Eighth Circuit, holds, in Burton vs. United States, that where the acts described and the ideas conveyed in a book are calculated to deprave the morals of the reader by exciting sensual desires and libidinous thoughts, the book is obscene, under Section 3893 of the Revised Statutes of the United States declaring every obscene book, etc., non-mailable; and it is immaterial that the information conveyed is accurate and scientific and tends to prevent disease and other ills resulting from existing ignorance on the topics discussed, that as a whole the book is calculated to be of value to the medical practitioner and to men and women in the marriage relation, that its publication was approved by several physicians, and that some portions of it are extracts from standard medical works. The inquiry under this section is whether or not the circular or book charged to have been obscene was in fact of that character, and if it was, and the defendant knew its contents at the time of the act charged, it is immaterial that he himself did not regard it as of that character. Everyone who uses the mail for distributing circulars or advertising books must take notice of what is obscene. Whether or not a book is obscene, under this section, is to be determined on a consideration of such parts of it as are claimed to be of that character, together with so much of the context as may be necessary to a proper understanding of them, but not necessarily on an inspection of the entire book and with reference to all of its contents.

Personal Malpractice Liability of "Company" Officers.

The United States Circuit Court of Appeals, Third Circuit, says that the defendants in the malpractice case of Mandeville vs. Courtright and others were stockholders and officers of a company incorporated in the state of New Jersey and caused to be conducted in the state of Pennsylvania, in the name of the corporation, the business of dentistry, which the corporation had no charter right to carry on there and which it was expressly forbidden to carry on in Pennsylvania by the law of the latter state. The plaintiff, in ignorance of the existence of such a corporation, and supposing that she was in the hands of licensed dentists, submitted herself to an authorized employé of the establishment, who operated on her mouth so negligently and carelessly as to fracture the jawbone and cause her serious injury. Such being the case, could the defendants escape personal liability to the plaintiff by setting up the charter of the company? The court thinks not. To all intents and purposes, the defendants acted without any charter at all, for the New Jersey charter gives no warrant to the corporation to practice dentistry in Pennsylvania, and the Pennsylvania statute prohibited the corporation to practice dentistry in that state. The defendants were bound to know that their corporation was forbidden by law to practice dentistry in Pennsylvania, and it seems to the court that by the use of the name of the corporation they could not avoid personal liability for what they did. The defendants were not innocent non-assenting stockholders, but they were concerned knowingly and actively in the conduct of an illegal business carried on in the name of the corporation. What was being carried on at their establishment, the practice of dentistry, the corporation could not conduct. This the defendants were bound to know. What, therefore, the corporation could not do, they could not, under the guise of its charter, carry on. And hence they must be conclusively held to have done themselves what was actually done. In a word, these defendants, in view of their knowledge and active participation, could not be heard to say that what they were causing to be done was not being done by them, but by their corporation, when that corporation could not conduct the business and they knew that it could not. Moreover, the person who operated on the plaintiff's jaw was unlicensed as a dentist, seemed to have lacked experience, knowledge and skill, and in extracting from her jaw what he supposed to be a root or piece of process, extracted what was, in fact, a portion of her jawbone, and the court thinks that the facts disclosed fully justified the jury in awarding to the plaintiff exemplary damages. Wherefore the court, rendering the judgment which it says that the court below ought to have rendered, enters a judgment in favor of the plaintiff and against the defendants on the verdict of the jury in her favor for $4,000, with interest from the date of the verdict, and with costs in both courts.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Correction: The title of Dr. Geo. A. Moleen's article, paragraph 53, p. 73, The Journal, July 7, 1906, should read "Subcortical Cerebral Gumma Accurately Localized in the Comatose State; Death; Autopsy."

Medical Record, New York.

July 7.

1 *Fresh Air Treatment of Acute Respiratory Diseases, with Especial Reference to Pneumonia. J. M. Anders, Philadelphia.
2 Independent Medical Journalism a Necessity for the Profession. K. W. Millican, St. Louis.
3 Infections by the Bacterium Coli Commune, with Particular Reference to the Urinary Tract. C. A. McWilliams, New York.
4 *Albuminuria; Recognition of the Albumin Bodies in Urine. T. W. Hastings, New York.

1. **Fresh Air Treatment of Pneumonia.**—Anders discusses the fresh air treatment of acute respiratory diseases, especially pneumonia. He says that to be effective fresh, pure air must be constantly applied, without regard to the seasons of the year or the periods of the day, although a certain degree of protection can and should be afforded during climatic extremes and under different conditions of disease. It should be well understood also that to be effective the open-air treatment must be carried out in connection with a rigid system of living under the personal supervision of a competent physician. Cold stimulates the respiratory function, and, as an immediate consequence, more oxygen is absorbed. With pneumonia there is demanded an atmosphere containing the full complement of oxygen, because a large proportion of the air cells are rendered functionless. Anders does not advocate the fresh-air treatment to the exclusion of other accepted methods and means in the management of cases of pneumonia, but as a favorable adjunct to what is already known on the subject. Personal experience, he says, justifies the statement and belief that pneumonia patients are in no danger of contracting a cold from perflation of the sick room with fresh air, and that the mere breathing of fresh air or the flowing of cool air over the face while the patient is confined to bed is practically unattended with risk in this respect. In one severe case of lobar pneumonia the nurses in attendance were obliged to wear wraps.

The fresh-air treatment should not be undertaken without due deliberation on the peculiarities presented by the individual case. Thus, in certain forms of secondary forms of pneumonia, it might be inadvisable, as when pneumonia supervenes in the course of advanced Bright's disease or in persons having a highly sensitive nervous organization, and the like. In general, however, this measure is contraindicated in exceptional instances only; hence there is no difficulty in selecting suitable cases for its employment. Among the particularly beneficial effects observed from the constant breathing of fresh cool or cold air are a better general condition and increased strength, and improved appetite and digestion, refreshing sleep, lessened severity of the cough, diminished breathing, fever and pulse rate, in short, a less marked toxemia, than in cases treated by the more usual methods.

4. **Recognition of Albumin Bodies in Urine.**—Hastings says that many of the albumin bodies which theoretically might occur in urine may be excluded from consideration for various reasons: serum, albumin, nucleo-albumin, serum globulin and Bence-Jones' albumose to be considered. For purposes of excluding false reactions due to bacterial disintegration, the urine should be examined within six hours after being voided unless the reaction is massive. A most reliable test for serum albumin in urine is that of salting the urine with a saturated solution of sodium chlorid, acidulating with from 5 to 10 drops of 50 per cent. acetic acid, and heating to boiling the upper one-third of the tube. This throws down all traces of serum albumin and prevents a nucleo-albumin reaction.

New York Medical Journal.

July 7.

5 Fighting Plague in Japan. S. Kitasato, Tokyo, Japan.
6 *Operative Treatment of Infantile Paralysis, with Especial Reference to Neuroplasty. R. T. Taylor, Baltimore.
7 Gonococcic Infection in Women. J. T. Johnson, Washington, D. C.
8 *A Unique Case of Automatic or Unintentional Suicide in an Epileptic. W. P. Spratling, Sonyea, N. Y.
9 Early Symptoms of Tuberculosis and How They May be Developed when the Applicant Attempts to Conceal Them. W. Brinton, Philadelphia.
10 Features of Uterine Sepsis. S. Marx, New York.
11 Treatment of Tabes in the Preataxic Stage. A. D. Young, Oklahoma City, Okla.
12 Congenital Cystic Kidney; Rupture of a Cyst; Operation; Recovery. C. E. Prior and F. W. Gay, Malden, Mass.

6. **Operative Treatment of Infantile Paralysis.**—Taylor advocates the early use of braces, and, in fact, the use of braces in all cases of infantile paralysis in which the lost balance of power or the effect of gravity may lead to distortion, with or without surgical intervention. Neuroplasty, he thinks, can do no harm if conservatively done. If good coaptation is obtained positive results may be expected after three months. These results improve progressively. In two cases reported by Taylor, neuroplasty was performed with comparatively good results. In one case there was a distinct gain in power after 92 days; in this case, however, the paralysis had existed only a few years. In the other case the disease was of ten years' standing. One hundred and twenty days after the operation the patient was able to abduct slightly and flex the foot dorsally and to extend the toes.

8. **Unintentional Suicide in an Epileptic.**—The case reported by Spratling is out of the ordinary for the reason that suicide was committed while the patient was in an automatic or unconscious state following an epileptic fit. He drank the contents of an ink bottle of about two ounces capacity. The ink was of the kind used by architects on mechanical drawings. Its odor indicated the presence of phenol and aniline oil. It also contained nitrobenzol. The autopsy showed the esophagus and stomach deep black in color, shrivelled and corrugated.

Boston Medical and Surgical Journal.

July 5.

13 *Principles of Feeding in Typhoid and in Other Fevers. F. P. Kinnicutt, New York.
14 The Heart in the Puerperium. H. Jackson, Boston.
15 *Tuberculin in Treatment of Pulmonary Tuberculosis. W. A. Griffin, Sharon, Mass.

13. **Feeding in Typhoid.**—Kinnicutt collected and analyzed a large number of typhoid statistics drawn chiefly from hospital services. These show that intestinal accidents, hemorrhage and perforation are rather less frequent under a mixed, soft and solid diet, than under restricted fluid diet, consisting mainly of milk. As a result of this study Kinnicutt makes a plea for a different dietetic management of typhoid than that which almost universally prevails, a management adapted to the individual case and based on the recognition that: (1) While the digestive function in many cases of the disease is unquestionably seriously impaired, frequently the impairment is not a material one; (2) a clean tongue, a true appetite, hunger, should be accepted as guides for the cautious employment of a more generous diet; (3) the individual, rather than the disease, is to be considered and treated.

15. **Tuberculin Treatment of Tuberculosis.**—Griffin reports three cases of pulmonary tuberculosis, which he says would not be considered particularly favorable for the tuberculin treatment, since they were under observation for some months before treatment was instituted. The treatment was of great value in two cases and of no harm in the third. The first patient received 27 injections during a period of five months, the injections varying in amount from .0005 gm. to .6 gm. The patient's condition improved rapidly, and for more than a month before discharge the cough and expectoration were *nil*, while the signs in the chest were likewise much improved. The second patient received 58 injections during a period of seven and one-half months. She, too, improved until at discharge there had been no cough or expectoration for some time, and the signs in the chest had cleared up to a marked degree. When last heard from both these patients were in good health. The third patient received in all 51 injections, the last one being .7 gm. The general condition improved somewhat, but the cough and expectoration remained about the same, while the bacilli persisted in the sputum.

St. Louis Medical Review.

June 30.

16 Etiology, Pathogenesis and Treatment of Vesical Calculus in Women. C. G. Cumston, Boston.
17 *Melaniferous Leucocytes in the Diagnosis of Malaria. J. R. Clemens, St. Louis.

17. **Melaniferous Leucocytes in Malaria.**—Clemens thinks it strange that in districts where the manifestations of malaria are protean in character and of endless variety there is ignored a means of diagnosis employed extensively elsewhere and advocated by Manson. This is the finding of pigmented leucocytes in the peripheral circulation of those suffering from malaria. In children especially, in whom usually the paroxysms are not very marked, the search for plasmodia must necessarily often prove futile, whereas the pigmented leucocytes are always present. The color of the pigment lends itself to a differential diagnosis. Light yellowish or red pigment denotes a simple type of malarial infection, while jet black pigment is indicative of the presence of the æstivo-autumnal parasite. The amount of pigment present in the white corpuscles is also helpful in the interpretation of cases. When the pigment granules in the leucocytes are few in number to the leucocyte we are necessarily dealing with a case of recent infection. On the other hand, in long standing and chronic cases, the leucocytes are crowded with pigment. The only possibility of mistake lies in regard to the pigmented leucocytes found in the subjects of melanotic sarcoma—a differential point which may safely be ignored.

Lancet-Clinic, Cincinnati.

July 7.

18 Association of Hysteria with Organic Diseases of the Central Nervous System. H. H. Hoppe, Cincinnati.
19 Traumatism of the Ureter and Pelvis of the Kidney. R. B. Hall, Cincinnati.

American Journal of Obstetrics and Diseases of Women and Children.

July.

20 *Treatment of the Toxemia of Pregnancy. G. L. Brodhead, New York.
21 *New Operation for Anteflexion of the Cervix. W. H. Baker, Boston.
22 Puerperal Sepsis. F. H. Jackson, Houlton, Maine.
23 Pregnancy, with Rupture of Bicornuate Uterus—Operation and Recovery. I. L. Watkins, Montgomery, Ala.
24 *Value of Blood Examinations in Surgical Diagnosis. D. S. D. Jessup, New York.
25 Tubo-Abdominal Pregnancy at Term. J. Aspell, New York.
26 Statistics of One Thousand Cases of Labor. I. L. Hill, New York.
27 Heredity in Gynecology. G. Sneguireff, Moscow.
28 Judgment and Technic During Labor. E. Sothoron, Washington, D. C.
29 Classifications of the Non-Specific Surgical Fevers. W. M. Ford, New York.
30 Menstruation—Its Significance, with Particular Reference to Recent Literature. C. Hill, Chicago.

20. **Treatment of Toxemia of Pregnancy.**—Brodhead advises the following treatment: During the eclamptic seizure administer chloroform and oxygen if possible. Prevent the patient from biting her tongue and from injuring herself by blows or falls. If the pulse is full and strong, with tension, give the Squibb fluid extract of veratrum viride, minims x-xx hypo-

dermically, and repeat in doses of minim v every half hour until the pulse is reduced to 60. If the Norwood's tincture is used, give minims x-xx and repeat in doses of minim x every half hour until the pulse is reduced to 60. In case of collapse, use whiskey, morphin and atropin hypodermically. If the pulse is weak and feeble, rely chiefly on chloral and bromids by rectum in doses of from one-half to one dram of each. When the pulse is strong use veratrum as indicated, combined with chloral by rectum. If the patient is unconscious, move the bowels by croton oil, minims i-ii, given with olive oil, one dram, on the back of the tongue. If this is not sufficient, give a high enema of sulphate of magnesia and castor oil, of each one ounce. If the patient is conscious, give magnesium sulphate two drams, every fifteen minutes, until one ounce has been given. Then, if necessary, use the high enema of magnesium sulphate and castor oil. A hot pack should then be given. The colon should be irrigated with several gallons of saline solution and several quarts left to be absorbed. Intravenous infusion should be reserved for the very severe cases.

Venesection, when labor has not yet begun, may be used to advantage in robust patients with a full pulse, from 12 to 16 ounces of blood being removed. If, however, the patient is about to be delivered, a moderate blood loss can be allowed in the third stage, and, if necessary, venesection can be performed after delivery. To decrease arterial tension, and as a heart stimulant, diuretic and diaphoretic, nitroglycerin is also of great value, while caffein and strophanthus are second only to nitroglycerin. If labor has not commenced, a modified Champetier de Ribes bag should be introduced and the cervix should be softened and dilated by the use of these bags. When the cervix has been well dilated, complete dilatation by the hand, and delivery by the forceps or version are indicated. If labor has already begun, but the cervix is long and rigid, use the bags for softening and dilatation. If the cervix is soft and dilatable, complete dilatation manually and delivery by forceps should be done. If the cervix can not be dilated by the ordinary methods, Dührssen's incision or Cesarean section should be advised, but unless the operator feels perfectly able to perform these operations, it is better to rely on medical treatment alone.

21. **New Operation for Anteflexion of Cervix.**—The details of Baker's operation are as follows: With the patient in the Sim's position, the cervix is thoroughly dilated, if necessary. The posterior lip of the cervix is then seized with a bullet forceps and drawn as near as possible to the vaginal opening. The position of the wedge is then estimated as nearly as possible opposite the point of flexure, and tenacula are inserted at each apex of the wedge. The amount of tissue to be removed in the wedge is a question of mechanical judgment, depending on the amount of anteflexion present before the patient is etherized. The removal of the wedge offers some technical difficulties. These may be overcome either by the use of a right-angle knife or by the old-fashioned Emmett's scissors, which are sharply bent toward their point. Usually, however, the ordinary scalpel is sufficient, by drawing sharply down on the base of the wedge, either by tenaculum or double hooks. The position of the canal should at all times be kept in mind, and it is best to keep a sound inserted in the uterus. It is not always necessary to cut into the canal, but if a better position for the cervix, or better coaptation of the edges, can be obtained, there should be no hesitation in doing so. After sufficient tissue has been removed, so that the cervix can be reduced to its proper position, the wound should be closed by silver wire sutures twisted. The reason for using silver is for better coaptation, in order to secure primary union with greater surety. From a purely mechanical standpoint, the operations have all been successful, the position of the cervix being restored permanently to its normal axis, and in all but one case the symptoms of dysmenorrhea have been greatly relieved. No report on sterility can be made, as the operations have in all cases been done on unmarried women.

24. **Blood Examinations in Surgical Diagnosis.**—Jessup summarizes his paper as follows: 1. Knowledge of the absolute and relative leucocytosis in inflammatory conditions is of great value to the surgeon, but only when taken in conjunction with the history and clinical features. The man who operates on the blood count alone runs the risk of opening an abdomen for intestinal indigestion when the cause of the leucocytosis is a pneumonia. 2. In the absence of an absolute leucocytosis a relative increase of the polynuclears coupled with other signs is indicative of a purulent exudate. 3. The absolute leucocytosis is of value in prognosis, the higher counts being seen in cases in which there is good body resistance. Low counts with a high percentage of polynuclears and evidence of marked sepsis give a poor prognosis. 4. A differential count should accompany every total count for its proper interpretation; but it is not safe or wise at present to fix any definite percentage of polynuclears as the point at which pus is certain to be found. 5. In certain bacterial infections, e. g., with typhoid and colon bacilli, the polynuclear percentage may be below normal, although pus is present, and this must be borne in mind in interpreting the leucocyte counts.

Washington Medical Annals.

July.

31 Arteriosclerosis. J. B. Nichols, Washington, D. C.
32 *Case of Abdominal Pregnancy: Operation. I. S. Stone, Washington, D. C.
33 Three Cases of Tuberculosis. D. S. Lamb, Washington, D. C.
34 Two Cases of Cholecystectomy. I. S. Stone, Washington, D. C.
35 Case of Cholecystectomy for Gallstone. I. S. Stone, Washington, D. C.
36 Vaginal Versus the Abdominal Route in Pelvic Surgery in Women. J. W. Bovée, Washington, D. C.
37 *Case of Resection of Ileum. I. S. Stone, Washington, D. C.
38 *Appendicitis as a Cause of Tetany. G. T. Vaughan, Washington, D. C.
39 *Two Cases of Resection of Intestine with Recovery of Patients; Also, a Case of Rupture of the Intestine. G. T. Vaughan, Washington, D. C.
40 *Case of Fatal Hemorrhage from Perforation of Intestine by a Gallstone. A. M. Ray and I. S. Stone, Washington, D. C.

32. **Abdominal Pregnancy.**—Stone reports a case of abdominal pregnancy that primarily was tubal, and which by either tubal rupture or abortion was permitted to escape intact, perhaps first into the broad ligament, then out of its bed there and continuing its own life, avoiding necrosis by acquiring new sources of blood supply, and at the same time continuing the life of the fetus and fetal membranes until past the time of normal gestation.

37. **Resection of Ileum.**—Stone reports a case of resection of the ileum for stenosis associated with a large enterolith. Five inches of bowel were removed. The enterolith weighed 15 grams.

38. **Appendicitis as a Cause of Tetany.**—Vaughan's patient, a girl 11 years of age, for two years had suffered from recurrent attacks of appendicitis and in each attack she had had tetany, the seizures consisting of tonic spasms of two to three minutes' duration, affecting the muscles of the face, extremities and body. The appendix was removed and there has since been no attack of tetany.

39. **Resection of Intestine.**—The first case reported by Vaughan was one of carcinoma of the mesentery occurring in a woman 63 years old. Six feet and seven inches of intestine, including small intestine, cecum, ascending and one-half of the transverse colon were removed and a side-to-side union made with sutures. The patient made a good recovery, but was troubled with diarrhea, and now, about six months later, has to be careful in her diet to prevent diarrhea. The second case was one of gunshot wound of the intestine and bladder, in a man, 23 years old. A laparotomy was done about four hours after the injury. There were ten holes in the small intestine and two in the bladder. Six holes in the intestine were sutured and 2 inches of bowel, containing the remaining four holes, were resected and the ends united with sutures. One hole in the bladder was sutured, but the other was so deep in the pelvis that it could not be reached. Rather than split the bladder open and suture the bullet hole on the inside, it was decided to leave it closed and to depend on permanent catheterization to prevent infection. The abdomen was closed and a rubber tube left in for drainage. A soft catheter was introduced into the bladder through the urethra and fixed. The catheter was kept in place three weeks, only removing it every two or three days for cleansing. The patient made a good recovery.

40. **Perforation of Intestine by a Gallstone.**—In the case reported by Ray and Stone a communication was found between the gall bladder and duodenum large enough to admit the whole index finger. This opening was located about three inches below the pylorus. A large gallstone was found at this point which had not yet escaped into the bowel. There also existed a communication between the gall bladder and along behind the omentum into the transverse colon at the hepatic flexure. This perforation was oval in shape and admitted the end of the index finger.

Ophthalmic Record, Chicago.

June.

41 *A New Eye Symptom in Exophthalmic Goiter. H. Gifford, Omaha, Neb.
42 Use of the Electro-Magnet and X-Ray in Removing Foreign Bodies from the Eye. A. R. Baker, Cleveland, Ohio.
43 *An Intraocular Irrigator. A. Greenwood, Boston.
44 Case of Hypertropia. J. E. Colburn, Chicago.
45 Case of Acromegalia, with Interesting Eye Symptoms. E. H. Porter, Tiffin, Ohio.
46 Ocular Signs and Complications of Accessory Sinus Disease. J. Green, Jr., St. Louis.
47 *An Unusual Case of Methyl Alcohol Poisoning. H. Gifford, Omaha, Neb.

41. **New Symptom in Exophthalmic Goiter.**—The symptom referred to by Gifford is the difficulty encountered in trying to evert the upper lids of some patients affected with exophthalmic goiter. Eight cases are reported in which the upper lid could be turned only with great difficulty and then at the expense of so great a strain on the tarsal conjunctiva that the latter was entirely blanched in the center by the pressure. Excluding the exophthalmos as a cause of this symptom, Gifford thinks it most unreasonable to assume that it is due to a spasm or rather an unnatural irritability of one or both of the levators of the upper lid. So far as the symptoms go they might be caused by either one or both of the levators, but in view of the close association between the striated levator and the recti muscles, none of which seem to be affected, it seems more probable that the affected muscle is the non-striated levator of Müller which is innervated by the sympathetic nerve.

43. **Intraocular Irrigator.**—This apparatus was devised by Greenwood with the object of combining lightness and ease of manipulation with the absolute assurance that the return flow of irrigating solution from the anterior chamber should be as free as possible. To insure lightness the metal tube through which the rubber feed tube passes is made very thin, light and only about the size of an ordinary round pencil. About half an inch from one end a crescent-shaped segment is removed to allow the finger tip completely to compress the rubber tube at that point and thus to control the flow. The free return of fluid from the anterior chamber is insured by the little metal rod extending across the concavity into the anterior chamber, or even into the lower part of the posterior chamber; the rod serves to elevate the corneal flap and thus to permit a free return of the débris-laden fluid. After the expulsion of a lens Greenwood never makes pressure on the cornea to assist in the removal of cortical débris, but irrigates for the removal of such débris. Since using this irrigator in this way for over two years he has not had a single case of loss of vitreous. The whole apparatus may be boiled and thus thoroughly sterilized.

47. **Unusual Case of Methyl Alcohol Poisoning.**—Two years ago, while working intermittently at painting, Gifford's patient spent three or four hours in a room, 16x14x8, the woodwork of which he decorated, first, with a stain which he mixed himself in the room, using wood alcohol freely as its main component, then using a shellac mixed with wood alcohol. He purposely closed the doors and windows extra tight to keep out dust. He finished about 4 p. m and 6 p. m. of the same afternoon he was absolutely blind. He could not see a ray of light. He was not nauseated nor ill in any other way. After a week of total blindness, perception of light began to return and improved so that after two or three weeks more he could read coarse print with a strong magnifying glass. Then a change for the worse set in gradually and continued until, after six months, he was practically blind again. He could see light, but for some weeks was entirely unable to guide himself in the brightest daylight. Then another change for the better began. Very gradually his sight improved, and in the course of a year reached the point at about which he has since remained. He now can see the sidewalks so as to find his way about town quite readily. The treatment consisted mainly in hot eye baths and moderate doses of potassium iodid.

New Orleans Medical and Surgical Journal.

July.

48 *Mechanical Treatment of Fracture of the Patella. J. D. Bloom, New Orleans.
49 Studies of Yellow Fever. J. B. Guthrie, New Orleans.
50 Case of Multiple Urethral Stricture with Complications. C. W. Allen, New Orleans.
51 Stovain in Spinal Anesthesia. V. Maes and S. Logan, New Orleans.
52 Bier's Vacuum Hyperemia in the Treatment of Carbuncle. P. McIlhenny, New Orleans.
53 Fracture of the Superior Maxilla Successfully Treated by the Use of the Interdental Splint. A. G. Friedrichs, New Orleans.
54 Case of Acute Endomastoiditis, with Thrombosis of the Lateral Sinus. H. Dupuy, New Orleans.
55 Diphtheria of the Conjunctiva in the Far South. H. D. Bruns, New Orleans.
56 Osmic Acid Injection for Trifacial Neuralgia. A. Danna, New Orleans.

48. **Treatment of Fractures of Patella.**—A method of mechanical treatment of fracture of the patella that has proved successful in the hands of Bloom is that based on a hyperextension of the limb and coaptation of the fragments. The splint used for this purpose is of a V-shape with inversion at its angle-shaped site, its upper flange attached to a collar for encircling the upper thigh, the lower flange resting on a triangular base for support and to accentuate the extension. A receptacle for the calf and heel is placed on this. Abrasion for detachment of any possible fringe adhesion to the fragments is first done. Hyperextension by plaster strips is made in the application of the splint, and this is further reinforced by bandages on either side of the joint to strengthen and to confirm its position. The coapting effect of imbricated strips one-fourth of an inch in width secures more firmly the apposition and adds a fixity that contributes an immobilizing influence to the fractured bone. The splint as applied requires careful watchfulness to the calf and heel. It is well to remove the leg bandage at least once a week to observe for any pressure-necrosis that might occur from insufficient padding or sharpened pressure. The re-application of the bandage, both to the thigh and leg, also insures a more perfect result in the union.

The Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

July 1.

57 *Treatment of Burns and Skin Grafting. H. Sneve, St. Paul.
58 Diagnosis and Treatment of Chronic Myocarditis. J. W. Bell, Minneapolis.
59 *Treatment of Burns. C. T. Granger, Rochester, Minn.
59½ Two Splinters of Steel Removed from the Interior of the Eye with the Magnet. W. R. Murray, Minneapolis.
60 Disease of the Pancreas. J. A. Lyng, Minneapolis.

57. This is practically the same paper which was published in THE JOURNAL, July 1, 1905.

59. **Treatment of Burns.**—Granger cuts a few pieces of gauze as large as are necessary to cover the burned area. The gauze is then spread with a thick layer of equal parts of lanolin and oxid of zinc ointment. The ointment is then covered with the waxed paper sold by instrument dealers. The gauze is backed up by a thin layer of absorbent cotton, and the dressing is applied with the waxed paper surface in contact with the burn. The whole is covered with a roller bandage. Patients affirm that this dressing has a remarkably cool and easy effect, which is kept up continuously. One of the advantages which this dressing affords is the ease with which it may be removed without harm to the granulating tissue.

Annals of Gynecology and Pediatry, Boston.

June.

60½ Education of the Dullard in the Public School. J. P. Haney, New York.
61 *Management of Constipation in Infancy. T. S. Southworth, New York.
61½ *Case of Sterility Due to Chronic Appendicitis and Hydrosalpinx. J. V. Young, New York.

61. Management of Constipation in Infancy.—Southworth states that constipation in the exclusively breast-fed infant presents more difficulties than that in the bottle-fed, because the composition of the food is rather less readily modified. The indications in these cases are to try to increase the flow of milk. With the possible exception of milk drinking, nothing has proved so efficient a milk-maker in Southworth's experience as well-cooked and salted corn-meal gruel. One quart of moderately thin corn-gruel should be drunk each day, plain or mixed with an equal quantity of milk. If well borne, one or even two teaspoonfuls of sweet gravity cream may be given before each nursing, and will be immediately diluted by the breast-milk. If there be reason to suppose that the amount of fluid received from the breast is limited and the stools are hard, boiled water may be given freely between nursings with the purpose of preventing undue absorption from the intestinal contents. Training of the lower bowel should begin soon after birth. This is facilitated by partially introducing a gluten or glycerin suppository for a few moments and gently massaging the abdomen at the same time each morning and late afternoon. The infant may then be held upright on a small, warmed chamber. The hour is chosen to be at the conclusion of nursing, when peristalsis is active. For the actual relief of constipation the suppository must usually be fully inserted into the rectum and left there. The habitual use of laxatives is harmful. By emptying the small as well as the large intestine they do not interfere with assimilation but tend rather to increase the difficulty which they are designed to relieve.

The constipation of bottle-fed infants is ordinarily best met by a general increase of the strength of the food, with possibly a somewhat greater increase in the fat, but not one exceeding 4 per cent. Orange juice should be given after six months of age, and if there be the usual evidences of rickets, cod-liver oil also. Oat meal gruel may be substituted as the diluent, and a malt sugar preparation be substituted wholly or in part for other forms of sugar. If these measures fail cascara is the best regulator, increasing from small doses until results are obtained. In Southworth's experience infants require relatively full doses of cascara preparations.

61½. Sterility Due to Appendicitis.—Young reports the case of a woman, aged 36, who had had several attacks of appendicitis, although a diagnosis was not made at the time. Her condition finally became such that an operation was advised. Both tubes were absolutely occluded and filled with a clear fluid. Amputation of both tubes was done an inch and three-quarters from the cornua. The ovaries, which were normal, were fastened by an interrupted cat-gut stitch to their normal position. The appendix was removed. It was strictured, contained three concretions, and about one-half dram of pus. After having been sterile for twelve years the patient was delivered of a normal child one year after this operation. The interesting point in this case is the fact that there was no possible source for an existing local peritonitis through the uterine canal, and that the appendix, lying at the brim of the pelvis with the tip just over the rim, and filled with pus, was ample cause for the peritonitis, which spread and occluded the tubes and formed the starting point of the hydrosalpinx.

Illinois Medical Journal, Springfield.

June.

62 The Dynamic Force of Drugs. E. H. Fitzpatrick, Pontiac.
63 Sources of Infectious Agents and the Ways and Means of Infection. L. Hektoen, Chicago.
64 Rôle of the House Fly and Other Insects in the Spread of Infectious Diseases. A. Hamilton, Chicago.
65 Standard of Government Meat Inspection. W. K. Jaques, Chicago.
66 Somnoform Anesthesia. C. M. Paden, Chicago.

July.

67 *Popularization of Medicine. H. C. Mitchell, Carbondale.
68 *Progress in Serum Therapy During the Year Ending June 1, 1906. E. R. Larned, Chicago.
69 *Treatment of Compound Fractures. E. H. Ochsner, Chicago.
70 Hydatidiform. G. C. Waiss, Chicago.
71 Prognosis and Treatment of Cerebral Apoplexy. J. Grinker, Chicago.
72 Cerebral Localization in Apoplexy. S. Kuh, Chicago.

67-68. See abstracts in The Journal, June 9, 1906, p. 1787.

69. **Id.**—June 23, 1906, p. 1965.

Philippine Journal of Science, Manila.

May.

73 Histology of the Skin Lesions in Varicella. E. E. Tyzzer, Boston.
74 Vegetation of the Lamo Forest Reserve. H. N. Whitford, Manila.
75 Waters of the Crater Lakes of Taal, with a Note on Some Phenomena of Radioactivity. R. F. Bacon, Manila.
76 Silver Oxid and Silver Suboxid. G. N. Lewis, Manila.

Yale Medical Journal, New Haven, Conn.

June.

77 Utilization of Carbohydrates, with Special Reference to the Problems of Infant Feeding. L. B. Mendel.
78 Prevention of Venereal Diseases. R. A. McDonnell. New Haven.
79 Use of Cocain in Surgery. R. F. Rand, New Haven.

Journal of the South Carolina Medical Association, Charleston.

June 21.

80 Locating Fistulæ in the Lower Intestinal Tract by Injecting Hydrogen Dioxid Through the Anus. H. A. Royster, Raleigh.
81 New and Efficient Procedure in the Treatment of Catarrhal Deafness. J. W. Jervey, Greenville.
82 Belladonna—Its Uses and Abuses. R. E. Mason, Charlotte.

Ohio State Medical Journal, Columbus.

June 15.

83 Diagnosis and Surgical Treatment of Gallstones. F. E. Bunts, Cleveland.
84 Myeloid Leukemia and the X-Ray. J. Eichberg, Cincinnati.
85 Diseases of Bones and Joints. H. J. Whiteacre, Cincinnati.
86 Esophageal Stenoses. L. A. Levison, Toledo.
87 The Business Side of the Practice of Medicine. T. M. Johnson, Lima.
88 A Short Review of Medicine in Logan County from 1838 to 1842, Inclusive. S. W. Fuller, Bellefontaine.
89 Chronic Constipation. J. F. Kahler, Canton.

Cleveland Medical Journal.

June.

90 Tendon and Muscle Transference. E. H. Bradford, Boston.
91 Case Showing Abdominal Ptosis, Hyperchlorhydria, Regurgitation and Rumination. G. W. Moorehouse.
92 Vincent's Angina. L. W. Ladd, Cleveland.

The Canadian Practitioner and Review, Toronto.

June.

93 Intermittent Gastrosuccorrhea. G. Chambers, Toronto.
94 Mastoid Cases with Complications. W. Crawford, Toronto.
95 Additional Experience in the Treatment of Pelvic Disease Associated with Psychoses. E. A. Hall, Victoria.
96 Opsonins and Aggressins. E. V. Frederick, Albany, N. Y.

Denver Medical Times and Utah Medical Journal.

June.

97 Sore Throat in Pulmonary Tuberculosis. R. Levy, Denver.
98 Treatment of Hemoptysis in Pulmonary Tuberculosis. N. A. Johnson, Denver.
99 Treatment of Gastrointestinal Disorders in Pulmonary Tuberculosis. C. D. Spivak, Denver.
100 Treatment of Cough in Pulmonary Tuberculosis. S. Simon, Denver.
101 Treatment of Fever in Pulmonary Tuberculosis. A. M. Holmes, Denver.
102 Malnutrition as a Factor in Tuberculosis. A. M. Holmes, Denver.
103 Nerves of the Blood Vessels. B. Robinson, Chicago.
104 Successes and Failures in Roentgen Therapy of Epithelioma of the Lip. G. H. Stover, Denver.
105 Relation Between Diseases of the Nose and Throat and Those of the General System. J. M. Foster, Denver.

Kentucky Medical Journal, Louisville.

June.

106 Arterial Tension and Its Practical Significance. J. A. Flexner, Louisville.
107 *College Education Preparatory to the Study of Medicine. J. W. Pryor, Lexington.

107. **Id.**—Nov. 4, 1905, p. 1430.

Medical Examiner and Practitioner, New York.

June.

108 Address of President, Delivered Before Association of Life Insurance Examining Surgeons. W. Moore, New York.
109 An Undeveloped Field—the Advantages that May be Derived from Making Examinations for Accident Insurance Companies. C. H. Harbaugh, Philadelphia.
110 Liability Insurance. F. E. Allard, Boston.
111 Life Insurance Examiners in Their Relation to the Companies. F. Wells, Boston.
112 Mistakes Made by Insurance Examiners. G. G. McConnell, Chicago.
113 Medical Examination Considered as an Exhibit to a Commercial Contract. W. H. Birchmore, New York.
114 To What Extent Should Insurance Organizations Educate Their Insured as to Healthful Living. E. S. Sherrill, Detroit, Mich.
115 Life Insurance Medical Examiners, Medical Examiners' Associations and Reciprocal Relations Between Life Insurance Companies and Ourselves. L. H. Montgomery, Chicago.

Western Medical Review, Lincoln, Neb.

June.

116 Duties and Responsibilities of the Medical Profession. A. F. Jonas, Omaha.
117 Measures of Precision Influencing Prognosis. L. Crummer, Omaha.
118 Gall-Bladder Surgery, with Special Reference to Chronic Pericholecystitis. A. I. Mackinnon, Lincoln.

American Journal of Surgery, New York.

July.

119 Fourth of July Injuries, with Especial Reference to the Prophylaxis and Management of Tetanus. W. H. Luckett, New York.
120 Value of the Roentgen Rays in Surgical Diagnosis. C. Beck, New York.
121 Spontaneous and Criminal Abortion, from a Medicolegal Point of View. A. Vander Veer, Albany, N. Y.
122 Twentieth Century Featural (Cosmetic) Surgery. J. C. De Vries, Brooklyn, N. Y.
123 Plaster of Paris and How to Use It. (Concluded.) M. W. Ware, New York.
124 Diagnosis of Fracture of the Skull. W. A. Bryan, Nashville, Tenn.
125 A Possible Case of Intratracheal Arteriovenous Aneurism, or Exophthalmic Goiter. W. S. Bryant, New York.

Journal of the Outdoor Life, Saranac Lake, N. Y.

July.

126 The Ottawa Tent Colony. J. W. Pettit, Ottawa.
127 State and Municipal Control of Tuberculosis. M. P. Ravenel, Philadelphia.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

July.

128 Prevention of Disease in the Army and the Best Method of Accomplishing that Result. C. E. Woodruff and F. T. Woodbury, U. S. A.
129 Practical Methods for the Purification of Drinking Water. W. H. Devine.
130 Transport Model for Conveying Recumbent Wounded Over Rough and Mountainous Roads. A. Ross.
131 A Much Needed and Easily Effected Reform in Camp Sanitation. N. Roberts, P. H. and M.-H. S.
132 Physical Effects of Gun Fire. L. Thomas, N. G. S.
133 Malaria and Mosquitoes at Lucena Barracks, Philippine Islands. H. Page, U. S. A.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

June 23.

1 Meaning and Mechanism of Visceral Pain. J. Mackenzie.
2 *Chorea Considered as Cerebral Rheumatism. D. Duckworth.
3 *Dilatation and Hypertrophy of the Heart and Some Other Points in Cardiac Pathology. S. West.
4 *Congenital Heart Disease. F. J. Poynton.
5 *Aortic Insufficiency. S. Taylor.
6 *Degeneration of the Myocardium in Hot Climates. W. C. Brown.

2. **Chorea and Rheumatism.**—Duckworth reiterates his belief that chorea is a variety of rheumatism which more particularly involves the brain. He says that the evidence in favor of the rheumatic nature of chorea is stronger, if possible, from the clinical than from the bacteriologic side. Chorea is more frequently seen in families prone to rheumatism. It may precede by months or years an onset of rheumatic fever, or it may supervene during an attack. It may also occur subsequent to such an attack, with or without overt rheumatic complications. Duckworth's statistics show a family or personal history of rheumatism in 85 per cent. of cases of chorea. He believes that a larger percentage could be discovered if it were possible to secure accurate histories of past attacks of the disease. The occurrence of chorea may be the sole manifestation of an attack of rheumatism. It is thus a true cerebral rheumatism and in first attacks of rheumatism and in first attacks of chorea there is not seldom to be observed a distinct degree of cardiac dilatation, sometimes independent of pyrexia, pericarditis, or appreciable endocarditis.

3. **Cardiac Pathology.**—One of the subjects referred to by West is cardiac pain or angina, which he likens to similar pains caused by the effort made on the part of any muscular organ to get rid of its contents. He terms this effort on the part of the heart the cardiac colic, thus placing angina in the general group of colic.

4. **Congenital Heart Disease.**—Poynton discusses the morbid changes in congenital heart disease under two headings: 1. Those due to malformation. 2. Those due to intrauterine endocarditis. A number of cases in point are cited.

5. **Aortic Insufficiency.**—Taylor reports several cases illustrating the advantages which will accrue to a patient with aortic insufficiency when he also has a co-existing mitral insufficiency. He says the distress is less and that the patient is also capable of greater exertion. There is a safety-valve action through the mitral orifice comparable to the tricuspid safety valve on the right side during prolonged muscular strain. Taylor believes that digitalis is beneficial in aortic regurgitation only when there is also present mitral regurgitation, and that although digitalis is the most powerful remedy in mitral disease, in cases of pure aortic regurgitation digitalis is not only a dangerous drug but actually a poison.

6. **Degeneration of the Myocardium.**—Brown describes a somewhat unfamiliar but by no means infrequent result of residence in the tropics, a peculiar form of degeneration of the cardiac muscle. Sudden and unanticipated death occurs not infrequently after an apparently trivial illness. Contrasted with the commoner forms of myocardial decay the salient features of the disease are the absence of fainting fits, the inconsiderable impairment of the circulation, the vagueness of the physical signs, and the fact that fatal syncope usually supervenes in the absence of unwonted exertion. It is perhaps only a coincidence, but one the importance of which will not be overlooked, that death frequently occurs at night and after the administration of a soporific. The disease is one of the imprudently strenuous life. It occurs usually in those who are given to over indulgence in hard exercise. This degeneration occurs in persons who abstain altogether from alcohol, in moderate drinkers, and in those who are chronically overstimulated. It affects smokers and non-smokers alike, but women distinctly less than men. Repeated attacks of malarial and other fevers, and the high body temperatures usually associated with cardiac asthenia and cloudy swelling, do not originate it, while, contrary to the opinion which was formerly held by many physicians, it seems to have no relation to beriberi. The postmortem appearances are fairly uniform. On opening the pericardium (which contains no excess of fluid) the heart is found to be somewhat larger than normal. It lacks the resistance of a healthy organ, and is lax and flaccid. Epicardial fat is markedly deficient. If the viscus is removed from the thorax and held up by the great vessels, it sags and droops; in extreme cases the parietes are so loose that it collapses in mushroom shape over the hand that grasps it. Section into the ventricles shows no dilatation and no endocarditis; on the contrary, the lining membrane is blanched and bloodless. A similar condition prevails in the muscle; there are no infarcts, no points of hemorrhage, no deposits of pigment, no fat, no reaction to iodin, no serous atrophy. The coronary arteries are dilated and soft, and show no atheromatous change. The myocardium is pale, almost to whiteness, soft and friable. Microscopically, the intermuscular connective tissue is seen to be swollen, and apparently increased in quantity, but round-celled infiltration and vascular congestion are absent. The condition of the individual fibers suggests cloudy swelling; the section looks waterlogged; it appears to have a general boggy turbidity, the striæ are hazy and indistinct, and there is occasional rupture and fragmentation of the ultimate strands. From other indications it is obvious that the general nutrition is profoundly impaired, and that the myocardial lesions, as in the case of other retrogressions of tissue, are only prominent incidents of a general dyscrasia.

The Lancet, London.

June 23.

7 *Uses of Pessaries. P. Horrocks.
8 Insanity and Murder. T. C. Shaw.
9 Aphasia. B. Bramwell.
10 *Primary Pneumococcal Arthritis. W. Pasteur and L. Courtauld.
11 *Case of Congenital Hypertrophy of the Pylorus. J. W. Rob.
12 *Orientalism; or a Change to an Eastern Appearance. H. W. Dodd.
13 *Epithelioma of the Tongue with Secondary Growths in the Glands of the Neck and the Liver Treated by X-Rays. R. Knox.

7. **Uses of Pessaries.**—Horrocks says that there is one great advantage in trying to relieve women who suffer from displacements, by means of pessaries—namely, that it is, to-day,

a treatment that is absolutely free from danger to life and there is no mortality. It is for that reason, as well as because it has been his experience to meet with few cases in which complete failure occurs, that he is strongly advocating a patient trial of pessaries before resorting to operative procedures which even in the best of hands have a slight immediate mortality, which in itself, apart from other objections, renders it necessary to have very weighty reasons for recommending and carrying out such operations. One writer has said that the day of pessaries is over. Horrocks does not think so. On the contrary, he thinks that they will be used more frequently as the rank and file of the profession come to understand more clearly the principles of their action.

10. **Primary Pneumococcal Arthritis.**—Pasteur and Courtauld summarize their paper as follows: 1. Primary pneumococcal arthritis is apparently of rare occurrence in adults. 2. In children it is less uncommon. 3. The path of infection is the blood stream, to which the organisms gain access through some slight and unnoticed area of injury. This is in all probability situated in the mouth, nasopharynx, or middle ear, and the relative frequency of this form of arthritis in infants and young children may be connected with their susceptibility to inflammatory conditions of these regions. 4. The infection is usually localized at first in one joint and may remain so; on the other hand, it may become generalized. 5. The death rate in the primary form compares very favorably with that of secondary pneumococcal arthritis. This may be accounted for by the usual restriction of infection in the former, whereas the latter generally implies a more or less pronounced septicemia. 6. It is probable that the records available do not convey an accurate idea of the frequency of this form of arthritis, as many slight cases, which recover without surgical interference, must escape bacteriologic examination.

11. **Congenital Hypertrophy of Pylorus.**—The line of treatment adopted by Rob in this case was that of washing out the stomach every day and feeding the baby on peptonized milk (1 part) and water (2 parts), in amounts of half an ounce every hour. The child improved steadily under this treatment and an operation is unnecessary. The food was changed, both as to kind and amount, so as to be in keeping with the needs of the patient and the capacity of the stomach and its ability to take care of the food.

12. **Orientalism.**—Dodd cites the case of a man, aged 47, whose facial appearance underwent a distinct change, becoming Mongolian in type. The only subjective symptoms appeared to be a feeling of general weakness and a vague alteration of sensation, although the latter was not constant. There was some hemiatrophy of the tongue, and when protruded it inclined slightly to the right side. There were no other paralyses. The reflexes were normal. A complete blood examination showed no abnormality. Vision was normal in both eyes. The patient always seemed rather sleepy. His memory was bad. The cause of this change could not be discovered. The testes were very small, unequal in size, and abnormally tender and soft. Sexual desire was absent. Dodd thinks that this case forms a type by itself.

13. **Epithelioma of Tongue.**—The interest in Knox's case centers in the apparent arrest of the primary growth by the *x*-ray, and the changes occurring in the several glands in the neck. The patient died as the result of the secondary involvement of the liver.

Journal of Tropical Medicine, London.

June 15.

14 Subhepatic Abscess. J. Cantlie.
15 Anatomy of the Biting Flies of the *Genera Stomoxys* and *Glossina*. (To be continued). G. M. Giles.
16 Puru of the Malay Peninsula. T. D. Gimlette.

The Practitioner, London.

June.

17 *Some Obscure Cases of Urinary Disorders. R. C. Elsworth.
18 The Throat and Nose in Relation to Phthisis. H. Barwell.
19 *Certain Bodies Present in the Chancre, in the Condyloma, and in the Blood During Secondary Syphilis. W. E. de Korte.
20 Treatment of Tuberculous Peritonitis. T. Guthrie.
21 Necrobiotic Fibroids and Pregnancy. F. E. Taylor.
22 After-Treatment of Cases of Suprapubic Cystotomy. G. H. Colt.
23 Removal of a Tracheotomy Tube Which Had Become Impacted in the Left Bronchus. R. Fullerton.
24 Case of Bronchiectasis Successfully Treated by Incision and Drainage. T. Redmayne.

17. **Urinary Disorders.**—Elsworth reports ten cases which clearly illustrate certain difficulties in diagnosis and the value of the cystoscope as an aid in diagnosis. He emphasizes the following points: Cystitis lasting for long periods, due to a primary lesion of the bladder, and accompanied throughout its entire course by acid urine, is much more common than is generally supposed. The occurrence of urinary disorder with acid pyuria, and frequency of micturition, does not mean that a bladder lesion is excluded, and that the lesion is necessarily in the kidney. That it is possible to have extensive disease of the kidney without any urinary symptoms whatsoever, and that too with normal urine. There may be urinary symptoms consisting of pain, frequency of micturition and acid pyuria without disease of either kidney or bladder, the symptoms being due to a lesion in the ureter. The various organs are so intimately connected that the symptoms produced by disease of one may be common to all. The differentiation is only possible by physical examination, in which the cystoscope gives valuable aid. In a certain limited number of cases, the administration of a pigment, such as aniline dye, facilitates the recognition of a partially, or completely, blocked ureter.

19. **Bodies Present in Blood During Secondary Syphilis.**—de Korté examined the blood of a large number of syphilitics and failed to find a single spirochete, either pallida or refringens. He did find, however, bodies distinctly protozoan in nature, whose life cycle he studied carefully. He does not offer any opinion as to the causal relationship to syphilis of these organisms.

Bulletin de l'Académie de Médecine, Paris.

25 (Year LXX, No. 24.) Results of the "Nursling Consultations." —Des consultations de nourrissons. P. Budin.
26 Sudden Hematoma of the Uvula.—Quelques cas de suffusion sanguine brusque de la luette. P. Fabre.

Press Médicale, Paris.

27 (XIV, No. 45.) *Sleeping Sickness.—La maladie du sommeil. E. Brumpt.
28 (No. 46.) Appendicite et Typhlo-colite. P. Reclus.
29 Traitement chirurgical des tumeurs scrotales dans les pays chauds (in the tropics). Thiroux and D'Anfreville.
30 (No. 47.) Le réflexe gastro-salivaire. H. Roger.
31 L'autonarcose. I. Dusciau.
32 (No. 48.) Asphyxie locale et gangrène des extrémités d'origine tuberculeuse. G. Guillain and P. Thaon.
33 *Les gastrorragies frustes. A. Falloise.

27. **Sleeping Sickness.**—Brumpt advises in prophylaxis of sleeping sickness that communication between infected and non-infected regions should be restricted. Workmen and soldiers should be obtained for infected regions only from regions already infected, and in the still healthy parts only from regions still free from the disease. He urges search for regions and zones where the insect intermediate host is not found, and that villages be founded there. The children born after the removal will be free from the scourge, and it will gradually die out. The French Geographical Society is now fitting out an expedition for the study of the disease, to make Brazzaville its headquarters. Two physicians and a naturalist comprise the party.

33. **"Occult" Gastric Hemorrhages.**—Falloise prefers to call the minute quantities of blood escaping into the stomach "gastrorragies frustes," instead of Boas' term "occult bleeding." He regards it as a most valuable differential sign, confirming the diagnosis of ulcer in cases suggesting a possible neurosis, differentiating further chronic gastritis or achylia from cancer, and even ulcer from cancer, if the findings under treatment are borne in mind. It sometimes reveals the presence of a cancer not causing any other symptoms. The absence of the "fruste gastrorrhagia" can also serve to exclude cancer in certain dubious cases, even when a tumor can be palpated.

Semaine Médicale, Paris.

34 (XXVI, No. 25.) *La fièvre ganglionnaire. L. Cheinisse.

34. **Glandular Fever.**—Cheinisse reviews what has been written on glandular fever in Europe and in this country. There can be no doubt, he says, that the affection is a general in-

fection, with a well-defined clinical syndrome. The glands involved are those near the posterior margin of the sterno-cleido-mastoid muscle. The onset in children is generally sudden, with torticollis, accompanied by sore throat and constipation. The principal differentiating features are the localization and the evolution of the glandular affection, the lack of proportion between the enlargement of the glands and the manifestations in the mouth and throat, and the slight tendency to suppuration. Differentiation is more difficult if the patient has recently had scarlet fever. Epidemics of glandular fever have been observed in adults, one occurring in a Russian regiment. Among the complications noted have been epistaxis, nodular erythema, and acute nephritis, and Kissel has recently reported two cases in which there was great prostration and rapid emaciation. In Moussoux's case the general disturbances were so severe that they were ascribed to incipient tuberculosis. Treatment should include suppositories of quinin or antipyrin to reduce the fever, supplemented by purgatives. The local measures advised are camphorated oil on plenty of cotton or an ichthyol salve, or merely moist compresses with an impermeable outer covering. The patient should be isolated to prevent contagion of others, although the isolation need not be so severe as for other infections as the receptivity is limited.

Beiträge z. Geb. und. Gynäkologie, Hegar's, Berlin.

Last indexed, page 77.

35 (X, No. 3.) *Ueber die Erfolge der vaginalen Uterus-Exstirpation wegen Karzinom. A. Blau.
36 Untersuchungen ueber die Veränderungen der Decidua basalis bei manuell gelösten Plazenten. H. Jockers.
37 Bakteriologische Untersuchungen des Genital-Sekretes neugeborener Mädchen (of newborn female infants). V. Neujean.
38 *Anatomische, experimentelle und klinische Untersuchungen zur operativen Erweiterung des Beckens (enlargement of pelvis). H. Sellheim.
39 *Ueber die Anwendung der Tuberkulinpräparate, speziell den diagnostischen Wert des alten Tuberkulin bei Genitaltuberkulose. R. Birnbaum.
40 Beitrag zur Lehre von den Cysten der Nabelschnur (cysts of umbilical cord). H. Haas.
41 Ueber den Sitz des Fruchtkuchens und die Bedeutung dieses Sitzes für die Geburt (site of placenta with regard to birth). O. H. Petersen.
42 Fall von Sarcoma hydropicum papillare. J. Bäcker and K. Minich.
43 Zur Steigerung der Widerstandskraft des Organismus durch klinische Leukozytose (artificially induced leucocytosis). J. Hofbauer. (Commenced in vol ix.)

35. **Vaginal Extirpation of Cancer.**—Blau gives a detailed report of all the vaginal radical operations for cancer performed at the Chrobak clinic between 1890 and 1903, and also the abdominal operations during the last few years. The Schuchardt incision is preferred. It has widened the range of operability. Fully 25 per cent. of the carcinomas of the cervix have failed to show evidence of recurrence since the operation, and 76.4 per cent. of the carcinomas of the corpus. In 5,587 women examined in the clinic for various affections in 1900-1901, carcinoma was found in 153, and in 24 of these cases it was found to be operable (15.6 per cent.). In the following year carcinomas were found in 85 out of 4,626 women, operable in 28 (32.9 per cent.). Between March, 1902, and October, 1903, 9,365 women were examined and carcinoma was found in 96, operable in 51 (26 per cent.). There has been no recurrence in 45.8 per cent. of 24 cases treated by vaginal "igni-extirpation" and traced for several years. A total of 113 patients were treated by this method of vaginal total extirpation with the Paquelin cautery, with one death each from pyemia, marasmus and the anesthesia, and 4 deaths from peritonitis. The article is based on 244 cases of vaginal total extirpation of uterine cancer.

38. **Anatomic, Experimental and Clinical Researches on Operative Enlargement of the Pelvis.**—Sellheim has been studying and comparing symphyseotomy and pubiotomy. The enlargement of the pelvis proceeds about the same with each, but pubiotomy seems to protect better against laceration of the soft parts. He advises the latter in cases in which the head of the child is exceptionally large, even when the pelvis is of normal size. His articles in this and the preceding volume give a graphic reproduction of the actual topography of the pelvis by a new and ingenious method of casts.

39. **Tuberculin Diagnosis of Genital Tuberculosis.**—Birnbaum found tuberculin of the greatest assistance in 17 cases, both for differentiation and treatment. One of his patients was apparently in perfect health nine years after operative cure of a peritoneal and genital tuberculous affection. She returned to ask if she could marry; the pronounced reaction to the tuberculin test decided the question. In another case nodules in the breast of a pregnant woman suggested a tuberculous affection, but the tuberculin test was negative. Later surgical treatment showed the nodules to be enchondromas. The fetus did not seem to be affected by the tuberculin in any of the cases in which it was given. Birnbaum expresses regret that gynecologists pay so little heed to tuberculin.

Berliner klinische Wochenschrift.

44 (XLIII, No. 13.) *Upper Limit of Dullness in the Back in Case of Pleural Effusions.—Verhalten des medialen Abschnitts der hinteren oberen Dämpfungsgrenze bei pleuralen Flüssigkeitsansammlungen. G. Krönig.
45 Weitere Beobachtungen ueber Spirochæte pallida. A. Buschke and W. Fischer.
46 Die Lungentuberkulose im Schulpflichtigen Alter (during school age). H. Roeder.
47 Firearm Wounds of Skull.—Die Prognose und Therapie der Schädelverletzungen durch die modernen Kriegsfeuerwaffen. Hildebrandt.
48 (No. 14.) *Ueber die moderne Therapie der chronischen Herzkrankheiten (heart affections). F. A. Hoffmann.
49 *Mutual Relations Between Heart and Stomach Affections.—Ueber die Wechselbeziehungen zwischen Herz- und Magen-Darmleiden. Ad. Schmidt.
50 *Zur Therapie der Nephritis. A. Strasser and R. Blumenkranz.
51 *Ueber Nervosität im Anschluss an gynäkologische Operationen. O. Kaiserling.
52 Ueber das Verhalten der Tuberkel-Bacillen an der Eingangspforte der Infektion (behavior of tubercle bacilli at entering point). A. Uffenheimer.
53 *Disturbances in Ocular Domain of the Trigeminus.—Ueber Störungen im Augengebiet des Trigeminus, speziell des Cornealreflexes und ihre diagnostische Verwertung. Kempner. (Concluded.)
54 *Ueber Arteriosklerose und Nephritis. F. Hirschfeld. (Concluded.)

44. **Differentiation of Pleural Effusions from Pneumonia.**—Krönig has found a triangular area of resonance in case of a pleural effusion which is contrary to the teachings of the text-books. His experience with nearly a thousand cases has convinced him that this area may serve to differentiate a pleural effusion from pneumonia in dubious cases. This area, comparatively free from dullness, lies between the effusion and the spine, and testifies to the fact that at this point there is little if any fluid. Krönig found the highest point of the area of resonance at the inner margin of the scapula, the upper limit sloping gently from this point toward the axilla and the spine.

48. **Modern Treatment of Heart Affections.**—Hoffmann studies the cases of heart affection in which digitalis will do most good, also the "iodin cases," and the cases which are benefited most by cold water. He thinks that more can be learned from comparison of the heart sounds than from the sounds themselves. The relative behavior of the second sound is the criterion for digitalis. Very little can be expected from digitalis, he states, when the second sound is weaker at the base than the first sound. If the first sound is like a drum then digitalis is contraindicated, he thinks. What he calls the "iodin heart" is encountered in individuals with high tension in the aortic system, while the heart sounds do not behave normally, the second sound being much too sharp. The second sound at the apex is decidedly louder than the first. The kidneys must be sound and there must be no tendency suggesting exophthalmic goiter or hemoptysis. This class includes many cases of insufficiency of the aortic valves, of aneurisms, of arteriosclerosis, either of the coronary arteries or of the aorta and peripheral regions. Persons with normal or subnormal blood pressure do not belong in this group. He gives the iodin for from four to six weeks, and again after a longer pause, if benefit has been derived, and he has witnessed very fine and durable results. The only safe means to reduce the blood pressure permanently, he states, is by hygiene and dieting. The "cold water heart" is distinguished by the fact that the second sound is feebler at the base than the first. This behavior of the second sound is especially noticeable in exophthalmic goiter. Such patients require hydrotherapy and avoidance of irritation from the food, giving the preference to milk or milk and vegetables. Many find out from their own experience that cold applications to the heart relieve them,

a small ice bag, coil of tubing with cold water, or the like. Patients who do not belong in these three groups can be benefited by general treatment with balneotherapy, respiration and hygiene of the heart, and these measures are also useful as adjuvants in the above groups. The fame of many health resorts, he states, is due more to the hygiene taught and enforced than to any special virtues in the waters. In no way, he continues, can we supply such a vigorous wave of blood to the heart for its nourishment as by deep breathing, and this means of aiding the heart should never be neglected in the early stages of heart disease. Many cured cases of "beer heart" testify that it is effectual even with advanced disturbances. He advises it especially in case of arteriosclerosis, the action of iodin and of carbonated baths being much less reliable. Elderly patients and those with emphysema, bronchitis or anemia are sure to benefit from it, if the physician orders it with the proper dosage and in the proper guise. All other measures besides these six mentioned are merely symptomatic. In conclusion he warns against direct massage of the heart and also against treating people for heart disease who have not got it. He has been making a special study of the displacement of the heart from the lifting up of the diaphragm by the enlarged or distended stomach. This chronic lifting up of the diaphragm is met with in certain stomach troubles, in habitual constipation, and in case the musculature of the diaphragm is diseased. The patients do not complain of their stomach, but only of palpitations and oppression of the heart. The anatomic conditions are not known as no one dies in consequence of them, but anatomists should be on the lookout for them when examining cadavers when such symptoms have existed during life.

49. **Mutual Relations Between Heart and Gastrointestinal Affections.**—Schmidt relates several case histories of persons who applied to him for relief from gastrointestinal trouble distinguished by accumulations of gas in the stomach and intestines. These patients were otherwise apparently in good condition and after the gas had passed off in eructations or flatus they were relieved until it assembled again after the next meal. He is convinced that the trouble is due to the insufficient absorption of the gases by the venous blood. Digitalis helps here. Normally the blood absorbs a large proportion of the gas ingested or formed in the digestive tract. When there is any stasis in the gastrointestinal blood vessels, the gases are not absorbed, and their accumulation is a sign of defective functioning of the circulatory apparatus, sometimes before any other signs call attention to it. It is especially important in case of heart disease as the accumulations of gases react mechanically and injuriously on the heart. Stasis of the blood induces a predisposition to catarrhal affections. He cites a typical example of severe gastrointestinal trouble on this basis, cured by digitalis. One patient died as the result of intestinal hemorrhages, but no lesion could be found in the digestive tract beyond a simple stasis catarrh. He also describes cases of the reverse condition, namely, functional disturbance of the heart from gastrointestinal affections. He is inclined to believe that there is always some underlying organic or functional disturbance in the heart in the cases of irregularity in the pulse, and attacks simulating angina pectoris and asthma ascribed to gastrointestinal factors. The connection with the digestive disturbances is apparent from the periodical recurrence of the symptoms. The digestive disturbances are generally mild and of a functional nature, anomalies in secretion, atony or gastric neuroses, but there are almost always accumulations of gas. The innervation of the stomach and also of the heart is probably abnormally sensitive in these patients. The prognosis is favorable so long as the heart trouble is only functional, but if it is organic, irreparable harm may be done by reflex action, as in a case described in which a patient with mitral insufficiency succumbed to an attack of acute gastritis. Faradization and massage of the abdomen may prove useful in supplementing the regulation of the diet and bowels. Rest in bed is imperative for all these patients. It has proved particularly useful in the cases of heart affections masked by stomach symptoms. Digitalis, possibly given by the rectum, is more effectual than all other measures combined.

50. **Treatment of Nephritis.**—Strasser and Blumenkranz announce that the diuresis and the elimination of nitrogen and of sodium chlorid are very favorably influenced in nephritic patients by prolonged baths, from an hour to an hour and a half in length, in water at 34 C. (94 F.). The albuminuria was not essentially modified, although the influence was favorable in their experience. One nephritic patient was given electric light sweat baths for several days, and notwithstanding that the elimination of sodium chlorid, etc., was ample, covering the intake, yet edema of the face developed. This they accept as a sign that edema is due to injury of the vessel walls, and not exclusively to retention of sodium chlorid and water.

51. **Nervous Affections After Gynecologic Operations.**—Kaiserling relates his experience with hydrotherapy in 29 cases of neurasthenic and hysteric disturbances after gynecologic operations—all observed during the last year. Prophylaxis lies in the hands of the gynecologist, he remarks. If nervous symptoms are apparent, treatment should be begun at once as the results are more favorable than in long established cases.

53. **Diagnostic Significance of Ocular Reflexes.**—Kempner has been studying this subject on hundreds of persons, including 350 cases of organic affections in the domain of the trigeminus, and 400 without organic trouble. After discussing the anatomy and physiology of the parts, he tabulates his findings in detail, and classifies the cases. When the corneal reflex was absent or diminished, this occurred on one side only in the cases of organic affections, while it was bilateral in the functional disturbances. In the organic cases the anomaly in the reflex was generally accompanied by sensory disturbances affecting the trigeminus or some of its branches, while in the merely functional cases there were no sensory disturbances, or if present they did not correspond to the trigeminus area. In the organic cases, further, the sensory disturbances were progressive. In case of a tumor in the posterior cranial fossa the cornea was first affected, then the rest of the first division of the fifth nerve, and then the second, and finally the third division, while in the true functional cases the reflex anomaly and the sensory disturbances were not progressive and were liable to alternate irregularly. In 4 cases the diagnosis wavered between tumor of the cerebellum and hydrocephalus: the corneal reflex was normal or exaggerated. Hydrocephalus was found in the 2 that came to autopsy.

54. **Mild Course of Arteriosclerotic Nephritis in the Aged.**—Hirschfeld describes a few cases of general arteriosclerosis in elderly patients with typical arteriosclerotic contracted kidney, and yet there was no hypertrophy of the heart, and during life there had been no symptoms of cardiac disturbance. The mildness of the course of the nephritis resembles that of ordinary atrophy of the kidneys in the aged. It harmonizes also with the fact, he says, that true nephritis never has been clinically demonstrated as the outcome of general arteriosclerosis alone in the aged. Also that nephritis as the result of diabetes has never been observed in an elderly diabetic, although it is common in diabetics between 40 and 60.

Centralblatt f. d. Grenzgebiete der Med. u. Chir., Jena.

Last indexed XLVI, page 624.

55 (VIII, No. 24.) Route of Infection of Tuberculosis.—Die Infektionswege der Tub. B. Fischer and W. Fischer-Defoy. Collective review of the literature. (Commenced in No. 22.)
56 (IX, No. 1.) *Die Mediastino-Pericarditis und ihre chirurgische Behandlung (Cardiolyse). R. Paschkis. Collective review.
57 (No. 5.) *Erfahrungen über Diabetes und Glykosurie (Gravidität, Heredität, Albuminurie, Narkose, etc.) G. Salus.
58 *Results of Operative Treatment of Perforated Gastric Ulcer.—Operationserfolge bei der Perforation des Ulcus ventriculi. S. Goldstücker. Collective review. (Commenced in No. 1.)
59 (No. 9.) *Die Cytologie der Ex- und Transsudate. H. Raubitschek. Collective review. (Commenced in No. 2.)

56. **Mediastino-Pericarditis and Its Surgical Treatment.**—Since Brauer—an internist—first suggested in 1902 to free the heart by opening up the bony wall over it, this operation of cardiolysis has been performed in 7 cases, according to the literature collected by Paschkis. The results of the operation were strikingly beneficial in every instance. All the patients bore the intervention well, the pulse became stronger, the cyanosis and all the symptoms of stasis subsided. The patients

feel subjectively well and have returned to their work or business. Some have been under observation nearly two years. One died recently of pneumonia, and autopsy showed slight degeneration of the heart muscle. The symptoms accepted as demanding cardiolysis were those of cardiac insufficiency, accompanied by the direct symptoms of the pericarditis, including the systolic retraction of the thorax and the diastolic rebound, the occasionally missing apex beat, the diastolic collapse of the jugular veins, and signs of an old pleurisy. The area of cardiac dullness was generally enlarged, the pulse sometimes full and tense, sometimes the pulsus paradoxus. Auscultation always disclosed, besides the usual heart sounds, an extra sound following the second heart sound and synchronous with the diastolic rebound of the thorax wall. In one of Brauer's 3 patients who were operated on, five sounds could be heard, as the first and even the second sound was reduplicated. This second diastolic sound is diagnostically important; it coincides with the rebound of the thorax and the collapse of the jugular veins, and it is distinctly separated by an interval from the first diastolic and the systolic sound. Brauer advised resection of the ribs and of even part of the sternum, with or without detaching the adhesions. A flap of the soft parts with the base above is turned back, and the third to the fifth ribs are resected from the left margin of the sternum to the anterior axillary line. The flap is then replaced and a drain inserted.

57. **Glycosuria and Diabetes.**—Salus bases his article on personal experience and comparison with 15 of the more important works on the subject in recent years. Only 6 out of his 34 cases of inherited diabetes were in women. In 2 instances both husband and wife were affected, but he thinks that common ingestion for many years of food too rich in starch was probably the predisposing factor. In 14 individuals the symptoms were recognized between the ages of 10 and 30. Tuberculosis developed in 2 of his 251 patients with diabetes—not inherited—and in 2 of the 34 with the inherited disease. Many of his patients are over 50 and 60, and yet they exhibit no indications of arteriosclerosis. His experience confirms the observation that a hereditary predisposition to the disease is most marked among Jews. The prognosis of glycosuria in pregnancy and in inherited diabetes proved more favorable in his experience than in that of others, but he found that considerable albuminuria had an unfavorable prognosis. His experience contradicts the possibility of actually curing a case of diabetes, but it demonstrates that it is possible to save the patient many disturbances and to prolong his days by regulating his mode of life according to the individual phenomena which are the response to the ingestion and the restriction of carbohydrates year in and year out.

58. **Results of Operative Treatment for Perforated Gastric Ulcer.**—Goldstücker summarizes his study of 259 articles on the subject as imposing the necessity for prompt operative intervention in case of perforation of an ulcer in the stomach. There are no reliable signs of impending perforation, but in the majority of cases there have been symptoms for years suggesting a stomach affection. Women are affected oftener than men, and the female patients as a rule are younger than the male. A sudden, violent pain in the stomach region usually accompanies the perforation, with localized peritoneal friction sounds. Initial vomiting is generally observed, and the abdominal walls are rigidly taut. The vanishing of the liver dullness as a diagnostic sign of perforation of the stomach is overestimated. Too much time should not be wasted on waiting for the patient to recover from shock. The anesthesia can be general or local as preferred, but the incision must be ample, and the posterior stomach wall should always be examined, as there is a possibility of multiple ulcerations. Simple tamponing should not be used if it can be avoided. Statistics show that about 50 per cent. of the patients recover. Recovery without operation has seldom if ever occurred unless the stomach was empty at the time of the perforation. In 236 cases the time when the operation was performed is given; 71 per cent. of these patients operated on within the first twelve hours recovered, while only 46 per cent. recovered after the twelfth hour. The end results are constantly growing better with time.

59. **Cytology of Effusions and Exudates.**—This extensive study of this subject as presented in the literature terminates with the remark that there is no cytologic formula in any accumulation of fluid which is pathognomonic for any affection. At the same time the cellular constituents of the fluid throw some light on the quality of the process occurring in the preformed cavities of the body, and the cytologic examination of effusions and exudates may prove a valuable aid for diagnosis. It is especially important for the differential diagnosis of nervous and mental affections.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

60 (XXXII, No. 20.) Die Migraine. E. Mendel. Clinical lecture.
61 *Versuche zur Serodiagnostik und Serotherapie der epidemischen Cerebrospinalmeningitis. G. Jochmann (Breslau).
62 Bemerkungen zur Sahlis Desmoid-Reaktion des Magens. . Max Einhorn, New York.
63 Origin of Atrophy of the Eyeball.—Experimentelle und klinische Untersuchungen über die Entstehung Phthisis Bulbi. O. Schirmer.
64 Cultivation of Spirochetes on Artificial Solid Media.—Ueber Züchtung von Zahn-Spirochæten und fusiformen Bacilien auf künstlichen (festen) Nährböden. P. Mühlens.
65 Calculi in Lungs.—Ueber Lungensteine. E. Bürgi (Berne).
66 Spastic Paralysis of Children.—Die spastischen Lähmungen der Kinder und ihre Behandlung. A. Hoffa. Clinical lecture. (Concluded.)
67 (No. 21.) Diagnose und Behandlung des Plattfusses (of flat foot). G. Ledderhose. Postgraduate lecture.
68 Pancreas und Diabetes. G. Herxheimer.
69 Fall von gleichzeitigem Bestehen von Typhus und Amœben-Dysenterie kompliziert durch Milz- und Leberabscesse. M. Martin (Togo).
70 *Operation bei Barlowscher Krankheit (infantile scurvy). H. Riese.
71 Pulse rate of 56 in Internal Hemorrhage from Tubal Pregnancy.—Ein seltenes Pulsphänomenon bei innerer Blutung infolge von Tubenschwangerschaft. Busalla.
72 *Trephining Labyrinth, etc., for Subjective Sounds in Sclerosis of Middle Ear.—Lab.-Trepanation und Auskratzung des Vorhofs wegen qualvoller Geräusche bei sogenannter "Mittelohrsklerose."—Otospongiose. Matté.
73 Celluloid Cylinders Instead of Napkin Rings.—Serviettenhüllen aus Celluloid M. Edel.
74 Tumor Between Cerebellum Pons and Temporal Lobe.—Fall von Kleinhirnbrückenwinkelgeschwulst. Püschmann.

61. **Serum Treatment of Cerebrospinal Meningitis.**—Jochmann has succeeded in producing a prepared serum which he claims has given good results in 17 clinical cases. The injections were made subcutaneously and by lumbar puncture, and their harmlessness has apparently been established. He suggests that the serum might be used as a preventive for the sound "meningococcus carriers."

70. **Operative Treatment of Infantile Scurvy.**—Riese was summoned to operate in a supposed case of multiple osteomyelitis in a male infant of 14 months. The aspect of the interior of the mouth, however, revealed that it was a case of infantile scurvy. The large hemorrhagic extravasations on the leg were so prominent and painful that he incised them, cutting down to the periosteum and releasing the accumulated blood, afterward tamponing. The child was relieved at once, the fever subsided, and the small wounds rapidly healed. Roentgen examination later showed that the bone was sound, with no traces of the preceding trouble. Heubner has also reported similarly favorable results in a case in which an operation was performed on a mistaken diagnosis (sarcoma). The lack of inflammatory swelling of the musculature differentiates the affection from osteomyelitis. The process is restricted exclusively to the bone.

72. **Trephining the Labyrinth, etc., for Subjective Sounds.**—Matté describes a case in which he performed this extensive operation to relieve a patient tormented by unbearable subjective sounds due to sclerosis of the middle ear. The sounds were banished by the operation and sleep restored, although a slight seething sound is still heard at times. He describes his technic and argues that the intervention is justified in certain cases. He curetted the vestibular portion of the cochlea after trephining the labyrinth. Excision of the ossicles had failed to give relief.

Muenchener medizinische Wochenschrift.

75 (LIII, No. 13.) Zur Morphologie und Biologie der Mast-Cellen, Leukozyten und Lymphozyten. J. Arnold.
76 Ueber die diagnostische Sonderung echter Cholerafälle von cholera-ähnlichen Erkrankungen (differentiation of true cholera). C. Berger.
77 Ueber den Rachenreflex (throat reflex). W. Baumann.
78 *Die Arteriosklerose in der Chirurgie. E. Siegel.

79 Ueber Behandlung der Gelenk-tuberkulose (of joints). Gebele and Ebermayer.
80 Protection for Body Linen in Gonorrhea.—Ein neuer Wäscheschutz bei Gonorrhoe. C. Philip.
81 Ueber traumatische Pupillen-Starre (immobility). S. Kreuzfuchs and G. Dreyfus.
82 Die Stellung des Alveolar-Echinokokkus. A. Posselt (Concluded).
83 Life and Medical Lore of Natives of India.—Einiges ueber das Alltagsleben und die Volksmedizin unter den Bauern Britischostindiens. W. D. Sutherland (Concluded).
84 *Lifting Appliance for Bandaging Trunk.—Stangenlager. J. Hahn.
85 (No. 14.) *Treatment of Acute Inflammations with Stasis Hyperemia.—Zur Behandlung akuter Entzündungen mittelst Stauungshyperämie. E. Lexer. Id. R. Bestelmeyer.
86 *Lumbal-Anästhesie im Morphium-Skopolamin Dämmerschlaf, M. Penkert.
87 Firearm Wounds of Joints.—Erfahrungen über Gelenkschüsse aus dem russisch-japanischen Kriege. A. Brentano.
88 Roentgen Ray Work in War.—Die kriegschirurgische Bedeutung und die Art zeiner Verwendung im Kriege. F. Colmers.
89 Action of Light on Ferments in Absence of Oxygen. Wirkung des Lichtes auf Fermente (Invertin) bei Sauerstoffabwesenheit. A. Jodlbauer and H. v. Tappeiner.
90 Loss of Extension Aponeurosis.—Abriss der Streckaponeurose der Finger (distalen Phalanx). F. Selberg.
91 Wolfsrachen und perorale Tubage (cleft palate). F. Kuhn.
92 Automatic Suction Syringe.—Die automatische Saug- und Druckspritze als Saug-Apparat für Biersche Stauungshyperämie. A. Strauss.
93 *School and Corset.—Schule und Korsett. F. Lange (Munich).

78. **Arteriosclerosis in Surgery.**—Siegel's experience with chloroform anesthesia in cases of pronounced arteriosclerosis has been very favorable. A history of attacks of angina pectoris did not add to the gravity of the general anesthesia. Apoplectic symptoms have been observed in arteriosclerotic subjects under the influence of chloroform, but they are extremely rare, and he ascribes them more to the excitement than to the arteriosclerosis. Even patients with myocarditic changes in the myocardium tolerate the chloroform well, provided the heart affection is well compensated, the kidneys still acting well, and that there is no bronchitis or emphysema. The combination of arteriosclerosis with emphysema and bronchitis renders the prognosis much graver. Chloroform has been recommended as a remedy for angina pectoris and many persons in the eighties operated on now and then for incarcerated hernia or the like, bear the chloroform almost always very well. On the other hand, arteriosclerosis in younger patients is liable to produce some very disastrous surprises. Examination of the heart and kidneys reveals nothing abnormal, but there is liable to be serious collapse under the influence of the anesthetic, and the rigid, tortuous course of the peripheral arteries is then noticed. The patients are usually revived in these cases, but he has encountered instances in which the patient succumbed to heart failure six or seven hours later. He is of the impression that an arteriosclerotic individual bears better a deep than a superficial anesthesia. The persisting reflexes may affect the heart injuriously. Such persons tolerate the anesthesia better than the pain. Aseptic surgical incisions and amputations heal surprisingly well in arteriosclerotics, but complications are almost inevitable in operations on the intestines, especially resections. Inflammatory processes in the intestines frequently entail congestion in the intestinal wall, with friability of the tissues, especially in younger subjects. Even in an "interval" appendicectomy the ligatures are liable to tear out. There is also a special tendency in the arteriosclerotic to after-hemorrhages, especially in tissues after Schleich infiltration anesthesia. He discusses aneurisms and diabetes in relation to arteriosclerosis, and reaffirms that arteriosclerosis is one of the most frequent causes of pancreatic affections. This is particularly true of apoplexy of the pancreas. Hemorrhagic intestinal catarrh in elderly people is probably due to the altered condition of their blood vessels. He adds, in conclusion, that there are a number of affections which masquerade as appendicitis or gallstone trouble or acute or chronically intermittent stenosis of the intestines, which in reality are only the consequences of sclerosis of the mesenteric vessels.

84. **The Rod Bed.**—Hahn illustrates a contrivance to facilitate the application of large bandages to the trunk. An iron vertical standard on each side of the bed has a row of holes large enough to admit an iron rod about the size and shape of a lathe. When the trunk is to be lifted, this rod is pushed across the bed; it readily passes under the sacral region. The rod is then raised to fit in the holes of the two standards on each side of the bed, thus lifting up the pelvic region until the bandage can be easily passed around the trunk. A second rod and set of standards may be used to raise the shoulders also. The rods can be padded. This contrivance has given great satisfaction in his clinic during the last six or seven years, and is in daily use.

85. **Stasis Hyperemia.**—Lexer has been studying the various phases and features of Bier's method of artificially induced hyperemia and its effects. His conclusions are that it is beneficial in mild cases of acute inflammation, but that in the severer cases the conditions are aggravated by it unless it is preceded by ample incision and evacuation of the lesion. The liberation of large amounts of endotoxins from the bacteriolysis in the hyperemic area is directly injurious unless they are allowed to escape freely by large and early incisions. The accumulation of antitoxic bodies is not materially important, but the increase of the proteolytic ferments in the area involved has a decidedly favorable action in case of infected wounds. The increased transudation or exudation is liable to spread the toxins into hitherto intact areas unless it is allowed free escape; in this case it is beneficial by mechanically sweeping away the infectious substances. Dubious cases should be regarded as severe and should be treated by early and ample incisions. Suction treatment is applied in mild, incipient inflammations of the fingers and in case of older, already softened infiltrates and furuncles. Bestelmeyer discusses the experiences at von Angerer's clinic in this line, with about 200 cases of acute inflammatory processes. They demonstrate that "stasis hyperemia" is an effectual measure for the cure of acute inflammatory processes, but that it has its limitations. The deeper the lesion the less effectual this method of treatment. The results were actually bad in bone affections, and they were uncertain in some cases of tendon sheath phlegmon and in joint suppurations. On the other hand, the results were extremely favorable when the circumscribed suppuration was close to the skin. The advantages of the new procedure are that it is much pleasanter for the patient, that the cicatrix is comparatively small, and that tamponing is done away with. It has been conclusively demonstrated that the delicate tissues of joints and tendons suffer from tamponing and drying out. Another advantage of Bier's technic is that active and passive movements can be begun early. An important factor in the results is the intelligent co-operation of the patient. When this can not be counted on the application of the technic meets with great difficulties. It also requires considerable time for the daily applications. A further disadvantage is that asepsis can not be so complete as by other measures.

86. **Spinal Anesthesia Preceded by Morphin-Scopolamin.**—Penkert writes from Krönig's clinic to relate the good results obtained with spinal anesthesia applied when the patient was under the influence of scopolamin and morphin. The drowsiness thus induced obviated the dread and excitement which frequently interfere with the success of spinal analgesia. In 140 cases there was vomiting in only four after the combined anesthesias, and in these cases it was extremely mild and there was no remembrance of the operation. The patients did not look as if they had undergone a severe operation, but seemed fresh and were free from any tendency to bronchitis. The scopolamin has a drying effect on the mucosa of the upper air passages, and reduces the secretions. The combination has proved very useful in a number of laparotomies, and also for cystoscopy in inflammatory conditions, and in obstetrics. From two and a half to three hours before the operation an injection of 0.01 gm. morphin and 0.0003 gm. scopolamin is given, repeated in an hour, and the patient becomes drowsy. The preparation and disinfection are done the day before, and when the drowsiness is observed the patient is put to bed in the anesthetic room, protected from noise and bright light. The ears are plugged also to keep out all noise. After thorough disinfection of the lower part of the back the patient is made to sit up and the lumbar puncture is made, the cerebrospinal fluid flowing into the syringe attached to the puncture needle, where it mixes with the anesthetic and is then rein-

jected. In 25 cases the uterus was removed by the vaginal route under this technic, and in 69 others various major gynecologic operations were done through the abdomen. Headache was observed in 13 cases, but in 9 it had existed prior to the intervention. In 2 cases slight transient deafness was observed, and very slight vomiting in 4. The main advantage of the technic, however, is the absence of any tendency to aggravation of a bronchial trouble or to postoperative bronchial or pulmonary complications.

93. **Schoolgirls and Corsets.**—Lange does not approve of bearing all the weight of the clothes on the shoulders, and he thinks that growing girls need some kind of a support for their back. He thinks that he has realized the desired results with a short corset suspended loosely from the shoulders, cut out below the bust and curving upward in front so as to leave the stomach region free. The principle is the same as in men's clothing. The ends of the corset waist cross in the back and button at the sides, and the skirts button to the corset. The stockings are held up by a separate loose belt, bringing the weight on the trochanter, the posterior superior spine, and the symphysis, with the straps on the front of the thigh.

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94 (XXII, No. 9.) Fonacoscopio e fonacoscopia. M. Landolfi and R. Papale (Naples).
95 *Studio dell' erisipela. C. V. Pich.
96 (No. 10.) *Sulla febbre sifilitica terziaria (fever). L. D'Amato.
97 (No. 11.) *Sulla fine localizzazione del mercurio nell' organismo. A. Conti an P. F. Zuccola. (Commenced in No. 9.)
98 (No. 12.) *Sulla diagnosis dei tumori intracranici giunti allo stadio terminale. A. Murri. (Commenced in No. 11.)
99 Fatty Degeneration in Infected Liver.—Degenerazione grassa nel fegato infettivo. P. Bueri.
100 *I piu recenti metodi per la diagnosi del cancro dello stomaco e ricerche sulla reazione biologica. A. Santini.

95. **Erysipelas of the Lungs.**—Pich describes a case of erysipelas in which the affection spread rapidly from the outer ear through the nose and ear to the meninges, terminating with acute edema of the lungs from paralysis of the left ventricle. A second case commenced with the same severity, but the symptoms suggested pneumonia, severe local pain in one lung, mucopurulent sputum and dullness. The local pain passed abruptly over to the other lung the next day, with high fever; the third day all the pulmonary symptoms suddenly vanished for three days and then returned as severe as ever. Again they vanished after two days, but soon returned again and lasted for five days, with high fever, when they vanished completely. The Fehleisen micrococcus of erysipelas was cultivated from the sputum, but no traces of erysipelas could be detected on the skin or mucosa anywhere. The case was diagnosed as a migrating erysipelatous inflammation of the lung. Treatment consisted in alcohol, digitalis, and injections of 2 per thousand solution of carbolic acid. This primary invasion of the lungs enforces Bouchut's warning that persons in contact with a case of erysipelas are liable to contract inflammatory affections, a sore throat, pneumonia, or something of the kind.

96. **Tertiary Syphilitic Fever.**—D'Amato relates the history of 3 syphilitic patients who exhibited temperature several degrees above normal. rebellious to quinin, but soon yielding to mercurial treatment. His experience shows that this syphilitic fever is liable to appear in the early stage of the secondary phase and to recur again later, during the tertiary phase, possibly as late as fourteen or sixteen years after the infection. The fever in the tertiary phase may be intermittent or continuous-remittent, or it may change its type in the same patient. It may continue for several years, during both the secondary and the tertiary phases, and may be accompanied by visceral manifestations, especially in the liver, but it does not seem to be dependent on these lesions and may occur without them. The fever may subside spontaneously, but in such cases it shows a tendency to recur. When it subsides as the result of specific treatment it falls by lysis.

97. **Localization of Mercury in the System.**—Conti and Zuccola epitomize their clinical and experimental researches in the statement that the white corpuscles take up the mercury, by whatever route it is incorporated, and transport it to various organs, but principally to the liver, intestines and kidneys. The liver seems to store it up while the intestines and kidneys eliminate it. It is not found in the glands and other organs except inconstantly, and only when there is oversaturation of the system with it. It it always found by preference in the nucleus of the cell.

98. **Endocranial Tumors.**—Murri concludes this clinical lecture and report of the autopsy findings in a number of cases with the remark that in dubious cases of endocranial tumors the surgeon must not hesitate to open the skull extensively at need. Even repeated exploratory operations, he states, are justified.

100. **Diagnosis of Cancer of the Stomach.**—Santini relates the results of two years of special research on the diagnosis of cancer of the stomach. He found that the biologic precipitation test of the stomach contents gave encouraging results, but needs further study. The best results were obtained with a prepared serum from rabbits and guinea-pigs, inoculated with fluids taken directly from the cancers, either cancerous gastric juice, or fluid from an accessible cancer, as in the rectum. Still better results might be obtained, he believes, with cancer material sterilized with chloroform.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. Issued Under the Authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India, 1906. No. 22. Anatomy and Histology of Ticks. By S. R. Christophers, M.B., I. M. S. Price, Rs. 3, or 4s. 6d.

Golden Rules of Surgery, Aphorisms, Observations and Reflections on the Science and Art of Surgery. Being a Guide for Surgeons and Those Who Would Become Surgeons. By A. C. Bernays, A.M., M.D., Life Member of the German Society for Surgery of Berlin, Chief Surgeon Lutheran Hospital, etc. Cloth. Pp. 232. Price, $2.50. St. Louis: The C. V. Mosby Medical Book Co., 1906.

Problems in Animal Metabolism. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Cloth. Pp. 205. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By W. M. Brickner, M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary, etc., and E. Moschcowitz, M.D., Assistant Physician, Mount Sinai Hospital Dispensary, etc. Cloth. Pp. 60. Price, 50c. New York: Surgery Publishing Company, 1906.

Principia Therapeutica. By H. Sainsbury, M.D., F.R.C.P., Fellow of the Physiological Society, Physician to the Royal Free Hospital and to the City of London Hospital for Diseases of the Chest, Victoria Park. Cloth. Pp. 244. Price 7s. 6p. net. London: Methuen & Co.

Das Einzige Kind und Seine Erziehung. Ein ernstes Mahnwort an Eltern und Erzieher. von Dr. med. Eugen Neter, Kinderarzt in Mannheim. Mit einem Vorwort von Prof. Dr. Adolf Baginsky. Paper. Pp. 50. Munich: Verlag der Aerztlichen Rundschau, 1906.

Die Blinddarmentzündung. Ihre Entstehung, Verhütung und Behandlung nach neueren Gesichtspunkten. By Dr. Max Meyer, Gerichtsass.—Arzt zu Bernstadt in Sachsen. Paper. Pp. 28. Price, mk. 1.20. Munich: Verlag der Aerztlichen Rundschau, 1906.

Haarschwund und Glatze. Ihre Verhutung und Behandlung. By Dr. M. Meyer, Gerichtsass.—Arzt zu Bernstadt in Sachsen. 3.—4 Auflage. Paper. Pp. 48. Price, mk. 1.20. Munich: Verlag der Aerztlichen Rundschau, 1906.

Chimie Pastorienne. L' Action Diastasique Dans les Fermentations Industrielles. By Emile Diederich, Licencie es Sciences. Avec 12 figures intercalées dans le texte. Paper. Pp. 181. Price, 4 fr. Paris: Jules Rousset, 1906.

Yellow Fever Prophylaxis in New Orleans, 1905. By R. Boyce, M.B., F.R.S., Liverpool School of Tropical Medicine—Memoir XIX. April, 1906. Paper. Pp. 62. Price, 5s. net. London: Williams & Norgate.

Transactions of the Western Surgical and Gynecological Association. Fifteenth Annual Meeting, held at Kansas City, Mo., December, 1905. Cloth. Pp. 450. Minneapolis: Press of the Journal-Lancet, 1906.

La Medication Iodique. Etude comparative de ses diverses formes et de leurs indications respectives. By J. Noe. Paper. Pp. 47. Price, 1 fr. 50. Paris: Jules Rousset, 1906.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. V. 1906. Paper. New York: The Rockefeller Institute for Medical Research.

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Address

THE PROGRESS OF MEDICINE IN THE PHILIPPINE ISLANDS.*

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MANILA, P. I.

The health of any community, or of any country, is its most valuable asset. The truth of this proposition applies with special force to the Philippine Islands, where so much has been lost, so much delayed, and so much is to be gained by health conditions. If cholera, rinderpest and surra had not appeared in these islands, the historian would have had quite a different story to tell. These diseases are, in a large measure, responsible for the depression in business, the timidity of capital, and the spirit of unrest of which we have already heard too much.

Medical science holds the key to the prosperity of the Philippine Islands, and on every doctor here rests an individual responsibility so great that its magnitude can not be measured. Whatever may be the relative importance of the medical man in other parts of the world, he, and the profession he represents, stands first in this country. To be without health is to be without earning capacity. Public health is an economic asset of the highest possible value, contributing to the economic strength of the people, furnishing the foundation on which the entire superstructure of municipal credit and life is built. A strong people, relieved of unnecessary burdens caused by sickness and death, can bear other and larger burdens which will give them a commanding lead in this age of commercialism.

Medical progress in the Philippine Islands may be divided into three periods: The first, beginning with the Spanish occupation and extending down to 1876; the second, dating from 1876 to 1898, and the third, beginning with the American occupation and extending to the present time.

During the first period the physicians were imported, and, to a large extent, under church or governmental control. They came and they went, each contributing something to impress on a mistrusting people the beneficent intentions of the most charitable and self-sacrificing profession the world has yet known. In reviewing the history of the physicians of that period, the conclusion is forced on us that they, and the government under which they served, can not be given too much credit for maintaining the profession on a regular, ethical plane. Modern quackery was scarcely known, and even to-day it may be said that there are fewer irregular practitioners in the Philippines than in almost any other country in the world.

The great cost of acquiring a medical education, and the long years of separation from home and friends, together with the manifestation of the spirit of professional development, led to the establishment, in 1871, of the San José Medical College, as the medical department of the Santo Tomás University, thus inaugurating a new period in the history of medical progress. The second period begins with the graduation of the first class from this college, in 1876, after a five years' course, and extends to 1898, when the American doctor appeared on the scene. It was during this period that such men as Pardo de Tavera, Rizal, Bautista, Apacible, Luna, Manuel Gomez and many others whose names are permanently associated with their country's history entered the profession. To be a doctor in those days meant opportunities for political advancement and prominence. From the medical profession came the Filipino political leaders, Filipino business men, Filipino generals and Filipino statesmen.

With the beginning of the present period, in 1898, a new order of things was established. The microscope supplanted the sword, the martial spirit gave place to the research habit, and the status of social and political prominence, to self-sacrificing obscurity, until to-day the medical man of the Philippine Islands, like the medical man the world over, is struggling on in the race of life, with no hope beyond that of being granted the sacred privilege of helping his fellow man.

The past year has been one of great importance in its relation to local medical progress. Until one begins to reflect along the lines suggested by the title of this address, he will have no idea that so much has been or could be accomplished in so short a time. The most notable event is the passage of an act by the Philippine Commission establishing a medical school and defining the manner in which it shall be controlled and conducted. The law provides that this school shall be located in Manila and known as the Philippine Medical School. It is to be managed by a board of control, which shall consist of the secretary of public instruction, the secretary of the interior, one other member of the commission, and one other member to be designated by the governor-general. The dean of the faculty, after its organization, shall also be a member.

The board of control has been vested with the authority to receive endowments and bequests, and to provide for their investment and disbursement, according to the conditions under which they were given; to confer the degree of doctor of medicine on such persons who are recommended by the faculty, and to perform in general all duties usually performed by boards of trustees.

The establishment of this school will mark a new era in the progress of medicine in the Philippine Islands. In time it will prove to be the best investment that the commission could have possibly made. The Philippines, with an educated native doctor for every thousand inhabitants, would be a different country with a different history.

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* An address delivered at the third annual meeting of the Philippine Islands Medical Association, Manila, Feb. 28, 1906.

We do not need American, European or other foreign physicians, but educated Filipino sanitarians. The former president of this association, in his address at the last annual meeting, mentioned the fact that the Japanese government, at the beginning of the Russo-Japanese war, determined that the only hope in the war with Russia was that every man who died should die on the field of battle, and planned to offset the numerical superiority of two millions of Russians over half a million Japanese by superior sanitary provisions. The Japanese medical schools are responsible for this reform, and the Philippines may well profit by the lesson, even if considered from a standpoint of dollars and cents, but the value of human lives can not be estimated by this standard.

The Philippine Medical School will do for the Philippine Islands what the Japanese schools have done for Japan, and will prove a blessing to the people, and it should have the encouragement which its importance deserves.

It is not immodest to claim that this school has been made possible largely through the efforts of the committee on public policy and legislation of this association. The work was begun by the committee for last year, and followed to a successful conclusion by the present committee.

Since our last meeting the cause of medicine in the Philippines has been greatly advanced by the establishment in the city of Manila of the Saint Paul's Hospital. This institution was founded by the Archbishop of Manila; a large amount of credit, however, is due to some representative members of this association who agitated the question until the object was attained. This hospital, with its modern equipment and superior facilities, is a monument to American ambition and progressiveness and a blessing to the public.

During the year Bishop Brent, of the Episcopal Church, has completed the necessary arrangements for establishing a general hospital; the Methodists, through Dr. Stuntz, have opened a dispensary and will soon establish a maternity hospital. The Navy has completed a fine modern hospital at Canacao, without which it would have been very difficult for Manila to care for the wounded Russian sailors, the hospital, fortunately, being opened just a few days before they arrived. The Army also completed a modern hospital at Fort William McKinley. A large general hospital has been built in Ilioilo by the Presbyterians. The government maintains a sanitarium in the mountains of Benguet. Dispensaries are operated, either by church organizations or by the Bureau of Health, at Cebú, Dumaguete, Cervantes, Laoag, and at many other places throughout the provinces. In addition to these facilities, the Bureau of Health, during the year, sent about $10,000 worth of medicines to remote portions of the islands for the purpose of furnishing relief to the indigent poor. How different is this from the condition of affairs a few years ago, when the free dispensary conducted by the Board of Health in the district of Quiapo was the only institution of its kind in the Philippine Islands. Now we have dispensary service at seven health stations and a central dispensary at the headquarters of the Bureau of Health; the dispensary service—surgical, medical and dental—of Saint Paul's Hospital; the Saint Luke's Dispensary, the Methodist dispensary and also several dispensary services conducted by native physicians. But while it is true that the facilities just mentioned show great progress, it is also true that Manila is still far behind other cities of similar size, and a large hospital, with modern buildings and equipment, is urgently needed for the relief of the afflicted, and if the new Philippine Medical School is to start with any hope of success a hospital with teaching facilities, where practical medicine may be learned, is absolutely necessary; otherwise mere theorists will be the graduates.

A recent reorganization act has greatly enlarged the duties of the Bureau of Health by merging into it the Civil Hospital, the Benguet Sanitarium, and the medical service of the Bureau of Prisons.

In the case of communicable diseases great progress has also been made. The Culion Leper Colony will soon be ready to receive patients, thus eliminating one of the most pressing and vexatious questions with which we have had to deal. The San Lazaro Hospital, with its leper, insane, cholera, smallpox and plague departments, has added to its equipment and facilities and is better prepared than ever to meet any emergency that may arise.

A few years ago the medical profession looked to its representatives in India for its research work on all tropical diseases, but since the American occupation of these islands a great change has taken place. The names of our scientific men are frequently seen in American and European medical literature. The medical world maintains an attitude of constant expectancy toward the medical men in the Philippine Islands—an expectancy which has not yet been disappointed. During the year results have been achieved in the advancement of medicine which are not only of interest to the Philippines, but are matters which have aroused interest and comment from medical men in all parts of the world. Among the foremost may be mentioned the experiments which have been conducted in the leper department at the San Lazaro Hospital by Dr. Wilkinson in the treatment of leprosy with the *x*-ray. While this work has not been sufficiently extensive to justify a positive statement, yet it has been successful enough to offer a well-grounded hope that the medical profession can hold out some encouragement to sufferers from this loathsome disease, who have from remotest times been exiles from society and denied all earthly hope. The results achieved by Dr. Wilkinson have at least demonstrated that it is possible to cure some cases of leprosy.

Another noteworthy achievement is the improvement made by Dr. R. P. Strong in the preparation of cholera and plague vaccine. A paper, by Dr. Wherry, on "Glanders and Its Prevention" has been pronounced, in Europe, as the best that has appeared on this subject. The paper on "Tropical Light," by Major Woodruff, of the United States Army, which has attracted so much attention in the medical and lay press, was first read before the Manila Medical Society.

The American medical profession has been represented in these islands only about eight years, but they have been strenuous years, full of discouragements and disappointments, but the record as written is one in which every American physician can take pride. To those who have not had an opportunity to compare the results of sanitary efforts in the cholera epidemic of 1902 with the present epidemic, the results may not appear so real as to those of us who are brought into daily contact with those for whom we are working. Measures which provoked profound opposition in the former epidemic are accepted, and even asked for, now. The influence of the physician is here to stay, regardless of the fate of the flag. This influence means progress along every line—progress everywhere.

The purpose of this association, as set forth in its constitution, is to federate and bring into one compact organization the entire medical profession of the Philippine Islands with a view to the extension of medical knowledge and to the advancement of medical science; to the elevation of the standard of medical education and to the enactment and enforcement of just medical laws; to the promotion of friendly intercourse among physicians, and the guarding and fostering of their material interests; and to the enlightenment and direction of public opinion in regard to the great problems of state medicine; so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

No organization was ever actuated by nobler motives or inspired by higher ideals. It only remains to live up to these principles. The people of the Philippine Islands need, more than they need anything, the extension of medical knowledge, and the advance among them of medical science.

The medical profession of the islands needs that elevation of standard, that aid promised by the enforcement of just medical laws, that promotion of friendly intercourse and that guarding and protecting of their material interests promised by our Constitution. The solution of the great problems of state medicine depends on the enlightenment and direction of public opinion to which we have pledged ourselves, and it is our sacred duty to become more capable, honorable and more useful to the public in the cure of disease and in the prolonging and adding comfort to life.

Well may the principles of ethics of the American Medical Association enjoin us to be mindful of the high character of our mission and of the responsibilities that the physician must incur in the discharge of his momentous duties. Well may the same principles declare that every physician should identify himself with the organized body of his profession, as represented in the community in which he resides, and strive to make his local organization an instrument for the cultivation of fellowship, for the exchange of professional experience, for the advance of medical knowledge, for the maintenance of ethical standards, and for the promotion of the welfare of the public.

The field is large, the work is great, the duty imperative; therefore, in order that we may fully meet our responsibilities, let us ignore our differences of opinion, let us forget personalities, and all work together for the success of the cause to which we have dedicated our energies, our ambition and our lives.

Tendency to Kidney Stones in Tuberculous Patients Under Forced Feeding.—Mousseaux writes to the *Archives Gén. de Méd.* for May 15 calling attention to the remarkable way in which forced feeding, especially with nitrogenous foods, is liable to modify the soil in the tuberculous and to induce a tendency to renal lithiasis. It is generally supposed that tuberculosis and lithiasis are antagonistic, but the forced feeding is able to modify conditions to such an extent as to put an end to this antagonism. He has had occasion to observe four cases of kidney stones in tuberculous patients under forced feeding. He has also noticed increased elimination of uric acid in the advanced cases, sometimes accompanied by lumbar pains, connected with the incomplete and defective elaboration of the food ingested. When the tuberculosis is arrested or retrogressing, the tendency to kidney stone formation becomes apparent. He believes that the organism is unable to assimilate more than a certain amount of nitrogenous food, and that all above this is sheer waste or worse.

Original Articles

TWO CASES OF GENERALIZED BLASTOMYCOSIS.

C. CHRISTENSEN, M.D.
LA CROSSE, WIS.
AND
LUDVIG HEKTOEN, M.D.
CHICAGO.

In neither of the cases of disseminated blastomycosis here reported is the course of the disease completed. Both patients, however, have passed out of our hands and it is extremely doubtful whether either will come again under our observation. We, therefore, place the two cases on record now and principally because certain facts noted in connection with them appear to us to add something to our knowledge of the clinical course, especially in the earlier stages of this interesting disease. It is not necessary at this time to review in detail the facts observed in connection with the previously recorded cases. That is done satisfactorily in the recent reports by Bassoe,[1] by Eisendrath and Ormsby,[2] and, so far as the closely related "coccidioidal granuloma" in California is concerned, by Ophüls.[3]

REPORT OF CASE 1.

Summary.—Man, aged 28, farmer in northeastern Iowa, was taken with acute fever in November, 1904, lasting one week. At the end of the second week numerous spots and lumps had formed on the face, head, neck, hands, forearms, lower extremities and back. Some of these lesions subsided, others grew into larger and smaller ulcers and abscesses, most of which refused to heal. There was some loss in weight. On admission to hospital, Jan. 10, 1906, 60 lesions of the skin and subcutaneous tissue were recognized, most of them being superficial ulcers and scars. Blastomycetes were present in pure culture in contents of abscesses and in sections of the ulcers. Some pulmonary signs, but no blastomycetes or tubercle bacilli were demonstrable in the sputum. There was considerable general and marked local improvement. He left the hospital April 6, 1906.

Patient.—R. K. U., born near Decorah, Iowa, twenty-eight years ago, entered La Crosse Lutheran Hospital Jan. 10, 1906.

Previous History.—His father's mother and one brother died of consumption after preceding pleurisy. As a child he had measles; otherwise he was healthy. For the last five years he has been a milk peddler, besides helping on the farm.

Present Illness.—In November, 1904, he was taken suddenly ill with headache, chills, pain in back and limbs, "as if he had taken cold." He felt feverish for a week, but did not stay in bed. At the end of the second week he observed that red spots or lumps from 1 to 2 cm. in diameter had broken out on the face, on the head and neck, hands and forearms, on the lower extremities and a few on the back of his body. The six or seven eruptions on the scalp reached in a few days the size of large hazel nuts, then broke, discharged considerable matter, dried up and healed in about two weeks.

The other spots or lumps started to grow with different rapidity, some quite early, others being apparently stationary for from five to six months. In a month some reached a diameter of from 2 to 4 cm., with an elevation of say 2 mm. over the surrounding skin; then they commenced to form crusts and disappeared gradually, leaving a more or less brown depression in the skin. Others formed elevations of reddish-blue color; matter would discharge itself through many pinhole openings, ultimately leaving a red granular, easily bleeding and very tender ulcer. Several of the smaller ones of this suppurating kind healed also in about three or four months, leaving the same atrophic skin as landmark.

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[1] Jour. Infect. Dis., 1906, iii, p. 91.
[2] Jour. A. M. A., 1905, xlv, p. 1045.
[3] Ibid., p. 1291.

The healing began always in the center. The larger ones reached a size of from 4 to 7 cm., and showed no tendency to permanent improvement.

Course of the Disease.—In June, 1905, after he had participated in the spring work on the farm, some of the spots on both legs and on the right foot, which had been nearly stationary since the primary eruption in 1904, began to grow rapidly and soon made it difficult for him to move about. Several abscesses formed; the first ones, in both submaxillary regions, were opened in July, one the "size of a fist" in the left supraclavicular region in October, two smaller ones on the flexor side of the left wrist and one as large as an egg over the right ulna a little below the olecranon in November, 1905.

In October and November, 1905, there was great improvement. All ulcers, especially on the lower extremities, diminished rapidly, secretion ceased, the surface flattened, glistening scales seemed to substitute granulations, tenderness disappeared and he again moved about very freely, "perhaps too much."

In December, 1905, he became worse, all the apparently healing ulcers breaking up almost simultaneously, and he was again forced to stay in bed most of the time. In the face, where the eruptions were very numerous, the growth was slow and the granulations not so luxurious; only a few smaller ones suppurated, leaving scars on the chin and cheeks.

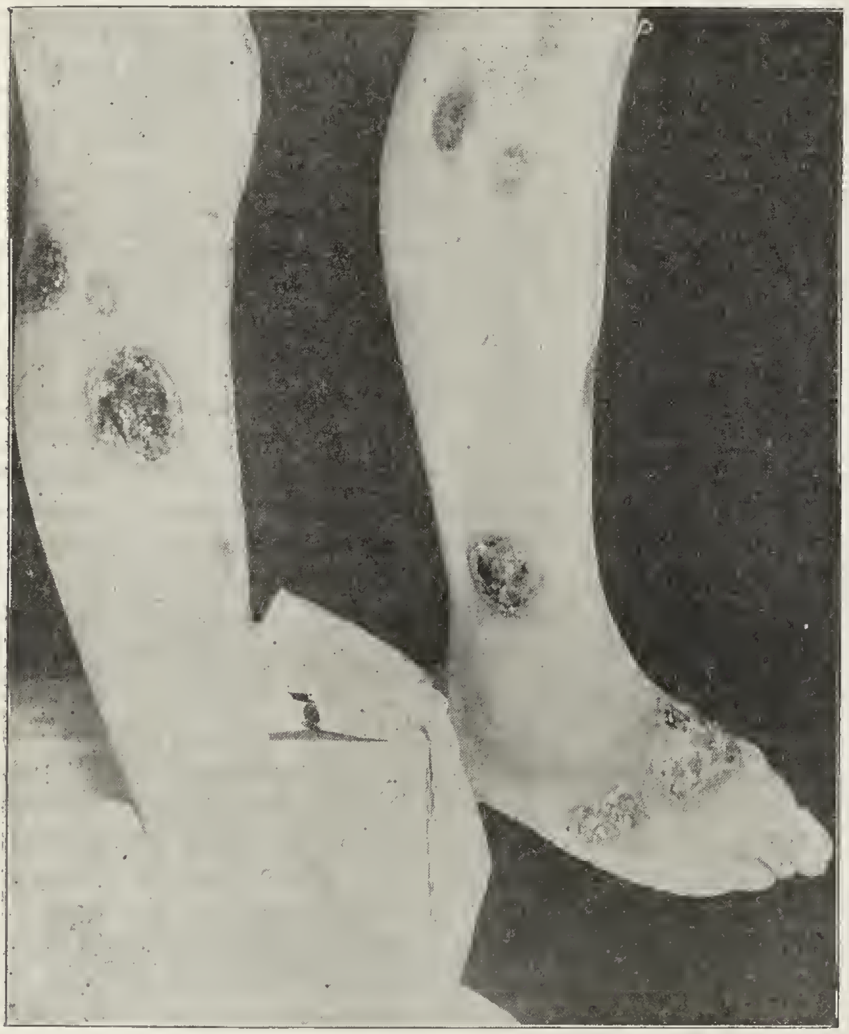
Fig. 1.—Showing lesions in skin over lower extremities in Case 1.

The patient claims that no new spots have formed since the first eruption in November, 1904, and that consequently all infiltrations or ulcerations have developed from pre-existing lesions.

With the exception of pain, especially on the changing of bandages, and the necessity of staying in bed, his general condition has been fair. Appetite has been good as a rule, but still he has decreased in weight from 174 to 145 pounds. He had no chills nor night sweats, but some cough with slimy expectoration the last three weeks. The patient knows of no similar case in his neighborhood.

Present Condition.—There are 52 superficial skin lesions, including 16 scars and 8 deeper processes, either cutaneous infiltrations or subfascial abscesses, only one of which has healed. Of the eruptions on the scalp no trace is to be seen, as growth of hair is even all over. In the face eleven eruptions can be recognized, three of which have healed, leaving rather deep but not wide depressions. Except some smaller ones on tip and wing of nose, the larger areas seem to be healing; their margins are still, however, elevated, bluish in color, partly covered with a smeary crust, on removal of which small bleeding points are seen. The margins slant toward the center, which is covered more or less with whitish scales, the color being more like that of normal skin. The eruption on the glabella, adjoining eyebrows and nose makes the man look older than he is and gives at first sight an appearance not unlike a leper. An ulcer on the right temple has everted the external angle of the eyelids. One area covers the left half of the upper lip, left angle of the mouth and extends into the left nostril. On the back of the neck are two smaller, suppurating lesions and one scar.

On his back are three ulcers from 1 to 3 cm. in size, slightly elevated, covered with white scales; of these he is not aware. In the lumbar region are scars after two small ulcers, which did not annoy him any.

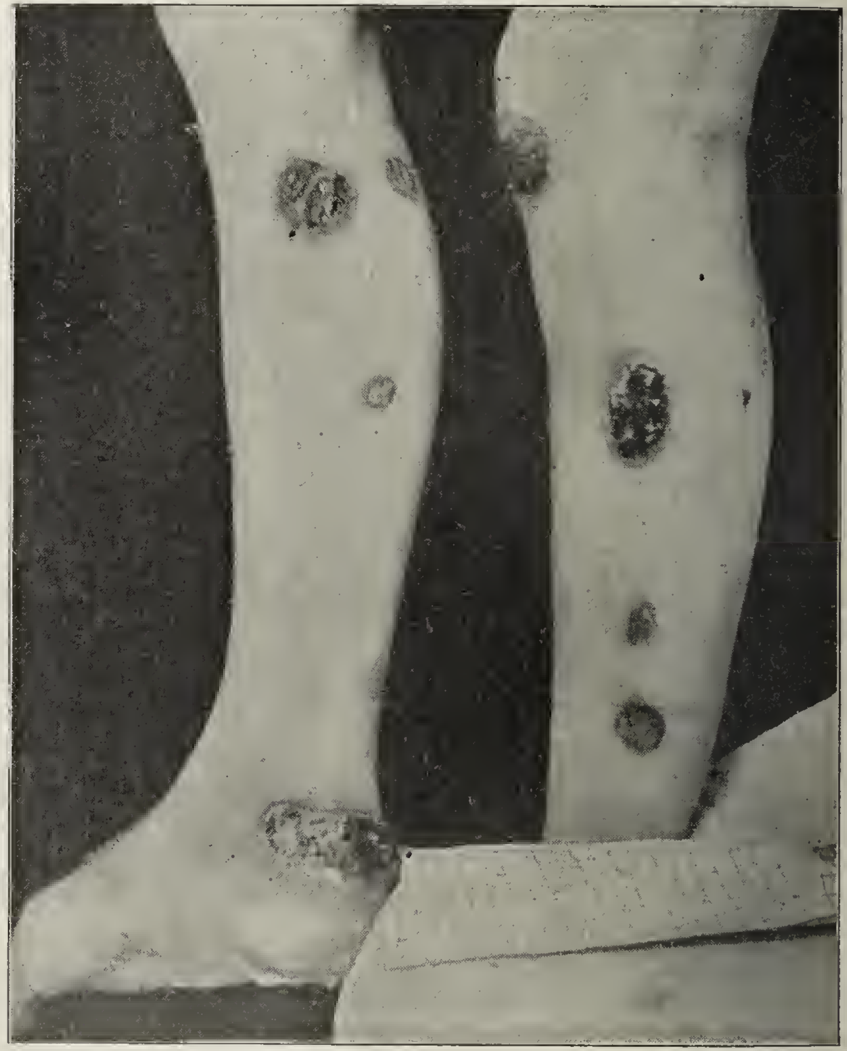
Fig. 2.—Lesions in skin of lower extremities in Case 1.

In the right submaxillary region is a small red scar from an opened abscess. In the left submaxillary region is an area of red infiltrated, undermined skin, where pus can be pressed out through several openings. In the left supraclavicular region is a fistulous opening, through which pus discharges freely.

On the dorsum of both hands are several large ulcerating surfaces, elevated about 5 mm. above the surrounding healthy skin. They consist of papillomatous granulations within an infiltrated, bluish-red wall, about 1 cm. wide, and partly covered with brownish, tallow-like crusts. On one finger are two slightly elevated areas with white dry scales.

On the volar aspect of the left wrist are two separate infiltrations in the skin with fistulous openings.

On the extensor side of the right arm below the elbow joint, is a small, deep, granulating ulcer, leading into a cavity under the fascia for about 4 cm.; no denuded bone is found. On the extensor side of the left arm, a little above the wrist, is a fluctuating tumor, approximately 6 cm. in diameter, over which the skin is freely movable and of normal color.

On the right thigh are seen four brownish scars or depressions from 2 to 4 cm. in diameter. On the right leg is one scar and two ulcers from 4 to 5 cm. in size. On the dorsum of the right foot are two areas, one 5x3 cm. and one 6x7 cm.; above the right heel is one 2.5x7 cm. In the left inguinal region is a subcutaneous abscess with a red, infiltrated, fistulous covering. On the left thigh are three scars and two suppurating ulcerations, on the left leg six scars and four ulcerations. (Figs. 1 and 2.) All lesions on the lower extremities look more active, the secretion is more profuse, and the odor very offensive. They are also extremely painful to the touch.

Over both lungs a few bronchial râles are heard and over a small area over the fourth rib in the papillary line there is fine creptitation. No blastomycetes or tubercle bacilli were found in the sputum. There are no enlarged lymph glands and the urine is normal.

Demonstration of Blastomycetes and Microscopic Examination.—There was no difficulty in recognizing blastomycetes in the form of characteristic, large double-contoured, occasionally budding bodies, in the unstained smears of the pus diluted with salt solution. No forms showing endogenous sporulation were seen.

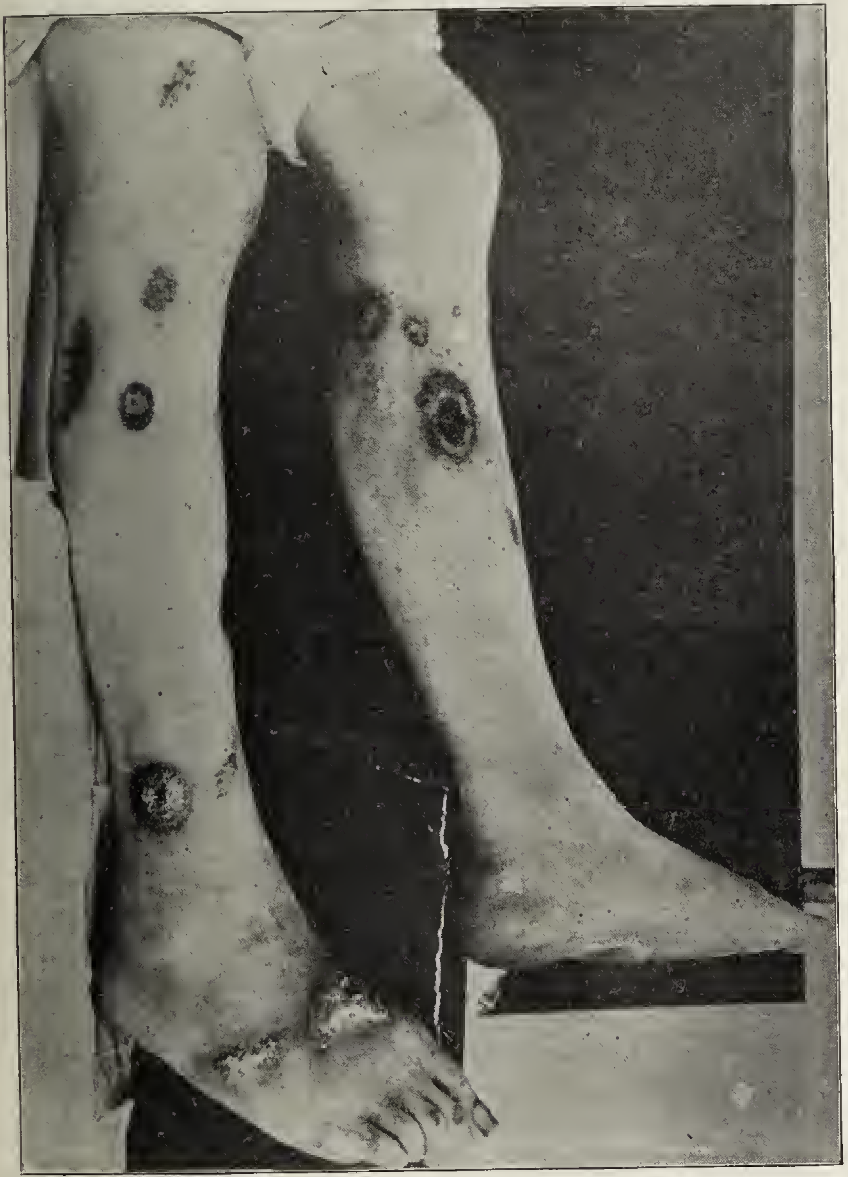

Fig. 3.—Scars in skin of lower extremities after ulcers have healed in Case 1.

Rather liberal quantities of pus from unbroken abscesses, secured as carefully as possible to prevent contamination, were smeared on numerous agar slants (plain, glycerin, glucose), and after several days' incubation about 40 per cent. of the tubes showed pure growths of blastomycetes, the rest of the tubes being sterile. The number of colonies in the different tubes varied greatly, some tubes giving only one or two colonies, others a dozen or more. The colonies began as small, delicate, raised points that slowly grew into wrinkled masses, which eventually sent offshoots into the air and down into the depths of the medium. The organism belongs to the hyphomycetoid subgroup of Ricketts,[4] and its cultural characteristics are being studied further.

In sections of abscess walls and of cutaneous ulcers, blastomycetes were found quite easily, generally free, surrounded by leucocytes, sometimes within giant cells. The ulcers present the structure characteristic of blastomycetic dermatitis—marked epithelial hyperplasia, inflammatory infiltration with giant cells here and there, and miliary abscesses. Tubercle bacilli or typical tubercles were not found.

Treatment and Further Course of Disease.—At first the treatment consisted in administration of potassium iodid, beginning with 4 grams and increasing the dose to 8 grams a day, besides local applications of different antiseptic solutions: boric acid, copper sulphate, silver nitrate and corrosive sublimate.

After several weeks' hesitation and refusal, he was persuaded to have the ulcers and abscesses curetted, which was done Feb. 14, 1906. The whole granulating surface of every surface was removed in one mass, leaving a perfectly smooth, freely bleeding, not very deep defect in the skin; no further curetting was necessary except of the margins.

After a while there commenced to form in the ulcers new granulation tissue, epidermization took place from the edges, and eventually complete healing resulted, the healed areas being dark red in color, covered with scales, and (in distinction to the spontaneously healed foci), their center was more elevated than their margins. (Figs. 3 and 4.)

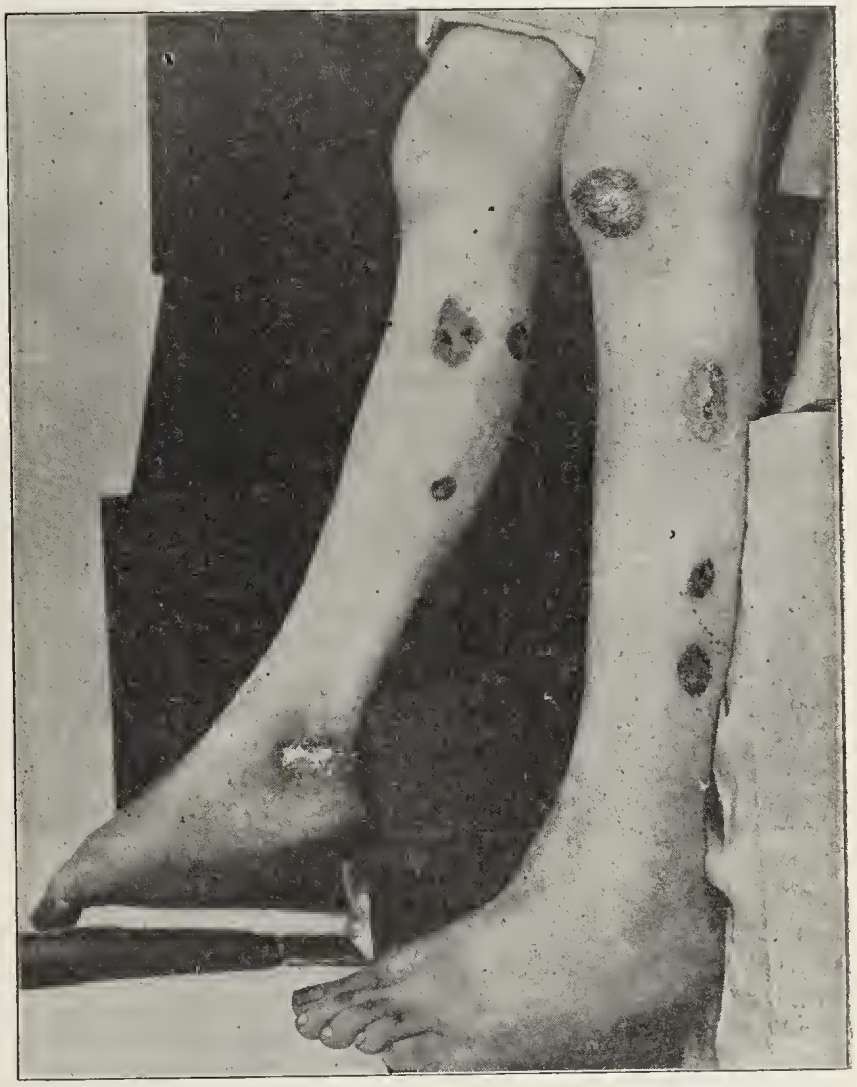

Fig. 4.—Scars in skin of lower extremities in Case 1 after ulcers had healed.

The deeper abscesses were curetted and counter-drained, but they have shown less tendency to heal, although secretion has diminished in all of them, especially during the last four weeks.

From March 16 to April 6 four injections were given of blastomycetic vaccine prepared by Dr. Ricketts from cultures of the organisms isolated from the patient, but of course no conclusions can be drawn as to the effect of the vaccine. The first injection was succeeded by a rise in the leucocyte count of 4,600, but the succeeding injections had no definitely recognizable immediate effect either on the leucocytes or on the temperature which always fluctuated between 98 and 101.

The patient left the hospital April 6, 1906. Most of the lesions had healed and he could walk without inconvenience.

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[4] "Oidiomycosis (Blastomycosis) of the Skin and Its Fungi." Jour. Med. Research, 1902, vol. vi, p. 374.

REPORT OF CASE 2.

Summary.—Norwegian, aged 58, farmer in Wisconsin for many years, became acutely ill Jan. 23, 1905, and three weeks later a large abscess had formed in the left lumbo-dorsal region.

Somewhat later, a similar attack occurred, and before long a swelling appeared in the left forearm and on the thighs and right forearm eruptions that formed raised granulating areas that would heal partially and break open again. In October, 1905, an abscess formed in the right arm and more recently in the left arm. Blastomycetes were found in the pus and tissues of the ulcers. Excision and curettement of lesions was performed, in addition to general treatment. There were cough and expectoration—tubercle bacilli, but no blastomycetes were found in the sputum.

Patient.—C. O. Q. entered La Crosse Lutheran Hospital Feb. 21, 1906.

Previous History.—He was born in Norway fifty-eight years ago and has been in America thirty-eight years; for the past twenty-seven years he has been farming in Wisconsin. There is much tuberculosis in his family. He has been a dipsomaniac for many years, but has always been healthy.

Present Illness.—Jan. 25, 1905, he was suddenly taken ill with chills, headache, pain in the left chest and general malaise. There developed a large swelling in the left lumbodorsal region, and three weeks after onset an abscess surrounding eleventh and twelfth ribs and extending into the paranephritic tissue was opened and the eleventh and twelfth ribs were resected. Three weeks later, when recovering from the operation, he claims to have had another attack of chills and general debility. Soon after he detected a swelling under the skin in the middle of the left forearm on the extensor side. This has varied a little in size, has never been larger than an almond and never painful.

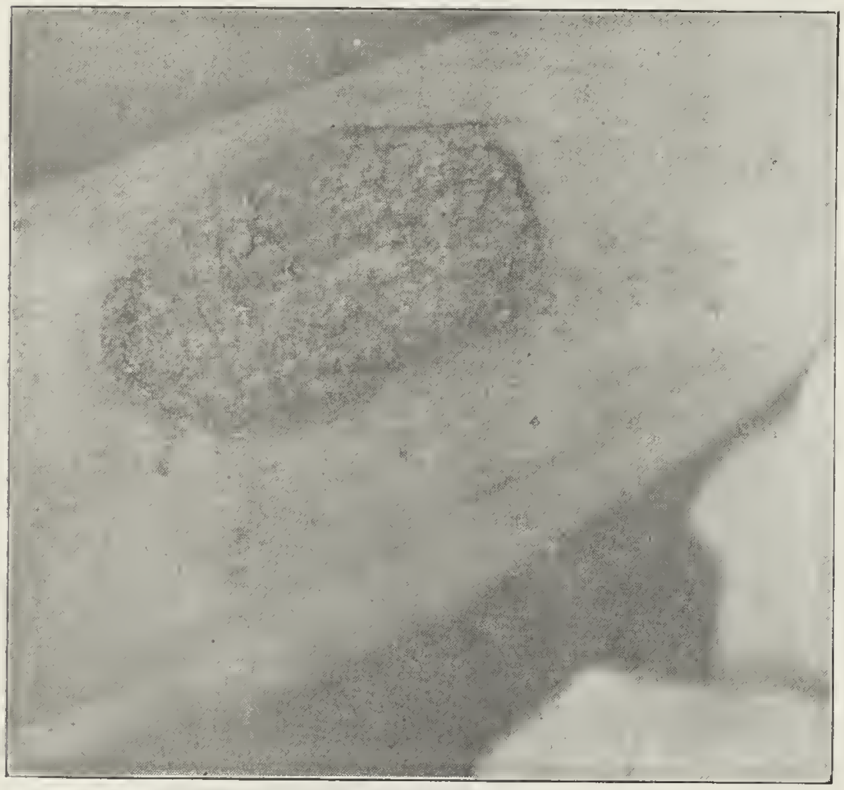

Fig. 5.—Ulcer on right thigh in Case 2.

In the middle of May an eruption "like a ringworm" appeared on the outside of the middle of the right thigh. A little later he noticed a similar affection on the extensor side of the right forearm and one over the left trochanter. These eruptions began as red spots, 2 cm. in diameter, and increased gradually in size, became elevated over the surrounding skin, assumed a granular surface, and a crust of peculiar offensive odor formed. The eruption on the left hip ceased to grow, when it—in about two months—had reached its present size of 3x4 cm. and has always been covered more or less with dry crust. The eruptions on the right arm and thigh grew more rapidly, became more elevated, the granulations larger and more tender, the discharge more abundant and the surrounding wall higher. Several times during the autumn it appeared as if these two large ulcers would heal as the granulations would disappear, first in the middle, and in a short time the whole surface would become covered with red smooth skin, almost to the margins, which, however, were still elevated and not participating in the healing process. In a few days the ulcers would break out again and the same high granulations with the same offensive secretion would form. The patient used boric acid compresses and no internal medication.

Course of Disease.—During October, 1905, the right arm above the elbow began to swell and be painful. For over two months he suffered very much and lost in flesh. The mobility of the elbow joint decreased somewhat during that time. In the first part of January, 1906, this swelling was incised and a large amount of pus evacuated with instant relief. The opening has been discharging ever since, but there is pain only on attempting to straighten the arm.

Lately he has observed two swellings on the left forearm, the smaller one near the elbow in front, the other 6 cm. above the elbow on the back of the arm; both are a little painful to pressure.

Since May, 1905, when he recovered from the operation, he has been in fairly good health, and although he has not been able to work, he has not regarded himself as sick except for the inconvenience of the ulcerations and the pain during November and December, 1905, before the abscess on the right arm was opened. He claims that he has gained some lately. He has not been aware of any fever of late. Appetite has been good and the natural functions in order. Lately he has been coughing considerably.

Present Condition.—The patient looks old, with sunken cheeks, grayish color of skin, pale lips and conjunctivæ. Height 5 feet 6 inches, weight 110 lbs.

In the left lumbo-dorsal region is a scar 12 cm. long; the twelfth rib and the greater part of the eleventh are missing, and whenever he speaks or coughs the integument bulges out.

The swelling on the left arm (which is the second lesion in order of appearance) is about 4 cm. long, 2 cm. wide and 1 cm. high; the skin over it is of normal color and freely movable; the mass seems to be attached to the deeper layer of muscles, is slightly fluctuating, and somewhat painful to pressure.

On the same arm are the two swellings, which recently made their appearance, the one right above the elbow has the size of an almond, the other, as large as a hen's egg, is situated 6 cm. above the elbow; it seems to be attached to the triceps, with which it moves. This last one has grown very rapidly in size. Both are soft, fluctuating.

The first "ringworm-like" eruption on the right thigh has now developed to an ulcer 10 cm. long and 5 cm. wide. (Fig. 5.) It is surrounded by an infiltration that forms a wall or margin about 1 cm. wide and 7 mm. high, a little undulated, of bluish-red color, partly covered with light brown sebum-like crust, on removal of which fine openings are seen. This wall or margin surrounds an uneven granulomatous or papillomatous surface. The granulations bleed easily and are very tender to the touch. Some of them form slender papillæ.

The eruption on the left hip, which the patient claims has been stationary for at least seven months, is only slightly elevated over the surrounding skin, and covered with a brown crust; the whole area has a more warty appearance.

The lesion on the right forearm is the largest, being 13 cm. long and 7 cm. wide. (Fig. 6.) It differs from the eruption on the right thigh in that a healing process has commenced in its central part, where the granulations are substituted by thin skin, which looks quite healthy, when the crust is removed.

On the same arm is an abscess, opening 5 cm. above the external condyle. The whole lower extremity of the humerus is very thickened. Above the internal condyle is a soft fluctuating swelling, covered with red infiltrated skin, but it does not communicate with the former opening.

No enlarged lymphatic glands are to be found anywhere.

There are bronchial râles over both lungs. No tubercle bacilli or blastomycetes were found in the sputum on entrance. The urine contains no albumin nor sugar.

Demonstration of Blastomycetes and Microscopic Examination.—Blastomycetes were found in the unstained smears of the pus from an unopened abscess. No other micro-organisms were found in stained preparations. Smears of the pus on agar slants gave pure cultures in about one-half the tubes. This organism also proved to belong to the hyphomycetoid group of Ricketts. Blastomycetes were demonstrated also in the sections of the extirpated ulcers and in the walls of abscesses. The ulcers were typically blastomycetic in structure. Typical tubercles with caseation were not observed.

Treatment and Further Course of Disease.—The deeper abscesses were either curetted or excised. The area over the left hip was excised. In these instances healing resulted. The lesion on the right thigh was excised and grafted, but only some of the grafts took and the wound healed by granulation tissue. The area on the right arm was curetted, leaving an island of healthy looking skin in the center. Four days later this area was studded with yellow points as large as pin heads; one per cent. solution of copper sulphate was applied in the form of compresses and healthy granulations soon sprang up and healing has since progressed from the margins. During his stay in the hospital he was given potassium iodid up to six grams daily. He also received four injections of blastomycetic vaccine prepared from organisms cultivated from his own lesions, but whether it had any influence on the rapid healing of the local lesions can not be stated.

During the last two weeks or so of his hospital sojourn the cough and expectoration increased and eventually tubercle bacilli were found in the sputum, but no blastomycetes.

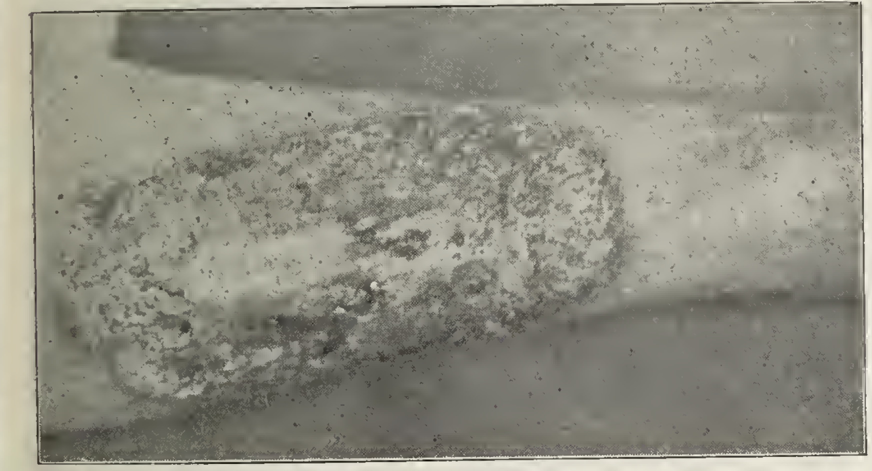

Fig. 6.—Ulcer on right forearm in Case 2.

The temperature ran from 98 in the morning to 100 and 101 in the evening. He left the hospital April 6, 1906.

REMARKS.

1. *Mode of Invasion.*—In these two cases the dissemination of the blastomycetic infection appears to have taken place quite suddenly and without the presence of any chronic, external lesion that might be regarded as the primary localization. In Case 1 the onset is like that of an acute general infectious disease, numerous separate lesions developing simultaneously in the skin and subcutaneous tissue directly on the heels of a general febrile reaction. In Case 2 the onset is also definite, but here the localization of the infection seems to have taken place in the deeper tissues before the subcutaneous invasion. Of course, the question whether or not the pararenal abscess, which formed soon after the first general reaction, really was of blastomycetic nature probably never can be decided, because the pus was not examined. At all events, other foci had formed already, or did form soon after, of the blastomycetic nature of which there can be no question.

The actual portal of entry of the infecting organism in these cases is, of course, largely a matter of conjecture. In Case 1 the history points to the lungs. In most of the previously reported instances of systemic blastomycosis the lungs are regarded as the point of primary attack. The hypothesis that blastomycosis may result from aërial infection might well form the basis for experiments to determine (a) whether the organisms in question are conveyed easily in air currents when dry, (b) whether they retain their vitality and infectiousness after drying, and (c) whether they are carried in minute droplets of sputum in which we know they may occur in pulmonary blastomycosis (Eisendrath and Ormsby, Bassoe). In this way some knowledge might be obtained as to the danger of established cases of blastomycosis as sources of further infection.

In the majority of instances of systemic blastomycosis (and coccidioidal granuloma) the involvement of the integument has been marked. The organisms seem to have a special predilection for the skin which may be an important avenue for escape perhaps to new hosts. As yet we know nothing of the occurrence of pathogenic blastomycetes or oidiomycetes in nature and consequently we do not know whether the cases of blastomycosis that are being recognized with increasing frequency, particularly in this part of the world, are the result of infection with facultative parasites or facultative saphrophytes, but so far as the mechanisms for continued parasitic existence are concerned the organisms of blastomycosis would appear to have reached a high degree of parasitic adaptation.

The frequent development of typical blastomycetic ulcers (dermatitis) in the course of generalized blastomycosis suggests that even more or less isolated, cutaneous, blastomycetic lesions may develop as the result of infection by way of the blood current and not necessarily always, as seems quite natural, from direct implantation from without. This possibility should, we believe, receive particular attention in those cases in which the lesion is located on parts of the body, e. g., the back, not ordinarily exposed to external infection. The fact that blastomycotic foci sometimes undergo spontaneous healing (illustrated especially well in our Case 1) may make it difficult to trace the sequence of events in a given case.

Treatment.—As yet no effective treatment for systemic blastomycosis has been discovered. Judging from the literature the problems of the nature of the finer reactions to blastomycotic infection and the formation of specific antibodies have received but little attention. The character of the lesions of blastomycosis—the accumulation of leucocytes, the formation of giant cells, and the phagocytosis of blastomycetes—indicates that this is an infection in which phagocytosis is an important means of defense and of healing. Certain preliminary test-tube experiments showed that phagocytosis of blastomycetes is favored by the presence of normal serum, and the idea arose that it might be possible to stimulate the greater formation, in cases of blastomycosis, of the body that promotes phagocytosis (opsonin), as well as of other antibodies, by the injection of blastomycetic substances in readily absorbable form. It was thought that the resistant character of the micro-organisms coupled with their enclosure in cellular exudate and granulation tissue possibly prevents the absorption in proper quantities of the substances necessary to call forth strong immunizing reactions. Hence, in order to hasten, if possible, the reactions that favor healing, we injected in each of our cases a sterile blastomycetic vaccine prepared by Dr. H. T. Ricketts of the corresponding organism. This procedure is based directly on the principles underlying A. E. Wright's method for the treatment of infections by vaccines composed of corresponding bacteria. Unfortunately the patients left the hospital at a time when no conclusion of value could be drawn as to the results of the vaccine. Work is at present in progress to develop certain methods whereby the effect of the blastomycotic vaccines may be estimated *in vitro,* in the hope that it may be possible to furnish some guidance to the treatment.

THE CLINICAL SIGNIFICANCE OF VARIATIONS OF WRIST AND ANKLE.*

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The paper which I have the honor to present to the Association contains little that is new to professional anatomists, but the underlying facts have not yet been brought, through the text books, to the cognizance of practical surgeons. The purpose is to call attention to matters of clinical importance, ignoring so far as may be, all abstract science. It were superfluous to show that variations are very numerous. I wish to insist on the practical point that they are to be expected at certain definite places. These variations are of four classes. The first is due to an increase in the number of bones, owing to the persistence of elements which normally fuse or disappear; the second, to a diminution of bones, owing to the union of elements usually distinct; the third, to unusual relations between bones; and the fourth to the exceptional development of processes usually small or absent. The important point is that the appearance of a variation from any of these causes is not to be confounded with the result of a pathologic process. I shall make no attempt to cover the whole field, nor even to show all that I have observed; but every figure that I shall show, with one exception, is from an observation of my own.

FIRST CLASS OF VARIATIONS.

To understand the first class we must know that the ground plan of the wrist and ankle is not that of the adult. Many pieces originally distinct, have either utterly disappeared during development or become fused with others. In saying originally distinct, I do not refer to any mythical theory of descent, but to what has actually occurred in that particular man. It has been shown that the early cartilage of the wrist or ankle is a single layer, not subdivided by joints, in which the place of the future bones is designated by well-marked accumulations of cells, some of which may soon lose their identity, while others, though ultimately fusing or disappearing, may be for a time as important as the groups of the typical bones which persist. Exceptionally, permanent bones develop from these usually transitory centers and also some of the so-called normal bones are occasionally represented by their constituent parts, which have refused to coalesce. Such additional bones are of great practical importance, owing to the natural tendency, especially after a lesion, to attribute them to fracture.

Bones of the Wrist.—The *styloid* bone of the wrist affords a typical illustration of what occurs. (Fig. 1). Originally a distinct piece of cartilage, it joins the base of the third metacarpal, forming the styloid process, which projects sharply between the trapezoid and the os magnum; but instead of pursuing this course it may preserve its individuality, or it may fuse with either of the other adjacent bones, thereby modifying strikingly the lines of the joints. (Fig. 2.)

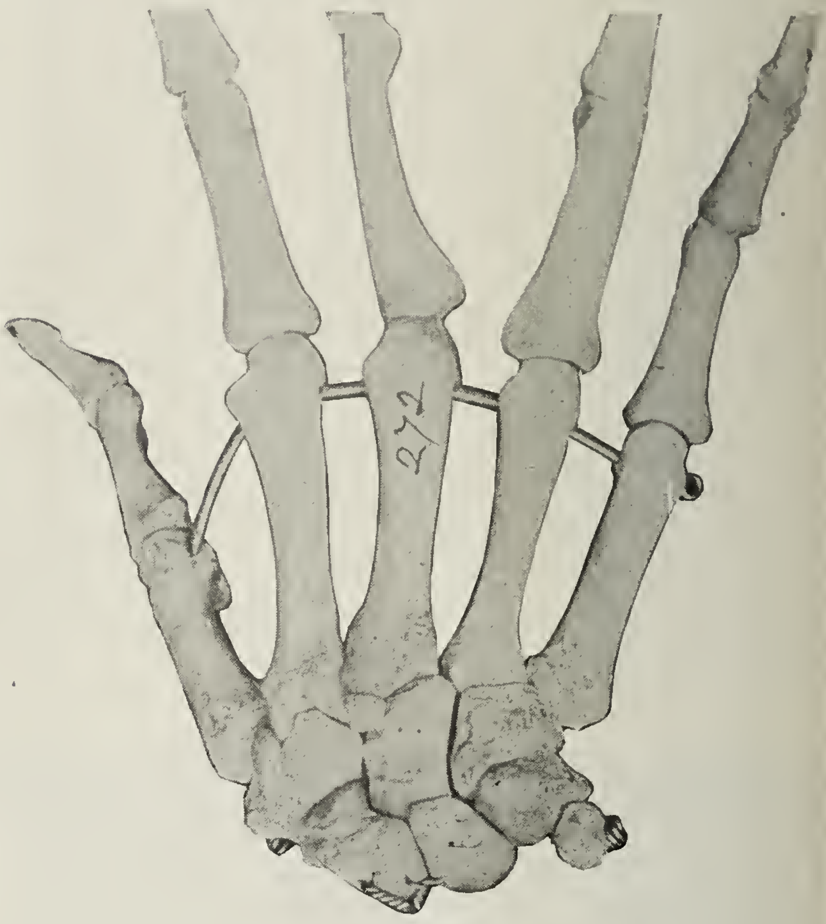

Fig. 1.—Styloid free.

The late Professor Pfitzner was so sure that the swelling on the palmar aspect of the os magnum represents a distinct element that he named it the *subcapitatum* (Fig. 3), though it had never been seen isolated. After his death I found it separate in both hands of one body. The observation remains unique.

The variation of supreme interest in the wrist is the subdivided scaphoid. This bone is developed from two chief elements, the radial and the ulnar, which normally fuse in the early cartilaginous stage. The former of these, bearing the trapezium and trapezoid, is situated in the main distally from the latter which forms the greater part of the joint with the radius. Exception-

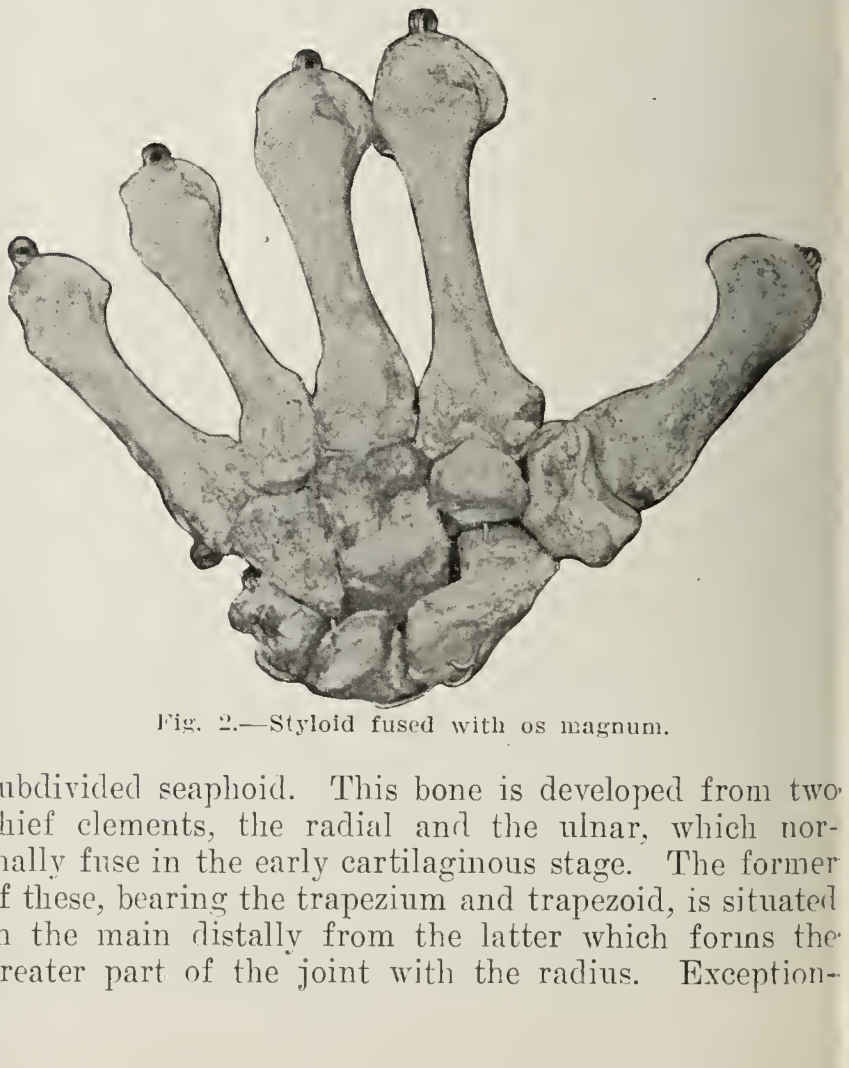

Fig. 2.—Styloid fused with os magnum.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

ally these parts never fuse. There is very rarely, if ever, in these cases a true joint between the bones, but usually a remnant of the original cartilage, more or less degenerated into fibrous tissue. That a bone so constituted should yield to violence more easily than a normal one, and that the displaced surfaces with their fibrocartilaginous covering should be ill-adapted for repair is precisely in accord with clinical experience in so-called fracture of the scaphoid. While I should not presume to assert that a normal scaphoid may not be broken, I have no doubt that the great majority of the so-called fractures of the scaphoid are due to the separation of the two original parts.

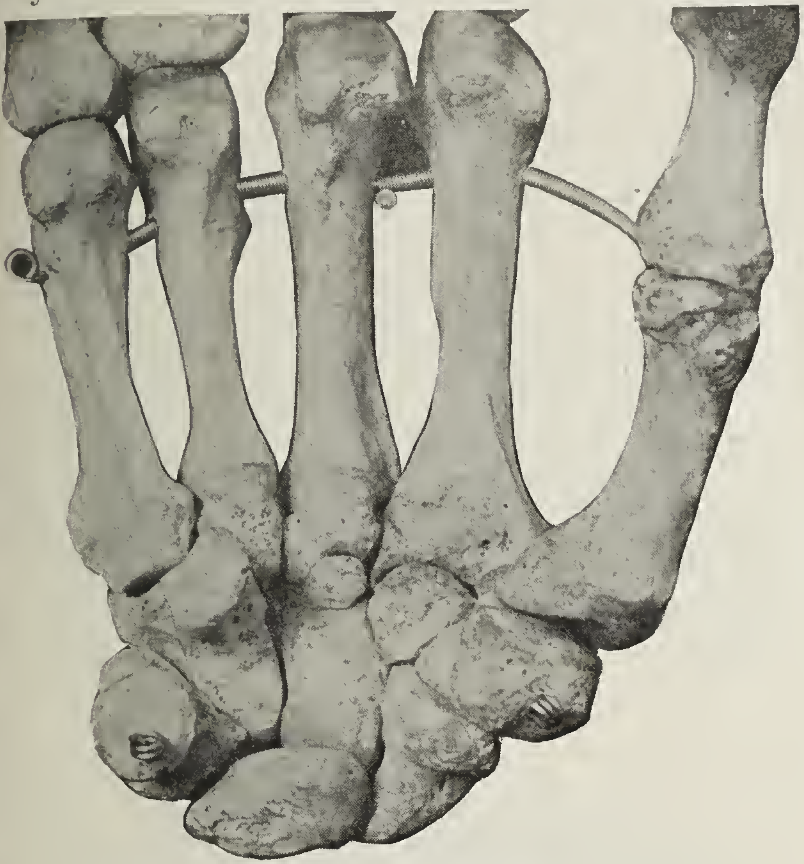
Fig. 3.—Subcapitatum.

In my collection I have a scaphoid at birth, and consequently wholly cartilaginous, divided into its two typical halves, which does not present the slightest sign of any pathologic process. I have also a scaphoid of a man of sixty-one, which remained throughout life in two pieces firmly united by fibrocartilage, presenting no evidence of lesion.

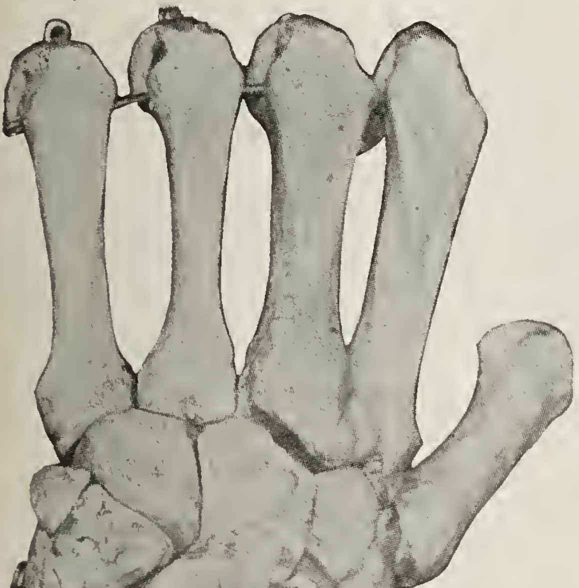
Fig. 4.—Ulnare externum.

It must be admitted that many cases, perhaps most, of subdivided scaphoid, have a very pathologic appearance. This is probably the consequence of inflammation following an early lesion. I must, with regret, leave subdivided scaphoid which I propose to discuss elsewhere.

The semilunar is composed of a body and of two points which may appear as separate bones forming each horn of the crescent, one on the back of the wrist and one in the palm. The former is the more common. The bone is sometimes found, as in this instance, divided into two equal parts. The interpretation is, I admit, difficult, but I incline to explain it by the over-development and separation of the dorsal point, the *epilunatum.*

The *ulnare externum* (Fig. 4), situated on the dorsal surface of the cuneiform near the unciform at the edge of the wrist, is sometimes found distinct, and when shown by the x-ray might, perhaps, be mistaken for a fracture. I am not aware that it has ever been caught in a skiagraph.

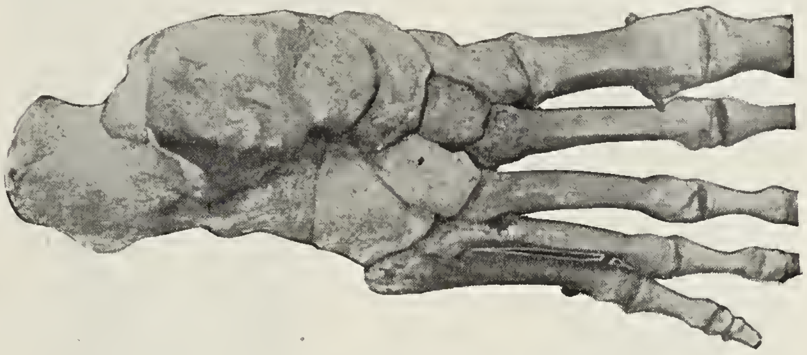
Fig. 5.—Os trigonum.

The *hamular* process of the unciform bone is a true element which exceptionally remains distinct.

Bones of the Foot and Ankle.—The foot presents corresponding variations, several of which, however, are less accessible to the x-ray than those of the hand. One of the most common is the *os trigonum* (Fig. 5), an element normally forming a part of the external tubercle at the back of the astragalus, which, when distinct, is connected to the bone by fibrocartilage, or very rarely by a true joint. Sometimes it appears at the end of a long process. It may be double. It is instructive to note that a distinguished surgeon, who is also an excellent anatomist, when he first met with this element, attributed it to fracture.

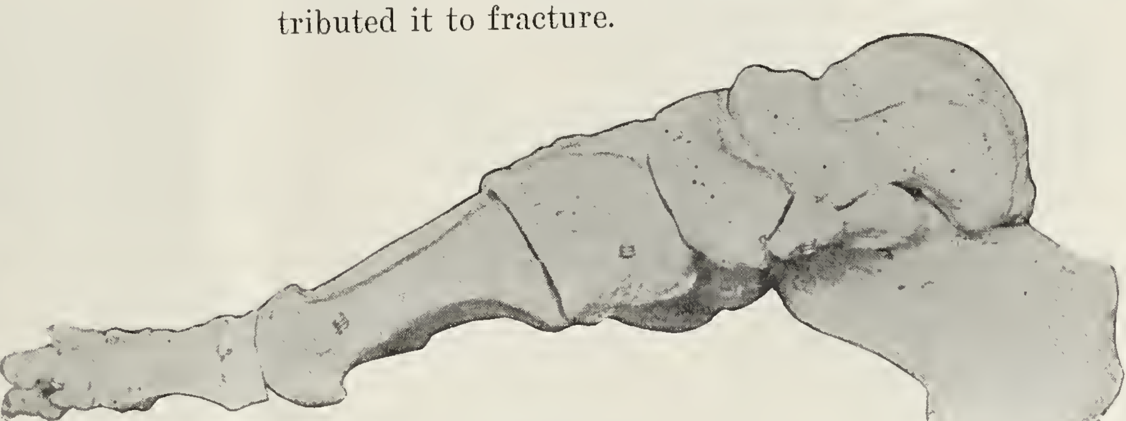
Fig. 6.—Tibiale externum.

The *tibiale externum* (Fig. 6), often appearing as a sesamoid bone, may be fused with the tuberosity of the scaphoid. It may form a hook-like process, suggesting an exostosis, or it may be distinct, joined by fibrocartilage. Sometimes when separate it is a striking feature of the foot between the tuberosity and the sustentaculum tali.

The *os intermetatarseum* (Fig. 7) is an element which normally either disappears or fuses with the internal cuneiform, but may exceptionally appear as a process of the latter, or as a distinct element, or attached to either the first or second metatarsal (Fig. 8). My collection contains all four forms.

On account of its extreme rarity and of the doubt whether the x-ray would define it, the *os intercuneiforme* which I alone have observed, is probably of little practical importance.

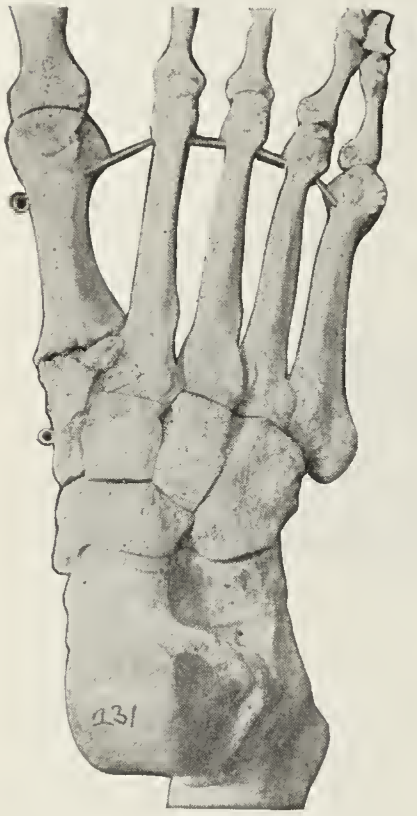

Fig. 7.—Os intermetatarsum free.

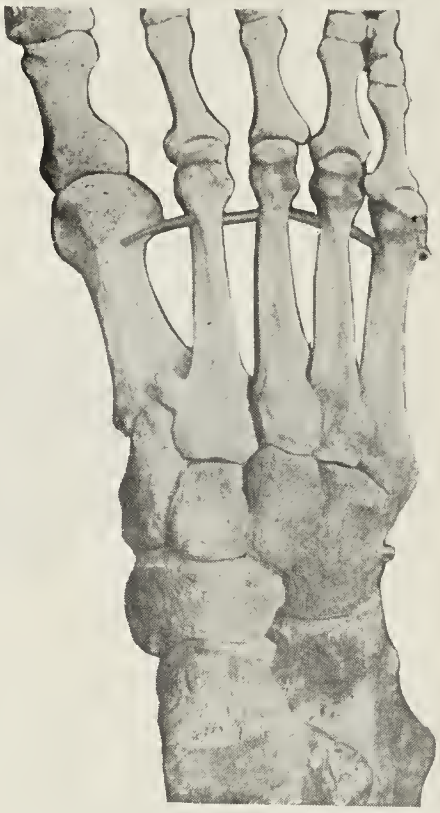

Fig. 8.—Os intermetatarsum fused with second metatarsal.

The *secondary cuboid,* usually fused with the scaphoid, may make a great projection in the sole of the foot. It has but once been seen distinct. It may have been so at an earlier time in this specimen.

Yet an element should not be disregarded because it is extremely rare. Grashey's "Atlas of X-Rays" shows a foot with a separate tuberosity of the fifth metatarsal which is one of the greatest rarities. Pfitzner never saw it. I have one probable specimen in an infant's foot.

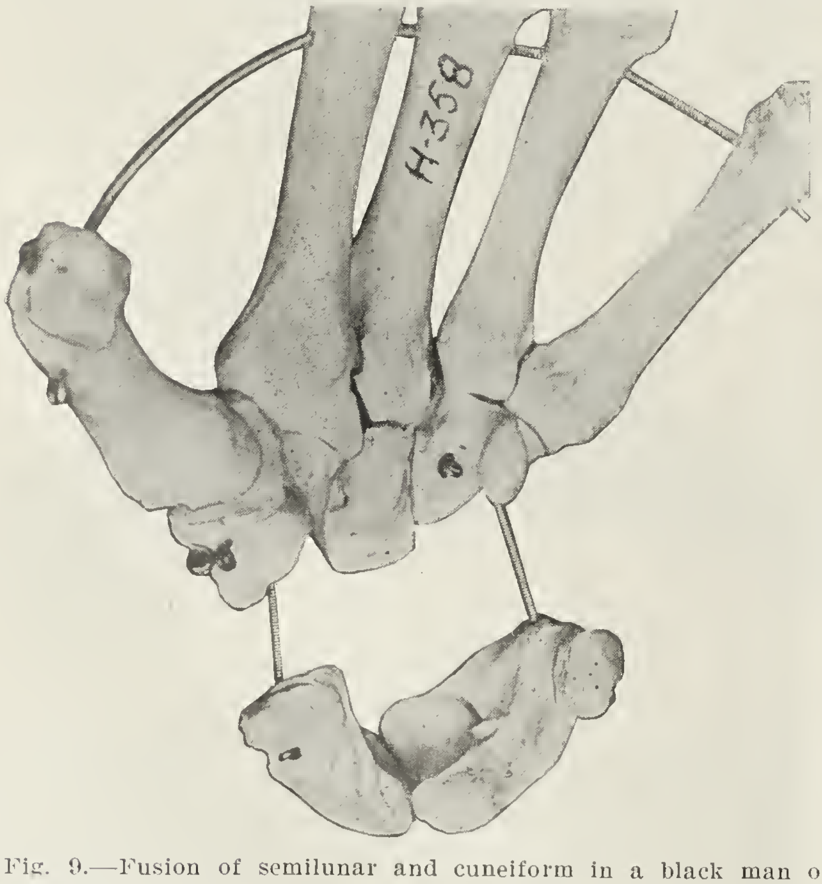

Fig. 9.—Fusion of semilunar and cuneiform in a black man of twenty-three.

SECOND CLASS OF VARIATIONS.

Passing now from cases of too many bones to those of too few, which constitute our second class of variations, it is especially to be noted that such conditions are due to the non-appearance of a joint cavity in the originally continuous cartilage and that the specimens do not show the slightest pathologic change. It is further noteworthy that these unions occur between particular bones and also at definite places. I have three or four specimens of fusion of the semilunar and cuneiform (Fig. 9), all of which are essentially the same, and similar to those figured by Pfitzner. The proximal surface of the conjoined bone is continuous and perfectly smooth, while the distal surface presents a deep cleft. In a case described by Elliott the cleft is shallow. It is very interesting to note that this is to some degree a race characteristic, a large proportion of the cases occurring in negroes. The second metacarpal is occasionally fused with the trapezoid, but the specimens present a less normal appearance.

Though it occurs in the hand instead of the wrist and consequently beyond the limits of this paper, I want to show this case of congenital fusion of the proximal parts of the fourth and fifth metacarpals as an illustration of union which assuredly is not pathologic.

A favorite point of union between the tarsus and metatarsus is at the extreme plantar border of the external cuneiform and the third metatarsal. It is probably due to the transformation of the original cartilage into bone instead of ligament. Pfitzner has seen it in a girl of seventeen, the union being partly cartilaginous and partly bony, and I in one of nineteen, the union being bony, in feet which were otherwise absolutely free from any abnormality and which did not show the slightest trace of inflammation. I shall not spend time in discussing another explanation.[1] The fact of the relative frequency of fusion between these two particular bones is to us the important one.

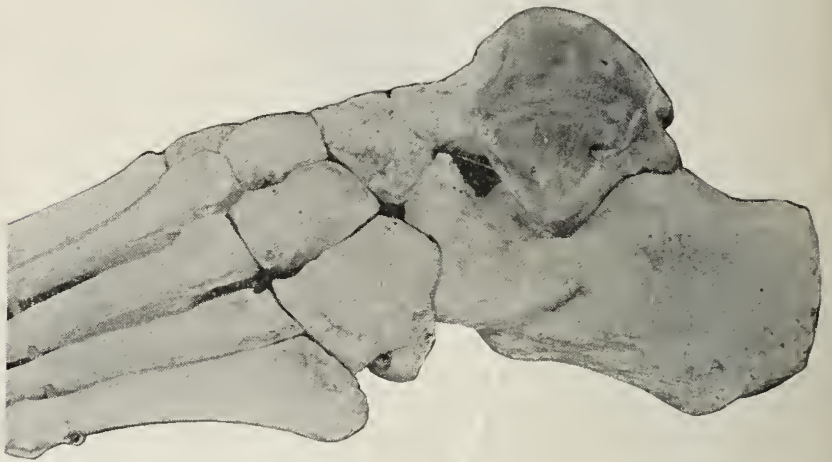

Fig. 10.—Fibrocartilaginous union of os calcis and scaphoid.

THIRD CLASS OF VARIATIONS.

The third class of variations comprises cases of unusual relations of bones. Usually the front of the astragalus and os calcis come to the same transverse line. Exceptionally, the front of the os calcis reaching further forward, joins the outer end of the scaphoid (Fig. 10). They may be in apposition merely by a line's breadth, or for the greater part of an inch. They may meet with a true joint intervening, or be closely connected by fibrocartilage, so that practically there could be no motion between them. The bony tissue may even be continuous, but I have not myself observed this condition. Leboucq believes that fusion of these bones leads to a break-down of the plantar arch. In my cases of fibrocartilaginous union I have found some support for this view, but on the whole I am inclined to associate this connection with a high instep. Apart from its influence on the shape of the foot this peculiarity is interesting from the opposition it would offer to a Chopart's amputation.

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[1] Pfitzner inclined to account for fusions by the occurrence of a supernumerary element which fused at an early stage with its neighbors. There is support for this view in some cases, but I think not in all.

FOURTH CLASS OF CASES.

Finally, in the fourth class, we have the over-development of a process usually small and occasionally absent. My instances are all from the foot. Here is an enormous peroneal process separating the tendons of the peroneus longus and brevis. This specimen from a negro almost equals the development of the chimpanzee, which alone of anthropoid apes has this process very prominent. It may be pointed out in passing as a good illustration of the folly of attempting to explain such appearances by atavism.

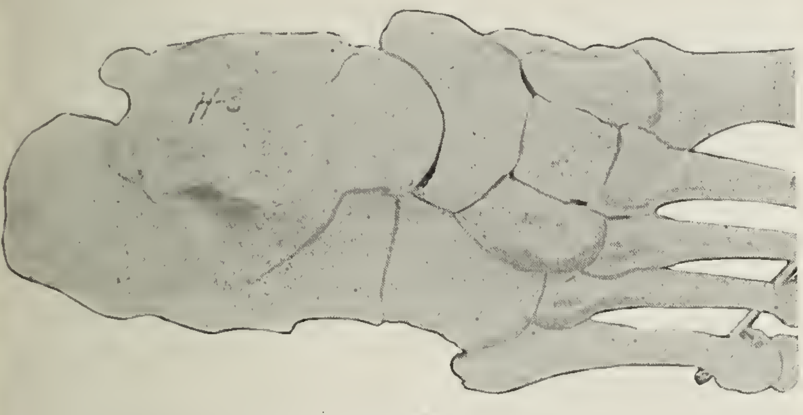

Fig. 11.—Very large inner posterior tubercle of astragalus.

Here is the inner posterior tubercle of the astragalus (Fig. 11) which, though apparently not a separate element in the plan of the foot, is sometimes overgrown so as to surpass the normal external one. It is a good instance of a trochlear or pulley-like process described by Hyrtl, round which a tendon curves. Perhaps of the same class, but of more doubtful interpretation, is the rising on the front of the astragalus (Fig. 12). Be it what it may it is very uncommon. A similar process, probably still more rarely, is found directly in front of it on the scaphoid.

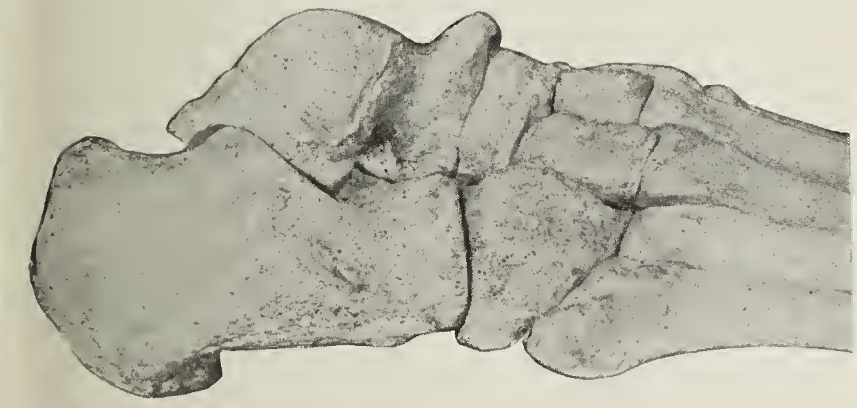

Fig. 12.—Abnormal process above the head of the astragalus.

The practical surgeon who may not care for the morphologic insignificance of these variations, may be interested to know that they occur at certain definite points and are, therefore, to be reckoned with. At least, it is in this hope that I have presented the paper. I am far from asserting, however, that these variations may not be accompanied by pathologic conditions, making the interpretation difficult.

DISCUSSION.

Dr. F. J. Shepherd, Montreal, Canada, agreed with Dr. Dwight that many of these cases can be explained on the basis of morphology and comparative anatomy. Any one who is well posted on these subjects can put forward a good explanation for the occurrence of these anomalies. Dr. Shepherd was the man Dr. Dwight referred to who read a paper about twenty years ago on fracture of the astragalus, but at that time he did not know that these cases had been described as errors in development. Dr. Shepherd still holds, however, that very often the separation of the fragment of the posterior portion of the astragulus is by trauma, a separation of an united epiphysis. The best example is a fracture of the anterior acromion process which was looked on for many years as being a fracture. We now know that it is an united epiphysis.

THE DIPLOBACILLUS OF MORAX-AXENFELD.*

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The Morax-Axenfeld diplobacillus as a pathogenic agent infecting the cornea and conjunctiva is an organism of the highest importance to the ophthalmologist. In America, in all probability, this organism is very widespread geographically and a frequent cause of infection, but it has not been deservedly recognized. Its recognition is of the greatest importance, because against infection with it we have a specific remedy. Owing to these facts, it has been thought wise to emphasize this organism in this symposium.

In justification of the statements made in the foregoing paragraph, it may be well immediately to call attention to the fact that in the 10 cases recorded below (and this experience accords with those of other observers) clinical conditions were caused by this organism varying from the most serious ulcer of the cornea to the most trivial conjunctivitis; indeed, the organism was found in one case in which there were neither objective nor subjective symptoms. There can be no question of the importance of such an organism to the ophthalmologist. That it is widespread geographically in this country is shown by my recent experience, for I have studied bacteriologically a case which Dr. N. M. Black found in his practice in Milwaukee, and of my cases one came from the southern part of Illinois. The fact that ten cases of infection by the Morax-Axenfeld bacillus were found in six months in a small clinical material is presumptive evidence that this bacillus is a frequent cause of infection in this country. That the organism has not received the attention in America that it deserves is evident from the scant literature that we have concerning it. This point has lately been emphasized by Gifford,[1] who in his article speaks of the fact that a most experienced American ophthalmo-bacteriologist had recently written to him that he had never seen a culture of this bacillus.

A recent statement by zur Nedden,[2] of Bonn, suggests to me that possibly this is an eminently fitting time to emphasize in America the importance of this organism in the pathology of the eye. This statement was called forth by Paul's[3] report from the Breslau clinic of a series of cases of serious corneal ulcers caused by the diplobacillus. Zur Nedden says that it is not to be doubted that the Morax-Axenfeld organism in some regions causes severe inflammations of the cornea, but that in Bonn he has not seen such complications as a direct result of infection with it. He suggests that possibly the sensitiveness of the cornea for this infective agent is not everywhere the same, and says that possibly this may be explained on the idea that this disease in the Western provinces of Germany has, as a result of its long existence and wide distribution, lost a part of its virulence. In this country the organism certainly finds much virgin soil, and if the suggestion of zur Nedden holds good we can expect the worst results from it. Four of the cases recorded below support zur Nedden's idea; one of these cases, as will be seen, was a severe corneal ulcer.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Gifford: The Clinical Importance of the Diplobacillus of Morax-Axenfeld. Ophthalmic Record, 1905, vol. xiv, p. 511.

[2] Zur Nedden: Ueber einige seltene bacteriologische Befunde beim Ulcus serpens. Archiv. für Augenheilkunde, 1905, vol. lii, p. 143.

LESIONS AND TREATMENT.

During the last six months, as has been said, I have found this organism as the pathogenic factor in ten cases. These cases have shown beautifully the clinical possibilities of this organism and the results of proper treatment; in other words, they tell well the clinical story of the diplobacillus; hence they are introduced here. The disease most typical of infection by this germ is a chronic blepharo-conjunctivitis. In this series I have had six such cases and they are recorded first, the atypical cases following:

Case 1.—Chronic blepharo-conjunctivitis in a young man who said that the condition was of long standing. The condition presented the picture most often found in infection with this organism. The edges of the lids were red and particularly at the outer angles, where the skin below the margin of the lids was also involved, being macerated by the overflowing of tears. There was more or less scaly deposit on the edges of the lids. The palpebral conjunctiva was not much swollen and only slightly hyperemic; the bulbar conjunctiva was not involved. There was slight discharge. The patient was a good deal annoyed by irritation of the lids. He said that other members of his family were similarly affected. The diplobacillus was demonstrated in culture and smears. Treatment with zinc sulphate 0.25 per cent., applied three times daily, and unguentum zinci oxidi applied to the lids at night brought about a rapid recovery.

Case 2.—Chronic conjunctivitis in an elderly man who said that he had had the condition for a long while and had been under the care of a competent oculist without avail. He complained of burning and smarting of the lids and a good deal of discharge in the morning. The condition showed a chronic blepharo-conjunctivitis, with involvement of the edges and skin of the lids, particularly at the outer angle. Smears and cultures showed diplobacilli. Zinc sulphate, 0.25 per cent. solution, applied three times daily, cured him promptly.

Case 3.—An elderly man on the service of Dr. Ralph Hamill at Dunning Asylum, to whom I am indebted for the privilege of recording the case. The man had a chronic conjunctivitis and smears showed Morax-Axenfeld bacilli.

Case 4.—Chronic conjunctivitis in a business man, resident of Chicago, who complained of a slight discharge from his lids in the morning. There was very slight redness of the palpebral conjunctiva, but no involvement of the edges of the lids. As will be explained below, in spite of attempts to make a bacteriologic diagnosis, the presence of diplobacillus was not at first recognized and the patient was treated for two weeks with 5 per cent. solution of protargol, applied twice daily. This did no good and at the end of that time the medicine was changed to 10 per cent. argyrol, applied three times daily, which also did no good. In the meanwhile the patient had been given glasses to correct a slight refractive error. The glasses were of no service. At the first examination the presence of diplobacilli was suspected and three or four smears at different times were examined, but no diplobacilli found. Cultures were also made on Loeffler's blood serum on which Xerosis bacilli grew, but no diplobacilli. The Loeffler's blood serum that I had used was finally found to contain boric acid. On good blood serum the diplobacilli grew immediately and abundantly. The patient was then given zinc solution and in two weeks he was relieved of all eye symptoms.

Case 5.—A small boy with blepharo-conjunctivitis, and who has recently had repeated phlyctenule-like ulcers at the edge of the cornea and one small ulcer in the center of the cornea. Bacteriologic examination showed diplobacilli and staphylococcus aureus; smears from the conjunctival sac show the latter organisms in great abundance. Treatment with zinc sulphate, 0.25 per cent., applied three times daily, brought about a rapid recovery.

Case 6.—Acute conjunctivitis in a man aged 37. The patient stated that the conjunctivitis began two days before consulting me. On examination the palpebral conjunctiva was found acutely inflamed and there was abundant muco-purulent discharge. The patient complained greatly of burning and smarting of the conjunctivæ. He said that the lids were stuck together in the morning. Smears and cultures showed the Morax-Axenfeld diplobacillus. In this case pure cultures of the diplobacilli were found.

Case 7.—Acute conjunctivitis in a woman, aged 40. This case was the counterpart of the foregoing one, except that Xerosis bacilli were found along with the diplobacillus. Both of these cases recovered promptly under the effect of 0.25 per cent. zinc sulphate, applied three times daily.

Case 8.—Acute conjunctivitis was seen at the Cook County Hospital at the request of Dr. Joseph A. Capps, on whose service the patient was entered, and to whom I am indebted for the privilege of recording the case here. The case was thought to be one of gonorrheal conjunctivitis. There was a rather profuse muco-purulent discharge and the palpebral conjunctiva was quite red and slightly swollen; the ocular conjunctiva was not involved. In smears there were great masses of diplobacilli—no other organisms were present.

Case 9.—Corneal ulcer. The patient, a man 35 years of age, and a native of Kentucky, stated that from unknown cause his eye became sore and began to discharge several days before Thanksgiving day. He neglected it for several days and then applied to a public clinic for care, where they bandage the eye, put in atropin, and told him that the eye was in a serious condition. On Sunday following Thanksgiving day he was admitted to my service at the Cook County Hospital. There was a bad ulcer of the cornea which involved about 1/3 of its area and extended from below over the papillary region. The ulcer, which extended deeply into the corneal tissue, showed a yellowish necrotic mass with a slightly bulging center. The cornea at the edge of the ulcer was undermined and a semi-opaque zone extended around the top of the ulcer. The upper part of the cornea was clear and a clear zone separated the ulcer from the limbus below, except at the lower inner side. There was hypopyon and iritis, and the iris was adherent to the lens at places—the pupil was semi-dilated from atropin. There was great double engorgement and a slight muco-purulent discharge. There was no disease of the lachrymal sac. A diagnosis was made of ulcus serpens and the pneumococcus was considered as the probable cause. The ulcer was cleansed with sterile boric acid solution, cocain was applied, smears were made, and also cultures on human blood agar. The cultures developed pseudodiphtheria bacilli; the smears showed pseudodiphtheria and diplobacilli. The ulcer was cleansed, the eye was cocainized, and scrapings from the edge of the ulcer made and inoculated on blood serum. These cultures showed pure cultures of Morax-Axenfeld diplobacillus. Proper steps were taken to differentiate the organism from that of Petit. The usual treatment for corneal ulcers was instituted, with the addition of 0.25 per cent. solution of zinc sulphate, a few drops applied every three hours. The condition immediately began to improve and the patient was discharged with a fairly good eye.

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[3] Paul: Ueber Hornhautulcerationen durch Diplobacillen. Klin. Monatsb. für Augenhk., 1905, vol. xliii, 1 p. 154.

Case 10.—In marked contrast to the case of ulcer is the following one: A young lady consulted me, complaining of headache, which was due to a refractive error. In examining her no symptoms referable to the conjunctivæ or lids excised, and to all appearances the conjunctivæ were normal, but smears and cultures showed the presence of Morax-Axenfeld diplobacilli and pseudodiphtheria bacilli.

As will have been seen from the foregoing cases, the Morax-Axenfeld diplobacillus can run the clinical scale from no symptoms to the most severe corneal ulcer. On the subject of the importance of such an organism no further remarks are necessary.

Until very recently it has been generally thought that this organism possessed only slight tendency to infect the cornea, and that when the cornea was attacked the resulting lesion was not serious. In Axenfeld's[4] article in Kolle and Wassermann's "Handbuch," we find the statement: "The diplobacilli possess only slight tendency to infection of wounds of the bulb corresponding to the rarity and relative inoffensiveness of the keratitis cases" (*relativenen Leichtigkeit der vorkommenden Keratitis fälle*). In marked contrast to this teaching are the recent findings of Paul,[3] Erdmann[5] and Stoewer.[6] Paul reports 26 severe diplobacillus ulcers of the cornea observed in one and one-half years. Erdmann reports 8 cases of severe corneal ulcers, and Stoewer reports 26 cases; in these three series of cases a good many eyes were lost as a result of corneal ulcers. Realizing the pathogenicity of the organism for the cornea, one idea that presents itself is that the organism should be looked for before any cutting operations are done on the cornea. Another idea that occurs to one is that in cases of acute conjunctivitis, like the cases mentioned above, it may be that an unusually virulent strain of the organism exists or that the patient is unusually susceptible, and that in such cases an injury of the cornea, such as one may receive from a cinder or other foreign body, might be a serious matter, for it might give a point of entrance in the cornea for the organism. In these cases to prevent such possibilities, I believe it would be wise to confine the patient to the house or have him use protecting goggles during the few days that are required to cure the condition.

In emphasizing the importance of the diplobacillus as a factor of danger for the cornea, I would not underestimate its importance as a pathogenic factor for the conjunctiva, for the conjunctivitis, acute and chronic, that it causes is frequently a serious annoyance to patients and they are grateful when relieved. It is a matter of interest that Axenfeld first observed cases of acute conjunctivitis caused by this organism. It is also an interesting fact that Erdmann[5] and Plaut and v. Zelewski[7] have seen cases like my Case 10, where the diplobacillus existed and caused neither objective nor subjective symptoms.

Recurring to the idea quoted above from zur Nedden, it is interesting to recall the case of acute conjunctivitis in the negro (Case 8), in which the clinical diagnosis was made of probable gonorrheal ophthalmia. Possibly the conjunctiva of the negro offers good soil for this organism; bearing on this idea data on the severity of the lesions caused by this organism in the negroes of America would be of much interest. Probably this is the first case recorded of conjunctivitis caused by this organism in the negro.

As has been said, the recognition of this organism is important from the standpoint of treatment, because we have a specific remedy for it in zinc. The rapid recovery of my cases under the influence of zinc supports the unanimous testimony as to its efficiency in combating this type of infection. Case 4 was particularly interesting from the point of view of treatment, in that the patient for weeks used faithfully the silver salts that just now occupy such an important place in the therapeutic armamentarium of the oculist. This case alone brought to my mind the idea that now, when we in America depend so greatly on the organic salts of silver as remedial agents in conjunctival infections, it would be well to point out the fact that we have with us the bacillus of Morax-Axenfeld, and that against infection with this organism these salts have little, if any, effect; at any rate they are not nearly so effective as zinc.

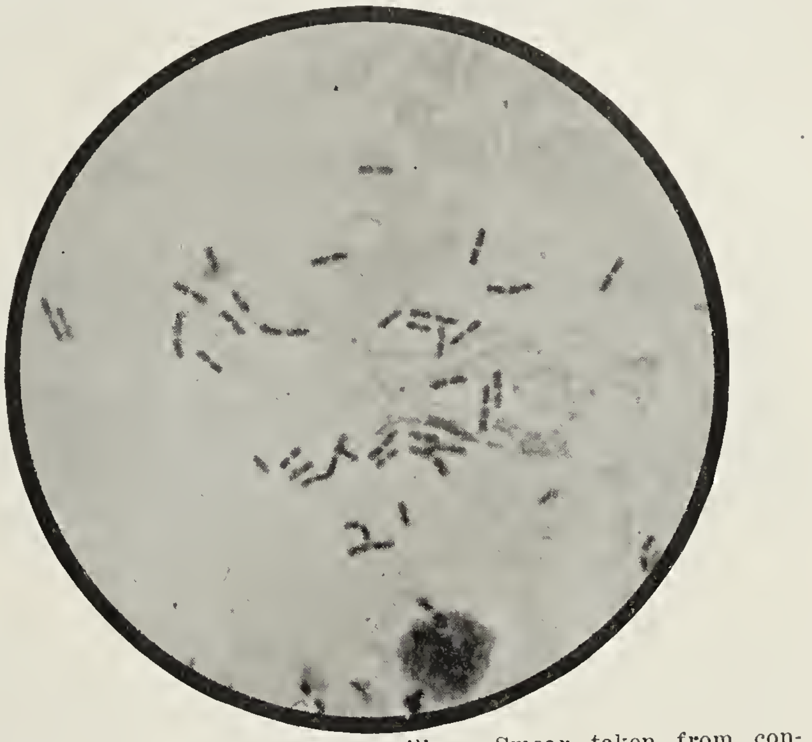

Fig. 1.—Morax-Axenfeld diplobacillus. Smear taken from conjunctiva.

Fig. 2.—Stereoscopic photograph of a culture of the Morax-Axenfeld diplobacillus on blood serum.

In the case of the ulcer, the zinc seemed to have the best effect. The idea has been suggested that there is danger in the prolonged use of zinc solution in corneal ulcers, because of the possibility of the deposition of zinc in corneal tissue. It is worthy of note that in my case I used zinc sulphate for three weeks, applied every three hours, and then for another three weeks applied three times daily, and that no deposit of zinc in the tissue was apparent.

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[4] Axenfeld: Specielle Bacteriologie des Auges, Kolle and Wassermann's Handbuch der pathogenen Mikro-organismen. Jena, 1903, vol. iii, p. 489.

[5] Erdmann: Ein Beitrag Zur Kenntnis der Diplobacillengeschwüre der Kornea, nebst Untersuchungen über die Widerstandsfähigkeit der Diplobacillen gegen Austrochnung in Sekreten. Klin. Monatsbl. für Augenhk., 1905, vol. xliii, 1, p. 561.

[6] Stoewer: Ueber das Diplobacillengeschwür der Hornhaut Klin. Monatsbl. für Augenhk., 1905, vol. xliii, 11, p. 142.

[7] Plaut and von Zelewski: Ueber den Keimgehalt der Bindehaut nach der Thranensackexsterpationen. Klin. Monatsbl. für Augenhk., 1901, vol. xxxix, 1, p. 369.

CHARACTERISTICS OF THE ORGANISM.

The Morax-Axenfeld diplobacillus, an organism which so far as known is only pathogenic for the human eye, averages about 1 micron wide and 2 microns long, the size, however, varying. When taken from the conjunctival sac the bacilli, in my experience, vary very little in width, the length being more variable as one sees both short and long ones. When grown on Loeffler's blood serum, the medium most often used for their cultivation, one sees great variations in shape and size. Taken from this medium one finds thin bacilli and thick ones, short and long ones and degeneration forms. They usually occur in pairs, end on, whether found in secretion or culture, the ends of the bacilli being slightly rounded. Frequently pairs, dividing into four, as indicated by constrictions forming in the middle of each, are met with. One may also find short chains; this is particularly so in cultures. The bacilli stain with all the ordinary dyes and are negative to Gram.

As a rule, there is not nearly so much secretion in a conjunctival sac infected with this organism as in other forms of conjunctival infection, and sometimes it is hard to obtain a mass for staining, but usually a deposit may be found on the caruncle. From such a deposit generally the bacilli are present in enormous numbers. However, variations from this occur, and sometimes, as in my Case 5, very few organisms are found. The secretion in a diplobacillus conjunctivitis consists in great part of fibrin and is poor in cells. The bacilli may lie on the cells; I have not seen bacilli within cells.

The diplobacillus can be grown only at blood temperature, and with certainty only on blood serum or serum agar or on culture media containing human body fluids. Loeffler's blood serum is a most excellent culture medium, and it is a medium which is always available, for almost every city health department supplies it for the diagnosis of diphtheria. On this medium in from 16 to 24 hours the bacilli produce a very characteristic picture, in that they liquefy the medium, forming holes in it, the bases of which are moist and without color. After a while these holes become bigger and may in due course run into one another. If the growth is allowed to continue, the culture medium may be almost completely liquefied. Of all the bacteria observed in the conjunctiva none other grows like the diplobacillus on blood serum, except the bacillus of Petit. This organism is very similar in all its characteristics to the Morax-Axenfeld bacillus, and only by cultural characteristics can it be differentiated from the latter, namely, in growing abundantly on all usual culture media and in liquefying gelatin.

[Editor's Note: Dr. Pusey's article was discussed with those of Drs. Shumway and Weeks. These and the discussion will be published next week.]

Rules for Resident Physicians.—J. T. Rugh, in the *Jeffersonian* for May, gives the following succinct rules for the conduct of a resident physician: 1. Serve your chief by obeying his directions and those of the institution. 2. Be always ready to do your duty and as much more as time will permit. 3. Cultivate observation and reason, and acquire as large a fund of common sense as possible. 4. Have regard to your personal appearance and let it be always neat. 5. Pay attention to details. 6. Keep the eyes and ears open and the mouth shut.

TREATMENT OF LOOSENED TEETH.*

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NEW YORK CITY.

No departure from a physiologic condition of the mouth is so readily noticed by the sufferer as a tooth which has become more or less loosened in its alveolar socket. In considering this abnormal condition of the teeth, two classes may be distinguished.

First. Those cases resulting from infection which has caused pus to spread in such a manner as to interfere with the pericemental attachment of the root to the alveolus. In such cases, the more or less speedy removal of the focus of infection will generally restore the tooth to its normal degree of solidity. Infection following a dying pulp, difficult erupting teeth, ligatures accidently left around the necks of teeth, ill-advised separating of teeth and other injudicious dental operations are the most common causes in this class, and, therefore, they can be strictly classified as localized diseases, readily cured if the cause is ascertained and removed.

Second. Those cases in which necrotic conditions prevail and the tooth becomes gradually less firm in its socket as it loses more and more of its peridental attachment. These abnormal conditions are the gradual results of some form of malnutrition, and consequently are not so readily amenable to treatment.

ETIOLOGY.

It follows as a natural result that, in order to treat a loosened tooth in a rational manner, the first thing is to make a correct diagnosis of the etiology of a given case. Every practitioner has his "red letter" cases among his records of very loose teeth, cured by the removal of a suppurating pulp; cases which have been brought to him after some worthy colleague has given up the case in despair; having erroneously treated as a pyorrheal pocket an ordinary alveolar abscess. Lest we find ourselves in the same class at some time or other, let us beware of hasty opinions of any case of suppuration. The etiology of some cases is more difficult to diagnose than that of others and often it will take the most careful differential diagnosis to reveal the true condition of affairs.

EXAMINATION OF THE TEETH.

The first thing in such an examination is to determine whether or not there are any gingival pockets, and if so, how far they extend toward the end of the root, and in many cases, when the pockets are very extensive, to determine how much peridental attachment is left. For this purpose, the pockets should be carefully sprayed with some sterilizing solution, and the examination is then best made by means of a very thin flat right angle burnisher. When the pocket extends completely from the gingiva all the way around the very apex of the root, it is generally safe to assume that there is no vitality left in the pulp of the tooth and it becomes the first duty of the operator to enter the pulp of such a tooth and to remove every portion thereof. When these pockets are of a very insignificant depth and often not at all perceptible as real pockets, the question as to the condition of the pulp is a more serious one. Recourse can now be had to the different means at our disposal of testing for pulp vitality by thermal and electric effects. This, however, is not always satisfactory. The condition of occlusion of the particular tooth is an important matter for consideration. It is not uncommon to find a pericementitis set up, followed by the loosening of a tooth which has all the strain of occlusion of the entire jaw centered on it, caused, perhaps, by some recent filling which has not been sufficiently ground away. It should be remembered that, in an acute inflammation of a loosened tooth, there is apt to be at times some protrusion of the tooth itself from the socket. This in itself will produce a stress of occlusion at this particular point, and while it has become a detrimental factor, care should be taken not to confound it with the original cause of the trouble.

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* This paper, illustrated by lantern slides made from radiographs of clinical cases, was read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

THE USE OF THE ROENTGEN RAYS.

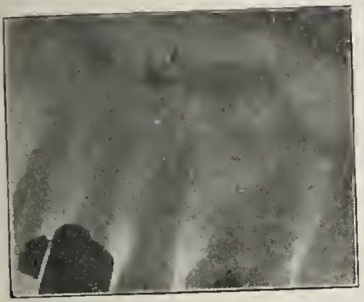
Figure 1.

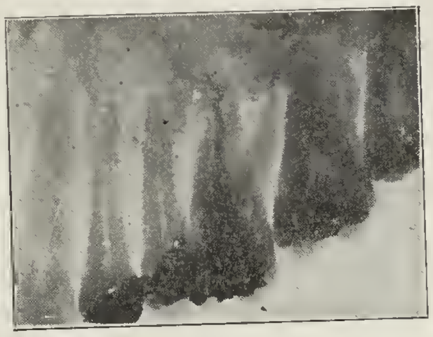
Figure 2.

Since the advent of the Roentgen ray in practice, it has been found of great aid in diagnosing pathologic conditions, both in the pulp and around the roots of the teeth. Whenever there is any doubt on the subject of the vitality of the pulp, it is almost imperative at the present day to have a radiograph made of the part involved. For this purpose the film should be small enough to embrace only two or three teeth adjoining the affected one, for the purpose of obtaining a picture as free from distortion as possible. In a number of cases of loosened teeth, in which all the former methods of examination have proved unsatisfactory, a radiograph will frequently show the outlines of a well-defined abscess in the vicinity of the apex of the root. Whenever this pericemental abscess is found it is useless to attempt to treat it without thoroughly removing the pulp contents, for it is not an uncommon thing to find vitality still remaining in the pulps of such teeth. The results of the examination and treatment in many such cases leads me to form the opinion that it is only a question of time before the infected zone will cut off the vitality of the pulp and all this material become added fuel to the inflammatory fires raging in this locality. If this conclusion is based on the results of correct observation, it follows as a natural conclusion that it is a wise thing to remove such a pulp aseptically before it has been reached by the infected material.

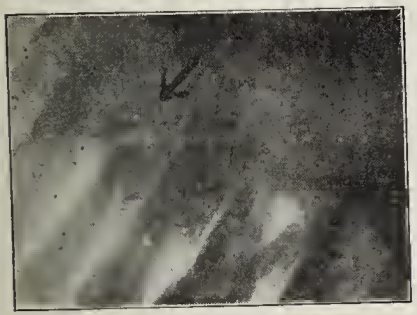
Figure 3.

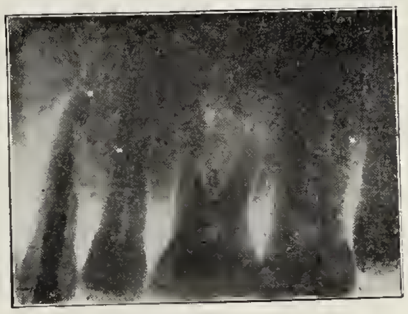
Figure 4.

In many cases in which there is no question of the tooth having lost its vitality, it is impossible to determine from ordinary observation whether such a dead pulp has been removed by a previous operator, and, if removed, whether the root has been properly filled. For this purpose the radiograph is also a very valuable aid, as, under proper conditions, it will disclose the evidence of most of the generally used methods of root filling and by this means can be ascertained whether the root canal has been thoroughly filled or not. In the same manner, when suspicion exists of the penetration of the antrum by the root of a tooth, a radiograph showing the same is of value in corroborating the diagnosis.

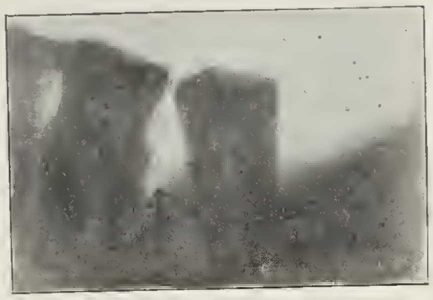
Figure 5.

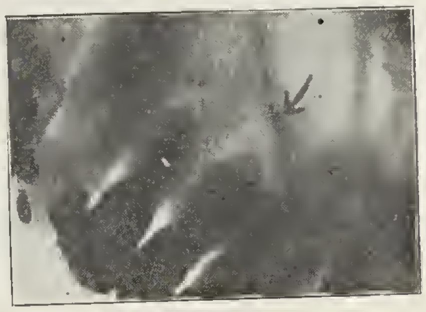
Figure 6.

It is not an easy matter to read a radiograph correctly. The practitioner starting to use this diagnostic field must make up his mind to study the pictures carefully at the beginning, or he will be liable to form false deductions from what he thinks he sees. This is most apparent in a picture of an upper molar, when frequently the floor of the antrum dips down between the lingual and buccal roots. The radiograph will show the floor of the antrum well defined, and apparently all the roots of the tooth penetrating the same. The result will be that the beginner will suppose that all the upper molars which he examines have their roots penetrating the antrum. In the same way there are root-filling materials which will not appear in a radiograph. Later I will show a slide (Fig. 6) of an upper bicuspid, the canal of which appears not to have been filled. On entering this root canal it was found to be filled with cotton to the very end. This particular root had given no trouble for over twenty years, and during this time the tooth had never been disturbed. An examination showed a well-defined pericemental abscess and slight absorption around the end of the root, and yet this cotton was found free from odor or taint of infection, it being, in fact, the only root filling of cotton that ever came under my observation that appeared to the eye to be in anything like a sterile condition. The patient had commenced to suffer from pain around the end of the root, due undoubtedly to the abscessed area in this locality, and this caused the taking of the radiograph which plainly showed the seat of trouble. The picture was read incorrectly, as it led to the false inference that the canal was unfilled. This case is dwelt on to some extent, because it illustrates so forcibly that the radiograph, while of great value as an aid in diagnosis, can not be absolutely depended on; consequently, this drawback should never be lost sight of by the careful diagnostician.

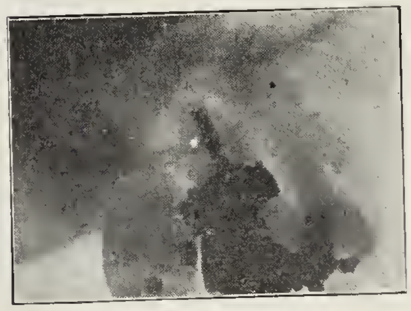
Figure 7.

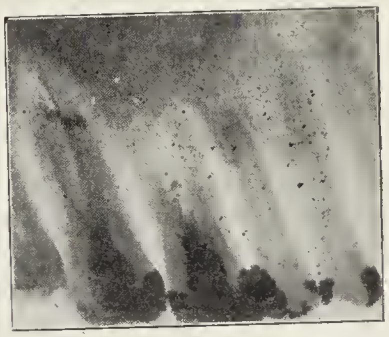
Figure 8.

There are a large number of traumatisms coming under the head of the first class of cases which, producing a pericementitis, will be often followed by considerable loosening of the tooth. In such cases a good radiograph is of inestimable value, inasmuch as it will show up, generally speaking, an entirely healthy field, so far as the alveolar socket is concerned (Fig. 1, inflammation from imperfect gold crown). This will indicate that, with proper treatment, the tooth will return to its normal condition, and at any rate delay is indicated so far as any active operative measures are concerned.

In the second class of cases in which malnutrition under some of its manifold and devious methods is playing havoc with the nutritive supply around the alveolar sockets, the consensus of opinion at the present time appears to be that in all such cases the pulp has ceased to retain its physiologic characteristics. Lack of time prevents a proper consideration of the details of this subject. It can be stated that the removal of all such pulps is a well-recognized and satisfactory form of treatment; whenever it is feasible every vestige of pulp tissue should be removed to the very end of the different roots. To this end the original radiograph will be found of great service as a guide to the operator while removing the pulp tissue.

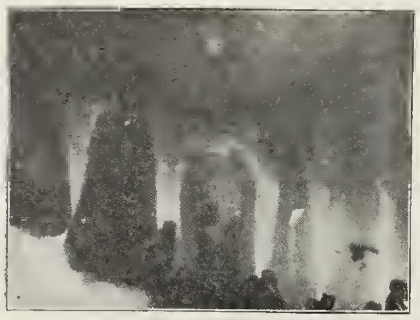
Figure 9.

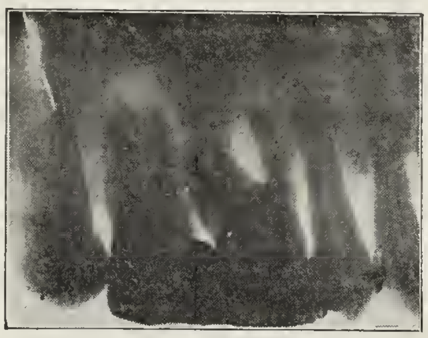
Figure 10.

It is best perhaps to state that in all these cases every particle of deposit and foreign matter has been carefully removed, the surfaces of the teeth have been thoroughly polished and the pockets treated both surgically and therapeutically. The patient is instructed to brush his teeth and gums carefully four times a day, and this frequent massage of the gums has a very invigorating influence on the capillary circulation. The teeth are to be retreated at the expiration of three or four weeks. In addition to this massage of the gums by the use of the tooth brush in the patient's hand, the therapeutic use of the Roentgen ray has been more or less advocated during the past two years. It has not been in use long enough for us to form a positive view as to its real value. There is a strong unanimity of opinion among careful observers that in many cases it has exerted a very favorable influence toward an improved nutritional condition. But its use for this purpose has been mostly of an empirical nature, and on this account it is necessary to advise great caution. No absolute definition of the means by which the circulatory condition is improved from the use of the x-ray has been discovered. It is a well-known fact that in all investigations the x-ray has shown no germicidal properties. The general belief is that the circulatory corpuscles are stimulated to a great degree, and yet this is a very indefinite statement. Furthermore, it is necessary to use the x-ray with great care and caution on account of the liability of inflammation arising from a too prolonged application. Its use might be safely started with the application of a strength of five amperes at a distance of about twelve inches. The length of time of the exposure can be safely started at about one and a half minutes and gradually increased according to the judgment of the operator. The high frequency current in various forms is also used for this purpose and has the one advantage that it appears to lack the dangerous qualities inherent in the Roentgen ray.

OTHER METHODS OF TREATMENT.

Frequently, treatment of this nature will suffice to cause sufficient repair to the deteriorated tissues so that the tooth will again become firm in its socket. In order to accomplish this result, it is essential to remember that every possible pus focus must be removed and one of these foci that frequently escapes the observer is a root of one of the multirooted teeth that has lost its entire attachment and is absolutely a necrotic appendage to the rest of the tooth. Such a root (Fig. 8) must invariably be amputated and removed in order to remove from the field permanently every possible focus of infection. After such a necrosed root has been removed, the best results can only be attained by replacing it with a porcelain substitute, the technic of which I have described elsewhere[1] (Fig. 7). After a trial of more than seven years, it can be safely asserted that this operation is a very valuable means for the preservation and tightening of loosened teeth. About 85 per cent. of the cases operated on have resulted favorably; considering the fact that some of the cases were experimental, the results achieved are very satisfactory.

A tooth that is loose and wobbly is only a source of discomfort and the irritating nature of such a tooth materially tends to increase the unhealthy condition of its own environment. A tooth in such a condition should either be removed, or, if saved, it must be placed in such a state that it will cease to be a source of discomfort and irritation. When the different methods of treatment previously outlined have failed, there remains the last resource of uniting loosened teeth to each other, or to teeth which are in a healthy condition. This operation[2] has been found invariably successful in the retention of teeth that seemed doomed to the forceps (Figs. 11 and 13).

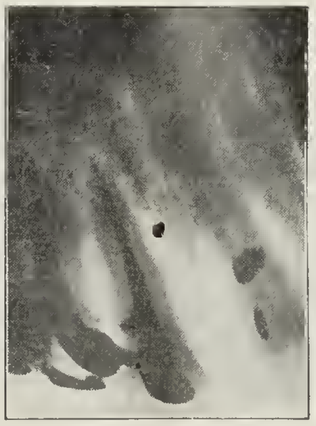
Figure 11.

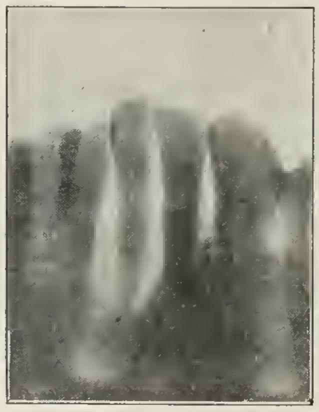
Figure 12.

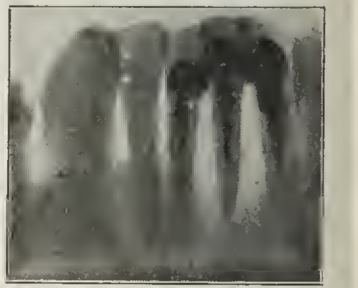
Figure 13.

The one thing to remember in the treatment of all the loose teeth of the second class is that after the mouth has been made comparatively comfortable and the loosened teeth firm this condition can only be maintained by careful prophylactic treatment once every month at the hands of the dentist and dental nurse.

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[1] Items of Interest, February, 1904, and Dental Cosmos, September, 1902.

[2] Dental Cosmos, March, 1888, and Id., May, 1903.

NOTE: Dr. Rhein then exhibited on the screen a large number of lantern slides of radiographs taken from clinical cases. A few of these are here reproduced.

Figure 1 illustrates a normal physiologic maxilla with the exception of a gold shell cap over the first bi-cuspid. This tooth had been somewhat loose from the irritation produced by this badly constructed cap, and the radiograph shows distinctly that the trouble does not extend much beyond the gingiva of this tooth. The removal of the cap is sufficient to cause the tightening of the loosened tooth.

Figure 2 is a radiograph of the mouth of a man, aged 54. It has a number of interesting features, but the main one centers around the apical portion of the roots of the second molar, which shows a well-defined abscess, although no suspicion of this existed. After this radiograph had been taken the pulp cavity was at once entered and found to be filled with a foul-smelling, putrescent material. In this mouth there were four other teeth in like condition, and the patient's general condition was very much deteriorated as a result of so much septic matter. The removal of these numerous pus foci caused a rapid and marked improvement in the general condition.

Figure 3 shows another mouth with practically the same history. Over the first bi-cuspid can be seen the outlines of a well-marked pericemental abscess. The same condition is evident in the first molar. Neither of these teeth had any fillings or defects in their crowns.

Figure 4 is a radiograph of the same mouth a week after the putrescent pulp had been removed from the first bi-cuspid, and the root had been filled. There is already evident a marked improvement in the tissue conditions around the apex of the root of the first bi-cuspid.

Figure 5 demonstrates the effects of calculary deposit on the side of the root of a molar, and one that has escaped the visual examination of the operator.

Figure 6 illustrates the case described at length of a root filled with cotton over twenty years, when suddenly an intense neuralgic condition started up around the end of the root, due to the abscess shown at the point of the arrow in the illustration. The artificial crown on the first bi-cuspid distinctly shows the root filling, but the fact that the root of the second bi-cuspid has been filled is not at all perceptible in the radiograph, and illustrates the point of the necessity of careful study of radiographs in order to be able to read them properly. This particular abscess was cured by the removal of the cotton root-filling and the application of electrolysis through the end of the root for a period of seven minutes with three milliamperes of current.

Figure 7 is a radiograph of an upper molar after the lingual root had been removed and replaced by a porcelain substitute. The root that is visible is the porcelain substitute.

Figures 8, 9 and 10 show three different stages in the mouth of a man 55 years of age who had been a sufferer from arthritic pyorrhea alveolaris for years. There were numerous pericemental abscesses in this mouth that were located by means of the radiograph. The first and second molars here illustrated were so loose that they wobbled from side to side and could have been easily removed by the patient himself.

Figure 8 illustrates that the pulp of the second molar had been thoroughly removed and the roots filled to the very end. It also indicates that the lingual root had lost all its attachment and was practically a foreign body and should be removed. The first molar was found to be in a still worse condition. The previous dentist had not been able to find the canals of the buccal roots. The lingual root in this tooth is also entirely devoid of attachment and partly absorbed. The first thing accomplished in this case was reopening into the pulp cavity of the first molar and the thorough cleansing of the buccal roots and filling of the same as shown in Figure 9. The lingual roots of both teeth were then amputated and porcelain substitutes for these made. Two iridiumized platinum staples were bent into shape; one extending from the porcelain root to the second molar across the occluding surfaces and into the pulpal cavity of the first molar and vice versa; a staple from the porcelain root of the first molar, across the occlusal surfaces into the pulpal cavity of the second molar. These staples were fastened in with amalgam, which entirely contoured the crowns of both molars, making a perfect splint, and holding the two teeth rigidly together.

Figure 10 is from a radiograph showing the complete operation of the two teeth splinted together and showing the two porcelain substitutes in place of the necrotic roots that were amputated.

Figure 11 illustrates a superior central incisor with very bad pyorrheal pockets. The tooth was very loose and could be moved in and out at random with the tongue. The wide space between this and the adjoining incisor made the case more than usually difficult. The illustration shows the condition of the parts after it had been successfully splinted to the adjoining lateral incisor.

Figure 12 is a radiograph of a pyorrheal condition surrounding the lower incisor, which, as is readily apparent, was almost ready to drop out of the mouth.

Figure 13 illustrates the method used to preserve this incisor in a firm condition, retaining all the esthetic beauty of this and the adjoining teeth. The splint here shown is only observable on the lingual side and can not be seen without the aid of a mouth mirror.

38 East Sixty-first Street.

INTERSTITIAL GINGIVITIS DUE TO AUTOINTOXICATION

AS INDICATED BY THE URINE AND BLOOD PRESSURE —DIAGNOSIS.*

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In a former paper, "Interstitial Gingivitis Due to Autointoxication," I discussed etiology; in my work on "Interstitial Gingivitis, or So-called Pyorrhea Alveolaris" I demonstrated the pathology; in this paper I propose to discuss the method of diagnosis in interstitial gingivitis. It has been demonstrated that this disease originates from autointoxication. It is justifiable, then, to state that interstitial gingivitis is dependent on the circulation and the vasomotor system. It is, then, a profitable subject for investigation. Before discussion of this phase of the subject, it is necessary to become familiar with the structures involved, which in themselves are unique. There are no other structures in the human body like them. I have gone into details many times in a description of these structures. I will now only discuss them in a general way. The alveolar process is a bony structure intended to hold the teeth in position; when the teeth are removed the process absorbs; therefore, it is a transitory structure. In the evolution of the head, face, jaws and teeth, the process including the jaws grows smaller, the teeth and process change their shape, making the alveolar process doubly transitory. Transitory structures are more easily involved by disease than any other. Some of the lower vertebrates shed their teeth continuously. A tooth comes into place, is used a short time, is shed and a new one takes its place. This continues throughout the life of the animal. Man has two sets. He sheds the first, after they have performed their functions, and a new set takes its place. As soon as the alveolar process has developed about them a low form of inflammation sets up absorption. I have called this osteomalacia or senile absorption. This form of absorption will continue until the teeth loosen and drop out or are extracted. It is an atavistic process. The alveolar process is an end organ. The tooth, so far as the process is concerned, is a foreign body. The arteries, capillaries and nerves pass through the bony process and stop.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

There are other end organs in the body, chief of which are the kidneys, the eye and the brain. Physicians claim, and rightly, that, because these are end organs, they are more easily involved in disease and are often the determining factors of kidney lesions. Alfred C. Croftan[1] says: "It is not surprising to find that particularly those organs that are supplied by end arteries are chiefly involved, for in them vascular disturbances must first produce nutritional derangement. Chief among the organs supplied by end arteries are, precisely, the kidneys, the retina and the brain, and, I think, this explains the frequent involvement of the kidneys, eyes and brain in Bright's disease. The fact that the retina and the brain are often found injured before the kidneys, that cases of Bright's disease run their fatal course occasionally with practically no renal changes, but with serious apoplectiform brain lesions and retinitis, bears out this conception and constitutes a valid argument against the common belief that the nephritis is the primary event and the determining phenomenon of the disease."

A marked difference exists between the kidney, eye and brain as end organs and the alveolar process as an end organ. This difference is the important point in the study of interstitial gingivitis. End arteries running into the kidney, eye and brain, owing to their soft nature, give the arterial walls a chance of expansion, permitting, in a measure, the blood to flow more easily and prolonging the tendency to disease. On the other hand, blood vessels extending throughout the alveolar process in a tortuous manner can not expand, as the result of which blood charged with toxins and subject to cardio-vascular changes immediately sets up irritation and inflammation resulting in dilatation, bone absorption and arterial degeneration. These changes, therefore, will occur much earlier in the alveolar process than in other end organs.

This is apparent to every physician in the more marked systemic disturbances, such as scurvy, malaria, drug poison, constitutional disease, etc.; the gums and alveolar process are symptomatic and are watched with greatest care. The severity of the disease, as well as its progress, may often be determined by a careful scrutiny of these tissues. It is the more obscure and simple etiologic factors to be considered at this time. The pathology is the same, whether the cause is mild or severe.

In tracing the etiology of this disease, it is at once cognizant that as one grows older the milder forms of this disease become more severe. Every individual has interstitial gingivitis to a greater or less extent. We are able, therefore, immediately to arrive at its etiology, autointoxication due to a want of proper elimination. The excretory organs of the body weaken and become senile. As age advances, the kidneys and bowels fail to perform their functions properly. We are conscious, therefore, of self-poisoning by the odor exhaled from the lungs and bodies and the accumulation of gases in the gastrointestinal tract. The effects of autointoxication on the gums and alveolar processes direct through the blood-producing interstitial gingivitis, together with the peculiar odor from the lungs and body, are, to the expert, valuable early signs of more grave lesions about to occur in the kidneys, heart and arterial systems throughout the body, especially the kidneys.

For the past ten years, I have given special study to the constitutional condition of interstitial gingivitis as indicated by the urine, the only means at hand of ascertaining the general condition of the system. The cases I wish to report are the first fifty, ranging from 27 to 67 years of age. All had interstitial gingivitis in its most aggravated form, with more or less loose teeth. Thirty-two had lost teeth as a result of the disease. Fourteen had pyorrhea alveolaris observed by the naked eye. The teeth were cleaned. The loose teeth were either extracted or fastened to other teeth. Twenty-four hours urine was obtained. A part or all was sent to the Columbus Medical Laboratory for examination. In tabulating the reports, the following results were obtained:

Specific gravity, two had 1005; two, 1006; two, 1007; two, 1008; two, 1009; one, 1010; one, 1011; one, 1012; two, 1013; six, 1014; one, 1015; five, 1016; two, 1017; one, 1018; five, 1020; three, 1023; one, 1024; three, 1025; one, 1026; two, 1027; one, 1028; two, 1029; one, 1031. There were granular casts in six reports. Hyaline casts in twelve; cylindroids in twenty-two; degree of acidity showed, one had 11 degrees; two, 12; one, 14; two, 15; one, 16; two, 17.5; four, 20; one, 22; one, 24; five, 30; seven, 36; two, 40; two, 44; one, 46; two, 56; one, 58; one, 59; one, 60; two, 62. The urea showed, two had 0.3 per cent.; one, 0.5; two, 0.6; two, 0.7; two, 0.9; two, 0.1; one, 1.1; two, 1.3; one, 1.4; four, 1.5; six, 1.6; one, 1.7; three, 1.8; one, 1.9; one, 2.0; three, 2.1; three, 2.2; two, 2.4; six, 2.5; two, 2.6; one, 3.0; one, 3.1; one, 7.1. Albumin was found in four cases; blood in six; leucocytes in forty-five; epithelial cells in forty-six; uric acid crystals in two; urates in five; oxalates in fifteen. Indican was present in every case. To make a more complete study of each individual case the following table has been prepared:

Specific. gravity.	Granular.	Casts. hyaline.	Cylindroid.	Acid. degree.	Urea. per cent.
23	0	0	0	60	2.5
20	1	1	1	56	2.5
8	0	0	1	20	1
6	0	1	1	12	.6
12	0	0	0	36	1.5
31	0	0	0	44	2.6
29	1	1	1	46	2.2
16	1	1	1	52	2.2
11	0	0	1	17.5	1.4
17	0	0	0	17.5	1.6
27	0	1	1	62	2.1
20	0	0	1	24	2.2
25	0	1	0	44	2.4
9	0	0	1	16	1.5
25	1	1	1	40	3.1
29	1	1	0	58	2.6
14	0	0	0	36	2
16	0	0	0	30	1.8
14	0	0	0	30	1.5
13	0	0	0	36	1.6
13	0	0	0	36	1.6
15	0	0	0	36	1.7
15	0	0	1	15	1.6
14	0	0	0	36	.9
28	0	0	0	36	3
5	0	0	0	..	.3
16	0	0	0	..	1.6
20	0	0	0	..	1.5
10	0	0	0	..	1.1
25	0	0	1	..	2.5
27	0	1	1	62	2.1
25	0	0	0	..	2.5
14	0	0	1	30	1.3
20	0	0	0	..	1.9
24	0	0	1	..	2.4
26	0	0	0	..	2.1
18	0	1	1	..	1.6
14	0	0	1	30	1.3
5	0	0	0	15	.7
23	0	0	1	40	1.8
7	0	0	0	14	1.3
16	0	0	0	30	1.8
9	0	0	1	11	.9
14	0	0	1	22	1.5
7	0	0	0	20	.7
7	0	0	0	20	7.1
23	0	0	0	60	2.5
20	1	1	1	56	2.5
8	0	0	0	20	1
6	0	1	1	12	.6

TOTAL EXAMINATION OF URINE.

Qualitive Examination.
Physical condition:
  Clear, 17.
  Cloudy, 33.
Reaction:
  Acid, 46.
  Alkaline, 4.
Color:
  Yellow, 46.
  Amber, 4.

Quantitative Examination
Indican.
50.

Microscopical Examination.
Casts:
  Hyaline, 14.

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[1] The Alkaloidal Clinic, July, 1905.

- Odor:
  - Negative, 46.
  - Present, 4.
- Mucin:
  - Present, 30.
  - Absent, 20.
- Albumin:
  - Present, trace 4.
  - Absent, 46.
- Peptones:
  - None.
- Sugar,
  - None.
- Bile:
  - None.
- Blood:
  - Present, 6.
  - Absent, 44.
  - Granular, 7.
  - Epithelial, 1.
  - Cylindroids, 21.
- Cells:
  - Blood, 4.
  - Leucocytes, 45.
  - Pus, 11.
  - Epithelial cells, 46.
- Crystals:
  - Uric acid, 2.
  - Urates, 5.
  - Oxalates, 15.
  - Phosphates calcium, 1

These tables indicate either renal insufficiency or excessive suboxidation products producing renal strain. Where the degree of acidity exceeds forty degrees, there is excessively imperfect oxidation which, irrespective of the types of acid, underlies, as is now pretty generally recognized, severe constitutional stress allied to that of diabetic acidosis. Where the degree of acidity falls below thirty degrees, similar states occur, as G. F. Butler[2] has pointed out, from insufficient elimination. The degree of acidity is obtained by taking 5 c.c. of the urine specimen, plus two drops of phenolphthalein solution as indicator, adding decinormal NaOH until a slight pinkish color is produced. The number of c.c. of N/10 NaOH required multiplied by 20 equals the degree of acidity. Another great source of acid is the resorption products from imperfect intestinal fermentation, like indol, which is eliminated by the kidney as indican, greatly stained thereby. Wherever there is an endogenous or an exogenous poisoning with which the liver is unable to cope and the strain is thrown on the kidney, elimination proceeds through the skin, nasal and buccal mucous membranes, and hence through the alveolar process, since the last contains end organs in which useless products settle. This produces, for example, the blue line of lead poisoning, the green of copper and red of mercury.

The tendency to graver diseases as here presented is shown in the inflammation and absorption of the alveolar process. The physical condition, reaction, color, odor, mucin and the cells (since they are apt to be of local origin) are of little significance. Crystals are of limited value, since the longer the urine stands before examination the larger the number of crystals. The amount of uric-acid crystals confirms my report of some years ago.[3] In these experiments, teeth with deposits on them were extracted in which excessive absorption of the alveolar process had taken place. One hundred were sent to one laboratory and one hundred and fifteen to another. They were examined for uric-acid crystals by the hydrochloric test, the dry distillation and the murexid test. By the murexid test, twelve of the two hundred and fifteen gave positive reaction, and by the micrscopic ten showed crystals, or about 5 per cent. The microscopic examination of urine in forty-six cases revealed two cases, or about 4 per cent.

Croftan[4] says: "While hyaline casts do not necessarily indicate nephritis, i. e., advanced renal inflammation, they nevertheless indicate renal irritation and should be regarded with suspicion. Covered with blood or renal elements, their pathologic importance becomes great, since their appearance then indicates distinct renal inflammation.

Urine containing hyaline casts often contains albumin in solution. The amount of coagulable albumin in solution may be minimal and, though rarely, albumin in solution, detectable by ordinary clinical methods, may be absent. The absence, however, of albumin does not exclude renal irritation nor even certain forms of nephritis.

To the category of hyaline casts probably belong the cylindroids, long bands and cylinders. These, like the hyaline casts, must be considered coagulation products of albuminous material that the tubular epithelia exude in small quantities. The factors that cause this exudation are not always determinable. Cylindroids of distinctly tubular origin are pathologic in the same sense as hyaline casts. They are often found in urine otherwise apparently quite normal. Neither they nor hyaline casts, therefore, can be considered typical evidences of patho-anatomic renal lesions, but are common in heart disease, with congestion of the kidneys, in a variety of toxic and infectious states and in irritation of the tubuli by crystals in acidosis and after epileptic fits."

Cylindruria, according to Simon,[5] is not necessarily associated with definite pathologic alterations of the renal parenchyma. This statement should likewise be accepted as to the occurrence of purely hyaline casts and their presence in small numbers. A few renal epithelial cells may be found at the same time occurring either in the urine or adhering to the casts, but never presenting an atrophic or otherwise altered appearance in the absence of definite renal lesions. The presence of compound hyaline and coarsely granular casts, as well as of waxy and amyloid casts, on the other hand, may be regarded as indicating definite changes in structure, so that, as far as diagnosis is concerned, microscopic examination of the urine furnishes information of more value than simple demonstration of albumin.

Hyaline casts are most frequently seen—reference is here had only to the purely hyaline or, at least, but faintly granular form—and are found in all conditions in which albuminuria occurs. When present in only small numbers, and particularly when occurring but temporarily in the urine, it may be assumed, in the absence of other symptoms pointing to renal disease, that there is a mild circulatory disturbance of the kidneys. Granular casts, according to Croftan,[6] invariably indicate either inflammatory processes in the kidneys or advanced circulatory disturbances (cyanotic induration). They are almost pathognomonic of nephritis, especially when coarse. The significance of blood and epithelial cells imbedded on hyaline casts is the same as the significance of blood and epithelial casts; both are pathologic and indicate nephritis. Fine granular and hyaline casts often occur from autotoxic strains on congenitally insufficient kidney in arthritic and allied states.

The presence of albumin in these cases was exceptional, it being found in but four cases. This would show that in none of these cases had disease become very marked. When present, it does not in itself indicate grave disorder, since albumin may be due to many conditions of the renal tract. It is of interest to us, since disturbance of circulation may bring about albuminuria without inducing structural change in the kidney. Purdy says: "Circulatory disturbances, in order to induce albuminuria, must include the renal vessels. In Nature they must consist of acceleration of the arterial current or slowing of the venous current, in either case resulting in increased blood pressure. . . . Again, in some derangements of the nervous system which interfere with the vasomotor nerve regulation of the renal vessels, temporary albuminuria is not an uncommon result." Albuminuria is present in autotoxic neurasthenia, epilepsy, paretic dementia, and the renal crises of locomotor ataxia.

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[2] American Medicine, vol. x.

[3] "Pyorrhea Alveolaris." International Dental Journal, April, 1896.

[4] Clinical Urinology, p. 246.

[5] Clinical Diagnosis, p. 620.

[6] Clinical Urinology, p. 248.

The specific gravity ranges from 1005 to 1031, normal specific gravity ranging from 1015 to 1025. The difference depends on the amount of solids and fluids present, increasing as the solids increase, decreasing as the amount of fluids increase. Specific gravity is, hence, an index, in a general way, of metabolic change. The low degree of acidity would indicate that a certain amount of acid was circulating throughout the system.

Critical examination of these tables must convince a careful observer that in every examination two conditions are present: First, autoinfection due to intestinal fermentation and faulty elimination as represented by the indican; second, kidney overstrain and renal insufficiency due to hepatic insufficiency. When the liver fails to destroy the poisonous materials and the bowels to eliminate the toxins, overstrain of the kidneys causes the blood to become overcharged with toxins and acidity and the heart and arteries undergo degenerative changes. Cardiac hypertrophy and cardio-vascular diseases with insufficient blood supply result.

Just what the toxins or their chemical characters are, we are unable to determine at present. It would seem, however, they are unoxidized products of metabolism, as poisonous ammonium salts, xanthin and hypoxanthin, which when normally excreted from the system are in the form of non-toxic substances. Croftan[7] injected these alloxuric bases in small doses in animals, producing changes in the heart, arteries and kidneys, characteristic of Bright's disease. How these toxins act on the circulatory system is not yet fully determined. It would seem from experiments that they act in different ways. Some on the vasomotor nerves, others on the heart muscle direct, and still others on the peripheral arteries, especially those of end organs. It is known that the heart and arteries become involved before the symptoms of Bright's disease are observed.

"The old idea, then, that in Bright's disease the kidneys are primarily involved and that as a result of renal insufficiency certain excrementitious bodies are retained that produce the changes about the heart and arteries, the eye ground and brain is not tenable. This course of events sometimes occurs in toxic and infectious forms of acute and subacute nephritis, but such cases are not Bright's disease." That the heart and arteries in end organs are the first involved in autointoxication as a result of intestinal fermentation, hepatic and renal insufficiency and drug poisoning has been fully demonstrated. The heart becomes enlarged and a high blood pressure is developed. Dilatation of the arteries results, especially those in end organs, resulting in arteriosclerosis, which is present in every case.

To ascertain the blood pressure in patients suffering with interstitial gingivitis, I used Cook's modification of the Riva Rocci sphygmomanometer, this instrument being best adapted for my convenience, and is exceedingly simple. The armlet used was sold with the instrument and consists of a rubber bag, 4½ by 40 cm. The patients ranged from 27 years to 67. With this instrument the normal adult female's arterial blood pressure is 115 to 125 mm.; adult male's, 125 to 135 mm. In twenty-six females there were three who ranged between 115 mm. Hg and 125 mm. Hg and, therefore, normal. Three ranged below 115 mm. Hg and twenty from 133 mm. Hg to 180 mm. Hg. In twenty-four males there were eight who ranged between 125 mm. Hg and 135 mm. Hg and, therefore, normal. Three ranged below 125 mm. Hg and thirteen from 133 mm. Hg to 160 mm. Hg. When we consider thirteen of these patients were under 45 years of age, the high blood pressure is remarkable.

I have been unable to demonstrate whether the interstitial gingivitis is accelerated directly because of the poisons circulating in the blood vessels, causing high blood pressure because of their action on the heart, or because of their action on the vasomotor nerve governing the heart or blood vessels, or both. The effects of the toxins and extra blood pressure is to set up irritation and inflammation of the outer surfaces of the Haversian canals producing halisteresis, in the vessels of von Ebner producing Volkmann's perforating canal absorption and setting the osteoclasts at work, all producing absorption of the alveolar process.

The question arises, Which end organ is the most susceptible and first involved in autointoxication? When a man visits the physician for treatment, one of the first questions asked is, "What is your occupation?" If the man replies he is working in drugs, metals or mines, the physician examines his patient's gums to note if his system be saturated with poisons. If a physician be treating a patient for lues, the drug is administered until the "gums are touched," which is the only indication his patient is under the influence. One of the most marked symptoms of scurvy is the inflammatory condition of the gums and alveolar process, which are always taken into consideration in diagnosis.

Physicians agree the arteries in such end organs as the kidneys, brain and retina dilate under blood pressure. The arteries ramify in bone structure only imperfectly, if at all. Arteries entering transitory bone structures gradually undergo pathologic changes. After the individual has obtained his growth, they are certainly more susceptible to toxin poison and blood pressure than those either in the kidney, brain and retina. I have demonstrated these pathologic changes in the alveolar process in my work on "Interstitial Gingivitis or So-called Pyorrhea Alveolaris."

Some of the following are expected to develop: Headache, irritability, fatigue, muscle soreness, hypochondriasis, vertigo, neurasthenia, lethargy, stupor, insanity, cutaneous affections, such as pruritus, acne and urticaria; later arteriosclerosis, gout, rheumatism, Bright's disease, diabetes, uric-acid diathesis, nervous disorder, asthma, anemia and many other diseases. Before most of these conditions are apparent, interstitial gingivitis will have become firmly established, with marked recession of the alveolar process and often times loosening of teeth.

DISCUSSION.

ON PAPERS OF DRS. RHEIN AND TALBOT.

Dr. M. I. Schamberg, Philadelphia, said that although there are some advocates of entirely local causes of pyorrhea or interstitial gingivitis, he is convinced that men who make a careful study of this obstinate disease, which is so refractory to treatment, are of the opinion that there are underlying causes for pyorrhea which are distinctly of a constitutional nature. He agreed with Dr. Talbot as to the necessity for more frequent examinations of the blood and urine in these cases. During the past few years he has been examining the urine in all cases of pyorrhea that come to his attention, and it is remarkable to note the number of cases in which either diabetes, Bright's disease, or an excess of uric acid may be found.

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[7] American Journal of Medical Science, 1900.

Dr. M. H. Fletcher, Cincinnati, said that a large part of his professional time is devoted to the treatment of these cases. He agreed that this trouble is of local origin, with systematic complications of many varieties, and he considers it interesting to note that the trouble in these cases will disappear by local treatment. It is a well-known fact, he said, that the conjunctiva, or other mucous membranes of the body, are irritated in the dry stage of inflammation. Every tissue of the body is subject to irritation, with accompaniments of systemic trouble. Dr. Fletcher believes in a local cause for many disorders. It is a fact, he said, that every disease has its nervous phase; many diseases are now known to be purely nervous which were formerly thought to be organic. Any condition which produces a continual irritation may produce systemic disorders of a severe nature, and he is convinced that the systemic disorders referred to are brought about by the local irritation, which is continuous. There is an effort to throw off this foreign body, and this continuous effort of Nature to restore herself to normal results in the destruction of the tissue about the teeth, with the result that finally a pathologic or diseased habit is established; and in no instance can it be cited that this trouble does not disappear by removal of the teeth. Dr. Fletcher said that it has fallen to his lot to do considerable work in the antrum, and in hundreds of examinations of the mouth and skull he has failed to find the antrum as far forward as the canine, and in but twelve cases in a thousand antrums has he found that the roots of the teeth produced a tubercle in the floor of the antrum, as shown by Gray and other anatomists. He has found abscesses of the molar teeth discharging in the antrum where the roots come against the floor of the antrum; the roots are often uncovered, so far as bone is concerned, just as all practitioners know; on the outer surface of the alveolar process the bone is completely gone and the root covered with nothing but soft tissue. Now it is easy to understand that in gingivitis going up the root in a case in which there is no body covering to the root in the floor of the antrum, there will be extension into the antrum, with all the accompaniments. This disease is something to which Dr. Fletcher thinks stomatologists must give more attention. He has never seen a patient in whom there was not more or less calcareous deposit. He has seen a case of pyorrhea in a child of ten. In other ways the child was perfectly healthy; the disease evidently had been caused by calcareous deposit.

Dr. G. V. I. Brown, Milwaukee, said that it might be of interest to recall something of the progress of the science of this particular affection, as Dr. Talbot has brought it out. His earlier papers demonstrated, for the first time by actual microscopic study, that this disease was considerably in advance of what he had been accustomed to recognize as diseased tissue of this character. His first series of slides showed that. He next took up the question of autointoxication, and showed by slides the relation of those conditions in this disease, and again of that kind of poison to mineral and other poisons, bringing it all down to the simple proposition of an absorption and taking into the system of poison which was disastrous to tissue, which affects, first of all, that portion supplied by the very small vessels and structures of a transitory nature, such as the alveolar process. Dr. Brown said that we have all heard and read for years of the uric acid diathesis, and its relation to this disease, and now we find that uric acid, while it is a factor and sometimes represents associated disease, it is only one of many disturbing elements of a somewhat similar character.

Dr. M. H. Fletcher, Cincinnati, said that this discussion has shown unquestionably the local features of this disease, and according to his mind the proposition is quite simple; with the system loaded with intoxication there is less resistance to any kind of an irritation. If, under these circumstances, there is local irritation in this region, there is as a result a condition which we recognize in the disease. It is a well-known fact, he said, that affections of the kidneys, or other organs, weaken their powers of function, especially that of elimination, laying all the tissues especially liable to disturbance from any kind of irritation. Now, if we supply the irritation about the teeth, we produce the disease. If we remove the irritation and the intoxication, to that extent we relieve the condition and the disease.

Dr. Vida A. Latham, Chicago, said that this exhibition of Dr. Rhein's proves almost conclusively that the stand taken by some of the members of the Section, that dentists are pure mechanics, is certainly out of order. Dr. Latham said that we can not do without the scientific branches. Dr. Rhein's exhibition, she said, to-day has shown that the mechanical filling of those canals, their anatomic bearings, the relations of those tissues and the far-reaching effects mentioned by Dr. Talbot, have brought together both the scientific and the mechanical aspects, as perhaps has never before been done. Dr. Latham said that we have to deal with another set of tissues, the mucous glands, which form around and in the peridental membrane, and that there is a bearing of the mucous glands in the peridental tissue which has to deal with the question: these glands are also affected by the end organs, and by the arterial changes. What the exact histologic and anatomic conditions of those mucous glands are we do not know. Dr. Latham declared that it can truthfully be said that in some lines dentistry has advanced far ahead of medicine. But in these particular lines—the scientific and anatomic—we are not advancing as rapidly as in the mechanical.

PALLIATIVES FOR HAY FEVER.

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Since 1898, when I made the first announcement of the value of preparations of the suprarenal gland in the treatment of hay fever,[1] I have made many observations on myself and others with a view to determine the best of these preparations and the best method of application and administration. I have also made observations with other promising palliatives, especially pollantin. The results may be summed briefly.

I. SUPRARENAL PREPARATIONS SYSTEMICALLY.

For some individuals, and in certain seasons, the systemic action of suprarenal preparations suffices to induce and preserve comparative comfort. The stomach, however, as I have previously pointed out, is not an eligible channel of administration. The medicinal substance must be absorbed from some other mucous membrane, where it can escape exposure to the digestive juices and the action of the liver. The eye, the tongue, the nose, the pharynx may be utilized. It was, and still is, possible to attain results by using the old crude preparations of suprarenal substance, but the active principles are more easily managed on account of their effectiveness in the minutest quantities. I have employed both the adrenalin chlorid solution of Takamine and the epinephrin of Abel; the latter being marketed by a manufacturing firm under the name of suprarenalin. Suprarenalin, which appears in the form of a non-hygroscopic powder, may be made into very small tablet triturates, each containing from 1/40 to 1/10 of a grain (1.5 to 6 milligrams) of the active substance, with a small quantity of sugar of milk; and this being placed on the tongue quickly dissolves, is absorbed and becomes therapeutically active. The quantity of sugar of milk used should be the least possible to make a triturate that can be handled. I have to thank Mr. F. E. Morgan, of Philadelphia, for his skill in making for me these very small tablets, as also for his efficient co-operation in my experiments with various diluent powders, as set forth later in discussing the topical action of suprarenal preparations. The dose of suprarenalin that I find effective in my own case is 1/20 grain (0.003 gm.), placed on the tongue. This dose may be repeated in from 10 minutes to two hours, according to effect and necessity. When one remains quietly at home in a cool room, in darkness or semi-darkness, one or two doses daily will suffice. If one goes abroad in the city and takes the precaution of wearing dark glasses, a tablet every hour or two may be necessary. If one goes into the country and especially if one has to take a long, hot and dusty railway journey, local measures are likely to become necessary, in addition to the more frequent use of the lingual administration of suprarenalin. The dose varies with different individuals and with the same individual in different seasons, on different days of the same season, and even at different periods of the same day, as position of sun, temperature, humidity, precipitation, dustiness, direction of prevailing wind, cloudiness and other environmental conditions change. As a rule, those who have not before been treated in this manner respond readily to doses as small as 1/40 or 1/50 of a grain of suprarenalin, while those who have used this agent in previous years seem to need larger doses, even, at times, up to 1/10 of a grain.

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[1] Philadelphia Medical Journal, Aug. 13, 1898.

When suprarenalin is not available or a druggist can not be found to make it into very small tablet triturates, or into small powders, 1 or 2 grains of powdered suprarenal substance may be taken on the tongue and allowed to remain there as long as convenient. There is no objection to swallowing it, but so much as is swallowed becomes inert, in so far as control of the hay fever syndrome is concerned. Better than this is the use of a compressed tablet (3 or 5 grains) of suprarenal substance, allowing it to dissolve in the mouth somewhat after the manner of the ordinary lozenge. But these expedients are crude and ineffective in comparison with the use of the active principle.

Adrenalin chlorid solution is not eligible for use by lingual administration, as in order to obtain the necessary quantity of active principle one would have to hold in the mouth half-a-dram or more of the commercial solution (1/1,000), and even if the mouth did not fill additionally with saliva it is practically impossible to continue so holding the fluid long enough for absorption; it must either be ejected or swallowed. Solutions of active principle (either adrenalin chlorid or suprarenalin) may be used by instillation into the conjunctival sac or into the nasal passages; the quantity, however, that may be employed in this way being rarely sufficient for systemic influence, despite its excellent topical effect.

II. SUPRARENALIN PREPARATIONS, TOPICALLY.

In the majority of cases the systemic administration of suprarenal preparations must from time to time be supplemented by their topical use, while in some cases the topical use alone suffices to keep the patient comfortable, except when the environment is particularly unfavorable. Fresh filtered solutions, powders and ointments of desiccated suprarenal substance, as used by Bates and others and by me, before the active principles had been introduced, are effective, but they are not so easily managed as preparations of adrenalin or of suprarenalin. The last-named substance may be used in solid form by sniffing or insufflation, if sufficiently diluted (1/500 or 1/1,000) with an unirritating powder. Both forms of the active principle may be obtained in watery or oily solution (from 1/1,000 to 1/4,000) for use by nebula or spray; or rubbed up either with a simple base (petrolatum, lanolin, lard. 1/1,000), or with the addition of a small quantity of a sedative and astringent agent, such as zinc oxid, may be employed as an ointment. Before these topical applications are made the nose should be thoroughly cleansed with an alkaline detergent spray, or if the application is to be made to the eye the conjunctiva should be bathed with a sedative collyrium. If ointment or oily spray is to be used, the cleansing spray applied to the nasal passages may also be oily, but if the powder or a watery solution is to be used an oily spray is evidently contraindicated. However, it is always well, some ten or fifteen minutes after the adrenalin application, to use a puff or two of some bland aromatic oily spray, that may act as a protective covering to the mucous membrane. I have given up the use of aqueous solutions of the suprarenal principles, except in the eye for local palliation, and even here in some cases it is better to apply an ointment to the lids. Sometimes I use in the nose an ointment or suppository of suprarenal substance (1/50 or 1/100), or, preferably, of adrenalin or suprarenalin (1/1,000) in cocoa butter, or a smooth base of lanolin (1 part) and benzoinated lard (2 parts), with or without the addition of zinc oxid (10 to 33 per cent.) or yellow mercuric oxid (½ to 2 per cent.). The following formulas are typical:

1.	Suprarenalin	gr. 1/5	01
	Wool fat		
	Purified petrolatum		
	Benzoinated lard, of each	ʒi	4
	Yellow mercuric oxid	gr. i	06

Mix. Rub well. Dispense in tin tube.
Sign: For application to eye-lids or nasal passages.

2.	Suprarenalin	gr. 1/5	01
	Wool fat	ʒi	3
	Ointment of zinc oxid (benzoinated)	ʒii	7

Mix. Rub well. Add a few drops of olive oil if needed to make a smooth ointment. Dispense in a tin tube. Sign: For application to nasal passages.

More frequently, however, I find it advisable to use a snuff made according to some such formula as follows:

3.	Suprarenalin	1 part
	Zinc stearate (comp.)	100 parts
	Heavy magnesium carbonate	900 parts

Mix. Triturate well.

4.	Suprarenalin	1 part
	Zinc oxid	100 parts
	Bismuth subcarbonate	400 parts

Mix. Triturate well.

5.	Suprarenal gland substance	1 part
	Zinc stearate	20 parts
	Zinc oxid	80 parts

Mix. Triturate well.

The one I use most frequently is:

6.	Suprarenalin	1 part
	Bismuth subcarbonate	300 parts
	Zinc oxid	300 parts
	Zince stearate (comp)	200 parts

Mix. Triturate well.

These preparations can be snuffed up into the nasal passages or may be insufflated by means of a powder-blower. I have used as diluents of the snuff a number of other agents, as, for example, boric acid, sodium borate, sodium bicarbonate, starch powder. I have also added at times to snuff powders or as constituents of ointments or "nasoids" ("nasal suppository") minute quantities of menthol, camphor, cocain, antiyprin, acetanilid. With some individuals boric acid or sodium borate or sodium bicarbonate answers better than the diluents given in the foregoing formulæ, but in most cases they irritate more or less. Starch powder—marante being the form used—proved irritating in every case in which it was tried, so that but a few experiments, some half dozen, were made with it. Menthol, camphor, antipyrin and acetanilid proved decidedly irritating in my own case, but for a few patients were found to be desirable additions, assisting in the cleansing and opening of the nasal passages and giving an agreeable aftersensation. Cocain and alypin were always palliative, the former assisting markedly to free the respiration, yet for prudential reasons I rarely prescribe it. Orthoform proved too irritating to be persisted with. Despite the initial smarting it produces, anesthesin (1 to 500) was useful in a number of cases. But for its lightness, zinc stearate would have been by far the best diluent powder of any that was experimented with. Being so light, unless great care is observed in snuffing it up or in insufflating it, it is quickly carried into the pharynx and sometimes into the larynx, inducing a rather disagreeable choking sensation, which, however, soon passes off. When the patient can be trusted to make the application carefully, a snuff of 1 part of suprarenalin in from 100 to 1,000 parts of zinc stearate meets all the requirements. The bismuth subcarbonate, the heavy magnesium carbonate and the zinc oxid were added as unirritating substances, possessing sufficient weight to be available. In addition, zinc oxid has a slight astringent effect, bismuth subcarbonate is slightly sedative and both act as protective coverings. Perhaps the best diluent of all, could it be obtained, would be a serum powder prepared from the blood of healthy animals—preferably horses or goats, to avoid the danger of unrecognized tuberculosis. The anti-tetanic serum powder and antidiphtheritic serum powder on the market would answer, but these are unnecessarily expensive, their specific antitoxic properties not being requisite for this special use. I have also used with success a snuff consisting of suprarenal gland substance (1 to 5 per cent.) zinc stearate and bismuth subcarbonate or zinc oxid. This is less expensive than the suprarenalin snuffs.

III. POLLANTIN.

Dunbar's antipollenic serum is a distinct addition to our resources and its effects are positive in from 30 to 50 per cent. of the cases met with. I have not found it to be more than a palliative, however, in any instance, and in those cases in which the suprarenalin preparations are effective pollantin offers no advantage over them that I have been able to see or to experience. In not a few cases pollantin or suprarenal snuff can be used indifferently with about the same useful palliative result. This has been my own personal experience. Either pollantin (spring) or suprarenalin with zinc and bismuth powder gives me relief for from two to ten hours, according to environmental conditions; both failing to give relief for more than ten or fifteen minutes, while on a long and dusty railway journey. In some cases, however, in which the suprarenalin preparations fail entirely, pollantin controls the symptoms. In a less number of cases pollantin fails and suprarenalin succeeds. In still other cases, about one-third of all, according to my observation, both pollantin and suprarenalin fail to have any marked effect.

Both pollantin and suprarenalin snuffs must be used properly to be effective. The nose should first be cleansed, then a small quantity should be sniffed into each nostril and thoroughly distributed by titillation after the manner of the elegant snuff-takers of former generations.[2] This titillation should be done with the head thrown well back, so as to bring the nasal fossæ as near as possible into a vertical position. For this purpose one may lie down and should, in any event, remain recumbent for some ten minutes after the snuff-taking, if at all possible. The snuffing of pollantin or the snuffing or insufflation of suprarenalin powder, as the case may be, should be done the first thing in the morning, preceding the toilet, and if thoroughly done and if the ten or fifteen minutes of recumbency be observed, such an application will protect for several hours, if not for the whole day, under favorable conditions; especially if the additional precaution of using two or three puffs of oily spray as a protective be carried out, as advised in a previous paragraph. In the use of pollantin one should be careful to prescribe and to obtain the "spring pollantin" in the spring and the "autumn pollantin" in the fall. As I have previously suggested,[3] it would be still more desirable that a number of specific pollantins, as grass, rose, goldenrod, ragweed, etc., should be prepared, in which case the number of persons relieved by one or the other of these preparations would doubtless be much greater than the 30 to 50 per cent. of all sufferers for whom the preparations now in the market are suitable and effective.

IV. INTERNAL MEDICATION.

In some instances in which one or more of the measures already described proves but partially successful in controlling the symptoms of hay fever, relief may be aided and often completely achieved by the judicious internal administration of belladonna or its active principle or some modification thereof. Minute doses are necessary, and these should be taken at intervals determined experimentally in the individual case. I find it convenient to use atropin sulphate or hyoscin hydrobromate or, sometimes, eumydrin, which last bears the same relation to atropin that heroin bears to morphin, being a methyl substitution product (methyl-atropin-nitrate). The dose of the hyoscin salt or the atropin salt is from 1/2,500 to 1/500 of a grain (1/40 to ⅛ milligram). Ordinarily I employ about 1/2,000 of a grain. The dose of eumydrin is from 1/200 to 1/64 of a grain (0.3 to 1 milligram). The following are illustrative formulas:

7.	Hyoscin hydrobromate	gr. 1/100	0006
	Camphor monobromate	gr. ii	12
	Milk sugar	sufficient	

Mix. Triturate well. Divide into 20 tablets (or capsules).

8.	Atropin sulphate	gr. 1/50	001
	Camphor monobromate	gr. v	30
	Peruvian balsam	sufficient	

Mix. Divide into 20, 24, 32 or 40 equal parts and dispense in capsules.

9.	Eumydrin	gr. i	05
	Milk sugar	sufficient	

Mix. Triturate well. Divide into 100 or 200 tablets (or capsules).

The dose of any of the foregoing preparations is one tablet (or capsule), to be repeated every ten to ninety minutes until the sneezing and running of the nose are controlled, after which one tablet (or capsule) may be taken every second, third or fourth hour, as may be necessary to maintain the effect. Eumydrin, if given in doses of 1/200 or 1/100 grain, is, of course, not to be repeated so frequently as atropin or hyoscin in doses of 1/2,000 or 1/1,000 grain. Its effects, moreover, are much slower in development.

Patients are told what the unpleasant effect of an overdose of any of these agents would be, and are warned not to take sufficient of the drug to cause notable dilatation of the pupil or dryness of the throat or disturbance of vision. They are also advised to take not less than a wineglassful of water with each dose. The addition of camphor monobromate seems useful, and sometimes a small quantity of quinin, say ⅛ to ½ of a grain, may also be added to each dose, although this has not the same applicability in hay fever as in ordinary coryzas.

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[2] I owe these suggestions to one who, although a layman in medicine, is an "adept" in hay-fever "treatments," as well as in jurisprudence.

[3] System of Physiologic Therapeutics, vol. xi, page 64.

In many cases it will also be found useful to administer the so-called antilithic remedies, as piperazin quinate, lithium citrate and sodium salicylate. In a few instances I have found a combination of sodium salicylate and sodium benzoate beneficial.

The following formulas are illustrative:

10.	Piperazin quinate		
	Lithium citrate		
	Sodium salicylate (true) of each.	gr. iii	20

Mix. For one capsule. Sign: One capsule with half a tumblerful of water, after meals and at bedtime (4 times a day).

11.	Sodium salicylate (true)	ʒiii	12
	Sodium benzoate (true)	ʒvi	24
	Essence of pepsin	f℥ii	60
	Tincture of nux vomica	fʒi	4
	Peppermint water, sufficient to make	f℥iv	120

Sign: 2 fluidrams (teaspoonfuls) in (or with) one-half tumblerful of water, every fourth hour, for four (or five) doses daily.

Mild alkaline carbonated mineral waters are always helpful and patients should be advised to take freely during the hay fever season any palatable water of these groups; for example, one of the numerous American lithia or "Vichy" waters or imported Vichy (Celestin), or Giesshuebl or Fachingen. If preferred, tablets of lithium carbonate or lithium citrate may be used to make an artificial mineral water.

V. ASTHMATIC PAROXYSMS.

If the palliative measures already described and the general precautions to be set forth in conclusion are carried out systematically, asthma is not likely to occur. To relieve an attack, a tablet of suprarenalin may be placed on the tongue (1/10 grain, repeated, if necessary, every 10 to 20 minutes); or suprarenalin or adrenalin solution (1:1000) may be applied to the nose by spray or cotton wad; but a hypodermatic injection of 10 to 20 minims of adrenalin or suprarenalin solution (1:1000) is usually the quickest method. If for any reason the suprarenalin preparations are contraindicated, chloroform or ethyl chlorid may be inhaled with due care and not to the induction of general anesthesia. Patients very prone to asthma may be given prophylactic inhalations of ethyl iodid (3 to 10 minims every 3 to 4 hours); or one of the following prescriptions may be taken:

12.	Aspidospermin hydrochlorate	gr. iii	20
	Hyoscin hydrobromate	gr. 1/100	005
	Peruvian balsam	sufficient	

Mix. Make 24 capsules.

Sign: One every hour for 10 to 12 hours daily, or as needed.

13.	Morphin hydrochlorate	gr. 1/6	01
	Strychnin sulphate	gr. 1/30	002
	Hyoscin hydrobromate	gr. 1/250	0002
	Atropin sulphate	gr. 1/250	0002
	Sterilized water	m. xx	

Dissolve. Sign: Use by hypodermic injection.

14.	Codein sulphate	gr. ii	12
	Hyoscin hydrobromate	gr. 1/40	002

Mix. Make 6 (or 8) pills. Sign: One pill at 6 or 7 p. m. and one pill at 8 or 9 p. m.; a third pill may be taken at 10 p. m. or later if needed.

15.	Strong tincture of passiflora incarnata	f℥ii	60

Dose: 10 to 30 drops in water every 10, 20 or 30 minutes, as needed, to relieve distress in breathing. Four fluidrams must not be exceeded. Should drowsiness, vertigo or nausea occur, the medicine is to be discontinued.

It is only rarely that the last prescriptions will become necessary. Obviously such measures demand care in application and the indications for their use must be clear.

VI. GENERAL PRECAUTIONS.

Those who are able to go to an immune region usually need no additional palliation. The less fortunate must, in addition to the use of one or more of the expedients detailed in the foregoing paragraphs, observe certain precautions. Exposure to dust, to smoke, to direct sunlight, to heat, must be avoided or minimized. Sometimes it is advisable to wear cotton filters in the nostril when exposed to the dust of city streets, when walking or driving on country roads, and especially during railway trips. Dark glasses will also be found extremely useful. Hurry and excitement are to be avoided, if possible. The bowels, the skin and the kidneys must be kept normally active or even a little stimulated.

Diet must be simple and on the whole sparing. Shellfish and elaborate mixtures are usually harmful. Meat is to be avoided or cut down to the lowest possible point. Pastries and sweets should be avoided. Concerning fruits, marked idiosyncrasies exist. Peaches, if pared, can usually be enjoyed, but the fuzzy skin distresses many persons. Strawberries cause aggravation of symptoms in a few hay-fever patients. Melons are not only palatable and refreshing, but have a slight diuretic action that is often helpful. A tepid bath, followed by a brisk cold rub, just before going to bed, and a hot sponge, followed by a brisk cold rub, in the morning, after the rest following pollantin or suprarenanal snuffing, will be found to conduce very much to comfort. Also advantage should be taken of every opportunity for rest and quiet.

By utilizing some or all of the palliative measures described, not in unintelligent routine, but varying the expedients with the individual and the occasion, the vast majority, probably at least nine-tenths of those hay-fever sufferers who are unable to take the best course—namely, flight to a region of peace—may be enabled to get through their season of tribulation with a minimum of discomfort, and even to enjoy, from time to time, hours and sometimes days of complete relief. In these intervals they have opportunity to realize the truth of the poet's utterance, "Life's keenest pleasure is surcease of pain."

THE VALUE OF ROUTINE URINE EXAMINATION.

A STATISTICAL INQUIRY.*

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If an excuse for writing a paper of the above title is necessary, it may be found in an article published in THE JOURNAL of the American Medical Association, March 18-25, 1905, by Dr. Richard C. Cabot, Boston. The title of that paper is: "A Clinical Examination of the Urine. A Critical Study of the Commoner Methods."

The last two paragraphs of the paper are as follows: "The attempt to estimate the anatomic condition of the kidney by the measurement of albumin and the search for casts is fallacious in the extreme." "The most reliable data about the urine are those most simply and quickly obtained, the twenty-four hour quantity, the specific gravity and the color."

To quote the title of the paper and these last paragraphs alone is to make it appear that Dr. Cabot believes that clinical examination of the urine is "fallacious in the extreme."

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* Read by title before the Philadelphia County Medical Society.

As a matter of fact, Dr. Cabot attempts to prove by the investigation of a large number of urine examinations made at the Boston City Hospital, and a comparison of autopsy findings in the same cases, that albumin and casts in the urine do not always mean that a pathologic nephritis is present in the case, and, on the other hand, that a true pathologic nephritis may be present without the presence of albumin or casts in the urine. The paper is an extremely valuable one because it settles in a certain way that nephritis, in common with other diseases, may not always be surely diagnosed from one symptom alone, and because it calls renewed attention to the well-known fact that albumin and casts in the urine do not warrant the diagnosis of Bright's disease.

But I consider it an extremely dangerous paper to spread broad-cast among the medical profession. Many men will read the title and the conclusions alone and will jump to the opinion that if such an eminent authority as Dr. Cabot believes that Bright's disease can not be diagnosed by urine examination, then surely urine examinations are useless. It is true that a careful reading of the paper will not justify such an opinion, but I fear that will be the ultimate effect.

Everyone who has seen much of medical practice throughout this country, must realize with sincere regret that the more careful laboratory helps in diagnosis and treatment of disease, including urine examinations, are woefully neglected by the average practitioner of medicine. I fear that Dr. Cabot's paper will help to make the average man more careless, instead of helping him to make a more accurate diagnosis, as it surely was meant to do, and as it surely would do, if read carefully. The trouble is, I repeat, that it will be generally read by the title and the conclusions, and will thus give an erroneous idea of the author's meaning. Everyone knows that even though albumin and casts in the urine may not always mean nephritis, that their presence in the urine does mean that a vital organ is at fault, and this fault should be duly weighed in diagnosis, prognosis and treatment. Then, too, there are other conditions of the urine which are of the greatest importance, such as the presence or absence of glucose, of pus, of blood, persistently or intermittently large quantities of urine, etc., all of which should be made a note of in routine examinations.

During the past eighteen months I have kept notes of the color, specific gravity, albumin, sugar and microscopic findings of 1,666 urine examinations. Of these, 1,346 examinations showed entirely normal urine; 320 examinations showed something abnormal about the urine. The urine of 763 patients was examined; 669 patients had entirely normal urine; 94 had some abnormal sign in the urine.

It will be seen that approximately 20 per cent. of the urines examined were abnormal and about 12 per cent. of the patients whose urine was examined showed something abnormal in the urine.

If these abnormalities can be shown to have any effect of importance on either diagnosis, prognosis or treatment, surely then it is worth while to examine five urines to find one abnormal one. The work is, of course, tedious, it takes time, but it assuredly can be done by the busiest practitioner and in my opinion it should be done and must be done if we are to advance in scientific methods. I have worked as a general practitioner long enough to test the value, and here make the appeal that every general practitioner provide himself with a private laboratory in which to work.

I have divided the cases which showed some abnormality into the following groups: First, 21 cases, showing either chemically or microscopically an abnormality which on further examination was found to be of no pathologic importance; second, 5 cases, showing albuminuria of pregnancy; third, 7 cases, showing acute nephritis (with apology to Dr. Cabot); fourth, 2 cases, showing urine of hysteria; fifth, 4 cases, showing urine of diabetes mellitus; sixth, 2 cases, showing lactosuria during the beginning of lactation; seventh, 1 case, showing diabetes insipidus; eighth, 11 cases, in which there was severe arteriosclerosis with albumin and casts in the urine; ninth, 9 cases, showing true interstitial nephritis; tenth, 15 cases, acute conditions, developing during the course of the disease, severe albuminuria with casts and albumin; eleventh, 1 case, showing albumin caused by a beginning menstrual period; twelfth, 2 cases, in which there was cardiac disease with severe renal complications; thirteenth, 3 cases, in which there were chronic conditions, developing severe albuminuria and casts: fourteenth, 11 cases, showing a local condition of the genitourinary tract.

Now as to the 669 patients whose urine was found to be entirely normal, it was of the greatest value and comfort to know, for instance in a case of convulsions, that the urine was normal, and that the kidneys need not be taken into account in the treatment, or in a case of unconsciousness to know that I was not dealing with a uremic coma, indeed, it seems to me that often the negative finding is about as valuable as the positive, but it is the 94 abnormal cases that we want chiefly to consider.

I shall not cite all of these cases, of course, or I would be tiresome, but shall give only an abstract of a few of the important ones. I desire here to state that I have in my possession the case histories of each of these 94 cases, so the pictures are not fanciful. Of the first group of 21 cases, thirteen patients were pregnant women showing a trace of albumin, but repeated examinations showed the albumin to be of no pathologic importance, and probably due to a leucorrhea. One case is worth quoting:

Case 1.—A young single woman was rather suddenly seized with constant vomiting, severe headache, apparent delirium. The physician in attendance had discovered albumin in the urine. Careful examination showed the urine to be of small quantity—high specific gravity—with a trace of albumin. Microscopically there were no casts, but numerous leucocytes and epithelial cells. The urine examination did not justify the diagnosis of uremia, and a careful physical examination showed the patient to be pregnant.

This case proves Dr. Cabot's point, of the error of diagnosing Brights disease on insufficient grounds:

The five cases of albuminuria of pregnancy showed the great importance of routine examinations, and I fully believe that if no other cases needing treatment had been found save these five alone, that the whole work would have been justified. I believe the doctor is almost criminally neglectful who has a case of puerperal convulsions, in which he has had any opportunity of examining the urine and has not done so.

Case 2.—Mrs. L., ii-para. With the first child there was considerable puerperal toxemia with albuminuria and casts in the urine. She became pregnant again in June, 1904, and immediately consulted me. Remembering her previous condition I urged a frequent urine examination. In July, 1904, the urine was normal. None was sent until November, 1904, when I called at the home and urged her to send me a specimen every week. The specimen sent at that time was normal. She neglected to send another specimen. In the early part of December I was called and found her in convulsions with the urine full of albumin and casts. In spite of treatment she died in 48 hours.

This case not only proves that a urine examination is necessary, but that it should be made frequently in the later months of pregnancy.

The next group of seven cases of acute nephritis were all of the same character; none of them could, by any possibility, have been suspected as nephritic cases so early, had a urine examination not been made in a routine way. I believe all the patients were saved from a seriously prolonged illness, perhaps some from death.

Anyone can suspect nephritis when the individual has edema or a convulsion, but it is then frequently too late to lead the patient to health.

Case 3.—George H., married, a mill worker, called at my office complaining of malaise, aching limbs, headache, loss of appetite. The heart, lungs and abdomen were normal. The temperature was 101 F. I supposed the case to be influenza and told the patient so, but ordered a specimen of urine.

Examination showed much albumin and many epithelial and blood casts. The case ran a typhoid course of acute nephritis.

Surely no diagnosis of nephritis could have been made at that time without a urine examination and surely it was only because the habit had been formed by me of making routine examinations that one was made. All the other cases were exactly of the same character.

The cases of diabetes mellitus and diabetes insipidus and of lactosuria were of the greatest importance. None of them would certainly have been diagnosed had I not made a habit of examining the urine regularly.

Case 4.—Diabetes mellitus. Otto D. was seized suddenly with pneumonia. Examination of the urine showed 5.5 per cent of grape sugar. Questioning revealed the fact that for some months previous to his attack of pneumonia there had been the classical symptoms of diabetes mellitus. These symptoms had been disregarded and the routine examinations were the first to reveal the presence of sugar. A particularly unfavorable prognosis was made, which was upheld by the unfortunate termination of the case.

Case 5.—Diabetes insipidus. Charles J. came to my office complaining of thirst, pain in the back and polyuria. Examination showed a large quantity of urine—eleven quarts in 24 hours, having a specific gravity of 1,001 and free from albumin, casts or sugar.

Case 6.—Lactosuria. Mrs. L., iv-para. On the third day of the puerperium the urine, which was being examined for albumin and casts which had been long present, showed the presence of sugar by Fehling's test. Careful subsequent examinations showed this reducing agent to be some other body than grape sugar, and in all probability lactose. It disappeared from the urine in a few days.

No amount of speculation could have made a differential diagnosis in those cases without a urine examination.

The group of arteriosclerosis cases shows, perhaps, the value of Dr. Cabot's paper equally as well as the next group of true cases of nephritis; and at the same time it shows, I think, the great value of examining the urine of every patient coming under our care. In order to draw the line between the cases of arteriosclerosis with albumin and casts in the urine, and the true cases of nephritis with arteriosclerosis, the following points should be kept in mind:

First, almost all cases of arteriosclerosis have albumin and casts in the urine, but the urine is usually of normal quantity and specific gravity. The heart shows signs of myocarditis, while the symptoms are those referable to general arteriosclerosis, rather than to a uremic condition.

On the other hand, the true cases of interstitial nephritis usually have large quantities of urine of low specific gravity with considerable hypertrophy of the heart and marked accentuation of the second aortic sound with eye symptoms, or attacks which are truly uremic.

Case 7.—Mrs. R., aged 64, had extensive arteriosclerosis, much dyspnea, and irregular heart action. On many occasions the urine of this patient showed a trace of albumin and a few casts, but always the symptoms were dyspnea and cardiac palpitation. At no time were there uremic symptoms.

Case 8.—Mrs. S. had marked arteriosclerosis, retinitis and hypertrophy of the left heart. The urine was always of low specific gravity with constant albumin and pale, granular casts. Uremic symptoms developed and she died in convulsions.

The group of acute cases developing albumin and casts shows the absurdity of treating acute conditions without repeated urine examinations. The same may be more forcibly said of chronic cases.

Every careful practitioner has seen serious complications arise in acute and chronic conditions, the cause of which was entirely unsuspected until the urine was examined. If the practitioner had been in the habit of examining the urine at regular intervals, the cause of the untoward symptoms would have been found before these symptoms became a serious complication.

As an instance of the first of these:

Case 9.—A case of pneumonia. The patient, D. F., had a very severe attack of pneumonia of the right lung, with increasing dullness of mind. Examination of the urine showed a gradually increasing amount of albumin and numerous casts showing the severity of the toxemia. The prognosis was guarded and the termination showed its propriety.

Case 10.—Mrs. H., in course of an ordinary case of tuberculosis of the lungs, became suddenly unconscious. Examination showed the urine to contain albumin enough to cause it to become solid on boiling. She died of uremia. The presence of nephritis was not suspected because the urine had not been regularly examined.

The last group of local genitourinary cases show equally as well as the others the great importance, indeed the absolute necessity of a urine examination before a diagnosis even can be made, not to speak of treatment. This group contains two cases of pyuria due to stone, four cases of acute renal colic with passage of a small calculus, one case of cystitis and four cases of hematuria.

How futile even a guess in these cases would have been and how easily the diagnosis was cleared up by the microscope is shown by Case 11.

Case 11.—A young man was suddenly seized with pain and tenderness in the region of the appendix. Tenderness and muscular resistence were extreme. Very frequent urination attracted attention to the urine. There was free blood in the urine. In a few hours a small renal calculus was passed. This patient might easily have been operated on for appendicitis had a urine examination not been made.

I therefore claim, as proven by these cases, which, of course, are not unique, that a urine examination is of the utmost value indeed, and that a tentative diagnosis only can be made without it in as many as 12 per cent. of all cases treated.

I further claim that the examination should be routine. To examine the urine only when symptoms point to the genitourinary tract is to miss the diagnosis in many important cases, and often if the examination is made only after such symptoms appear it is too late to intervene for the patient's recovery.

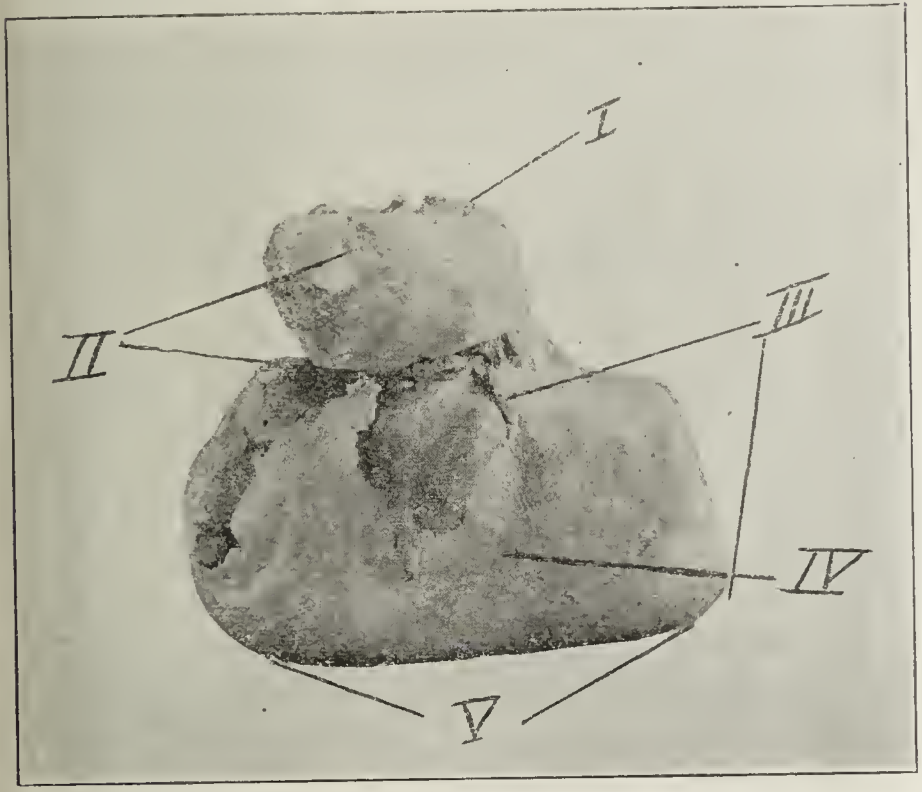
I again call attention, therefore, to the absolute necessity of a clinical laboratory at each practitioner's command, if he desires to give full value of his service to his patients.

Clinical Notes, New Instruments, Etc.

A REMARKABLE OSTEO-CALCAREOUS TUMOR IN THE NOSE.

H. B. LEMERE, M.D.
OMAHA.

Patient.—The patient, L. S., a girl aged 15, American born, parents Norwegian, was referred to me by Dr. Jensen, Newman Grove, Neb., March 27, 1906. She was well nourished, above average height and weight. Her appearance was healthy, with no deformity except that she was a mouth breather and had a full bridge to her nose. She has had no serious illness, but complained of having had headaches and a dull feeling over her forehead, and catarrh of the right side of the nose, as long as she could remember. July, 1905, her nose became totally occluded, and the headaches and heavy feeling of the forehead increased. Dr. Jensen informs me that one year ago her mother had a suspicious growth (carcinoma) removed by him from the cervix uteri. Her father is well. She has four brothers, all healthy at present. Dr. Murdock informs me that he removed a tuberculous sequestrum from the arm of one of them about three years ago, but that the boy is now quite well.



Tumor, actual size. I. Facet where tumor was attached to the ethmoid. II. Foramina of nutrient vessels to tumor. III. Putty moulding where tumor was scraped and taken away in small pieces. IV. Portion of tumor adjacent to antrum of Highmore. V. Base of tumor, which rested on floor of nasal cavity.

Examination.—On examination of left nasal space the deviated septum was seen to be the cause of almost total occlusion of the left nostril, the convexity being one-quarter of an inch from the nasal spine in front. She could force air through this side with difficulty. The right side had a commencing corresponding concavity, but the whole nasal space was entirely occluded by a white mass, which on probing proved to be of stony hardness. This mass commenced about three-sixteenths of an inch back of nasal spine, and filled the nasal space so tightly that no probe could be passed between it and the walls of the nasal cavity. Attempt was made, unsuccessfully, to view it from the post-nasal space. I judged that it was probably one-half inch through, and called in the assistance of Dr. Schneider, a dentist, with his dental engine and trephine.

Operation.—The trephining was done under general anesthesia. The trephine cut with great difficulty, and when about one-sixteenth inch in it stuck and broke off. Finding the trephine impracticable I continued the boring with dental drills and burrs, with the idea of hollowing out the core and then getting hold of the tumor from behind and pulling it out forward, but on account of the intense hardness of this core the work progressed very slowly. The burrs which ordinarily cut dental tissue with but little trouble would sing over this material, making very little impression on it. We finally constructed a long heavy drill, and with this we made better progress. In four days of drilling, taking in eight sessions of over one hour each, we drilled out a core five-sixteenths inch in diameter, which was surrounded by vascular and sensitive tissue. As cocain had no effect on this substance drilling had to be stopped, and on Monday, April 2, under chloroform anesthesia, Dr. Arthur and Dr. Schneider assisting, a post-nasal plug was inserted and attempt was made to draw the tumor out anteriorly, but it was found quite immovable. I chiseled out a piece of the cortex adjacent to the antrum of Highmore. This piece was about one inch long and three-eighths of an inch in diameter, and by means of sharp curette and chisel I further removed the core of the tumor, so that in looking into the right nostril a space over one-half an inch in diameter could be seen communicating laterally with the antrum, and posteriorly with the left nares, through a perforation well back in the bony septum. As there was considerable bleeding the post-nasal plug was left in position, and the left nostril and antrum packed with iodoform gauze.

Postoperative History.—The packing and gauze were removed the next day, and irrigation of nasal chambers with small bulb ear syringe was carried out every hour.

Two days later, Wednesday, the right membrana tympani ruptured and discharged freely without the patient having complained of any pain in it, and unfortunately the left accessory nasal cavities became infected, producing so much swelling of the lids that the left eye was completely closed. Hot compresses were applied over this region, and for several days the patient ran a pus temperature between 100 and 104. Owing to uncertainty as to exact location of the pus and the foul condition in which the right nares continued, no further operative procedures were resorted to till Monday, April 8, when that portion of the cortex of the tumor in the middle meatus was observed to have slightly left the walls of the cavity, and a gentle pull with light forceps caused it to fall to the floor of the nares. I thought the body of the tumor now could be easily extracted through the nostril, and administered a little chloroform, but all my efforts, even with heavy sequestrum forceps, failed to deliver the remainder of the tumor. The following morning, Tuesday, April 9, under chloroform, I seized the body with a pair of ordinary heavy rongeur forceps, intending to break it in two, but the forceps proved false and broke. I then took a pair of heavy flat blade bone forceps and with the combined weight of myself and assistant, which the forceps fortunately stood, I managed to gnaw the body in half and then delivered the two pieces with sequestrum forceps through the nostril. The septum which was entirely occluding the left nasal space was then straightened with Roe's forceps, and as there was but little hemorrhage and the nose was very septic, no packing was used. The patient recovered with very little reaction, the temperature came down and has remained normal. The swelling on the inner side of the left eye subsided greatly. April 20 the patient returned home, the extremely foul odor which came from the nose while any of the tumor remained having totally disappeared. The septum was straight, there was a small polyp in right nares which it was impossible to remove owing to patient being entirely unnerved. The frontal and antral sinuses were both discharging into the nose and through two small fistulæ on to the face, but owing to the timidity of the patient no further operation was considered advisable, as the drainage from the nose was improving and there were no pressure symptoms.

The growth was evidently a calcified osteoma of the nose with origin probably from the roof of the nares. I report the case thus fully because the occurrence of such a growth is very rare and the means employed in removing it might be of interest. Unavoidably I lost several pieces of the growth, and a great part of it was dissolved by the dental drills and curetted away in fine scrapings, so that from the fragments I have built up the tumor in its original shape for the purpose of illustration.

Bosworth says: "While it is not an especially rare occurrence for the nasal cavity to be invaded by an osseous tumor, which has its origin in parts beyond, a neoplasm of this form developing in this region is much less frequent." Lenox Browne in his latest work refers to one removed by LeBec "as large as a hen's egg" as unique. Very little is said by the authorities as to the structure, except that there are two forms, the cancellous and the eburnated. This tumor had lost the character of bone in the center and by the dense deposit of lime salts was, to all purposes, petrified. The sound of the pieces striking together was altogether stony. Its effect on the edge of curettes and drills was like stone. A close examination of the tumor shows an apparent pedicle which must have come from the situation near the posterior part of the cribriform plate of the ethmoid. The large vascular spaces on the cortex of the tumor would indicate that at one time it had a highly vascular covering. Dr. Lavender's examination of a small portion of the cortex shows true bone and cartilage cells and deposits of lime salts. These are all arranged chaotically without Haversian systems.

In conclusion I would say that the subsequent showing of that attachment of the tumor to the cribriform plate of the ethmoid, its extension to which region was only suspected at the time of removal, proves the necessity of the technic adopted—the plane of the chiseling being always in directions parallel to the cribriform plate. In the septic condition of the nose any break in the dura would probably have proved fatal.

QUININ AND IRON IN PNEUMONIA.

CHARLES F. NIEDER, M.D.
GENEVA, N. Y.

The satisfactory results noted in my previous report[1] of pneumonia cases treated by quinin and iron have continued. My experience with this method is limited to 15 cases. The only fatal case was that of a pronounced alcoholic who had been suffering for months with an active tuberculous process in both lungs. He had been unable to work for two months prior to the attack of pneumonia. In this case the treatment exerted a beneficial influence on the circulation. The patient was nearly pulseless on the second day of the disease before instituting treatment. After administering the quinin and iron a good pulse was maintained for five days. In response to requests which are being made for more information concerning the quinin and iron treatment of pneumonia, I submit the following report of a recent case:

Patient.—J. McC., aged 30, maltster.

History.—The patient had never been ill with the exception of typhoid fever six years ago. He is an alcoholic and had been on a debauch when taken ill. He had been troubled with a slight cold for a few days when his illness began, April 19, 1906.

Examination.—April 19, 5 p. m., temperature was 103; pulse, 130; respiration, 35. Percussion and auscultation indicated congestion of the lower lobe of the left lung. The man complained of headache and severe pain in the left side.

Treatment.—He was given a saline purge, followed one hour later by quinin sulphate gr. xxx. I tried to give him a larger dose of quinin, but he was attempting to vomit so frequently that I desisted. Tincture of chlorid of iron was ordered to be given every three hours in 10-drop doses.

Course of the Disease.—On April 20, at 9 a. m., temperature was 98.6; pulse, 90; respiration, 28. The patient was very comfortable and said that he had no pain. He was given quinin, gr. vi every four hours; the iron was continued.

April 21: The patient felt so well that he got up early and went down street, where he remained all day. He drank three glasses of ale, but no whisky. At 5 p. m. he was taken with a severe chill and pain in the left side. He had much difficulty in walking home.

At 6 p. m. his temperature was 105.2; pulse, 130; respiration, 45. Percussion and auscultation showed consolidation of lower lobe of left lung. Subcrepitant râles were heard over this area. The patient coughed at times, raised typical pneumonic sputum, and was delirious.

A diagnosis of pneumonia was made.

Treatment.—At 6 p. m. he was given quinin sulphate, gr. lv, and one hour later gr. xx. At 8 p. m. 10 drops of tincture of chlorid of iron were ordered to be given and the dose repeated every two hours. At 10:30 p. m. his temperature was 103.5; pulse, 130; respiration, 38. There was profuse sweating. The patient was very delirious and tried to get out of bed. He was given triple bromids, gr. xv.

At 11:30 p. m. his temperature was 101; pulse, 105; respiration, 32. He was quiet and said that he had no pain. He slept the remainder of the night.

April 22: At 9 a. m. his temperature was 98.4; pulse, 68; respiration, 28. He continued to raise pneumonic sputum. There was no pain and he felt fine. I ordered quinin, gr. vi, every four hours and the iron was ordered continued.

April 23, 24, 25: During this time his temperature was always slightly subnormal. The pulse ranged from 60 to 72. He felt fine and would sit up if allowed. He continued to raise rusty sputum. During this time he was given quinin, gr. vi, three times a day, and the iron was administered every four hours.

April 26: The patient sat up, pulse and temperature were normal, and he was discharged.

REMARKS.

The diagnosis in this case can not be questioned. Those who have never used the Galbraith method may doubt that the treatment had any effect on the course of the disease. Those who are familiar with it have learned to expect similar results in nearly every case. The results obtained in this case are the rule and not the exception.

I have carefully observed the effects of this treatment on the pulse, circulation, temperature, pain, crisis and duration of the disease, and I find that the results correspond exactly with those obtained by Drs. Galbraith and Gustetter. In almost every case I have felt like calling in my colleagues to see how comfortable my pneumonia patients are without ice-bags, mud poultices or opiates. My experience is too limited to draw conclusions as to the mortality, but I am confident that this method will prove very satisfactory in this respect.

I have reason to have great faith in the value of antitoxin—having treated 21 cases of diphtheria without any mortality—but I can state truthfully that I have never seen such marvelous results from the use of antitoxin in diphtheria as I have obtained from the use of quinin and iron in pneumonia. The statements which we have been taught to believe, that pneumonia can neither be aborted nor cut short by any known means, and that we have no drugs which have any appreciable effect on the toxemia, are obsolete.

Overcrowding of Vienna Hospitals.—The *Wien. klin. Rundschau* quotes a local daily to the effect that a sick workingman tried to gain admittance to the various public hospitals in turn, but was constantly turned away for lack of room. In order to get into some hospital he reasoned that if he could get himself arrested he would then be given hospital treatment. He consequently stole a pair of shoes, was arrested, and in the jail was given the needed medical care and treatment. On his recovery he served a brief term for petty larceny.

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[1] The Journal A. M. A., Nov. 18, 1905.

A NEW RECTAL ENEMATOR.

DUDLEY ROBERTS, M.D.
BROOKLYN, N. Y.

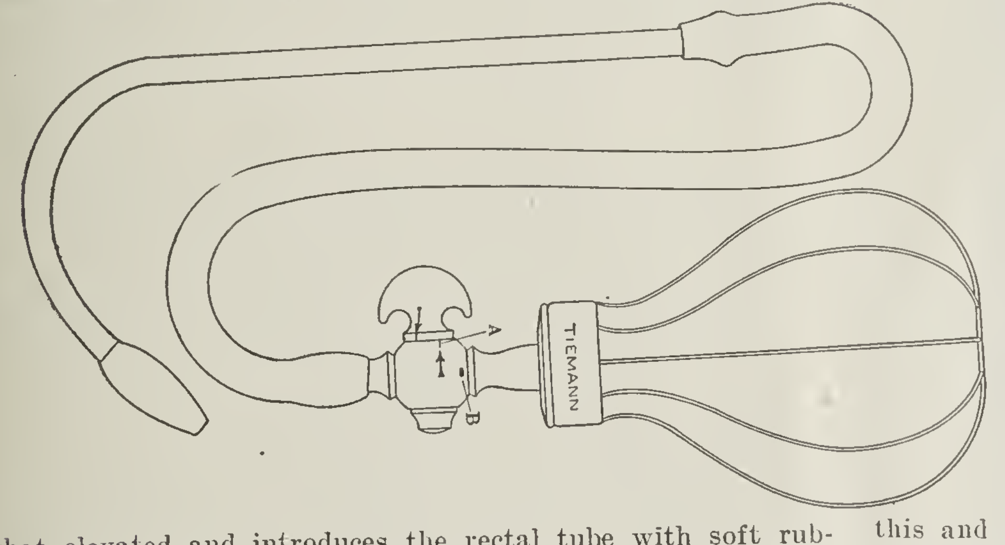
In the treatment of the different forms of chronic constipation no measure is so uniformly successful as the systematic injection of oil into the rectum. It may, indeed, be said that this method is indispensable in the cure of the spastic form of constipation. Since the elaborate study of this method of treatment by Fleiner and Kusmaul in 1892 it has gradually grown in favor.

There is, however, one serious objection to this method of cure; while patients realize its value they constantly complain that the taking of the oil is exceedingly annoying. By all the heretofore practised methods of injection there has been the bother of warming the oil and pouring it into the reservoir and the very trying experience of having the oil spill from the container or run from the rectal tube after its withdrawal from the anus. Now as success depends on the persistence with which this measure is kept up it is very essential that the procedure be simplified as much as possible, and that all unnecessary annoyance be eliminated. It is understood that as the oil is to be retained over night it must be injected by the patient himself at bedtime.

After a considerable experience with all methods of having the oil injected I have discarded them for the one here described. Patients who have had experience with the old apparatus characterize this new one as a great boon and well worth the additional cost.

The apparatus, as may be seen from the cut, consists in a curved rectal tube of hard rubber, the end of which is olivary shaped to make it self-retaining. This tube is made curved so that it comes up in front of the pubis; to this end is attached a 10-ounce Politzer bag, the connecting soft rubber tube being of a convenient length for the patient. The rectal tube is made with such a curve that it is readily passed from the front of the body to the anal opening; here by a slight traction movement it enters the anus in the proper direction, pointing toward the umbilicus. It has been demonstrated that this new form of tube is much less awkwardly introduced than by reaching around behind the buttocks. The Politzer bag is fitted with a stopcock having a small hole in one side, which permits the bag to fill with air when the cock is closed.

The method of taking the injection is simple; the bag is allowed to fill itself and the oil is then warmed by placing the bag in warm water. The patient lies on the back with hips somewhat elevated and introduces the rectal tube with soft rubber tubing attached. The bag is then attached and the stopcock turned to permit the oil to be slowly forced into the rectum. The bag being emptied, the stopcock is turned and air dilates it so that all oil may be forced from the tubing; by shutting off the stopcock we prevent the return of any oil into the tube and obviate the danger of soiling the clothing and bedding.



This new rectal tube can be used for ordinary enemata if attached to a fountain bag, and experience with it will quickly demonstrate the great ease with which it can be introduced into the rectum.

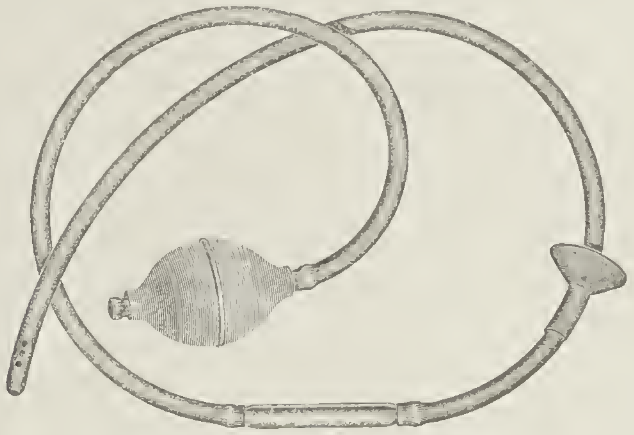
84 Remsen Street.

AN IMPROVED STOMACH TUBE.

RICHARD F. CHASE, M.D.
BOSTON.

The apparatus shown by cut consists of (1) an Ewald stomach tube proper, 30 inches long, marked at 22 inches from its distal end with a white band; (2) an adjustable saliva shield, to prevent saliva from flowing down tube; (3) a glass connector, and (4) a 30-inch connecting tube, to which is attached a strong valveless bulb of 3 ounces or 90 c.c. capacity.

Some of the advantages of the apparatus are as follows: (1) Aspiration or expression of gastric contents; (2) lavage or douching of stomach, and (3) inflation of the stomach may be done without making a connection or disconnection of apparatus and without the use of a stop-cock or shut-off. The efficient bulb enables one to evacuate the stomach contents quickly and thoroughly as is required in poisoning. The apparatus will be found most convenient for self lavage, requiring no assistant. By substituting a "Rosenheim" douching tube the stomach may be douched as recommended by Rosenheim, the late Riegel and others. By using the 30-inch colon tube in place of stomach tube proper, the colon may be inflated for diagnostic and therapeutic purposes and rectal injections and high enemata may be given.



The apparatus has thus far acquired only a local reputation, but since it was seen in use during the recent Boston session, it has gone to many distant states and abroad. I naturally desire that it shall prove a success and for this reason have some suggestions to offer. The first is an important caution: Do not use the tube on a patient until you have spent five minutes in mastering its simple mechanism. Take a basin of water and follow explicitly the directions on box cover.

Inability to evacuate gastric contents may result from (a) plugging of eyes of tube; the injection of one bulb of air will clear eyes; (b) tube being introduced too far or not far enough; withdraw tube a little or introduce further; (c) stomach in some conditions being empty one hour after an Ewald test breakfast, in such case tube should be passed in from 30 to 50 minutes after breakfast. In cases of gastroptosis it is often necessary to introduce tube twenty-four or twenty-eight inches. The white band on tube shows only average distance of introduction in normal cases. Failure to appreciate these points has at times led physicians to condemn this and other apparatus, when there was no fault with the apparatus. Lavage or douching is done with the apparatus by injecting fluid into the stomach with the bulb; five or six bulbfuls (15-18 ounces) is enough to inject at one time. The fluid is allowed to siphon out of stomach in the usual way; suction, induced with the bulb, hastens the return flow.

Inflation of the stomach or colon becomes a very simple process with this apparatus; after cavity is distended, the air is retained by simply pinching tube; it may be allowed to escape at any desired moment. No assistant is required in any of the above procedures.

419 Boylston Street.

HEMATOMA OF THE NEW BORN.*

THERESA BANNAN, M.D.
SYRACUSE, N. Y.

CASE 1.—T. P. was born Aug. 20, 1893, at Hospital of the Good Shepherd; weight 4½ lbs. The mother was a primipara, labor was uneventful.

History—On the second day jaundice occurred. On the same day a swelling appeared over the right parietal bone, followed soon by a similar tumor over the left parietal. Both increased in size and were limited and separated by the parietal suture until the fifth day.

Dr. John Van Duyn photographed the child and aspirated the tumors, finding blood. The jaundice deepened, the stool became green, child grew weaker, and died on the ninth day.

Autopsy.—Postmortem by Dr. Van Duyn showed infant very thin and yellow; the internal organs were normal. The tumors were beneath the pericranium and contained about six ounces of fluid clotted blood (Fig. 1).

CASE 2.—T. K. was born March 17, 1906; weight 9 lbs.

History.—The labor, in a primipara, was characterized by short pains, some delay at the inferior strait, and scanty amniotic fluid. The pelvis was large and roomy, the soft parts distensible. The cord was around the neck and there was some asphyxia neonatorum. The child's body was long and thin, and the head of the average size. On the second day a swelling appeared over the right parietal bone, and on the third day a similar swelling occurred over the occipital. Both increased in size and were separated from each other by a narrow strip at the suture, until the fifth day. The parietal tumor, which was the larger, covered the greater part of the parietal bone and rose 1½ inches or more above the surrounding level. It was ovoid, limited in the median line by the suture. The occipital tumor was circular and it seemed as if the two must coalesce. The baby was slightly yellow for two or three days, but seemed otherwise perfectly well and nursed and cried with vigor. The occipital swelling receded rapidly, the parietal more slowly. When the child was one month old the tumors were as they appear in Figure 2; one was nearly gone, the other was much reduced in size.

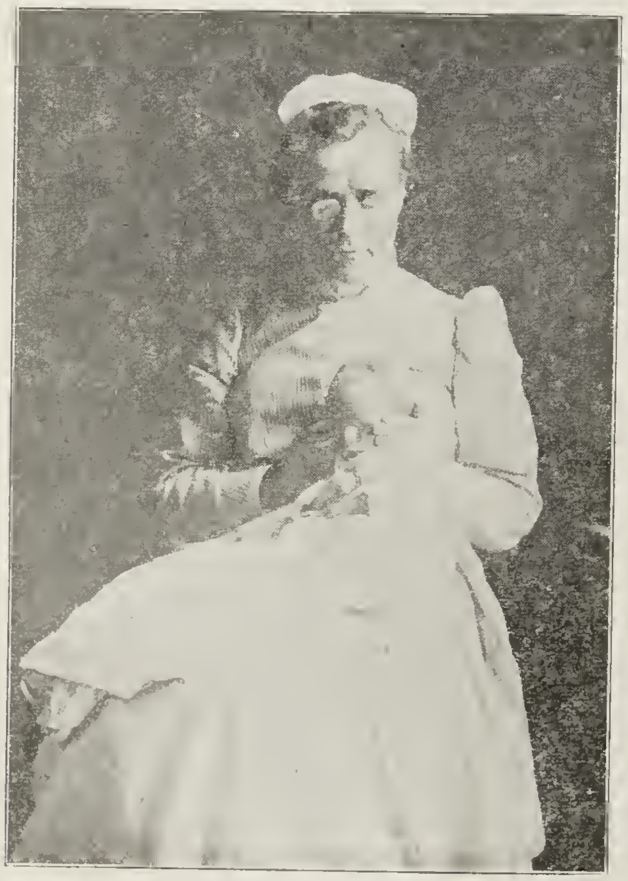


Fig. 1.—Infant in Case 1, 5 days' old.

It was assumed that these tumors contained blood because of their characteristic appearance. They were smooth, tense, fluctuating, sharply outlined, limited by the sutures, unaffected by change of position and with the base as extensive as the greatest circumference, apparently painless, and occurring after birth. They are free from the scalp which they lift almost at right angles to the skull. The circumference of the base of these tumors feels like an edge of bone marking an opening in the skull beneath the tumor mass. At birth, however, if the child's head had been examined and found normal the evidence is contradictory. So, too, when the tumor gradually increasing in size changes its circumference there is a sensation of an opening in the skull, where a few hours before was palpable bone.

Fig. 2.—Infant in Case 2, aged 1 month.

The cause of these tumors might be interesting if known. Theoretically, pressure during labor or by the forceps might be the cause. In practice, however, severe labors and instrumental deliveries are not as a rule followed by hematomata. No treatment except hygienic seems indicated.

503 Warren Street.

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* Read before the Syracuse Academy of Medicine, April 17, 1906.

A CASE OF ISOLATED PALSY OF THE RIGHT EXTERNAL RECTUS.

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Instructor in Clinical Neurology in Northwestern University Medical School.
CHICAGO.

Patient.—Mrs. J. R., a house-wife, aged 25.

Family History.—Her father died at about fifty years of age of some acute illness; her mother is living and well, and is about 56 years old; two brothers and one sister are living and well. There is no hereditary taint.

Previous History.—The patient had cervical adenitis when a child, the glands broke down and opened spontaneously, and healed with considerable scarring, but quite promptly. She has had what she describes as "sick headaches" all her life. The pain is of sudden onset, is neuralgic in character, located over the left temple, left side of forehead and extending through the left eye and ear; the teeth and face are not involved. The attacks come on irregularly every two or three weeks and last from one to three days. During one of these seizures the patient is completely prostrated, is weak, dizzy and unable to hold up her head. Nausea always accompanies an attack and vomiting frequently occurs. For two or three days after such an attack she is weak, tired and drowsy. From this time until the onset of another "spell" she is entirely free from pain and enjoys the best of health. These attacks are, of course, typical of migraine, although there is none to be found in any other of her family or relatives.

Recently she had an attack of grip, from which she believes she has recovered, although she feels a good deal "run down."

Her menstrual history is negative; the periods began at fourteen years, are of the twenty-eight-day type, moderate in amount and never very painful. She has one child nine months old, born spontaneously at term and at present quite hearty and well. There have been no abortions or premature labors. No venereal infection is acknowledged. Her bowels were always regular until her pregnancy, but have been slightly constipated since.

Present Illness.—The onset occurred while she was still feeling very poorly after the rather severe attack of influenza from which she was just recovering, and while suffering from one of her periodic headaches. The patient was walking along the street when she became aware that her vision was not so acute as usual; then she began to have difficulty in passing the people whom she met and several times collided with them and with lamp-posts and buildings. She then noticed that she was "seeing double," and came to my office greatly agitated, believing she was about to become blind. There was no other subjective complaint, except a dull frontal headache, which she believed to be of the type ordinarily troubling her; she did not associate this pain with the eye trouble.

Examination.—This showed a robust, well-nourished young woman; the skin was cool and moist; pulse, 90, soft, full and regular; temperature 98.6°, respiration, 22; she appeared to be much wrought up mentally. Speech was normal, but showed evident excitement and concern.

Subjective Symptoms: There was dull pain over both eyes, being a little worse on the left side, as is usual in her migrainous attacks. Vision was not acute, and she found that she could see very much better with the left eye alone than with the right alone, or with both eyes; also that with both eyes open, she could see much better by turning the head far to the right.

Objective Sensation: This was undisturbed (tactile, pain, temperature, stereognosis, muscle-sense.)

Gait: The gait was a little uncertain with both eyes open, and she said that she was afraid all the time of bumping against something. There was no staggering, no rigidity, spasticity or ataxia.

Reflexes: The reflexes were all normal and equal; there was no Babinski or Gordon reflex and no ankle-clonus.

Tremor: A tremor of the protruded fingers was apparent, rapid and coarse in character. (This was never present in subsequent examinations and was due to her excitement). The tongue, lips and eyelids were negative as to tremor.

Coördination: Coördination (as in touching tip of nose with extended index finger; approximating tips of fingers, etc.) was normal. She was unable to execute any very fine movements, such as threading a needle, cutting accurately with the shears, etc. The sphincters were not disturbed.

Special senses: The hearing was normally acute; taste and smell were unaffected.

Eyes: The left eye was normal in vision, field and movements. There was no ptosis and both lids followed their globes freely and normally.

The right eye showed a convergent squint entirely independent of the left eye. She could turn the right eye normally to the nasal side and was then able to abduct it through only about 30°; movements up and down were free and normal in extent. Vision was 20/60 and very easily fatigued.

The two pupils were of equal size and reacted normally to light and accommodation. There was no nystagmus; both fundi were normal. The distribution of the fifth nerve was not involved, there was no facial asymmetry.

Mentality: The mental state was normal; memory, consciousness and sleep were natural and undisturbed; there were no hallucinations or delusions.

Diagnosis.—The clinical diagnosis is, therefore, an isolated paralysis, or strictly, a paresis, of the right sixth cranial nerve, the abducens, there being no involvement of either the third or fourth nerves.

The findings already detailed will serve to locate the causative lesion. To sum up, there was a paralysis of the right external rectus muscle alone; no involvement of the other recti, the superior oblique or of the palpebral muscles, thus ruling out a lesion encroaching on the third or fourth nerve. The fundi and discs of both eyes were negative. If it were a central (cerebral) lesion, the distribution in the muscles and sensory terminals would be much more extensive. It was not located in the nucleus of the nerve affected, for in such a case the movement of the other eye to the nasal side is impaired. It was not located at the most common site of such lesions, namely at the sphenoidal fissure, for if that were the case, it would almost certainly have involved the inferior and possibly the superior division of the third, or even the fourth and the frontal and nasal branches of the fifth, all of which are in such intimate relation in this narrow passage. The lesion was, then, distal to the sphenoidal fissure and involved the sixth nerve alone—an isolated peripheral neuritis.

The pathologic process was probably a simple neuritis and peri-neuritis of rheumatic or influenzal origin, following the attack of general systemic influenza from which the patient suffered two weeks before the onset of the present trouble. Hemorrhage at this point is extremely rare, would have been much more gradual in its manifestation and, in all probability, would have involved the other related structures; there is no history of trauma and no history or evidence of arterial disease. A neoplasm would have caused very gradually increasing symptoms, among which pain would have been preeminent; the onset would have extended over months or years, and ultimately the related structures would have become involved. There is no evidence of present or past syphilitic infection; she is a total abstainer from alcoholics and temperate in all her habits.

Course of Illness.—The illness extended over nine weeks, from the onset until the recovery of normal visual and motor power in the affected eye. The improvement was steady and the recovery complete and there has been no hint of recurrence after eleven months. The general health of the patient is excellent, with the exception of an occasional paroxysm of the old pain in the head.

Treatment.—Fifteen-grain doses of potassium iodid every six hours for four days had no appreciable effect. To this was then added one-thirtieth grain of strychnia four times a day, and after ten days, when the condition was undoubtedly no longer progressive, a five to eight milliampere galvanic current was applied over the temporal and ocular regions. This was used on alternate days for fifteen minutes at a time throughout the remainder of the course of the disease. The patient experienced almost immediate benefit from this current and after the third application there was an appreciable increase in the power of abduction in the affected eye. During this same period, the fluid extract of cannabis indica was given in capsule, beginning with three minims and gradually increasing the dosage up to ten minims three times a day, for the migraine. The headaches were much improved and at the end of the treatment of the ocular palsy, the patient had been free from these prostrating attacks for six weeks. They have since recurred, in less degree, but are always promptly relieved by the cannabis indica. The patient was under my care for nine weeks, at the end of which time all movements of both eyes were normal and vision perfect, there being no pain or diplopia.

Remarks.—From a careful study of this case as here presented, I believe the diagnosis of paresis of the right external rectus oculi due to an isolated influenzal neuritis of the right abducens, peripheral to the sphenoidal fissure, is clearly justified, and is so infrequent in clinical experience and the literature as to merit such extended notice.

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SATURDAY, JULY 28, 1906.

OCCURRENCE AND SIGNIFICANCE OF EXTRADURAL BLOOD CLOT IN BURNED BODIES.

Burned bodies often present serious problems the solution of which is beset with great difficulties. In the case of a burned human body the medicolegal examiner may be called on to determine whether death was due to burns or whether the burns occurred after death and, in the latter instance, whether death resulted from natural or unnatural causes. It is not proposed at this time to discuss these questions in their larger aspects, but merely to call attention to the occasional occurrence in burned bodies of extradural blood clot, an occurrence that has attracted notice only of recent years. So long ago as 1860 Hölder first described extradural extravasations of blood in two burned bodies and ascribed them to postmortem processes, but his observations seem to have escaped notice completely. In 1882 Zillner[1] observed a mass of clotted blood over each convexity in a man whose body had been largely consumed by fire (Ring Theater disaster in Vienna in 1881); there were no recognizable traumatic fractures of the skull, the top of the cranium being bared of soft parts. Zillner cited this case as an example of the possibility of recognizing fatal lesions in extensively burned bodies.

More recent observations by Littlejohn,[2] Haberda,[3] Strassmann,[4] Harbitz[5] and others indicate, however, that accumulations of blood outside the dura may occur in burned bodies without violence and as part of the results of the action of heat on the head. In one of Strassmann's cases the soft coverings of the frontal regions were destroyed completely so that the bones were bared; there were no fractures of the skull, but inside the burned area was found, on the dura, a hard, deep red mass of blood surrounded by melted fat. The brain was peculiarly hard. In Littlejohn's case the left side of the head and face were burned extensively and the cranium exposed over an area about two inches in diameter; this part of the bone was dry, and inside was a large clump of brownish blood surrounded by lighter brownish, fatty masses. Both he and Strassmann, as well as Haberda, conclude that the extradural accumulation of blood in the cases seen by them was the result of postmortem changes due to the localized action of heat driving the blood and fat out of the exposed part of the cranium. In Harbitz's case the occurrence of all kinds of violence before, as well as during and after, the burning could be excluded, and he does not hesitate to ascribe the so-called hematoma to the action of the heat. Here also the blood was mixed with fat and the blood had accumulated under the parts most exposed to heat. It may be stated that spontaneous extradural hemorrhages are extremely rare, if such occur at all. Harbitz succeeded in showing experimentally that the application of heat for some time to circumscribed parts of the cranium of dead bodies resulted in an accumulation of blood and fat on the dura, but not nearly to such an extent as in the cases mentioned in the foregoing. He, therefore, doubts whether these accumulations are altogether of postmortem origin and suggests that they may be vital or agonal, the result of a beginning inflammatory hyperemia with hemorrhagic exudation mixed with blood and fat driven out of the bone by the heat. At all events, he holds that the accumulations result from the action of the flames.

These observations are of great practical significance. The literature is not without instances of the kind here described that have been interpreted as traumatic extradural hemorrhages. Every case of extradural accumulations of blood in a burned body must be considered by itself from all points of view, but it is essential that the possibility of such accumulation being the result purely of the action of heat be not left out of serious consideration.

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[1] Vierteljahrschr. f. gerichtl. Med., 1882, vol. xxxvi, p. 70.
[2] Edinburgh Med. Jour., 1899, v, p. 473.
[3] Friedreich's Blätter f. gerichtl. Med., 1900.
[4] Quoted by Haberda.
[5] Norsk Mag. f. Laegevidensk., 1906, lxvii, 521.

COMPARATIVE FREQUENCY OF DISEASES HERE AND ABROAD.

A few years ago it was the custom to think that a certain number of diseases which are rather common in Europe occurred much more rarely in this country. Such views even crept into the text-books and became the standard teaching to such an extent that most of us have come to accept them as supposedly founded on careful observation. With the progress of time and more critical sifting of medical literature and statistics, most of these nosologic differences supposed to be in favor of this country have proved to be unfounded. For instance, there was a very general impression in this country that gout was extremely rare in America as compared to its prevalence in England. When gout was suspected here great care was exercised in trying to trace it to hereditary origin in some English ancestor, and in many minds the final diagnosis was often considered dubious unless this element could be found in the history. The statistics of Johns Hopkins Hospital, however, kept carefully for fifteen years, show that gout is not nearly so rare in the United States as has been thought, that as a matter of fact for every four cases of gout admitted to St. Bartholomew's Hospital in London (due allowance being made for the comparative number of patients in both hospitals) three were admitted to Johns Hopkins. There is only 25 per cent. less gout in Baltimore, then, than in London, and there is no special reason why Baltimore should have more cases than any other American city. Gout, in America as well as in England, is not inherited, but is the result of the life led, as a rule.

Some fifteen years ago nearly the same state of affairs existed with regard to diabetes mellitus. Pathologic glycosuria was considered to be much more rare here than in Europe. Careful investigation, however, shows that the number of sufferers from diabetes in the United States nearly equals that of other countries, and there seems to be little doubt that we have no reason for congratulating ourselves on the greater infrequency of this fatal affection among our population. It has been pointed out that especially the terminal stages of diabetes have been masquerading as other diseases and that this has reduced the supposed mortality from diabetes. Not a few diabetics develop a terminal tuberculosis because of the readiness with which tubercle bacilli, in imitation of their affinity for sugary solutions in the laboratory, grow luxuriantly in blood rich in sugar. Practically all sufferers from diabetes present some albumin and some casts in their urine besides the sugar, and as a consequence it is almost inevitable that if the sugar should be missed for any reason the patients will find their way into the mortality records as sufferers from Bright's disease.

A corresponding improvement in methods of observation seems to be about to eradicate another false impression with regard to the presumed American infrequency of the serious nervous disease—multiple sclerosis. While Strümpel declared not long since that multiple sclerosis is one of the commonest organic diseases of the nervous system and that among the country population of Germany it is decidedly more frequent than tabes, in this country it has been considered to be a very rare disease and only a few cases of it have been reported. In the last few years, however, this opinion has been changed and there seems to be no doubt now that a number of cases of multiple sclerosis have been missed in diagnosis in this country because too much emphasis has been laid on the necessity of certain cardinal symptoms being present if the diagnosis of this affection is to be definitely made. Dr. Joseph Collins, New York, has recently[1] pointed out that it is unlikely that our population is spared this affection to any such degree as our statistics would seem to indicate. Dr. E. W. Taylor, of Boston, after reviewing the American literature on the subject, takes the same stand.[2] He admits that there may be some fewer cases in this country than abroad, but the affection is by no means so rare as has been said.

If multiple sclerosis is really as frequent here as in Europe, then it is important that the medical practitioners of this country should learn to recognize it, not only in its typical forms, but also in such less well-developed types as still seem to authorities in nervous diseases to justify the diagnosis. While originally the three symptoms of scanning speech, nystagmus, and the so-called intention tremor, were considered necessary for the diagnosis of multiple sclerosis, it is now recognized that all of them may be absent throughout the entire course of the disease, and, as Dr. Taylor says: "If the diagnosis is not to be made without the presence of one or more of them, we shall certainly continue to overlook many cases in the future, as we have in the past."

CYSTIC KIDNEY AND LIVER.

The explanations advanced to account for cystic kidney, by which is meant total polycystic transformation nearly always associated with great increase in size, may be divided into three sets, and we may speak of the retention theory, the cystadenoma theory, and the malformation theory of cystic kidney.

Virchow (1847) was the father of the retention theory, which assumes that the cysts arise as the result of obstruction to the outflow of urine from the kidney. Many varieties of possible forms of obstruction have been enumerated. Virchow first suggested uric acid deposits, but a little later he adopted the view that the obstruction was the result of a papillitis or pyelonephritis. At the present time the retention theory does not seem to find much favor with those that study the subject closely, and for various reasons, but more particularly because the structure of the cystic kidney is not simply that of a mass of retention cysts and because efforts to produce the condition experimentally by cauterization, etc., of the medullary papillæ in animals, have failed.

The cystadenoma theory dates from the year 1876, when Mihalkovicz suggested that "cystic degeneration of the kidney is analogous to cystic disease of the testicle, mammary gland and ovary." This theory has received strong support of recent years, especially because the anatomic conditions in cystic kidney have been found by competent investigators to indicate in some cases active epithelial proliferative changes with cyst formations. According to the advocates of this theory, it also explains equally well cystic kidney in the fetus or newborn and the adult, the differences in the two being mainly this, that in the adult the cysts have grown larger and secondary inflammatory changes have developed.

Numerous authors, whatever their view as to the mode of origin of cystic kidney, appear to favor the notion that cystic kidney in the adult in reality is congenital and may persist in a more or less latent state for many, many years. And there are certain considerations that speak in favor of this view, especially the close general resemblance between the early and the late cystic kidney, which in both cases may be associated with cystic conditions in other organs.

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[1] The Journal A. M. A., June 2, 1906, p. 1721.

[2] Journal of Nervous and Mental Diseases, June, 1906.

Congenital cystic kidney is so frequently associated with malformations and with cystic conditions in the liver that the idea has occurred that the true explanation is to be found in developmental defect or error. Cystic liver has been found in from 19 (Luzatto) to 27 per cent. (Lejars) of cases of cystic kidney. Reque[1] recently reported the occurrence of cystic kidneys and liver in a middle-aged woman. Of more evident malformations (in the ordinary sense) described in cases of cystic kidney may be mentioned hydrocephalus, polydactylism, hare lip, hypospadias, atresia of the vagina, defects in the circulatory system, etc.—certainly an imposing list. Many suggestions have been made as to the probable nature of the developmental anomaly that is to account for the cyst formation; these, notwithstanding their interest, may be dismissed, however, with the statement that in no case are they based on anything like a demonstration of an actual observed anomaly. Recent studies by Bunting[2] and others indicate that the essence of the malformation, if so it can be called, may consist in an abnormal power of growth of duct epithelium, involving not only that of the renal ducts, but in some cases also that of the liver, even of the pancreas, and possibly also of the intestinal tract.

Another noteworthy feature of cystic kidney (and liver) is the tendency to occur in families. Bunting recently described congenital cystic kidneys and liver in two children of the same mother; in one of these the pancreas also was cystic to some extent. A number of cases are now recorded in which the disease has occurred in two generations of the same family, but the occurrence in two or more (four, even five) children of the same parents seems to be perhaps more common. There is consequently much to indicate that cystic kidneys and liver are more closely related to malformations than to tumors, in the narrow and accepted usage of the word, although it must be acknowledged that there is room for considerable discussion in regard to this point.

The feature of particular interest to physicians in connection with cystic disease of the kidney and other organs (and the reason for this discussion) is the marked hereditary and family tendency shown by the disease. Knowledge of this tendency may prove of value especially in diagnosis of cystic kidney in the adult in which the difficulty as well as the importance of correct diagnosis make every additional fact welcome. If greater attention is given this phase of cystic kidney and liver, much new, interesting and valuable material will accumulate that surely will throw further light on an obscure disease.

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[1] Medical News, July 29, 1905.

[2] Jour. Exp. Med., 1906, viii, 271.

MIND AND MATTER.

There are two diametrically opposed views as to the relations between mind and matter, the one of which maintains that the former is merely a manifestation of the latter, depending on and terminating with it, and that aberrations of the one are to be sought in abnormalities in the other; while the other view contends that, although mind can not generate energy or force, it can cause matter to exert force on matter and thus can exercise guidance and control and prepare any sum of activity by arranging the position of existing material so as to produce results concordant with an idea or scheme or intention. One school holds that life has arisen from inorganic matter without antecedent life; the other, that life is neither matter nor energy, but something different and belonging to a different category. In the course of an address dealing with this subject Dr. T. Claye Shaw[1] proffers the suggestion that mind, consciousness, emotion, will, etc., may interact in a way akin to the x-rays or the unseen waves of wireless telegraphy. In his opinion, mind is not identical with life. The latter may exist in the absence of a nervous system, without which, however, there can be no manifestation of the former. So far as is known, a normal mind can show itself only through the body, and its manifestations can be made through no other material structure than the brain and the nervous system. The material of the brain and the nervous system necessarily implies mind, and it acts only by showing what are called mental processes. A nervous system is necessary to postulate mental phenomena. Mind is thus a necessary accompaniment of living nervous matter. The two arise together and are inseparable. Mind is not secondary to, but an essential part of, material, and the former can not exist without the latter, and when the material dies the mind must cease also. A disordered brain is practically a partially dead brain and it, therefore, can not show any true mind. The phenomena of diseases of the brain are manifestations of what is left of the sound tissue. The ravings and incoherences of the lunatic are not disease manifestations, but the unbalanced remnants of runaway tissue, true in themselves, but dangerous to the individual and to society, because the harness is broken and the guiding power inert.

THE PATHOLOGIC SIGNIFICANCE OF VASCULAR NEVI.

Vascular nevi of the port-wine type are not usually considered as of pathologic importance, however annoying their existence may be from an esthetic point of view. They are not, excepting in certain very marked cases, liable to malignant degeneration, and surgical measures are seldom sought except for cosmetic purposes. Their relation to certain nerve distributions, however, has been long noticed, though not always prominent, and Baerensprung's idea of their connection with conditions of the Gasserian ganglion when they are situated in the face has not apparently received general acceptance. Dr. Cushing's communication last week,[2] however, not only supports this theory—so far as the evidence he adduces goes—but also suggests a rather important pathologic significance of these anomalies. Three cases, of course, are not absolutely convincing, the less so when in only one of them could a thorough examination by autopsy be made, but they are enough so to incite interest in the subject and in the utilization of any further opportunities for investigation. If the occurrence of a facial nevus or angioma is a possible evidence of a similar condition in such a dangerous locality as the dura, such conditions would be looked on much more seriously than has hitherto been the case, and may afford important surgical indications in some cases of infantile convulsions and hemiplegia. Of course, it is only in case of such complication that such conditions are likely to be pathologically important.

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[1] British Medical Journal, June 9, 1906, p. 1335.

[2] The Journal A. M. A., July 21, p. 178.

Medical News

ALABAMA.

Fined for Not Reporting Births.—Dr. Thaddeus L. Robinson, Birmingham, pleaded guilty to the charge of having failed to turn in an obstetrical report for the month of May, and was fined $1.00.

Personal.—Dr. E. Marvin Mason, Marion, has been appointed a member of the staff of Johns Hopkins University, Baltimore.——Dr. William M. Price, Florence, was stricken with paralysis, but is improving.——Dr. William D. Fonville, Ensley, has been appointed assistant surgeon Alabama National Guard, and assigned to duty with the Third Infantry, vice Dr. Frank P. Pettey, resigned.——Dr. William M. Faulk has been elected mayor of Tuscaloosa.

ARKANSAS.

Hot Springs Drummers Dropped.—On July 13 the Secretary of the Interior, on recommendation of the local medical board, dropped from the register of physicians authorized to prescribe the waters of Hot Springs, the names of Drs. J. A. Flanders and M. T. Williams, charged with drumming for business, in violation of the regulations.

Site for New College.—Property on Lincoln avenue, Little Rock, now occupied by the Maddox Seminary for Young Ladies, has been transferred, for a consideration of $28,360, to a stock company for the purpose of establishing a medical college and hospital, to be known as the College of Physicians and Surgeons. The organization of this institution was noted in The Journal of July 21.

Personal.—Dr. Zaphney Orto has been elected president and Dr. William Crutcher secretary of the Pine Bluff Board of Health.——Dr. Harry C. King, Fort Smith, has been appointed local surgeon for the Midland Valley Railroad, vice Dr. Buchanan Hatchett, resigned.——Dr. W. P. Illing, Little Rock, physician of Pulaski County, has resigned in order to give his entire time and attention to the new college, hospital and training school for nurses.

CALIFORNIA.

Napa Exacts License.—The city council of Napa, on July 7, passed a license ordinance which provides that professional men, attorneys, physicians, dentists, architects, etc., hitherto exempt from taxation, shall hereafter pay a tax of $1.00 per month.

Change in Medical Course.—Dr. Arnold A. D'Ancona, dean of the University of California Medical Department, San Francisco, has arranged for the transfer from San Francisco to Berkeley of the medical instruction for the first two years. The departments of pathology, anatomy and physiology are those chiefly affected by this change.

Personal.—Dr. Reuben M. Bonar, Santa Rosa, has been commissioned assistant surgeon, N. G., California, with the rank of first lieutenant, and assigned to the Fifth Infantry.——Dr. Ida B. Parker has resigned as health officer of Orange.——Dr. Thomas B. W. Leland, San Francisco, was held up near his house, July 10, and robbed of $445 in currency and some valuable jewelry.——Dr. William Simpson has succeeded Dr. Frank H. Paterson on the San José Board of Health.

Graduating Exercises.—On June 14 a class of 28 was graduated from the College of Medicine of the University of Southern California, Los Angeles. The Right-Rev. Thomas J. Conaty delivered the doctorate address. Dr. Walter Lindley, dean of the college, presented the graduates to the president, Rev. George Findley Boyard, D.D., who conferred the degrees. In the evening the annual banquet was given by the faculty to the graduating class, over which Dr. George L. Cole presided as toastmaster.

Health Officers Organized.—On June 16 the San Joaquin Valley Sanitary Association was organized. The temporary officers elected were Dr. Newell K. Foster, Sacramento, secretary of the State Board of Health, president, and Dr. Oscar W. Steinwand, health officer of Selma, secretary. The following permanent officers were elected: President, Dr. William S. Fowler, Bakersfield; vice-president, Dr. Mary R. Butin, Madera; secretary, Dr. Oscar W. Steinwand, Selma; and treasurer, Dr. George L. Long, Fresno.

Hospital Notes.—The Long Beach Hospital is practically completed and ready to receive patients. The building was erected at a cost of more than $60,000.——The Columbia Hospital Association, San José, was incorporated June 29, with a capital stock of $200,000.——A new building is to be erected by the Seaside Hospital Company at Ocean Park, to accommodate 50 patients.——Sunset Hospital is to be erected on Angeleno Heights, Los Angeles. The building will be three stories in height, of fire-proof construction, and will cost about $200,000.

COLORADO.

Imprisoned and Fined.—George Elliott, Denver, who obtained, by fraud, license to practice medicine in Colorado, and who, it is reported, had engaged in questionable practices prior to that time in Chicago and Kansas City, whose history was given in The Journal of February 3, under the caption, "Medical Forgeries," has been sentenced to imprisonment for ten years, and in addition to pay a fine of $10,000 for using the mails to send medicines which are prohibited in regular practice.

Personal—Dr. P. Oliver Hanford, Colorado Springs, has been appointed representative of the Colorado State Board of Medical Examiners for El Paso County.——Dr. Hanford, City Physician of Colorado Springs, has also been selected to represent Colorado at the International Congress on Tuberculosis in New York, November 14.——Dr. S. Edwin Solly, Colorado Springs, who has been seriously ill, is reported to be much improved.——Dr. Tracey Love, Colorado Springs, was recently operated on for appendicitis at Englewood Hospital, Jersey Heights, N. J., and is reported to have suffered a relapse.

CONNECTICUT.

Hospital Fire.—The four-story building of the Amusement Hall of the State Hospital for the Insane, Middletown, was destroyed by fire June 21, the loss being estimated at $35,000.

Personal.—Dr. Thomas L. Mulcahy, police surgeon of Hartford, has gone to New York to take up the practice of the late Dr. William Mahon.——Dr. Robert Beck has been appointed medical examiner for the town of East Haven.

New Sanitarium.—The Elm Street Sanitarium of New Haven was incorporated July 8, with a capital stock of $100,000. Among the incorporators are Drs. Clarence F. Skinner, Henry L. Swain, Oliver T. Osborne and Norton R. Hotchkiss.

Communicable Diseases.—During June, 5 cases of smallpox were reported from 2 towns, 486 cases of measles from 55 towns, 99 cases of scarlet fever from 25 towns, 89 cases of diphtheria from 20 towns, 105 cases of whooping cough from 24 towns, 28 cases of typhoid fever from 16 towns, and 46 cases of consumption from 11 towns.

June Deaths.—During June there were 1,238 deaths reported in the state, 166 less than in May, 51 less than in June, 1905, but 157 more than the average number of deaths during June for the five years preceding. The death rate for the state was equivalent to an annual mortality of 15.1 per 1,000. Infectious diseases caused 186 deaths, or 15 per cent. of the total mortality; diseases of the nervous system caused 135 deaths; consumption, 113; heart disease, 107; accidents and violence, 94; pneumonia, 93; and diarrheal diseases, 88; measles, 22; diphtheria, 14; whooping cough, 11; cerebrospinal fever, 7; influenza and typhoid fever, 5 each; and scarlet fever and erysipelas, 3 each. No deaths from smallpox were reported.

DISTRICT OF COLUMBIA.

Typhoid Fever Record.—Typhoid fever shows an increase in the number of cases treated during the week and in the number of cases under treatment when compared with the previous week and with the corresponding week of 1905.

Assembly Hall for Hospital.—At the recent session of Congress, $75,000 was appropriated for the construction of an assembly hall at the Government Hospital for the Insane. The reservoir to be used as a receiving tank at the hospital is now nearly completed. It will have a capacity of 125,000 gallons. The population of the institution at present is 2,544, comprising 1,884 men and 660 women.

Crusade Against Typhoid.—The Health Department of Washington and the officers of the U. S. P. H. and M.-H. Service have joined in the crusade against typhoid fever. In addition to making analyses of all waters from public wells in the district, the chemists of the U. S. P. H. and M.-H. Service will aid the local health authorities in an exhaustive scrutiny of the existing cases of fever in an effort to determine whether the disease may be considered due to only given causes.

Mortality of the Week.—The mortality of Washington for the week ending July 14, was 141, a decrease of 42 from that of the previous week. Of the decedents, 75 were white and 66 colored, which is equivalent to an annual death rate per 1,000 among whites of 16.7, and among negroes of 35.6. The deaths among infants under one year of age was very high, 43 deaths in this period being recorded. Diarrheal diseases caused 31 deaths; consumption, 13 deaths; heart diseases, 14 deaths; diseases of the kidneys, 10 deaths; and typhoid fever and pneumonia, each 5 deaths.

Personal.—Dr. M. P. Sweeney, pathologist at the Washington Asylum, has been appointed interne at the Washington Asylum Hospital, vice Dr. Pargon, resigned.——Dr. Percy G. Smith has been named by the District Commissioners as superintendent for the Home for the Aged and Infirm, to be opened at the District farm at Shepherd's Landing.——Dr. James R. Wilder, Washington, has sailed for Europe.——Dr. George M. Kober has been nominated by the president to succeed Dr. H. Wells Woodward as a member of the District Board of Charities.——Dr. William F. Hemler has been appointed physician of the District Charity Bureau.——Dr. Edwin R. Lewis is reported to be seriously ill in Indianapolis.

FLORIDA.

New Sanitarium.—Dr. Robert L. Bryans, Pensacola, has recently purchased a large building overlooking the bay, which is due to be converted into a private sanitarium.

Personal.—Dr. Frank G. Thomason and family, Kissimmee, have gone to their new home at Houston, Texas.——Dr. George P. Henry has been reëlected mayor of De Funiak Springs.

Acquitted.—Dr. Hiram J. Hampton, Tampa, has been acquitted of the charge of manslaughter in causing the death of Mrs. J. W. Evans, Thomasville, Ga., by a lack of care in a surgical operation. This is a second trial, the first having resulted in conviction and a sentence of five years' imprisonment in the penitentiary.

State Association Meeting.—The Florida Medical Association will hold its annual session at Tampa, beginning the third Wednesday in April, 1907. At the conclusion of the session it is proposed to entertain the members and their families by an excursion to Cuban points of interest. The route will be from Tampa to Key West, thence to Havana, where time will be allowed for excursions to various points on the island, and on the return trip from Key West, stops will be made along the line of the East Coast Railway.

GEORGIA.

Typhoid Epidemic.—It is reported that there are fifty cases of typhoid fever in Greens Cut, a place of about 200 population, also that seven deaths have occurred in the last week.

Sanitarium for Waycross.—Drs. F. C. and G. P. Folks, Waycross, have decided to build a sanitarium, of which there is urgent need in that section. The building as planned will cost about $20,000.

Pasteur Institute.—The State Board of Health has passed a resolution for the establishment of a Pasteur Institute in Augusta. Money for establishing the institute will be taken from the funds appropriated by the legislature for this purpose.

College Prospects.—The dean of the faculty of the Medical College of Georgia, Augusta, announces that the college term has been lengthened to seven months. He also announces that one or two more professors will be added to the faculty of the college.

Personal.—Dr. Robert B. Barron, Macon, who underwent operation for appendicitis at Macon Hospital, is convalescent. ——Captain William C. Lyle, assistant surgeon Third Infantry, N. G., Georgia, has been commissioned major and surgeon of the same regiment.

Graduates Must Be Examined.—The House committee tabled the bill of Mr. Moore of Cherokee County, which allows graduates of incorporated medical colleges to practice without having passed an examination before the State Medical Board. The president of the board objected to the measure on the ground that it would lower the standard of the colleges.

ILLINOIS.

Diphtheria in Moline.—Five cases of diphtheria in one family are reported in Moline. The father of the family told the Health Commissioner that he was depending for treatment on divine healing and witch hazel.

Society Elects.—At the twenty-sixth annual meeting of the Crawford County Medical Society, held recently in Robinson, the following officers were elected: Dr. L. Roscoe Illye, Heathsville, president; Dr. James M. Mitchell, Oblong, vice-president; Dr. Herbert N. Rafferty, Robinson, secretary, (re-elected); Dr. Frank L. Dunham, Robinson, treasurer; and Drs. Charles H. Vorheis, Hustonville, Arthur G. Meserve, Robinson, and A. D. Midgett, Flat Rock, censors.

Deaths in Chicago.—During the week ended July 21, 517 deaths were reported, 19 more than for the preceding week, but 110 less than for the corresponding week in 1905. This death rate was equivalent to a mortality of 13.15 per 1,000. The more important death causes were acute intestinal diseases, 98; consumption, 56; violence, including suicide, 51; nephritis, 36; heart diseases, 33; and pneumonia, 31. Of the decedents, 148 were infants under one year, and 47 were between one and five years of age.

Newspaper Write-ups.—At a meeting of the Montgomery County Medical Society, June 14, a resolution was adopted censuring physicians who allowed reports of their cases to appear in the daily press. It was decided to keep a scrap book showing violations of this rule, the clippings to be read by the secretary of the society at each regular meeting, when the physicians in question would be allowed to make explanation.

Personal.—Dr. O. C. Willhite, the new superintendent of the Cook County Institutions, Dunning, has arrived and assumed charge.——Dr. Cyrus H. Cutter has been appointed official physician at the postoffice at Aurora.——Dr. Ira Frank, Chicago, was seriously injured July 21, in a collision between the motor car in which he was riding and an express wagon. He is now reported to be improving.——Dr. James L. Greene, the new superintendent of the Illinois Eastern Hospital for the Insane, arrived at Kankakee, July 21, and assumed charge July 23.——Dr. John MacKellar, formerly of Chicago, was seriously injured in an automobile accident at Manhattan, Nev. ——Dr. and Mrs. Fenton B. Turck and Dr. Hugh T. Patrick, Chicago, have returned from Europe.

INDIANA.

Typhoid in New Albany.—Typhoid is reported to be increasing in New Albany. In the cases reported patients have used water from ordinary wells.

Hailstorm Damages Hospital.—A severe hailstorm, July 13, caused damage to the extent of $25,000 to the Central Hospital for the Insane, Indianapolis.

Hospital Additions.—A permit has been issued for the erection of a four-story addition to the Deaconess' Hospital at Ohio street and Senate avenue, Indianapolis, to cost $22,000. This will provide twenty additional bedrooms and eight additional wards for the institution.

To Protect Water Supply.—The chief chemist of the State Board of Health has drawn a bill whereby the board is to have general oversight and care of all waters in the state, and is given authority to consult and advise with authorities of cities and towns or corporations, introducing or intending to introduce systems of water supply, drainage, or sewerage.

Personal.—Dr. T. Victor Keene, state bacteriologist, was operated on for appendicitis at the Eastern Hospital, Indianapolis, July 13.——Dr. William J. Purkhiser has been appointed Health Officer at Salem.——Dr. John M. Nickels, Sellersburg, was operated on for cancer of the liver and gall bladder, July 7.——Dr. Marcus H. Thomas has been appointed local surgeon at Huntington for the Fort Wayne Valley Traction Company.——Dr. Otis W. McQuown has been appointed secretary of the Marion Board of Health, to succeed Dr. Albert H. Combs, deceased.

June Diseases and Deaths.—The order of disease prevalence in June was as follows: Rheumatism, diarrhea, tonsillitis, bronchitis, intermittent and remittent fever, cholera morbus, typhoid fever, scarlet fever, whooping cough, cholera infantum, dysentery, measles, inflammation of the bowels, pneumonia, pleuritis, diphtheria, influenza, erysipelas, smallpox, typhomalarial fever, cerebrospinal meningitis and puerperal fever. Smallpox was reported from eight counties, 69 cases in all, with no deaths; typhoid fever from 137 counties, with 129 deaths. The deaths from tuberculosis were 315; pneumonia caused 111 deaths; violence 104 deaths, of which 35 were due to suicide and 5 to homicide. The total number of deaths during the month was 2,322, equivalent to an annual death rate of 10.6 per 1,000.

IOWA.

Diphtheria.—It is reported that there is an epidemic of diphtheria near Story City. Two deaths have occurred and twelve patients are under quarantine.

Gift to Hospital.—Peter Peterson, Sr., of Boone Township, Pottawattamie County, has made a contribution of $1,000 to the Jennie Edmonson Hospital, Council Bluffs.

Honors to President of State Board.—Dr. Robert E. Conniff, Sioux City, president of the State Board of Health, was the guest of honor at a dinner given to thirty-five local physicians at Dubuque, July 12, by Dr. D. R. Guthrie. On this occasion Dr. Conniff gave an address on the prevention of tuberculosis.

Health Officers Meet.—At the Iowa Health Officers' Association annual meeting, July 10, Dr. Cassius T. Lesa, Mount Ayr, was elected president; Dr. E. Warren Doolittle, Garden Grove, vice-president; and Dr. Nathan W. Getz, Marshalltown, secretary and treasurer. The next meeting will be held in Marshalltown.

State Board Affairs.—The State Board of Health elected at its caucus at Waterloo, July 14, Dr. Fred W. Powers, Waterloo, president, succeeding Dr. Robert E. Conniff, Sioux City. ——Dr. Joseph H. Sams, Clarion, was selected president of the State Board of Examiners.——Dr. Josiah F. Kennedy, Des Moines, who has been secretary for twenty-two consecutive years, tendered his resignation, to take effect Jan. 31, 1907.

Personal.—Dr. Charles F. Wahrer, of Fort Madison, has been elected president of the Tri-State Medical Society.——Dr. Edward M. Myers, Boone, has been appointed assistant surgeon and assigned to the Fifty-fifth Infantry, Iowa N. G.——Dr. William B. La Force, Ottumwa, has been elected professor of gynecology and abdominal surgery in Keokuk Medical College, College of Physicians and Surgeons, and secretary of the faculty of the institution.——Dr. William S. Osborn, at present assistant of the State Inebriate Hospital, Knoxville, has been selected by the State Board of Control to succeed Dr. Ole C. Willhite as superintendent.——Dr. Emmet T. Wickham, Washington, has resigned as Coroner of Washington County and has been succeeded by Dr. George W. Hay.

MISSOURI.

State Health Board Revokes Licenses.—The State Board of Health, at its meeting, July 10, revoked the licenses of Drs. E. H. Hogan, St. Louis, J. L. Fitzporter, St. Louis, H. C. McCall, Mexico, and Thomas Benton Hughes, St. Louis, on account of unprofessional and dishonorable conduct.

Pays Fine.—Dr. Conrad E. Thomas, St. Joseph, who was arrested on a warrant sworn out by the health officer, charged with failing to report a case of smallpox, paid a fine of $10 in the police court by agreement. Dr. Thomas claimed that the patient was ill, not with smallpox, but with contagious impetigo.

School Board Favors Inspection.—At the meeting of the St. Louis School Board, July 10, the board declared itself in favor of the bill now before the municipal assembly providing for medical inspection in the schools. The superintendent suggested that this be confined to inspection proper and should not contemplate the treatment of disease.

Alcoholic Patients at St. Louis City Hospital.—Dr. H. Wheeler Bond, Health Commissioner of St. Louis, has requested the chief of police to lock up all chronic alcoholic patients immediately on their release from the City Hospital and docket them for the police court on charges of drunkenness. The reason for this action is that the hospital is crowded, and many such patients return within a day or two after each release.

Health Board Reorganized.—At the meeting of the State Board of Health, July 10, Dr. Alfred B. Adcock, Warrensburg, was re-elected secretary to succeed himself; Dr. Ira W. Upshaw, St. Louis, was appointed a member of the board to succeed Dr. Mont M. Hamlin of that city, term expired; Dr. Albert H. Hamel, De Soto, was appointed to succeed Dr. Dempsey T. Powell, Thayer, and Dr. Robert H. Goodie, Hannibal, was elected president to succeed himself.

Pathologic Society Organization.—A society to further general interest in pathology was organized in St. Louis July 2. The society is to hold monthly meetings at which demonstrations of pathologic work will be made. The scope of the society is to be as general as possible, and all members of the regular profession will be invited to take part in its proceedings. Dr. Guthrie McConnell was elected president and Dr. George S. Drake, Jr., secretary and treasurer.

Legislation and Public Health.—The Committee on Legislation and Public Health of the Missouri State Medical Association, composed of Dr. Frank J. Lutz, St. Louis, chairman, Dr. Herman E. Pearse, Kansas City, and Dr. George Homan, St. Louis, held a called meeting at St. Louis, July 10, to hear suggestions from the county medical societies relative to the introduction of legislation regulating county poorhouses and medical practice. Forty-five counties were represented.

Hospital News.—The contract has been awarded for erecting a new hospital building on the state penitentiary grounds, Jefferson City, at a cost of $32,920.——An ordinance has been passed by the Kansas City Council appropriating $8,500 to construct an additional story on the east and west wings of the main building of the new general hospital.——The new Evangelical Deaconess Home and Hospital, St. Louis, erected at a cost of about $100,000, will shortly be ready for dedication. The institution will have accommodations for ninety patients.

NEW JERSEY.

Anthrax Present.—A serious epidemic of anthrax has broken out in several towns in the state. The epidemic is much worse than that present in the same locality two years ago, and more deaths have resulted than in any of the previous outbreaks.

Health Report.—In the report of the Health Department of Camden for the month ended July 15, a marked decrease is shown in the cases of contagious disease. In all there were only 31 cases, as follows: Typhoid fever, 4; scarlet fever, 9; diphtheria, 13; and tuberculosis, 5.

Personal.—Dr. George E. Sonneborn, resident physician at St. Francis Hospital, Trenton, was prostrated by the heat, July 1, but soon recovered.——Dr. John W. Bennett, Long Branch, has been elected secretary of the State Board of Medical Examiners, to succeed Dr. E. L. B. Godfrey.——Dr. Alexander H. Small, Riverside, was thrown from his automobile June 15, and painfully injured.

Sanitarium Opening.—The Red Bank Sanitarium for Children was opened June 9, nearly 2,000 boys and girls from Philadelphia enjoying the benefits of the great pleasure ground. President George McCreary and Dr. J. Chester Moore made addresses.——By the will of the late Monroe Smith the sanitarium receives $50,000. The institution was founded by the testator's father, and provides a home and recreation ground for Philadelphia's sick and poor children.

Camden Water Supply.—According to the health report presented by the Board of Health Camden, with a population of 80,000, had only 25 cases of typhoid fever, with three deaths, last year. It is believed by the health officials that every one of the cases reported was contracted in Philadelphia by use of the polluted water served in that city, because it has been demonstrated that Camden's artesian well systems are absolutely free from typhoid bacilli. While using Delaware river water, Camden, with a much smaller population, had more typhoid fever cases each month than it now has in a year.

NEW YORK.

Gives Hospital.—Miss Adelaide Kenny Richmond has announced to the secretary of the board of directors of the Batavia Hospital Association that she would give to the association a hospital for the care of contagious diseases, to cost between $2,000 and $3,000, and to be known as the William Eugene Richmond Memorial Cottage.

Personal.—Dr. Frederick F. Hoyer, Tonawanda, has completed his sixty-seventh year of medical practice in that place.

——Dr. Frank M. Woolsey, Hancock, has been appointed local surgeon for the Erie railway.——Dr. John Van Duyn, Syracuse, was seriously injured July 13 in a collision between his automobile and a trolley car.——Dr. Milton C. Conner, Middletown, who was recently operated on for appendicitis in New York City, has returned home.——Dr. Charles F. Howard, Buffalo, has been re-elected president of the Reformatory Prison Commission.

Infant Mortality Lowered.—As a result of the work of Dr. George W. Goler in securing a pure milk supply, the death rate among infants in Rochester has been decreased 30 per cent. In the nine years from 1888 to 1896 there were 6,629 deaths of children under five years of age, while for the nine years from 1897 to 1905, during which milk stations have been in operation, there were only 4,403 deaths, although the population had increased by more than 50,000. It is believed that while other factors are responsible for this decrease, the chief cause is the improved milk supply. The plan here is to secure absolutely clean milk, without resorting to pasteurization or sterilization. By extreme care with all utensils, etc., the average bacterial count is less than 10,000 to the cubic centimeter, in milk sold at the milk stations for infant feeding. The health bureau insists on a standard of not more than 100,000 bacteria per cubic centimeter for the general supply. The milk of one dealer, on 105 consecutive bacterial counts, yielded an average of less than 4,000 bacteria to the cubic centimeter.

Counties Celebrate Centennials.—Broome County Medical Society celebrates its centennial this fall.——Cayuga County Medical Society observed its one-hundredth anniversary the last week in June.——Columbia County Medical Society celebrated its centennial May 8.——Greene County Medical Society held its midsummer meeting and centennial at the Catskill Mountain House July 10.——Herkimer County Medical Society held its one hundredth annual meeting March 6.——Madison County Medical Society celebrated its centennial in Oneida May 8.——The Oneida County Medical Society held its centennial meeting in Utica July 10.——Orange County Medical Society celebrated its centennial anniversary in Goshen July 2.——Onondaga County Medical Society celebrated the one hundredth anniversary of its organization in Syracuse May 8. The meeting was closed by a banquet at which 200 were present, and over which Dr. Ely Van de Warker presided as toastmaster.——Rensselaer County Medical Society celebrated its centennial February 22.——Ulster County Medical Society celebrated its centennial anniversary June 26.

New York City.

For Post-Graduate Hospital.—Mr. and Mrs. Edgar E. Brandon, Oxford, Ohio, have given $5,000 to the Post-Graduate Hospital as a memorial to their infant son.

Hospitals Benefit by Will.—In the will of the late Thomas S. Ryder, Manhattan, bequests of $1,000 each are made to St. Francis Hospital and to St. Vincent's Hospital.

Vanderbilt Clinic.—Plans for enlarging and improving the laboratory of the Vanderbilt Clinic of the College of Physicians and Surgeons of Columbia University have been filed. According to the new plans the size of the laboratory will be doubled.

Failure to Report Death.—Dr. Weston, a coroner's physician, has demanded explanation why a death that occurred in Bellevue in the alcoholic ward had not been reported, and warned the authorities of Bellevue against reporting deaths through the police instead of directly to the coroner's office.

Epidemic of Trachoma.—Dr. Lester of the New York Eye and Ear Infirmary said that despite the efforts of the Health Board to check the spread of this disease, at least one-third of the school children in the thickly populated districts in Manhattan, and 25 per cent. of those in Kings, were afflicted with trachoma.

Trolley Victims.—The Brooklyn Rapid Transit Company has submitted a report to the State Railroad Commissioners showing that there were 111 fatal accidents on the railroad during the year ended June 30, 13 passengers being included in this list. In 76 cases no liability on the part of the company existed. There was one fatal accident to each 4,000,000 passengers carried.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended July 14, 392 cases of tuberculosis, with 163 deaths; 293 cases of measles, with 15 deaths; 224 cases of diphtheria, with 36 deaths; 86 cases of scarlet fever, with 10 deaths; 51 cases of typhoid fever, with 11 deaths; 45 cases of whooping cough, with 10 deaths; 7 cases of cerebrospinal meningitis, with 12 deaths; 31 cases of varicella and 2 cases of smallpox. A total of 1,131 cases, with 257 deaths.

Graphic Popular Teaching of Hygiene.—The Health Department is about to open a tuberculosis exhibition designed to instruct the masses in the prevention of tuberculosis and in the care of those afflicted with the disease. This exhibition consists of stereopticon views showing how the disease is contracted in poorly ventilated and dirty rooms, views of camps, etc. Between the "health" slides there will be popular scenes and songs. There will be four or five performances each week in parks and on recreation piers.

Fresh-Air Camp.—At Sixty-fifth street and East River John D. Rockefeller has established a fresh-air camp for sick babies. Five pavilions, 15 by 42 feet in dimension, with movable walls, constitute this camp. The camp is equipped to care for one hundred babies. Any sick baby under eighteen months of age is eligible. Mothers are instructed how to care for their infants, and this institution is being conducted partly as an experiment, with the purpose of demonstrating what can be done to keep down infant mortality.

Petition for Dissolution.—In the petition of a majority of the New York County Medical Association in the City of New York for a voluntary dissolution of said company, Justice P. H. Dugrow, of the Supreme Court of the State of New York, has ordered that persons interested in this corporation shall show cause before the Supreme Court at a special term to be held in New York City Sept 17, why said corporation should not be dissolved and why such petitioners should not have such other and further relief as the court may see fit.

Personal. — Dr. and Mrs. Walter F. Lambert sailed for Europe on the *Kroonland* July 7.——Dr. and Mrs. Albert G. Weed sailed for Glasgow on the *Astoria* July 7.——Dr. Elizabeth Jarrett sailed for London on the *Minnetonka* July 7.——Dr. and Mrs. Robert T. Wheeler sailed for Europe on the *König Albert* July 7.——Dr. Benjamin G. Strong, Long Island City, has resigned as Coroner's physician of Queens Borough.——Dr. William A. Griffith, Brooklyn, is reported to be seriously ill from scarlet fever in a hospital in Pittsburg, Pa.——Dr. James R. Sharp sailed on the *Batavia* for Hamburg, July 21.——Dr. A. Murray arrived on the *Prinzess Irene* on the 19th.

Pasteurize All Milk.—In spite of the safeguards thrown around the milk supply, the mortality among infants remains high. Figures recently presented in the monthly bulletin of the State Board of Health show that with a population of about one-half the commonwealth, New York City showed 76.2 per cent. of the total deaths of children between the ages of 1 and 5 years during May. Nathan Straus thinks the only remedy is to pasteurize all milk brought into the city, as a large number of these deaths are still due to infected milk. The death rates for the city and state for the month of May for the diseases most affecting infant mortality are as follows:

	Deaths in city.	Rest of state.
Measles	163	42
Diphtheria	216	62
Tuberculosis	793	435
Pneumonia	1,039	412
Diarrhea and digestive ailments	518	111
Totals	2.729	1,062

PENNSYLVANIA.

University Relief Fund.—The movement started by the University of Pennsylvania for the relief of university men who suffered by the earthquake in San Francisco has resulted in the raising of a fund of $8,500, which is now being distributed.

Society to Prevent Tuberculosis.—An association has been formed in Wilkesbarre to be known as the Wyoming Valley Society for the Prevention of Tuberculosis. A dispensary was opened July 13, in which a number of local physicians have volunteered to assist, and a trained nurse will be employed. The chief work will be to educate the people as to the means of prevention of the disease.

Philadelphia.

Vital Statistics for June.—The report of the division of vital statistics for June shows that 1,842 deaths and 2,622 births were reported during the month.

Hospital Report.—The report of the Mount Sinai Hospital shows that during the month of June, 39 patients were admitted to the hospital, that 69 patients were treated during the month, and that 26 remained in the institution July 1.

Typhus Fever in Philadelphia. During last week one case of typhus fever—the first in 15 years—was reported in this city. The patient was a young man, a recent emigrant from Denmark. He died after a few days' illness in the Municipal Hospital.

Personal.—Dr. J. William White, who was operated on in Rochester, Minn., returned home July 20.——Dr. and Mrs. Henry W. Stelwagon sailed for Europe, July 13.——Dr. J. Norman Henry sailed for Europe July 18.——Drs. Charles P. Noble, Henry C. Register, George J. Callan and Joseph S. Gibb left for a tour of Europe July 19.——Dr. Judson Daland left on Saturday, July 14, for a trip to the Grand Canon.——Dr. Eliza F. Pettingill will sail the end of July for a short tour of Europe.——Dr. Harris A. Slocum sailed for Europe, July 11.

Physicians Pass Examinations.—The Civil Service Commission announces that the following have successfully passed examination: Dr. Leonard Frescoln, for assistant chief resident physician of the Philadelphia Hospital, at a salary of $900 a year; Dr. William W. Richardson, for assistant physician in the insane department; Dr. Louis Schwartz, for junior resident physician in the Municipal Hospital, and Drs. Rebecca Cornfeld, A. J. Cohen, William L. Clark, C. Hamilton Gray, G. Cooper Moore, and Maurice Goldberg, for outdoor physicians for the Bureau of Health.

Health Report.—The total number of deaths reported for the week reached 528. This is a decrease of 11 from the number reported last week and a decrease of 80 from the number reported in the corresponding week of last year. The principal causes of deaths were: Typhoid fever, 7; typhus fever, 1; pertussis, 14; diphtheria, 2; consumption, 46; cancer, 21; apoplexy, 13; heart disease, 49; acute respiratory disease, 20; enteritis, 121; hepatic cirrhosis, 5; appendicitis, 3; Bright's disease, 48; suicide, 3; accidents, 16; and marasmus, 12. There were 191 cases of contagious disease reported with 11 deaths, as compared with 128 cases and 19 deaths in the preceding week.

GENERAL.

Cholera Situation in Manila.—A decided improvement is reported in the cholera situation in Manila. The daily average of cases is said to have decreased at least one-half in Manila, and there is no further increase in the number of cases reported from the provinces.

Smallpox on the Isthmus.—It is reported from Colon that several cases of smallpox have occurred in that city. The disease is confined to the laboring class. The medical staff of the canal zone is isolating and disinfecting the affected districts and hopes soon to have the disease stamped out.

Correction on Discussion of Dr. Jack's Article.—In The Journal, July 21, page 169, third line of second paragraph, discussion of Dr. F. L. Jack's paper by Dr. Otto T. Freer, the words "removal of the orbital wall or floor of the frontal sinus" should be substituted for the words "removal of the orbit."

Leper Colony in the Philippines Moved.—According to cable reports, sixty lepers have been transported from the island of Cebu to the island of Culion, under the direction of Dr. Victor Heiser, chief quarantine officer for the islands. The quarters from which the lepers were taken were built by the United States troops several years ago, and were no longer commodious enough for the number to be accommodated.

Medical Association of the Southwest.—Committees from Missouri, Kansas, Arkansas and Oklahoma met at Kansas City, July 16, to consider the organization of the Medical Association of the Southwest. Twenty-five representatives from the above states were present. Dr. Frank J. Lutz, St. Louis, was chosen chairman and Dr. Fred H. Clark, El Reno, Okla., secretary. A committee was elected, composed of one member from each state, to draw up a constitution and by-laws. It is understood that this association is to work in conjunction with the American Medical Association, the first condition for membership being that each member must be a member of his state society.

CANADA.

Personal.—Dr. E. Herbert Adams, Toronto, has returned from a trip to China and Japan.——President Loudon, of Toronto University, has resigned and has been released. He was connected with the university for over forty years, and for the last fourteen years had been its president. His retiring allowance was fixed at the annual salary rate, namely, $5,600.——Dr. C. J. Fagan, secretary of the British Columbia Board of Health, has inspected the salmon canneries of that province and has satisfied himself that the factories are sanitary and that they are conducted in a cleanly manner.——Dr. Laberge, the city health officer of Montreal, is advocating a federal system of food inspection for Canada.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.

Physicians of Bucks County (Pa.), $28.00:

Carroll, John B., Hatboro	$5.00	Osborne, R. H. G., Morrissonville	$2.00
Crewitt, John A., Newton	1.00	Richards, J. N., Tallingston	3.00
Hannum, W., Hatboro	5.00	Walton, L. S., Jenkintown,	5.00
Kearns, S. P., Philadelphia	2.00		
Myers, A. F., Blooming Glen	5.00		

SOCIETY CONTRIBUTIONS.

Columbus Academy of Medicine, Columbus, Ohio, $209.00:

Academy, The	$50.00	Inglis, W. D.	$ 1.00
Baldwin, Hugh	1.00	Kinsell, D. R.	5.00
Baldwin, J. F.	50.00	McKitrick, L.	10.00
Barnhill, J. U.	5.00	Means, W. J.	5.00
Benkert, L. C.	2.00	Rector, J. M.	1.00
Carlton, J. S.	1.00	Richardson, W. W.	1.00
Clark, C. T.	10.00	Rodebaugh, H. A.	1.00
Cooper, Albert	3.00	Schauwerker, G. H.	2.00
Davis, W. C.	1.00	Shepard, C. J.	1.00
Dunham, J. D.	1.00	Smith, R. B.	1.00
Edmiston, W. E.	5.00	Stockton, George	1.00
Emerick, E. J.	5.00	Whitaker, H. W.	10.00
Evans, E. W.	3.00	Willard, G. W.	5.00
Gilliam, C. T.	2.00	Winders, Frank	10.00
Goodman, S. J.	1.00	Woodlin, W. J.	1.00
Hamilton, E. A.	3.00	Woodruff, L.	1.00
Hamilton, W.D. and C. S.	10.00		

Elk County Medical Society (Pa.)	$ 18.00
Grafton County Medical Society (N. H.)	5.00
King County Medical Society (Wash.)	204.00
Lycoming County Med. Society (Pa.)	50.00
Westmoreland County Med. Society (Pa.)	25.00
Total	$539.00
Previously acknowledged	$12,591.00
Grand total	$13,130.00

FOREIGN.

Cerebrospinal Meningitis in Glasgow.—Cases of cerebrospinal meningitis are still appearing in Glasgow, Scotland. The majority of cases are in the east end of the city. Most of the patients are under 10 years of age, and no patient who has been removed to a hospital has recovered, says the *Medical Press and Circular*.

Epidemic Cerebrospinal Meningitis in Germany.—The *Münch. med. Wochschr.* states that since the first of the year there have been 1,571 cases reported throughout the empire, with 700 deaths. In May 25 of the cases were in Posen, 110 in Silesia, 79 in Westphalia and 53 in the Rhine provinces, showing that the number of foci is increasing.

A Pathologic Society for Great Britain.—We learn from the *Medical Press and Circular* that a project is on foot to establish a pathologic society in Great Britain along the lines of the present anatomic society. It is not intended to conflict with any of the existing local societies, but is designed to form a bond of union between the pathologists scattered through England, Scotland and Ireland. It is intended that the meetings shall be held at stated intervals at different places, and the first meeting will be held at Manchester.

French Colonial Congress.—The section of medicine and hygiene at the recent Colonial Congress at Paris in June passed resolutions advocating the abolition of opium-smoking dens throughout the French colonies, also advocating the creation of a central institute for parasitology, human and animal, in all the colonies, with a sanitary police to take charge of epidemics and epizootics, and that the committees in charge of the erection of prisons should always have a representative of the medical profession among their members. Another resolution called for the appointment of a special commission to study beriberi. Brault reported nineteen cases of epithelioma in Arabs, and Jeanselme and Nicolle presented exhaustive studies of the pathology and medical organization of Siam and Tunis.

Hospital Ambulances for London.—London has no adequate and decent facilities for removing sick or injured persons to the hospital. Horse or motor ambulances are practically unknown, indeed the means for transporting individuals to a hospital are primitive to a high degree. The London county council recently brought in a bill to provide ambulances to take injured and sick persons to the hospital. This bill passed the house of commons, but has been thrown out by the house of lords. Sir William Collins, the introducer of the bill, stated in evidence that 70 per cent. of the cases taken to hospital are aggravated through removal by unfit and inappropriate means—such as shutters or deal boards. It seems almost incomprehensible that such a state of things should prevail in a city which is so progressive in many respects.

Improved Technic for taking Roentgen Pictures.—The *Berl. klin. Wochschr.*, just received, contains some remarkably distinct Roentgen pictures of the knee. The bones stand out on patches of a much lighter background, inside the shadow of the soft parts. This surprising effect is obtained by the injection of oxygen into the joint before exposure to the rays. The oxygen does no harm and rather seems to relieve pain in the joint. It is generally absorbed in the course of a day or two, but in one instance it remained localized in the joint for a week. Hoffa, who writes the article, states that this method is now in current use in his clinic as a most welcome improvement in radiography. His assistant, Wollenberg, has devised a simple double tank, in which oxygen is generated from hydrogen dioxid, a tablet of potassium permanganate serving as the catalyzer.

Pozzi's Gold Book.—The Paris gynecologist, Prof. S. Pozzi, publisher and editor of the *Revue de Gynécologie*, recently completed the twentieth year of work in the Broca Hospital as gynecologist and surgeon. His friends and pupils celebrated the occasion by presenting him with a gold book, containing a series of articles on some phase of gynecology or abdominal surgery. They include some from the pen of Pinard, Delbet, Monprofit, Martin of Rouen, Treub of Amsterdam, Depages of Brussels and many others. A gold medal was presented at the same time, the design representing Science wresting a woman from the clutch of Death. The presentation took place on the morning of July 8 at the scene of his labors, and a number of his former pupils from France and abroad assisted in the proceedings. Pozzi visited this country a year or so ago as the official delegate to the Congress of French-speaking Physicians of America, and made many friends here. He is regarded as the pioneer in establishing gynecology as a special branch of medicine in France. He will be 60 years old October 3.

International Congress for Child Study and Care of Youth.—This congress, as already announced, is to convene at Berlin, October 1. A number of timely topics are to be discussed. Baginsky, of Berlin, will present the subject, "The Impressionability of the Child Under the Influence of Environment"; Neumann, of Königsberg, "Scientific Estimation of the Differences in the Capacities of Children and Their Practical Importance"; Ziehen, of Berlin, "The Normal and the Pathologic Association of Ideas in Children"; Binswanger, of Jena, "Hysteria in Children"; Heubner, of Berlin, "Occurrence of Idiocy in Private Practice," and Uffenheimer, of Munich, "Mimicry in Children." An exhibit of things connected with child life, hygiene and training will supplement the work of the congress. An exhibition of the first editions of works relating to the psychology of the child, from 1690 to 1882, is one of the features of the exhibit. Further particulars can be learned on application to the treasurer, Dr. M. Schäfer, Berlin N. W., 23 Klopstockstrasse. The *Münch. med. Wochschr.*, July 10, contains an extended notice of the congress.

Health Congress and Consumption.—The Royal Sanitary Institute of Great Britain recently held a health congress at Bristol. Mr. Arthur Richardson, M. P., read a paper on the "Rational Extension of Modern Cities." Mr. Richardson complained that the modern city is built up piecemeal. The result consists of large slum areas, dwelling houses side by side with industrial works; *bona fide* workingmen, in order to be near their employment, must gradually accommodate themselves to the tenement-house system. The efforts of reformers of the future, he said, must be of a two-fold nature—to prevent the influx of village laborers into the cities, and to secure for building purposes, big belts of land outside cities, but within reasonable distance of industrial works. A discussion took place as to the utility of establishing an experimental open-air colony in the country in which consumptive patients could be employed. Sir W. J. Collins, M. P., pointed out that war against tuberculosis, the white man's plague, is as yet but ineffectively waged, and declared that Professor Koch was right when he said that it is the overcrowded dwellings of the poor that we must regard as the real breeding places of tuberculosis.

From Russia.—Prof. A. Hippius writes from Moscow to the last *Deutsche med. Wochschr.*, describing the conditions prevailing there in what he calls the "present head-over-heels evolution of the country, which is scarcely to be distinguished from an actual revolution." He says that the official organ of the national medical association, known as the Pirogow Medical Association, recently issued an edition on red-tinted paper containing the names and the details of all the recent official arrests, imprisonments, banishments, etc., of medical men and women on account of political matters. There were 228 in February, 222 in March and 178 in April, a total of 628 cases in which physicians have either been killed or maltreated, arrested or banished. He states that the majority of Russian physicians are liberal in their views, but that some of them, and especially the younger set and almost all the rural medical officials and the Jewish physicians, are emphatically revolutionary. On account of the numerous arrests and banishments of medical men, and of the boycotting of certain localities by sympathetic physicians, there is a great scarcity of medical attendance in many regions. There are no applicants for the vacancies in medical posts officially announced in the papers. The lack of physicians was felt severely during the war with Japan, when so many were sent to the front, but the conditions in this respect are much worse now, and there are comparatively few medical students in the universities.

Asses' Serum in Treatment of Tuberculosis.—A series of experiments were reported at the meeting of the Paris Académie des Sciences, June 25, which have attracted considerable attention. Lannelongue, Achard and Gaillard have been working for seven or eight years to obtain an antitoxin which would protect guinea-pigs against tuberculosis. They believe that if it proves possible to protect guinea-pigs, the same technic might be applicable to man. The *Semaine Médicale* relates that in their latest experiments they had four lots of 30 guinea-pigs each. They were all injected with the same dose of virulent material, and then one lot was treated with serum from normal asses' blood, the second lot with serum from asses presumed to have been immunized against the disease, and another lot were injected with the same serum as a preventive. The mortality 371 days after the inoculation had been 90 per cent. in the controls, 87, 40 and 60 per cent., respectively, in the other lots. They claim that the curative and preventive action of the serum was thus clearly manifested. In another series of experiments, four lots of 50 guinea-pigs each were inoculated and were then injected with serum from a horse presumed to be antituberculous. After sixteen months and a half the mortality had been 78 per cent. for the controls, and 40, 55 and 48 per cent. in the other groups. After twenty months, the corresponding mortality was 97, 76, 72 and 73. The conclusions were strongly in favor of preventive and curative treatment with serum from immunized asses. Tests have been made with it in the clinic which they regard as very promising. They urge that the mortality curve in experimental tests is the most instructive point, although the fact that guinea-pigs are naturally short-lived must not be forgotten.

Mexican Typhus Fever.—The *Revista Med.*, xxii, 154, states that during one month recently 860 cases of "tabardillo," or typhus, were reported in Mexico, with 185 deaths. About 35 new foci were discovered. Dr. Ignacio Prieto, chief of the section of experimental pathology in the National Pathologic Institute, has succeeded in cultivating a streptococcus from the cerebrospinal fluid of typhus patients which he thinks may be the causal germ. It frequently assumes the aspect of a diplococcus. Inoculation of laboratory animals, according to the amounts injected, causes their speedy death or a lingering febrile affection which he believes to be identical with typhus. The Mexican government has authorized the purchase of monkeys for further experiments in this line, according to the daily papers, and has officially offered three prizes of $20.000 each for the actual discovery of the typhus germ, of its mode of transmission to man, and of a successful preventive or curative serum or effectual remedy. An appropriation of $10,000 has also been made to be distributed among the persons who aid the actual discoverers in their task. Competition for these prizes is open to the world, the final decision to be in the hands of the National Academy of Medicine. The address of the secretary of the academy for this year is Dr. D. J. G. Cosio, Ortega 9, Mexico. J. Terres, of Mexico, calls attention to the fact that the exacerbations of endemic tabardillo have invariably coincided, during the last twenty-seven years, with unusually dry seasons. When the rainy season was short and the rains less profuse the typhus endemics invariably flared up again. Another curious fact noted in connection with typhus in Mexico is that it is unknown below an altitude of 1.800 meters, while it is endemic in nearly every town above this altitude. Terres adds further that the disease is not transmitted by direct contact—at least he has never known of an instance in which this could be proved, although it is probable. He has frequently encountered cases in which the development of the disease followed close on some emotional shock lowering the resisting powers of the organism. One of Terres' patients was a physician, previously in good health and spirits until he was beaten by bandits one night. He was not injured much, but was thoroughly frightened, and he developed symptoms of tabardillo the next day. Typhus in Mexico differs from European typhus in that the fever does not reach its maximum for three or four days. In most cases there is slight temperature the first evening, declining the next morning, but rising again toward night, first intermittent and then remittent, until it becomes continuous, thus differing materially from the temperature curve of European typhus. He remarks that malaria does not become transformed into tabardillo, and malaria rarely appears as a primary affection in Mexico. During the last seven years the mortality of tabardillo has ranged about 25 per cent. in January to its maximum of about 31 per cent. in April, May and June.

New Red Cross Pact at Geneva Conference.—The *Semaine Médicale* for July 11 devotes nearly eight pages to the report presented by Louis Renault in the name of the committee on revision of the existing regulations. He is professor in the Paris School of Law and was the minister plenipotentiary from France to the conference. The full text of the regulations recommended was accepted and signed by the representatives of the countries represented, thirty-five in all. The text of the new agreement is given in full. One of the thirty-three articles in it is to the effect that the contracting parties agree to take the necessary legislative steps to protect the use of the red cross on a white background, the distinctive sign of the sanitary service of the army, prohibiting its use to private individuals or societies, and especially its use as a trademark or for advertising purposes. The colors, red and white, are those of Switzerland, where the idea of international care of the sick and wounded had its birth. The prohibition of the use of the symbol by other parties goes into effect five years after the signing of the convention, but henceforth no new trademarks are to be granted allowing its use. The various governments also agree to enact or enforce measures repressing individual pillage of the sick and wounded of the armies, and to punish the misuse of the Red Cross sign and flag. When the sick or wounded have to be left behind by one of the belligerents, a portion of the sanitary personnel and material may be left to take care of them. The sick or wounded soldiers and officers are to be respected and cared for, without distinction of nationality, by the belligerent in whose power they are. The wounded thus falling into the hands of the other belligerent become prisoners of war, but certain special measures may be adopted in regard to them, either exchanging the wounded left on the battlefield or sending them home after recovery, or turning them over to a consenting neutral state, which agrees to take charge of them and hold them prisoners until the termination of hostilities. Each belligerent will transmit to the authorities of the other army or to their home government the marks or other means of identification found on the dead and the names of the sick and wounded taken into their charge. The belligerents will also inform each other reciprocally of the prisoners and changes, the entries into the hospitals and the deaths among the sick and wounded in their power. They will also collect all the articles of personal use or value, letters, etc., found on the battlefield or left by the sick or wounded dying in the sanitary establishments, and forward them, so that they can be sent to those interested, by the authorities of the home country. The military authorities can call on the charitable zeal of the inhabitants to care for the sick or wounded of the armies, under their supervision, granting to persons who respond to this appeal special protection and certain immunities. Voluntary aid societies may be assimilated with the regular Red Cross establishments if duly recognized and authorized by their respective governments, under condition that they submit to the military laws and regulations. Each state must inform the other of the names of the societies which it has authorized to render sanitary services under its guarantee to the belligerent parties. No society from a neutral country can serve one of the belligerents without the consent of its home government and the formal acceptance of its services by the belligerent involved. Before accepting its services the belligerent involved must notify the other belligerent of its intention. Persons belonging to the regular and to the volunteer societies are to continue their work if they fall into the hands of the enemy. When their services are no longer indispensable they shall be sent back to their army or country. Persons forming part of the regular sanitary service may take away with them their effects, instruments, arms and horses which are their private property. Persons connected with the regular sanitary service while working for the enemy small be remunerated according to the same rates as the corresponding personnel of the same grades in its army.

Association News

Minutes of Section on Diseases of Children.

In the official minutes of the sections published in The Journal, July 7, the proceedings of the Section on Diseases of Children, Friday morning, June 8, were omitted. They are as follows:

Friday, June 8—Morning.

Dr. E. T. Shelley, Atchison, Kan., read a paper on "Superstition in Teratology." The paper was discussed by Drs. D. S. Hanson, Cleveland; George N. Acker, Washington; William T. Watson, Baltimore; G. W. Baker, Ogden, Utah; J. B. Learned, Northampton, Mass.; J. L. Morse, Boston; L. F. Bishop, New York; B. B. Simms, Talladega, Ala.; J. L. Morse, Boston, and E. T. Shelley.

Dr. Samuel Amberg, Baltimore, read a paper on "The Opsonic Content of the Blood of Infants."

Dr. Louis Faugères Bishop read a paper entitled "Constitutional Low Arterial Tension in Children." The paper was discussed by Drs. Arthur W. Fairbanks, Boston, Samuel M. Hamill, and L. F. Bishop.

"Value of Small Amounts of Human Milk in the Treatment of Infantile Atrophy and the Infections of Infants," was read by Dr. F. P. Denny, Brookline, Mass.

"The Wet-Nursing of Foundlings, a Pernicious Practice," was read by Dr. William T. Watson, Baltimore.

These two papers were discussed by Drs. S. M. Hamill, Philadelphia; W. L. Holt, Boston; H. McClanahan, Omaha; T. W. Kilmer, New York City; George N. Acker, Washington; I. A. Abt, Chicago; Thomas Morgan Rotch, Boston, and Drs. Denny and Watson.

"Some Unheeded Principles Involved in the Dietetic Management of Infants During Hot Weather," was read by Dr. Godfrey R. Pisek, New York. Discussed by Drs. R. W. Hastings, Brookline, Thomas Morgan Rotch, Arthur W. Fairbanks, and G. R. Pisek.

"Cerebral Palsies of Children," was read by Dr. William J. Butler, Chicago. Discussed by Dr. Thomas Morgan Rotch, Boston.

Dr. Rotch moved that a vote of thanks and appreciation be tendered the Chairman and Secretary by the Section for the marked success of the session. Seconded and carried.

Final adjournment.

Acknowledgement from Professor Trendelenburg.

Leipsic, July 7, 1906.

To the Secretary of the American Medical Association:—I thank you very much for kindly notifying me that the House of Delegates of the American Medical Association has elected me an honorary member of this great and illustrious scientific and professional organization. I fully appreciate the honor thereby conferred on me, and I ask you kindly to forward my best thanks to the President and to the members of the House of Delegates.

F. Trendelenburg.

Pharmacology

North Dakota to be Congratulated.

The people of North Dakota are to be congratulated on having not only a pure food law, but also officials who enforce it. Bulletin No. 69 of the North Dakota Agricultural Experiment Station, issue of June, 1906, contains analyses of many articles which have been found to be fraudulent or semi-fraudulent in character.

BIOPLASM.

One of the preparations reported on is Bioplasm, which was exposed in The Journal, Nov. 18 and Dec. 9, 1905. The North Dakota food commissioners analyzed this preparation and found that while the makers claim that it contains enzymes, "there was no indication of the presence of any of the digestive enzymes or ferments in any appreciable quantity, certainly not in sufficient quantity to produce any enzymic action." Their examination of the product showed it to contain "of nitrogen, 1.29 per cent., as against 13 per cent. claimed by the manufacturers. It was shown to contain of ash, 11.72 per cent., as against 7.72 per cent. claimed by the manufacturers. It was further shown that instead of containing a large amount of phosphoric acid in the ash as was indicated by the above claims, there was actually present 3.48 per cent. A further examination showed it to contain approximately 60 per cent. of sugar of milk."

The report goes on to state: "It can hardly be presumed, therefore, from the examination which has been made of this product that it is to be recommended as a cure in such divers complaints as are specified by the producers, namely, Bright's disease, catarrh, cough, consumption, diabetes, locomotor ataxia, jaundice, goiter, hay fever, hysteria and scores of other troubles. As a result of our examination we should say that it was devoid of any of the virtues claimed for it by the manufacturers."

PRODUCTS CONTAINING ALCOHOL.

The law of North Dakota "requires that each and every product containing more than 5 per cent. of alcohol sold as a proprietary medicine, beverage, etc., shall be labeled to show the true per cent. of alcohol." The following products were examined, and the results we copy from the Bulletin referred to above:

PAINE'S CELERY COMPOUND.

Wells, Richardson & Co., Bellington, Vt.

	Per Ceut.
Alcohol by volume	
Alcohol by weight	19.25
Total solids	15.63
Ash	14.28
	.81

DR. SHOOP'S RESTORATIVE.

Dr. C. I. Shoop, Racine, Wis.

Alcohol by volume	
Alcohol by weight	9.81
	7.89

SWIFT'S SPECIFIC, SSS BLOOD PURIFIER AND TONIC.

Swift's Specific Co., Atlanta, Ga.

Alcohol by volume	
Alcohol by weight	17.17
Total solids	13.92
Ash	8.12
	.16

DANDELION BITTERS, XXX BRAND.

Beggs Manufacturing Co., Chicago.

Alcohol by volume	
Alcohol by weight	28.62
	23.49

APPETITE BITTERS.

Geo. Benz & Sons, Minneapolis, Minn.

Alcohol by volume	
Alcohol by weight	36.95
Total solids	30.66
Ash	6.85
	.04

Sugar constitutes a considerable portion of the total solids in the above preparation.

HOSTETTER'S STOMACH BITTERS.

The Hostetter Co., Pittsburg, Pa.

Alcohol by volume	
Alcohol by weight	43.00
Total solids	36.03
Ash	4.55
	.006

The principal portion of the total solids in this product is sugar.

ELECTRIC BITTERS.

H. E. Bucklin & Co., Chicago.

Alcohol by volume	
Alcohol by weight	19.57
Total solids	15.89
Ash	1.76
	.08

This product contains little, if anything, of medicinal value aside from the alcohol.

MONARCH ROCK AND RYE.

J. D. Zien, Duluth, Minn.

Stated to be a powerful nervine and tonic.

Alcohol by volume	
Alcohol by weight	36.87
	30.59

The only constituent found present in any appreciable quantity in the form of solids was sugar.

BERLINER MAGEN BITTERS.

Berliner Magen Bitters Co., Duluth, Minn.

Alcohol by volume	
Alcohol by weight	23.22
Total solids	18.94
Ash	8.52
	.19

COLUMBIA STOMACH BITTERS.

Noyes Bros. & Cutler, St. Paul, Minn.

This product in appearance is much lighter than the ordinary whisky, indicating that it is largely neutral spirits.

Alcohol by volume	
Alcohol by weight	42.52
Total solids	35.60
Ash	8.60
Total sugar	.04
	7.75

The odor and taste indicate the presence of a slight amount of thoroughwort. This product can not properly be classed as anything other than an intoxicating beverage.

COOPER'S NEW DISCOVERY.

Alcohol by volume	12.00
Alcohol by weight	10.00

TOLU, CHERRY AND RYE, FOR COUGHS, COLDS AND CONSUMPTION.

Krales Medicine Co., Columbus, Ohio.

Alcohol by volume	30.00
Alcohol by weight	24.00
Total solids	3.03
Ash	.14

PERUNA.

Peruna Medicine Co., Columbus, Ohio.

Alcohol by volume	
Alcohol by weight	26.23
Total solids	21.96
Ash	.35
	.02

This product was not found to contain anything which you could properly class as medical in nature.

BLOOD AND CATARRH CURE.

Mederine Remedy Co., Duluth, Minn.

Alcohol	8.50

This product was found to contain alcohol and potassium iodid, and, therefore, would have to be labeled for presence and per cent. of alcohol and iodids.

COOPER'S NEW DISCOVERY.

Cooper Medicine Co., Dayton, Ohio.

Alcohol by volume	15.00
Alcohol by weight	12.13

SARSAPARILLA.

Webster Chemical Co., St. Paul, Minn.

Alcohol by volume	25.00
Alcohol by weight	20.43

The product contained potassium iodid in considerable quantity, also sarsaparilla and licorice.

HOOD'S SARSAPARILLA.

C. I. Hood & Co., Lowell, Mass.

Alcohol by volume	17.08
Alcohol by weight	13.84

This product also contains potassium iodid.

ELIXIR OF BITTER WINE.

Joseph Triner, Chicago.

Alcohol by volume	19.50
Alcohol by weight	15.84

The report states: "Each of the above products before being sold in North Dakota must be labeled to show the presence of alcohol and per cent. of the same, and where other products mentioned in Section 4, for example iodids, are present, the per cent. of these must also be shown on the label, otherwise, the products are not properly labeled and will be classed as illegal, and their sale in the state prohibited or the parties handling the same will be liable to prosecution under the drug law of the state."

BROMO-SELTZER.

The report also contains an analysis of bromo-seltzer, showing that it contains sodium chlorid, potassium bromid, sodium bicarbonate, citric acid, acetanilid, tartaric acid, and caffein.[1]

When the Emerson Drug Company of Baltimore were notified that their goods required labeling, they replied, the report states, substantially as follows:

> "We have not solicited any orders for our product nor shipped any goods direct to the trade or within the borders of that state (North Dakota), nor have we done any advertising there, as we did not intend to comply with the law by publishing any part of our formula, consequently would not violate the law; therefore decided to withdraw our goods from that market, so if our goods are sold in North Dakota they are sold procured through some other source, and we are not responsible for it."

It would be interesting to know what the Emerson Drug Company will do when the National Pure Food law goes into effect; will they refuse to ship goods into any state, or will they comply with the law?

BROMO-CAFFEIN.

Keasbey and Mattison Co., Chicago.

The report states that on examination this product was found to contain caffein, a citrate, a tartrate, potassium bromid, and sodium carbonate. "It must, therefore, in order to be legal in the state, be labeled to show the per cent. of bromids present."

FRENCH'S CELERY CAFFEIN BROMID.

French Cave and Co., Philadelphia.

This product, the report states, was found to contain caffein, tartrates, citrates, bromids in considerable quantity, and sodium carbonate. Therefore it must be labeled in order to show the per cent. of bromids present.

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[1] An analysis of this preparation was published in THE JOURNAL, Feb. 10, 1906, page 454, and was as follows:

Potassium bromid	10.53 parts
Acetanilid	4.58 parts
Caffein	1.20 parts

Assuming an average dose of the article—a teaspoonful—to weigh 76 grains (5.0 gm.), each dose would contain:

Potassium bromid	7 grains (0.5 gm.)
Acetanilid	3 grains (0.2 gm.)
Caffein	.8 grains (0.005 gm.)

BROMO-SODA.

William Warner and Co., Philadelphia.

The report states that an examination showed this product to contain caffein, tartrates, citrates, sodium bromid and sodium carbonate. "On notifying the company of the requirements under the law with regard to labeling for bromids, we were assured that the product is now being labeled to comply with the law and labels were furnished which show that each tablespoonful contains thirty grains of sodium bromid and one grain of caffein, which would comply with the requirements of the drug law of this state."

HAIR TONICS.

Various hair tonics were examined, among them Danderine, which was found to contain ethyl alcohol, by volume, 10.5. When the makers were notified that it must be labeled for the per cent. of alcohol which it contained, they replied:

"Replying to yours of the first, will say that under the ruling which you have made we must decline to ship any more goods to North Dakota."

The people of North Dakota are certainly to be congratulated on being so efficiently protected from frauds.

German Campaign Against "Patent Medicines."

Germany has for some time adopted the practice of publishing a kind of biannual black list of remedies, against the sale of which very severe restrictions were put, says the *British and Colonial Druggist*. This course has not been found satisfactory in the opinion of Count v. Posadowsky, the home secretary, who, according to the *Hamburger Nachrichten*, has a new plan of procedure under consideration. The list which, if the present system were maintained, would be published in October of the current year, is said to comprise no fewer than 600 new proprietary medicines. Against the regulations now in force two objections are cited, the possibility of a dealer escaping their effects by altering his production in name and composition before the issue of a new list, and secondly, the tendency which the publication of these lists creates of regarding them as indicative of what does and what does not constitute a "patent medicine." The new bill to be shortly laid before the Bundesrat is to strike at the trade by a special and easily applied legal process; "patent medicine" boards are to be founded, in which medicine, pharmacy and chemical industry will be represented, and before which the "patent-medicine" manufacturer will have the opportunity of appearing. These boards will apparently be given the duty of investigating the merits of each individual preparation. It is not stated who is to bear the cost.

Correspondence

The Country Doctor.

Greeley, Colo., July 14, 1906.

To the Editor:—In The Journal, May 19, there appeared an article by Dr. John G. Wilson, Montrose, Pa., entitled "The Country Doctor," which attracts attention, first, on account of its title, second, on account of its brevity. Its title appealed to those of us who labor under this cognomen, and in warm weather brevity is the soul of interest as well as the soul of wit. As Dr. Wilson does not attempt to define the title "country doctor," or enumerate the country doctor's characteristics, it remains for those of us who have perused the article to decide if we are qualified to bear this honorable name. Unless we include in this category all who reside outside the limits of metropolitan cities and centers of learning, it is, perhaps, a rather difficult problem to draw a definite line of demarcation. Hospitals are found in many small towns and competent trained nurses are obtainable in practically all. The physician in the small town is as busy, on the whole, as his city brother and likely to see as many patients. Books, medical journals and office equipment are not difficult to secure in either location, and surely no one would presume to think that a private office or laboratory located in the tenth story is more conducive to mental astuteness than one overlooking the cabbage patch. Notwithstanding these facts, the man in the small town is justly entitled to the name, and it is of him we may conclude that Dr. Wilson speaks. If we turn briefly to the profession of any city with which we are familiar we will find therein physicians of all grades of ability. Not all rise to the standard of Osler or Kelly, nor do many sink to the depths of the "specialist recently of Paris and Vienna." In the ranks of the country practitioners the same discrepancy exists. We have at times a Sims or a Mayo, more frequently capable toilers in the ranks and rarely the aforementioned criminal operator.

Dr. Wilson's appeal is certainly well timed and breathes the gospel of hope to the country physician who is anxious to render the best service to his patients. Not that the country doctor should attempt work with which he is unfamiliar; rather he should familiarize himself with this work in order that his advice may be both safe and sane. Dr. Wilson's remarks may be criticised or neglected by many who have no aptitude, ability or desire to render better or more skilled service to those seeking advice. Others wise in their day and generation may give timely heed to the words of the prophet: "The ordinary physician must become more competent or cease to exist. No one physician can do the best possible work in all lines of modern medical practice, but he may do better work in every field and the best work in almost every instance." If he desires to enlist in this progressive class, and has the ability and application to support his wishes, "he must embrace the opportunities freely given by the masters of the profession at their clinics," and "he must be determined to improve himself at every opportunity."

Charles B. Dyde, M.D.

The Gelatin Method of Preserving Specimens.

Boston, July 16, 1906.

To the Editor:—The title page of "Pathology and Treatment of Glaucoma" by Priestley Smith, published by Churchill, London, 1891, states that the volume is a revised publication, with additions, of the Erasmus Wilson lectures, delivered at the Royal College of Surgeons of England, in March, 1889. This is interesting in view of the claims for priority as regards the gelatin method of preserving specimens in Prof. Watters' letter in The Journal, A. M. A., July 14, 1906. Smith's method may be briefly described somewhat as follows: Fixation by the bichromate method, freezing, bisecting and embedding in a glycerin or gelatin jelly, the latter being prepared by soaking gelatin in water (1/8), melting, and after adding the white of an egg, boiling and filtering. Glycerin, 8 parts, and 60 drops of 10 per cent. carbolic acid is then added. At page 183 of this monograph it is stated in a footnote that: "The first suggestion of preserving specimens in glycerin jelly was published by Nettleship in 1871 (Royal London Ophthalmic Hospital Reports VIII, page 225)." In an article published in the Royal London Ophthalmic Hospital Reports, August, 1880, on glaucoma, Smith mentions embedding specimens in glycerin jelly. During 1896-8 Dr. Charles H. Williams showed several specimens of eyes mounted according to the Priestley-Smith method, somewhat modified, at various society meetings, and at about the same time the method came into use at the laboratory of the Massachusetts Charitable Eye and Ear Infirmary, which was then under the direction of Dr. W. J. Daly and myself. The use of glycerin jelly for the preservation of sections for microscopic examination was considered, to my personal knowledge, a convenient method, a quarter of a century ago. Although found to have been superior to bichromate for fixation, I have made no mention of formalin or the Kaiserling solution, confining myself to the crude and inconvenient method of fixation so much in use at a time when ophthalmology was only beginning to receive recognition, nevertheless the suggestions of 1871 have resulted in the development of a method which to-day is evidently appreciated by the general pathologist as well as by the worker along special lines of investigation.

William Dudley Hall, M.D.

Disinfection by Formaldehyd.

Iowa City, Iowa, July 20, 1906.

To the Editor —A note in The Journal, July 14, in the department of Miscellany, states that in using the potassium permanganate method of liberating formaldehyd gas the amounts used are 3½ ounces of potassium permanganate and 1 pint of 40 per cent. solution of formaldehyd to every 1,000 cubic feet of air space to be disinfected. During the past two years I have experimented a great deal with this and other methods of generating formaldehyd gas in the Iowa State Board of Health bacteriologic laboratory and in buildings of all kinds to test thoroughly the various methods. I consider the potassium permanganate method of liberating gas as the best. Realizing that it will no doubt be adopted more and more by the physicians of the country, I can not forbear making a correction in the article above referred to.

It is impossible to evaporate a pint of the 40 per cent. solution of formaldehyd with 3½ ounces of potassium permanganate. To do so it will require from 6 to 6½ ounces, and with the use of any less the disinfection, I am sure, will not be satisfactory. The article states that the Maine Board of Health recommends 6½ ounces of potassium permanganate and 2 pints of formaldehyd solution for every 1,000 cubic feet. This is an error. They recommend 13 ounces of the permanganate, according to their recent bulletin on the subject. It should always be borne in mind when using this method that a part of the formaldehyd is changed to formic acid during the process of evaporation. We should use, therefore, correspondingly more of the formaldehyd solution than when employing other methods. For that reason I always recommend that 20 ounces of 40 per cent. formaldehyd solution and 8½ ounces of potassium permanganate be used for every 1,000 cubic feet of room space to be disinfected. I have also found that by first heating the vessel in which the disinfectant agents are placed the evaporation will be more complete. I consider it, therefore, a desirable part of the process.

Henry Albert.

The Retirement of Professor Austin Flint.

New York City, July 17, 1906.

To the Editor:—Cornell University Medical College has suffered a serious loss in the retirement this year of its distinguished professor of physiology, Dr. Austin Flint. The many practitioners who, in their student days, came under his instruction in the former Bellevue Hospital Medical College, and later in Cornell, should be interested in this brief note of farewell.

A man who, up to the present time, has been a vigorous and effective teacher, and who, in his seventieth year, has issued a new edition of his work on physiology, revised and in every respect up to date, must be intellectually still in his prime. The university, having fixed an age limit to the employment of its instructors, was unable longer to reap the advantages of Dr. Flint's services. The loss will fall heavily on the present and future students, for as a teacher the retiring professor has had no superior in the history of American medical education. No one who ever attended his lectures could remain ignorant of the principles of physiology, which he taught not as a mere theory, but as directly related to medical practice. He taught it with a clearness, a thoroughness, and an emphasis that made an indelible impression on those who heard him. This clearness and force of statement were supplemented by a dexterity in demonstration which made his teaching doubly interesting and effective. There have been great lecturers who failed in their experiments, and great experimenters with no talent of expression. Dr. Flint's experiments have been the counterpart of his discipline, exact, lucid, and illuminating. He was never at loss for a word, and his laboratory technic was almost faultless.

This efficiency in the class-room was not merely the aptness to teach of a clever pedagogue. Dr. Flint's skill as an instructor was the result of a perfect mastery of his science, of a facility of speech due to rhetorical instinct and wide reading. As an author Dr. Flint is even more admirable than as a teacher. His work on physiology has become a great scientific classic. Its literary style is without either the pedantry or the vulgarity which mars the works of some of our ablest medical writers. It is a prose style, which, from its simplicity and elegance, will always be classical, yet always modern. To the scientific resources of the author the book bears emphatic witness. Dr. Flint's original work in his department has been manifested in a variety of ways. Not only has he contributed largely to our knowledge of the processes of digestion, secretion and circulation; he is also to be numbered among the ablest neurologists and alienists of our time. For, in addition to his knowledge of cerebral physiology and pathology, his native good sense and his experience as a man of the world have given him prestige in that difficult and delicate department of medical science and practice. As an expert in mental diseases he has always shown himself to be not merely a competent alienist, but an honest man.

About three years ago he collected and published in two large volumes more than sixty essays and articles contributed by him at various times to medical and other periodicals. These show at how many points their author has touched life. Besides the contributions to the literature of his own particular *Fach*, there are papers which relate to many other widely different subjects—historical, medicolegal, diagnostic, therapeutic and dietetic. There are reports on hospitals and other charitable institutions. There are discussions concerning gymnastics, medical ethics, pedagogics, and the practical life of the medical student. All these topics are handled with literary skill, and would of themselves be a lasting memorial of a life devoted to science and letters. The maxim that no evil should be spoken of the dead is sometimes interpreted to mean that there should be no praise of the living. Nothing need here be said of those personal qualities which have reinforced Dr. Flint's scientific attainments and influence. As a controversialist he has frequently aroused bitter antagonism. But his most decided opponents would admit that he has been a fair fighter, and that his manner of warfare has been that of a man, not of a serpent. It is simple justice to say that Dr. Flint has left a permanent impression on the medical institutions of the city, first as dean of the Bellevue Hospital Medical College, and later as one of those who have directed the medical department of Cornell. His example should be of advantage to the new generation of physicians and surgeons, for he has shown how a great specialist and man of science can be efficient in matters of practical importance, and how the genius and virtuosity of a learned physiologist may be combined with the rare distinction of a man of letters.

Samuel Alexander.

Triplets Living at Forty-seven Years of Age.

Cincinnati, July 16, 1906.

To the Editor:—I know of a remarkable case of triplets, born March 24, 1859, living at this time, now 47 years of age, two brothers and a sister. One of the brothers has been a life insurance agent for twenty years, and I know him intimately; all are living in good health. As far as my knowledge goes this record is unequaled. John L. Davis, M.D.

"Delicensed" Physician.

Chicago, July 17, 1906.

To the Editor:—In a magazine article, having occasion to use an adjective descriptive of a physician with license revoked, I coined "delicensed physician." This term has met no serious objections from the medical profession (I am a practicing lawyer) and as the authorities contain no explicit term for that purpose, I suggest this word. I tried to write this grouping in a sentence, "disbarred lawyer, delicensed physician, suspended clergyman." The sentence is far from pleasing when "physician with license revoked," is used in connection with suspended or expelled clergyman and disbarred lawyer. Elmer E. Rogers.

Marriages

Joseph N. La Londe, M.D., to Miss Heisler, both of Cold Springs, Minn.

Dwight E. Morton, M.D., to Miss Bertha C. Bugg, both of Taylorville, Ill., July 5.

Henry P. Smith, M.D., Pearson, Ga., to Miss Josie Hinson, Hybert, Ga., recently.

William J. Walsh, M.D., to Miss Jennie Clare Glynn, both of San Francisco, July 10.

Thomas A. Carroll, M.D., Easton, Pa., to Miss Charlotte G. Parker, at Baltimore, June 18.

Carl G. Zeidler, M.D., Belleville, Mich., to Miss Harriet Fletcher, of Chelsea, Mich., July 5.

Charles Michel Gray, M.D., Vineland, N. J., to Miss Myrtle Dickey, of Cornell, N. Y., June 27.

Arthur Hoermann, M.D., Watertown, Wis., to Miss Maria Meyer of Berlin, Germany, July 28.

Alfred Hugh Fowler, M.D., Chicago, to Miss Josephine Smith Bates, of Fairbury, Ill., June 30.

Hector McArthur, M.D., Cedar Creek, Neb., to Miss Flossie P. Ferguson, of Omaha, Neb., July 10.

James Glenn Vance, M.D., Warrior, Ala., to Miss Mary B. McIntosh, at Jamestown, N. Y., July 10.

Eber Reeves, M.D., Oberlin, Kan., to Miss Mary Veeh of Stuttgart, Kan., at Almena, Kan., July 8.

R. L. Clark, M.D., Detroit, Mich., to Miss Prudence Eliza Chapman of Walled Lake, Mich., July 11.

Wellie S. Mackenzie, M.D., Munising, Mich., to Miss Maude Elizabeth Warren of Chicago, June 27.

John F. Armentrout, M.D., Staunton, Va., to Miss Nancy Louise Merritt, in Augusta County, Va., June 27.

Charles B. Toms, M.D., Big Bay, Mich., to Miss Cordelia La Rue, of Republic, Mich., at Marquette, Mich., June 27.

J. Howard Iglegart, M.D., Baltimore, to Miss Nancy Kinnercy, Sweet Chalybeate Springs, Va., at Baltimore, July 18.

Deaths

Walter B. Odiorne, M.D. Harvard University Medical School, Boston, 1899, a member of the American Medical Association, and Massachusetts Medical Society; a recipient of the highest honors on graduation; an interne at the Massachusetts General Hospital, and afterwards a member of the staff of that institution, and associated with Dr. J. Collins Warren; one of the most promising and best known of the younger surgeons of Boston, died suddenly at the home of his mother in Cambridge, July 15, from heart disease, aged 33.

Thomas Jefferson Eaton, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1867, hospital steward of the One Hundred and Fourteenth Ohio Volunteer Infantry, during the Civil War; a well known chemist and toxicologist of Kansas City, Mo.; a member of the first faculty of Kansas City Medical College; died at the home of his daughter in Kansas City, July 18, from septicemia, following operation on a tumor, after an illness of a year and a half, aged 66.

George Willard Stevens, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1872, of Toledo, Ohio, a veteran of the Civil War; for many years a local surgeon to the Lake Shore, Hocking Valley and Ohio Central railroads, died at St. Vincent's Hospital, Toledo, after an illness of three years, June 9, aged 59.

Edward G. Tuffs, M.D. New York University, New York City, 1879, of New York City, a member of the Medical Society of the County of New York, the Medical Association of Greater New York, and the New York County Medical Association, died July 20, aged 55.

Edward O. Bell, M.D. Medical College of Ohio, Cincinnati, 1889, a member of the Columbiana County (Ohio) Medical Association, died at his home in East Rochester, Ohio, July 13, from malignant disease of the bladder, from which he had suffered ten years, aged 42.

Robert H. Theyson, M.D. New York University, New York City, 1891, of New York City, a member of the Medical Society of the County of New York, died July 20, from peritonitis, following an operation for appendicitis, aged 50.

William H. Bartles, M.D. Jefferson Medical College, Philadelphia, 1854, formerly a member of the medical staff of the Pennsylvania Hospital for the Insane, Philadelphia, died at his home in Flemington, N. J., July 18, a week after an operation for appendicitis, aged 63.

Charles A. Tinker, M.D. New York Homeopathic College and Hospital, New York City, 1879, of New York City, a member of the New York County Medical Society, died suddenly, from heart disease, at West Hampton Beach, Long Island, July 11, aged 51.

Thomas N. Garnett, M.D. Jefferson Medical College, Philadelphia, 1865, a surgeon in the Confederate service during the Civil War, died at his home in Manchester, Va., July 10, from cerebral hemorrhage, after an illness of one day, aged 82.

Robert H. Allison, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, some time port physician of Philadelphia, died suddenly in his office in Ardmore, Pa., July 16, from cerebral hemorrhage, aged 59.

Samuel Thompson, M.D. Rush Medical College, Chicago, 1867, first president of the Tama County (Iowa) Medical Association, physician for the Indian school and agency at Toledo, Iowa, died at his home in Toledo, June 20, aged 62.

David Clark Strachan, M.D. New York Homeopathic Medical College and Hospital, New York City, 1905, interne in Flower Hospital, New York, died at his home in East Orange, N. J., from sarcoma, after a long illness, June 23, aged 24.

David R. Streets, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1880, Hahnemann Medical College, Philadelphia, 1881; died at his home in Bridgeton, N. J., July 15, from heart disease, aged 50.

Andrew Washington Bowman, M.D. Rush Medical College, Chicago, 1878, for twenty-six years an active practitioner of Davenport, Iowa, died at his home in that city, from diabetes, July 17, after an illness of a year, aged 59.

W. F. Troughton, M.D. St. Thomas Hospital, London, England, 1855, for thirty years a practitioner of Seneca, Kan., died suddenly from heart disease, at the home of his daughter in Fort Worth, Texas, June 23, aged 69.

Frederick Warren Trull, M.D. Bellevue Hospital Medical College, New York City, 1886, for two terms coroner and public administrator of Solano County, Cal., died at his home in Vallejo, June 18, from nephritis, aged 44.

Hugh Wallace, M.D. Cincinnati College of Medicine and Surgery, 1887, a pioneer physician of Phillipsburg, Kan., and for many years surgeon of the Rock Island System, at that point, died June 27, from cerebral hemorrhage.

Sherman S. Utz, M.D. Kentucky School of Medicine, Louisville, 1893, who had resided for several years in Texas and Arizona on account of ill health, died at Georgetown, Ind., June 22, from tuberculosis, aged 40.

Louis M. Strauss, M.D. Jefferson Medical College, Philadelphia, 1884, formerly mayor and president of the school board of Aurora, Colo., died suddenly at his office in Denver, June 30, from cerebral hemorrhage, aged 52.

Joseph C. Wright, M.D. Howard University Medical Department, Washington, D. C., 1897, a colored practitioner of Pueblo, Colo., died at his old home in South Carolina, July 13, from tuberculosis, after a long illness.

Adam S. Keathly, M.D. Vanderbilt University Medical Department, Nashville, 1887, died at his apartments in Harriman, Tenn., July 8, from hemorrhage of the stomach, after an illness of four days, aged 49.

Marguerite Bell, M.D. Hering Medical College and Hospital, Chicago, 1894, who was under arrest at Detroit for alleged criminal practices, committed suicide by swallowing poison at her home in Detroit, July 17.

George P. Thompson, M.D. St. Louis Medical College, 1873, for 20 years local surgeon of the Frisco System at Golden City, Mo., died suddenly at his home in that city, June 24, from heart disease, aged 62.

James L. Edwards, M.D. Jefferson Medical College, Philadelphia, 1862, a veteran of the Civil War, and for several years a resident of Florence, Colo., died suddenly at his home in Florence, July 8, aged 70.

Albert H. Combs, M.D. Medical College of Indiana, Indianapolis, 1892, secretary of the Board of Health of Marion, died at his home in that city, July 17, from heart disease, after a long illness, aged 49.

Theophilus Gaffner, M.D. Missouri Medical College, St. Louis, 1880, a member of the American Medical Association, died at his home in Trenton, Ill., June 15, aged 54.

Denard S. Williams, M.D. University of Maryland School of Medicine, Baltimore, 1865, a health warden of Baltimore, died at his home in that city from uremia July 13, after an illness of five days, aged 61.

William H. Wolfe, M.D. University of Maryland School of Medicine, Baltimore, 1886, a practitioner of Martinsburg, W. Va., died suddenly, June 14, while driving home from a professional call.

Henry J. Crouse, M.D. Baltimore University School of Medicine, 1899, a practitioner of Neshanic, N. J., died in Somerset hospital, June 29, three days after an operation for appendicitis, aged 52.

George W. Jones, M.D. Northwestern Medical College, of St. Joseph, Mo., 1891, died at his home in Colfax, Iowa, July 14, from injuries received in a fall from his buggy the previous day, aged 50.

Jacob W. Cline, M.D. Miami Medical College, Cincinnati, 1869, formerly of Germantown, Ohio, died at his home near Dayton, June 29, after an invalidism of four years, aged 73.

William Lysander Adams, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1876, died suddenly at his home in Hood River, Ore., April 26, from heart disease, aged 85.

W. A. McIntosh, M.D. Toronto Medical College, 1900, formerly a practitioner of Deer Creek, Minn., died in Grace Hospital, Toronto, July 18, after a brief illness, aged 29.

Albert F. Perry, M.D. Meharry Medical College, Weldon University, Nashville, Tenn., 1890, died suddenly, July 12, from pulmonary hemorrhage, in his office at Chicago, aged 45.

Robert Schatelowitz, M.D. University of Helsingfors, Finland, 1893; University of Berlin, Germany, 1897; of Leadville, Colo., died suddenly from heart disease, July 10, in that city.

George W. Gaines, M.D. University of Louisville Medical Department, 1865, died at his home near Hickory Flat, Ky., July 11, after an illness of several years, aged 61.

Ernest T. Lind, M.D. Rush Medical College, Chicago, 1895, died at the home of his father in Chicago, July 22, from pneumonia, after an illness of two weeks, aged 34.

William A. Terry, M.D. Kentucky School of Medicine, Louisville, 1861, died at his home in Big Clifty, Ky., June 9, from tuberculosis, after a long illness, aged 67.

Henry Baethig, M.D. Hahnemann Medical College, Philadelphia, 1870, died suddenly at his home in Buffalo, N. Y., July 14, from heart disease, aged 56.

Samuel M. French, M.D. Hahemann Medical College and Hospital, Chicago, 1882, died recently at his home in Chicago, aged 80, and was buried June 26.

Rudolph H. Hutchason, M.D. Louisville Medical College, 1862, died at his home in Cannelton, Ind., July 13, from uremia, after a short illness, aged 56.

Samuel A. Graham, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1906, was shot and instantly killed at Holder, I. T., June 6, aged 36.

William McAffee, M.D. Hahnemann Medical College, Philadelphia, 1861, died from osteosarcoma at his home in Rockford, Ill., July 20.

Harry Stuart Chatterton, M.D. University of Nashville Medical Department, 1905, died at Paragould, Ark., July 12, from septicemia.

Lorenzo Northrup, M.D. Rush Medical College, Chicago, 1869, a resident of Valley Falls, Kan., since 1855, died in that city, July 9.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending July 21, 1906:

Clarke, Jos. T., surgeon, left Fort Ethau Allen, Vermont, with the 15th Cavalry, en route to Mount Gretna, Pa. for duty.

Thomason, Henry D., asst.-surgeon, left Whipple Barracks, Ariz., en route to Fort Huachuca, Arz., for duty with the 5th Cavalry en route to Camp near Austlu, Texas.

Phalen, Jas. M., asst.-surgeon, reports arrival at Fort Clark, Texas, for duty with Squadron, 1st Cavalry, en route to Camp near Austin, Texas.

Brownlee, Chas. Y., asst.-surgeon, left Alcatraz Island, Cal., with the 22d Infantry, en route to Camp at American Lake, Washington, for duty.

Flagg, Chas. E. B., asst.-surgeon, left Vancouver Barracks, Wash., with troops en route to Camp at American Lake, Wash., for duty.

Quinton, Wm. W., asst.-surgeon, left Fort McPherson, Ga., with the 17th Infantry, en route to Chickamauga Park, Ga., for duty.

Monerief, Wm, H., asst.-surgeon, left Fort McPherson, Ga. with the 17th Infantry, en route to Chickamauga Park, Ga., for duty.

Powell, Wm. A., asst.-surgeon, reports arrival at Fort Leavenworth, Kans., to accompany troops marching to Camp of Instruction at Fort Riley, Kans. Upon completion of this duty to return to his station at Jefferson Barracks, Mo.

Devereux, J. R., asst.-surgeon, left Fort Logan, Colo., on 15 days' leave of absence.

Carswell, R. L., asst.-surgeon, left Depot of Recruits and Casuals, Angel Island, Cal., en route with 22d Infantry to Camp of Instruction at American Lake, Wash., for duty.

Little, Wm. I., asst.-surgeon, left Fort Sam Houston, Texas, with the First Battalion, 26th Infantry, en route to Camp of Instruction near Austin, Texas.

Grissinger, J. W., asst.-surgeon, reports arrival at Camp Roosevelt, Camp of Instruction, Mount Gretna, Pa., for duty.

Wilson, Compton, asst.-surgeon, left Fort Sheridan, Ill., en route with two battalions, 27th Infantry, to Camp of Instruction, Fort Benjamin Harrison, Ind.

Johnson, R. W., surgeon, left Fort Crook, Neb., with 30th Infantry, en route to Camp of Instruction at Fort Riley, Kans.

Halloran, Paul S., asst.-surg., left Fort Leavenworth, Kans., with the Second Squadron, 9th Cavalry and Field Artillery, en route to Camp of Instruction, Fort Riley, Kans.

Robbins, C. P., asst.-surgeon, left Madison Barracks, N. Y., en route to Camp Roosevelt, Camp of Instruction at Mount Gretna, Pa.

Dunean, L. C., asst.-surgeon, left Fort Snelling, Minn., with troops en route to Camp of Instruction at Fort Benjamin Harrison, Ind.

Purnell, Henry S., asst.-surgeon, left Fort Maekenzie, Wyo., with troops en route to Camp of Instruction at Fort D. A. Russell, Wyo.

Roberts, William, asst.-surgeon, retired from active service, July 15, 1906, on account of disability.

Kirkpatrick, Thos. J., asst.-surgeon, left Fort Moultrie, S. C., en route to Fort McPherson, Ga, for temporary duty.

Keller, Wm. L., asst.-surgeon, left Fort Douglas, Utah, with troops en route to Camp of Instruction at Fort D. A. Russell, Wyo.

Edger, Benj. J., Jr., asst.-surgeon, left Fort Sam Houston, Texas, with Field Artillery, en route to Camp of Instruction, Austin, Texas.

Snyder, H. D., surgeon, left Fort Sam Houston, Texas, en route to Camp of Instruction at Austin, Texas.

Boyer, P. L., asst.-surgeon, left Fort Sam Houston, Texas, with First Cavalry, en route to Camp of Instruction at Austin, Texas.

Birmingham, H. P., surgeon, left Fort McPherson, Ga., en route to Maneuver Camp, Chickamauga Park, Ga., for duty as chief surgeon.

The following assignments of assistant surgeons, recently appointed, are ordered:

Love, Albert G., will proceed from Memphis, Tenn., to San Francisco, Cal., and report to the commanding general, Department of California, for assignment to duty with troops in camp in Yosemite National Park, Cal.

Jones, Harold W., asst.-surgeon, will proceed from St. Louis, Mo., and report to the commanding general, Department of California, for assignment to duty with troops in camp in Sequoia National Park, Cal.

Pinkston, Omar W., asst.-surgeon, will report to the commandant of the U. S. Military Prison at Fort Leavenworth, Kan., for temporary duty.

Hanson, Louis H., asst.-surgeon, will proceed from Eau Claire, Wis., to Fort Liseum, Alaska, and report to the commanding officer for duty at that post, relieving First Lieut. Chester J. Stedman, U. S. Army.

Sehmitter, Ferdinand, asst.-surgeon, will proceed from Schenectady, N. Y., to Fort Egbert, Alaska, and report to the commanding officer of that post for duty, relieving First Lieut. John R. Bosley, asst.-surgeon.

Reed, Howard A., asst.-surgeon, will proceed from Milford, Pa., to San Francisco, Cal., and report to the commanding general, Department of California, for assignment to temporary duty until October 1, 1906, when he will report to the medical superintendent of the Army Transport Service in San Francisco, Cal., for assignment to duty.

The following named assistant surgeons, recently appointed, will proceed from the places set opposite their respective names, to San Francisco, Cal., and take the transport to sail from San Francisco on or about July 25, 1906, for the Philippine Islands, and on arrival at Manila will report to the commanding general, Philippines Division for assignment to duty: Reasoner, M. A., Morrisonville, Ill., Nichols, Henry J., Binghamton, N. Y., Hopwood, L. L., Des Moines, Iowa; Freeman, C. E., La Grange, Mo.; McIntyre, H. B., Randolph, Vt.

Pyles, Will L., asst.-surgeon, granted one month's leave of absence, with permission to apply for an extension of one month.

Church, James R., asst.-surgeon, left Fort Robinson, Neb., with 10th Cavalry, en route to Camp of Instruction at Islay, near Fort D. A. Russell, Wyo.

Stockard, Jas. K., contract surgeon, returned to duty at Fort Revere, Mass., from temporary duty at Fort Banks, Mass.

Felts, Robert L., contract surgeon, granted leave of absence for three months.

Brown, Wilmont E., contract surgeon, returned from Fort Stevens, Oregon, to duty at his proper station, Fort Walla Walla, Wash.

Adair, Geo. F., contract surgeon, returned from temporary duty at Fort Slocum, N. Y., to duty at his proper station, Fort Wadsworth, N. Y.

Suggs, Frank, contract surgeon, returned to duty at Fort Michie, N. Y., from leave of absence.

Hutson, T. Ogier, contract surgeon, ordered from Fort McPherson, Ga., to Fort Moultrie, S. C., for temporary duty.

Bernheim, Julien R., dental surgeon, left Fort Wadsworth, N. Y., and arrived at Fort Slocum, N. Y, for duty.

Rhoades, Rex H., dental surgeon, left Fort Sheridan, Ill., and arrived at Columbus Barracks, Ohio, for duty.

Wing, Franklin F., dental surgeon, left Fort Riley, Kans., and arrived at Fort D. A. Russell, Wyo., for duty.

Carpenter, Alden, dental surgeon, left Fort Egbert, Alaska, and arrived at Fort Gibbon, Alaska, for duty.

Boak, S. Davis, dental surgeon, left Columbus Barracks, Ohio, on leave of absence for one month.

Wolven, F. Homer, dental surgeon, left Fort Trumbull, Conn., and arrived at Fort H. G. Wright, N. Y., for duty.

Johnstone, Ernest K., contract surgeon, ordered to duty at the Presidio of San Francisco, Cal.

Miller, Wm. G., contract surgeon, relieved from duty in the Philippines Division, and ordered to the United States.

Hogan, David D., contract surgeon, left Fort Hamilton, N. Y., and arrived at Fort Jay, N. Y., for temporary duty.

Harris, Herbert I., contract surgeon, granted an extension of one month to his leave ot absence.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending July 18, 1906:

Ballhache, P. H., surgeon, directed to proceed to Buffalo, N. Y., for special temporary duty, on completion of which to rejoin station at Stapleton, N. Y.

Mead, F. W., surgeon, temporarily relieved from Sanitary Inspection Board in Washington and directed to proceed to Point Pleasant, N. J., for the purpose of making physical examinations of keepers and surfmen in the Life Saving Service.

Kalloch, P. C., surgeon, directed to proceed to Sayville, N. Y., for the purpose of making physical examinations of keepers and surfmen in the Life Saving Service.

Cobb, J. O., surgeon, leave of absence granted for 10 days from June 25, amended to read nine days only.

Stimpson, W. G., surgeon, granted leave of absence for fifteen days, from July 28.

Blue, Rupert, P. A. surgeon, temporarily relieved from Sanitary Inspection Board in Washington, and directed to proceed to Tuckerton and Atlantic City, N. Y., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service.

Goldberger, Joseph, P. A. surgeon, directed to report to P. A. Surgeon M. J. Rosenau, chairman of the board making investigations as to the prevalence and origin of typhoid fever in the District of Columbia, for temporary duty.

Earle, B. H., P. A. surgeon, temporarily relieved from Sanitary Inspection Board in Washington, and directed to proceed to Ocean City, Md. Chincoteague, Wachapreague and Cape Charles City, Va.

Lloyd, B. J., P. A. surgeon, granted leave of absence for 12 days from May 25.

McCoy, J. W., P. A. surgeon, directed to proceed from San Francisco, Cal., to Fort Stanton, N. M., reporting to the Medical Officer in command for duty and assignment to quarters.

Boggess, J. S., asst.-surgeon, directed to proceed to Freeport and Sayville, N. Y., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service.

Roberts, N., asst.-surgeon, relieved from duty at Fort Stanton, N. M., and directed to proceed to Washington, D. C., for temporary duty in the Hygienic Laboratory.

Salmon, T. W., asst.-surgeon, granted leave of absence for fourteen days from July 14, on account of sickness.

Gibson, L. P., acting asst.-surgeon, granted leave of absence for five days.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended July 20, 1906:

SMALLPOX—UNITED STATES.

Illinois: Galesburg, July 7-14, 9 cases.
Louisiana: New Orleans, July 7-14, 10 cases, 1 death.
Massachusetts: New Bedford, July 7-14, 2 cases.
Montana: General, June 1-30, 7 cases, 1 imported.
New York: New York, July 7-14, 2 cases.
Ohio: Cincinnati, July 6-13, 1 case.
South Carolina: Camden, July 7-14, 1 case.
Tennessee: Memphis, July 7-14, 1 case.
Texas: Hopkins County, to July 12, 50 cases.
West Virginia: Marshall County, April 1-July 14, 24 cases.
Wisconsin: Appleton, July 7-14, 3 cases; La Crosse, 1 case.

SMALLPOX—INSULAR.

Philippine Islands: Manila, May 26-June 9, 2 cases.

SMALLPOX—FOREIGN.

Chile: Antofagasta, May 21-June 4, 8 cases, 4 deaths.
Great Britain: Hull, June 23-30, 1 case.
Greece: Athens, June 18-25, 1 death.
India: Bombay, June 12-19, 3 deaths; Calcutta, June 2-9, 33 deaths; Karachi, June 10-17, 7 cases, 1 death; Madras, June 9-15, 5 cases; Rangoon, June 2-9, 8 deaths.
Siberia: Vladivostock, May 28-June 4, 3 cases.

YELLOW FEVER.

Costa Rica: Limon (thirty miles from), 3 cases.
Mexico: Merida, June 24-July 7, 15 cases, 12 deaths.

PLAGUE.

Australia: Brisbane, May 16, 1 death; Fremantle, May 31, 1 case; Perth, May 15, 1 death; Rockhampton, May 13, 1 case; Sydney, May 10, 1 death.
India: Bombay, June 12-19, 67 deaths; Calcutta, June 2-9, 43 deaths; Karachi, June 10-17, 51 cases, 49 deaths; Rangoon, June 2-9, 74 deaths.
Chile, Antofagasta, May 20-June 4, 10 cases, 1 death.
Egypt: Alexandria, June 23, 1 case; Minieh, June 27, 1 case.
Peru: Lima, June 9-16, 1 case, 1 death; Paita, 1 case, 1 death; Trujillo, 1 death.
Japan: Formosa, May 1-31, 788 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, May 26-June 9, 2 cases, 2 deaths; Provinces, 6 cases, 2 deaths.

CHOLERA—FOREIGN.

India: Bombay, June 12-19, 20 deaths; Calcutta, June 2-9, 38 deaths; Madras, June 9-15, 3 deaths.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

COMPOSITION OF SAL-CODEIA (BELL).

Grant, Iowa, July 20, 1906.

To the Editor:—Will you kindly state what "Sal-Codeia (Bell)" contains?

M. B. Weir.

Answer.—According to the analysis by the Council on Pharmacy and Chemistry the contents of original sealed packages as purchased in the market were found to be a mixture containing the following ingredients approximately in the proportions given: Acetanilid, 43; sodium bicarb., 21; sodium salicylate, 20. See The Journal, June 3, 1905.

STUDY OF GYNECOLOGY AND OBSTETRICS IN GERMANY.

New York, July 21, 1906.

To the Editor:—In your reply to Dr. J. L. S., The Journal, July 21, you say: "Any one with a limited knowledge of German who goes to Germany to study should at once secure a teacher and devote several hours a day to securing a working knowledge of the language."

Permit me to say that this could be done before he goes to Germany, but it would prevent him from ever learning German so that he could think in German. I would advise boarding with some family in a small town or village where no English is spoken, hear Germans speak among themselves; in other words, learn by the ear first of all. Within four or six weeks he will understand more than he will be able to learn by books in six months. Very soon he will be delighted to find himself able to read light literature and able to dispense with the dictionary. He should commence with children's, or blood-and-thunder, stories, and only when he can read such simple language with great facility should be take up good books written in elegant style, by means of which he learns the rules of grammar without a grammar. This is the advice Macauley has given; hearing the language by the ear will enable him to think in the language, while commencing with teacher and books will teach him to translate. What a pity to go to Germany and to take a teacher to learn German?

A. Rose.

APPOINTMENTS IN ARMY AND NAVY MEDICAL SERVICE.

Ohio, July 14, 1906.

To the Editor:—1. What *modus operandi* is necessary to secure an appointment in the commissioned medical and surgical service of the U. S. Army or Navy?

2. What are the addresses of the secretaries of the registration boards of (a) South Dakota, (b) Kansas and (c) Oklahoma?

C.

Answer.—1. Persons of the required age and attainments are eligible to examinations which are held at certain intervals. For circular giving information address the surgeon-general of the medical department of the Army—or of the Navy—at Washington, D. C.

2. (a) Dr. H. E. McNutt, Aberdeen, S. D.; (b) Dr. F. P. Hatfield, Grenola, Kans.; (c) Dr. J. W. Baker, Enid, Okla.

LENGTH OF QUARANTINE IN DIPHTHERIA.

Seattle, Wash., July 13, 1906.

To the Editor:—Will you kindly express an opinion as to the length of time quarantine should be kept up in a case of diphtheria in which all clinical symptoms have disappeared, but in which repeated throat cultures are positive after many days. It has appeared to me that too strict an insistence on an arbitrary rule may create an undue prejudice against really necessary restraint. I see it stated in at least one text-book that the Klebs-Loeffler bacilli may linger in the throats of patients for weeks or even months.

W. R. Tymms.

Answer.—Isolation of the patient should continue until at least two microscopic examinations on two consecutive days fail to show the bacilli. If the diphtheria bacilli are infectious, and they are, there is no question that a child with the disease germs in the throat or secretions of the nose or mouth is a source of danger to the public. If such a case is treated with cleansing and germicidal sprays in the throat and nose the disappearance of the germ can be hastened. Boston, New York and Philadelphia terminate quarantine in cases of diphtheria only on the absence of the diphtheria bacilli, determined by two or three examinations with the microscope on consecutive days with as many negative results. In Chicago the physician does not make the microscopic examination, the department of health sends a medical inspector to the case to take cultures for the municipal laboratory as no disinfection of premises in diphtheria is undertaken until two or three examinations on consecutive days show absence of the Klebs-Loeffler bacilli. In cases where no microscope is used isolation in the mild cases should be not less than ten days after all membrane has disappeared from the throat and nose. In severe cases isolation should continue not less than three weeks after all membrane has disappeared from the throat and nose. If there remains any discharge from the throat, nose, ears, eyes or if there is evidence of inflammation of the kidneys the time of isolation should be extended till these local disorders have disappeared. The more scientific and exact method of terminating cases by the laboratory method is to be preferred.

THE CAUSE OF BAD BREATH.

Stillwater, Okla., July 9, 1906.

To the Editor:—Can you help me out? I have a man 43 years old, in perfect health, who has never had a sick day. His breath is something awful, his tongue is clean; he always has washed his teeth three times a day, there is absolutely nothing the matter with his nose or throat, and when he breathes through his nose his breath is not nearly so bad. He has used everything that one can think of until I have come to the conclusion that it is his teeth alone. I notice that people with false teeth never have bad breath when they keep them clean. He is exceptionally clean in his person, highly intelligent, and this condition is awful, for it can be noticed across the room, and smells like something dead. Any help on the above will be appreciated. J. T. Gray.

Answer.—An answer to a question like the above, which contains so few details, can only be along general lines. A foul, offensive odor, "like something dead" as mentioned, can only come from the decomposition of organic matter due to saprophytic organisms, and the diagnostic problem before one is, first, to discover the location of the decomposing matter. This may be in the stomach, in which case a gastric lavage would settle the question by removing the decomposing matter. One of the most frequent causes of such a foul breath is retention of decomposing caseous matter in the crypts of the tonsils. This condition may not produce any gross evidences of tonsillar trouble nor any subjective manifestations. The crypts most commonly involved are one or two large ones occupying the upper surface of the tonsil between the diverging pillars of the fauces or overlapped by one of the pillars, so they are difficult to find, and must be sought in order to be discovered. Crypts in this location are not emptied of their contents when the tonsil is compressed during the ordinary act of swallowing. Similar little, foul, cheesy masses may form in the follicles at the base of the tongue, where they are likewise difficult to locate. The teeth should be gone over by a competent dentist, who will be able to locate and remedy any cavities, etc. The pharyngeal adenoids and postnasal space may also harbor decomposing matter. The accessory sinuses, such as the frontal, ethmoidal, sphenoidal and the antrum of Highmore must be searched as possible sources of the trouble. The smallest particle of carious bone in the nasal or oral cavity may produce an exceedingly foul odor, which is very penetrating. A bad odor may also originate from decomposing secretions retained in the bronchi or lung tissue. It will thus be seen that the diagnosis in this case must rest with the one who is able to locate the decomposing matter.

Book Notices

Operative Surgery. By Joseph D. Bryant, M.D., Professor of Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College. Fourth Edition. Cloth. 2 Vols. Pages, 1527, illustrations, 1793, of which 100 are in colors. Price, $10.00. New York: D. Appleton & Co., 1906.

Bryant's Operative Surgery has fairly won a distinct place for itself among American text-books on surgery. This fourth edition follows very rapidly on the third, showing a large demand for the book. The general principles of operative surgery are clearly and fully handled in the three opening chapters. This is followed by the surgery of the tissue systems, vessels, nerves, bones, etc.; this again by the operative surgery of the regions. The descriptions of the operations are very complete and are made more graphic by the assistance of excellent plates. In describing each operation the anatomic points are fully presented, the instruments required, the precautions to be taken, and comments on unusual features are so clear as to give to him who consults the book a very useful guide in the actual performance of the work.

The second volume, devoted to the abdomen and thorax, is especially valuable to the operative surgeon of to-day. The subjects of intestinal and gastric surgery and the surgery of the other abdominal organs, which occupies so much of the time of the modern hospital surgeon, are most admirably presented. In the chapter on the surgery of the liver, one might suggest a fuller exposition of the incisions desirable in this work and the omission of several methods, which have evidently been given up after trial, such as Halstead's hammers for common duct work and Murphy's modified button for drainage in cholecystotomy, which are probably no longer employed, even by the originators themselves. The chapter on hernia is very full and complete, and proper credit given to such important operations as Andrew's imbrication method for inguinal hernia and Mayo's operation in umbilical hernia. The chapter on surgery of the prostate is well up to date and unusually well illustrated.

Throughout the book Dr. Bryant presents not only the methods which he has found useful and has adopted in his own clinic, but practically all the methods which have the approval of well recognized authority. This scheme has resulted in the development of a text-book which lacks somewhat the personal character of such an operative surgery as Kocher's, but gives the reader a broader view and a choice of methods. Taken as a whole, the work is one of the best expositions of operative surgery in the English language and deserves the favorable reception which has been given to it.

The Teeth and Their Care. By T. P. Hyatt, D.D.S., Member Second District Dental Society of the State of New York. Cloth. Pp. 43. Price, 50c. Brooklyn, N. Y.: King Press, 1905.

In this little book will be found information regarding the teeth that every layman should have, and hints regarding their care that, if followed, will prevent not only early decay, but certain digestive disorders.

Miscellany

Survival of Parties Drowning Together.—Rochon has been experimenting on animals and believes that he has demonstrated that a person succumbing to asphyxia in the water dies sooner than when a condition of apparent death has been early produced by inhibition from the nervous shock. With the nervous asphyxia the person ceases to breathe and no water is drawn into the lungs. Death seems to be immediate and yet it is liable to be only apparent and the individual may be resuscitated after a comparatively long interval. With true asphyxia the water is drawn into the lungs and other changes occur, easily recognized at the autopsy. The interval during which resuscitation is possible is much shorter than in case of suspended animation from nervous inhibition. Consequently the individuals in the latter condition survive those succumbing to asphyxia. His communication on the subject is published in the *Jour. de Méd. de Paris* for June 3, 1906.

Cholemia in Melancholia.—Cololian (*Arch. de Neurol.*) believes that disorder of the liver plays an important part in the pathogenesis of melancholia, and publishes a number of case histories which he considers go far to demonstrate this fact. He would almost say that biliary disease and simple "familial cholemia" have a direct causal relation to the mental disorder. The frequency of gallstones at the autopsies of melancholiacs is something more than a mere coincidence. In the cases of recovery from melancholia that he has observed it was only after disappearance of the hepatic disorders that the favorable mental change took place. The urobilin disappeared gradually from the urine and the Gmelin serum reaction became less marked till it finally disappeared. He concludes, therefore, that melancholia is a general and simultaneous affection of the viscera and the brain in which the liver is involved prior to the symptoms of mental depression. Its lesions seem to affect the mental state of the predisposed and the degenerate.

Humidity.—McAirty, in the *Montreal Medical Journal*, June, 1906, states that in regard to humidity the dwellings of the poor, supplied by the boiling kettle on the kitchen stove, are apt to be in a more satisfactory state than steam-heated flats where no special provision for a proper degree of moisture has been made. Air saturated with moisture at zero will have a humidity of only six when heated to 70 F., and the average indoor humidity in winter is often from 28 to 30, necessitating a temperature of from 76 to 78 to make most people comfortable. A degree of humidity of 60 per cent. makes a temperature of 65 comfortable and produces less nervous tension than a higher and dryer atmosphere, while the effect of such air on the skin and respiratory mucous membranes is injurious. McAirty describes an apparatus for furnishing and regulating the supply of moisture for small hospitals or apartment buildings, but not suitable for private houses or small buildings.

Roentgen Rays Plus Diphtheria Antitoxin in Pernicious Anemia.—Renon and Tixier report marked benefit in a case of pernicious anemia from injections of diphtheria antitoxin and Roentgen treatment. They found that each of these measures started a vigorous myeloid reaction. The bone marrow, they think, is evidently stimulated to a reaction by the leucolysins formed by destruction of white corpuscles under the influence of the Roentgen rays. The same effect is also induced by the hemolysins formed by the action of the diphtheria antitoxin. The energy of the reaction gradually decreases, consequently the two procedures were applied alternately. The patient was a woman of 68, who had noted the first symptoms eighteen months previously. When first seen there were 880,000 red and 2,000 white corpuscles in the field. Three months later, under the combined treatment, the reds numbered 2,405,000 and the whites 4,000, while the general health showed great improvement. The eosinophiles increased regularly from 3 to 16 during the six hours after an injection, or *x*-ray exposure. The case is described in detail in the *Bull. Soc. Méd. des Hôp. de Paris* for March 15. Josué's experimental research has also confirmed the specific action of diphtheria antitoxin on the hemoglobin elements of the blood.

A Physician's Impression of Osteopathy.—Louis Faugères Bishop, in *Merck's Archives* for April, considers osteopathy as a negative propaganda denying the utility of drugs and basing its practice on partial truths which have in the past been advanced as theories by members of the medical profession. He sums up his impressions as follows: Osteopathy "falls within the class of negative propagandas in denial of a wider pathology than that contained in their theory, and a therapy wide enough to include the use of drugs. That the physical and mental influence of their practice will benefit a considerable number of people there can be no doubt, but it is equally certain that it is an absolutely unsafe system for anyone suffering from serious disease. Relying on it is like extinguishing every light in the city but one, and trying to find one's way about." Whether positive harm will result from the narrow view of the osteopathist will depend on the honesty and intelligence of those who practice the art. Bishop believes that the community should require those who confine their practice to such a narrow field to be educated in the fundamental sciences which no one denies have a bearing on the understanding and treatment of disease, and that they shall be persons mentally and morally honest, and we would add, limit their practice to what they advocate as their only method of therapeutics, manipulation. If such practitioners have any new facts or useful methods to teach the medical profession, let them come forward and they will be given an opportunity to do so.

Abscess from Spinal Caries.—According to T. H. Kellock in the *Clinical Journal*, May 30, 1906, operation for abscesses resulting from caries of the spine may be delayed for a time if the patient's general condition needs improving, but when resorted to the operation should be conducted according to the following principles: Early operation should be done while the abscess is still deeply situated, the opening being made through the thickest layer of healthy tissue available, but not when the skin is implicated or when the abscess is near the surface. The opening should be made through rather than between muscles, the contents of the abscess should be completely evacuated, the interior gently scraped and the cavity irrigated and thoroughly dried. The openings through the structures covering the abscess should be closed with care and thoroughness in their order from within out. Small quantities of solution of adrenalin may advantageously be left in the cavity if there is any difficulty in getting it quite dry, but antiseptic and bactericidal solutions are unnecessary and may be injurious. Drainage is unnecessary and disadvantageous. Pressure to keep the walls of the abdomen collapsed is open to objections. If fluid recollects it can be removed by aspiration; if the suppuration recurs another opening should be made, by a fresh route if practicable. Disease in various regions of the spine requires special application of these principles.

Prolapsus Ani and Procidentia Recti.—D. Drew calls attention to the importance of the distinction between *prolapsus ani* and *procidentia recti*. In the former only the mucous membrane is involved, while in the latter the mass is composed of the whole of the rectal wall, and if removal is attempted the abdominal cavity will be opened. Prolapsus is common in adults, but procidentia is rare, although it may occur in children or in old age. It may be brought about by any condition that tends to increase the intra-abdominal tension, and is often associated with a weakness of the structures composing the pelvic floor or loss of support from a ruptured perineum. In children ordinary methods of replacement may be effective, or linear cauterization may be necessary. Drew has found it a better plan to remove one or more lenticular-shaped pieces of mucous membrane from the prolapsed part and to suture the edges. In adults these methods are ineffective, and by far the most promising method is to treat the mass by excision. For this purpose the peritoneum must be incised by a cut beginning at the junction of skin and mucous membrane and avoiding the sphincter. The peritoneum is then stitched to the bowel above the point of proposed excision. The redundant bowel is then amputated and the mucous membrane stitched to the skin. Drew has operated in this manner in two cases.—*Clinical Journal*, May 30, 1906.

Thyroid Migraine.—L. Lévi and H. de Rothschild have recently reported a number of cases of migraine in which the acquired or inherited tendency was successfully combated by thyroid treatment. The patients all presented signs of the mild chronic insufficiency of the thyroid gland of which Hertoghe has made a special study. Among these signs are chilliness, friability of the nails, fall of the teeth and hair, constipation and pains in the joints, with scanty or painful menses. In five of the cases the migraines were suspended during pregnancy and in two others they first appeared during a pregnancy. In one of these cases the migraine vanished during a second pregnancy, but reappeared at its close. The functional increase in the work of the thyroid gland during a pregnancy affords a kind of autotherapy of the pre-existing thyroid insufficiency. The subsidence of the thyroid gland to its previous condition of insufficient functioning after the termination of the pregnancy brings on the migraine anew. In five of the female patients a connection between the migraine and the menses was apparent. The chief argument, however, in regard to the thyroid nature of the migraine is afforded by the efficacy of thyroid treatment. The periodic headache may be unilateral or bilateral or alternating on each side; it may be in the brow, the back of the neck or in the face, and may last only for a few hours or as long as three days. Besides this thyroid migraine there is a form of continuous cephalalgia, accompanied by vertigo, which yields also to thyroid treatment. They reported an example of this variety in their communication to the Paris Société Méd. des Hôp. at the meeting on May 11.

Asylum Dysentery.—Dysentery still occurs in British asylums for the insane though it has practically disappeared from Great Britain as a whole. It occurs not only in old asylums, but also in new ones. On the other hand it does not occur in other institutions where large numbers of persons are congregated and in which there are no hygienic defects. The reason for this special susceptibility of the insane has been supposed to be some trophic defect of nerve function. In an important paper on "The Etiology of Asylum Dysentery" contributed to the *Journal of Mental Science*, April, Dr. W. B. Knobel has thrown considerable light on the problem. He finds that there is an association between lesions of nerve cells and fibers of the spinal cord and ganglia and atrophy of the cerebral gyri on the one hand and diseased states of certain abdominal viscera, including acute inflammatory conditions of the colon on the other hand. Evidently trophic influence is impaired in insanity. Dr. Knobel believes that the existence of the "privy atmosphere" in asylum wards is also a factor. He concludes that many microbes, either singly or by mixed infection, can produce dysentery; that disturbance of the subsoil in the neighborhood of an asylum is liable to be followed by an outbreak of dysentery; that asylum dysentery can be caused by some microbe that normally inhabits the colon and becomes pathogenic when the resisting power of the tissues is reduced; that dysentery is not spread by the transfer of recovered cases from ward to ward, and that increased precautions which have been taken within recent years have not diminished the incidence or mortality of the disease.

The Medical Journals of Great Britain.—An interesting sketch of our British exchanges is contributed by J. P. zum Busch, of London, to the current number of the *Deutsche med. Wochft.* After describing the general features of the *British Medical Journal* and the *Lancet* he comments with high approbation on their annual "students' number," which is a feature unknown in Germany. He remarks on the absence of any journal devoted exclusively to surgery or to internal medicine. Other specialties have several journals, and there are some devoted to hygiene, to social medicine and to alcoholism. He explains this lack as due to the absence in England of the great class of assistants who serve in the German clinics for years, and whose researches and compilations fill the medical and surgical journals in Germany. In England the assistants are the young internes who stay only for a year or so and then give place to others. The medical chiefs receive no salary, and lacking the help of the long trained assistants have less incentive to special, purely scientific and especially experimental researches. The diseases encountered in the hospitals are described in the annual reports, and the transactions of the various medical societies contain many important communications. None of the medical journals of Great Britain pays for scientific articles, he adds, and none gives reprints free of charge. The *British Medical Journal* is divided about equally between reading matter and advertisements, and it receives $40 a page for the latter. In conclusion he remarks: "In spite of the limited number of medical journals in England, yet too much is written and published, while the output of really important articles is small. The same evil prevails here as in Germany that a surgeon, for instance, who is interested in a special operation, publishes articles about it in every available journal, and yet they all contain practically merely the same thing. Besides this, the number of physicians who write is comparatively small. The same names are encountered over and over again, and often enough also the same ideas, served up again and again in slightly altered guise. The lack of a good *Centralblatt*, to furnish summaries of the current literature of the country, is much to be deplored."

Maternity Hospital for Turkey.—The Constantinople correspondent of the *Lancet* states that a Turkish newspaper announces that the Ottoman government has decided to establish maternity hospitals in the chief provincial towns. It is supposed that some will be located in the female sections of already existing infirmaries in these towns. The women, especially those of the poorer classes, will receive there careful treatment at the hands of medical men and qualified midwives. Should this decision of the Ottoman government take a definite practical issue it will prove to be a great boon to females in the provinces, for in provincial Turkey pregnant women are exposed to many dangers owing to the practices indulged in by a formidable host of unqualified, unscrupulous, extremely ignorant and superstitious *sages femmes*. These latter hold almost an unlimited sway in the provinces and, indeed, in the suburban districts of the capital itself. The *Lancet's* correspondent states that he has under treatment a great number of suffering women of the poorer classes and of various nationalities. Many among them are afflicted with different kinds of uterine trouble directly traceable to the mismanagement and ignorance of these unqualified midwives, whose notions of the most primitive rules of cleanliness and disinfection are very scanty indeed. Of late the government has tried to restrict the mischief by prohibiting the non-licensed women from engaging in midwifery practice, but the attempts have proved futile; they still abound, thriving on the utter ignorance of the population. In Turkey generally women in labor or with uterine trouble dislike calling a male physician, preferring to be treated by one of their own sex, no matter how lacking in the requisite knowledge. One maternity hospital exists in Constantinople and has been doing good work for ten years.

State Boards of Registration

COMING EXAMINATIONS.

Pennsylvania State Board of Medical Examiners, Haddon Hall, Atlantic City, New Jersey, July 30. Secretary, Joseph H. Willetts, Westinghouse Building, Pittsburg.

Nevada State Board of Medical Examiners, Carson City, August 6. Secretary, S. L. Lee, Carson City.

Nebraska State Board of Health, State House, Lincoln, August 8-9. Secretary, Geo. H. Brash, Beatrice.

Missouri State Board of Health, St. Louis, August 8-9. Secretary, J. A. B. Adcock, Warrensburg.

California State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco. (Applications must be in August 4.)

Illinois April Report.—Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, April 18-20, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 125, of whom 115 passed, 4 failed, and 6 did not complete the examination. Those who passed were from the following colleges:

	Year Grad.	Number Examn'd.
Meharry Med. Coll.	(1895)	1
Bennett Coll. of Ecl. Med. and Surg.	(1906)	37
National Med. Univ., Chicago	(1906)	3
Rush Med. Coll., (1900) 2; (1903) 1; (1904) 1; (1905) 2; (1906) 4;		10
American College of Med. and Surg., Chicago	(1906)	20
Hahnemann Med. Coll., Chicago	(1906)	19
Northwestern University	(1902)	1
Illinois Med. Coll.	(1906)	3
College of P. and S., Chicago, (1904) 1; (1905) 1; (1906) 7;		9
Hering Med. Coll., Chicago	(1906)	1
Chicago Homeo. Med. Coll.	(1904)	1
Indiana Med. Coll.	(1906)	4
Keokuk Med. Coll.*	(1895)	1
University of Louisville	(1893)	1
Barnes Med. Coll., St. Louis	(1906)	1
St. Louis University (Marion-Sims Beaumont Med. Coll.)	(1899)	1
University of Pennsylvania	(1903)	1
University of Edinburgh, Scotland	(1899)	1

Those who failed were from the following colleges:

Hahnemann Med. Coll., Chicago	(1906)	2
Bennett College of Eclectic Med. and Surg.	(1906)	1
Barnes Med. Coll., St. Louis	(1905)	1

*Now the Keokuk Medical College, College of Physicians and Surgeons.

Kansas May Report.—Dr. T. E. Raines, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, May 1-2, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 98, of whom 72 passed and 26 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
University Med. Coll., Kansas City (1893) 79;	(1905)	81.
(1906) the grades of 76 and 77 were reached by one each. 78 by four; 79 by five; 81 by one, 82 by six and 83 and 90 by one each.		
Hahnemann Med. Coll., Kansas City,	(1906)	75, 77. 80, 80.
Bennett Med. Coll., Chicago	(1906)	75, 78.
Rush Med. Coll.	(1906)	90.
Eclectic Medical University, Kansas City	(1906)	78.
College of P. and S., Boston	(1904)	80.
Ensworth Central Med. Coll., (1904) 75; (1906) the grade of 75 was reached by four, 76, 77. 78 and 82 by one each.		
Kansas Med. Coll., Topeka (1904) 77; (1906) the grade of 75 was reached by two, 76 by one, 77 by two. 78 by one, 79 by four, 80 by two, 81 and 82 by one each and 83 by two.		
Miami Med. Coll., Cincinnati	(1905)	80.
Lincoln Med. Coll.	(1906)	76, 77, 79, 80.

Meharry Med. Coll.	(1906) 79,	81.
Keokuk Med. Coll., Coll. of P. and S. (1896) 80;	(1897)	75.
Woman's Med Coll. of Pennsylvania	(1902)	80.
University of Missouri	(1905)	78.
Tufts College Med. School	(1898)	76.
Louisville Med. Coll	(1893)	76.
College of Med. and Surg., Chicago	(1905)	79.
Barnes Med. Coll	(1905)	76.

FAILED.

Denver and Gross Coll. of Med	(1905)	70.
Hospital Coll. of Med., Louisville	(1898) 69, 70,	74.
University Med. Coll., Kansas City	(1906) 73,	74.
Meharry Med. Coll	(1906)	73.
Ensworth-Central Med. Coll. (1904) 74; (1905) 65, 73; (1906); the grades of 70 and 73 were reached by one each, and 74 by four.		
Ontario Med. Coll	(1891)	68.
Eclectic Med. University, Kansas City. (1905) 68;	(1906)	68.
Barnes Med. Coll. (1903) 63; (1905) 66;	(1906)	74.
Homeo. Med. Coll. of Missouri	(1902)	72.
Lincoln Med. Coll	(1906)	74.
Hahnemann Med. Coll., Chicago	(1885)	70.
University of Cleveland	(1887)	61.

The following questions were asked:

SURGERY.

1. What are the best non-operative methods of reducing incarcerated inguinal and femoral hernia? 2. Describe the symptoms and physical signs of tuberculosis of the hip joint. 3. Give the mode of reduction of backward luxation of hip. Forward luxation of shoulder and backward and upward of the lower jaw. 4. Fracture of skull: (a) Why are fractures of skull slower in repair than other flat bones? (b) Which shows most rapidity in repair, outer or inner table; (c) Is callus greater or less than in other flat bones? 5. Describe the methods of reducing dislocations of the hip; i. e., (a) Give the causes, pathology, symptoms, diagnosis. (b) Differentiate from inter-capsular fracture. 6. Give the classification of tumors conforming to the types of fully-formed connective tissue. 7. Give in detail the preparation of a patient for trachelorrhaphy. Give technic of operation. 8. Describe Colles' fracture. Give treatment and differential diagnosis between that and dislocation of the wrist. 9. Give treatment of traumatic rupture of the urethra. 10. Give minute description and write one page on classification and treatment of burns.

REGULAR MATERIA MEDICA AND THERAPEUTICS.

1. Does the Pharmacopeia differ from a dispensatory and how? 2. What are the physiologic actions of the aromatic bitters. 3. What are the therapeutic uses of cinchona and its alkaloids. 4. What are the therapeutic uses of iron? 5. What medicines are incompatible with the iodids? 6. What are the effects, uses and doses of calcium chlorid? 7. What are the preparations and doses of belladonna and cannabis indica? 8. What medicines are incompatible with opium? 9. What are the medicinal uses of coca and its alkaloid? 10. What are the cardiac sedatives? Name the principal ones.

REGULAR THEORY AND PRACTICE.

1. Cerebrospinal meningitis—etiology, prognosis and treatment. 2. Acute articular rheumatism—diagnosis and treatment. 3. Purpura—symptoms and treatment. 4. Pneumonia—diagnosis and treatment. 5. Sounds of the heart—how many, and what sounds do we get in diseases of the heart? 6. Addisons disease—diagnosis and treatment. 7. Tabes dorsalis—anatomic characters and symptoms—8. Pyemia—anatomic characteristics, symptoms and treatment. 9. St. Anthony's fire—diagnosis and treatment. 10. Diphtheria—anatomic characters, treatment and sequela.

PHYSIOLOGY AND HYGIENE.

1. What are the functions of the capillaries? Where is lymph found? 2. Describe the phenomena of reflex action. 3. What are the phases of the cardiac cycle? How long to complete it? 4. Into how many great classes are food stuffs divided? Name them. 5. What is the action of bile on food? Describe bile pigment. 6. Describe the process of respiration. What is residual air? 7. What is colostrum? Describe and tell its action. 8. How is heat lost to the body? Give proportionate amount of each process. 9. What is meant by automatic action of the spinal cord? Give three examples. 10. What is the composition and character of urine?

HYGIENE.

1. Give a law necessary in preserving the health of the muscles and bones. 2. What can you say about the quantity of light allowed to the sick room? 3. What is the effect of too frequent eating? Give three reasons. 4. What food is best adapted to infancy? To old age? 5. In preserving health, what is of greater importance than warming the room? 6. What is the simplest mode of bathing the sick? 7. What is meant by reaction? 8. What is the predisposing cause of nervous diseases? 9. Is repetition necessary to make a durable impression on the mind? What is? 10. Give the hygiene of the secretory organs.

HOMEOPATHIC MATERIA MEDICA.

1. Name four remedies that act markedly on the skin, on the blood, on bronchi. 2. Give physiologic action of sulphur. 3. Give mental and nervous symptoms of aconite and gelsemium. 4. Mention the organs or tissues affected by lillium tig., veratrum virid and plumbum. 5. Give urinary symptoms of terebinth, ferrum phos. and lycopodium. 6. Differentiate phytolacca, lachesis and apis in diphtheria. 7. Name six remedies you would expect to use in acute diarrhea, and give three characteristic indications for one of them. 8. Give three essentials of a homeopathic prescription. 9. Differentiate spigelia, magnesia phos. and bell., in facial neuralgia. 10. Give laryngeal and tracheal symptoms of causticum, phosphorus and spongia.

ECLECTIC MATERIA MEDICA.

1. Give indication where you would use an acid and where you would use an alkali. 2. Give botannical description of aconite, its preparations and indications for its use. 3. Name five antiseptics, and give the indications for their use. 4. Give the indications for the use of santonine. 5. Give specific indications for the use of bryonia. 6. Give indications for the use of jaborandi. 7. Name 5 diuretics and give indications for their use. 8. Give the specific indication for the use of lobelia. 9. Give the indications for the use of pulsatilla, ergot, ustillago, maydis and black haw. 10. Give treatment and antidotes for poisoning from laudanum, carbolic acid, rough on rats, atropin, coal-tar products and strychnin.

ECLECTIC THEORY AND PRACTICE.

1. Diagnose and treat a case of chronic cystitis. 2. What is meant by the specific indication of remedies? 3. Name six remedies you will use as antiseptics. 4. Diagnose and treat a case of chronic intermittent fever. 5. Diagnose and treat a case of anemia. Differentiate it from chlorosis. 6. Give your treatment for croup. Diagnose a case of croup. 7. Describe a case of acute bronchitis. Differentiate it from pneumonia. 8. Treat a case of puerpural fever in its incipiency. 9. What remedies do you use in reducing temperature? Give special indications for four such remedies. 10. When are cathartics indicated? Name three with their indications.

CHEMISTRY AND TOXICOLOGY.

1. What is atomic weight? 2. Give the equivalents in Troy weight of 1 gram, 1 kilogram, also in grams of 1 grain and 1 ounce troy. 3. What are the compounds of Ca. with Cl., Br., and I? 4. What is nitrohydrochloric acid? 5. State the symptoms of acute poisoning by phosphorus. 6. How does Co. act as a poison? 7. When to a solution of lead salt potassium chromate is added what is formed. 8. What is an antidote for acute poisoning by Hg. Cl. 9. When oil of turpentine is treated with sulphuric acid what results? 10. How are blood and pus best detected in the urine?

OPHTHALMOLOGY, OTOLOGY, RHINOLOGY AND MEDICAL JURISPRUDENCE.

1. Differentiate iritis and glaucoma and give treatment of each. 2. Describe and give treatment in full of (a) phlyctenular keratitis; (b) interstitial keratitis; (c) perforating ulcer of the cornea, and possible sequela of the latter. 3. In a patient suffering from ear trouble how would you test his power of hearing? 4. Give the differential diagnosis between acute inflammation of the middle ear and mastoiditis. 5. Diagnose Meniere's disease. 6. Give diagnosis and treatment of enlarged turbinates, adenoids and give differential diagnosis. 7. Differentiate between a benign and malignant growth of the nose. 8. In a medicolegal sense what constitutes a dying declaration and what is necessary to make it evident in a court of justice, and how should it be taken? 9. Define idiocy, imbecility and cretinism.

HOMEOPATHIC THEORY AND PRACTICE.

1. Differentiate narcotic poisoning, drunkenness, uremia, and concussion. 2. Differentiate nervous dyspepsia, cardiac dyspnea and asthma. 3. Give the clinical signs or appearances, diagnostic of typhoid fever, stating the approximate time of the appearance of each. 4. Give the differential diagnosis of renal hepatic colic and appendicitis. 5. Give the causes of orchitis, and treatment. 6. Give the symptoms and homeopathic treatment of sunstroke. 7. Give the differential diagnosis between scorbutis and purpura hemorrhagica, and give treatment of each. 8. Give the differential diagnosis between acute endocarditis and pericarditis, and give the principal causes of each? Give the etiologic factor, avenue of entrance, source of infection, mode of dissemination and preventive measures to be adopted in lobar pneumonia. 10. On what signs would you base a diagnosis of large left-sided pleural effusion, without resorting to exploratory puncture? What is the etiology of this disease?

ANATOMY AND HISTOLOGY.

1. Give the origin and distribution of the jugular veins. 2. Describe the cardiac circulation. 3. Give the names of the tenth nerve, also origin and distribution. 4. Describe the fetal circulation. 5. Name all the bones of the foot, beginning with the ankle. 6. Describe the portal circulation. 7. Name the structures to be divided in operating for strangulation of an oblique inguinal hernia. 8. Give the histology of the heart. 9. Give the histology of the kidney. 10. Give the histology of the spinal cord.

OBSTETRICS AND GYNECOLOGY.

1. Write two pages on deformity of the pelvis. 2. Placenta prævia—causes, symptoms and treatment. 3. Puerperal eclampsia—premonitory symptoms of the attacks, and conditions between attacks. 4. Puerperal septicemia—give treatment in full. 5. Give the complications that you may have in the different presentations. 6. How would you treat a retained placenta at full term? 7. How would you treat fibroid tumor of the uterus? 8. Give a number of complications that may follow confinements, and give treatment for them. 9. Write two pages on the use of the forceps. 10. Pelvic cellulitis—diagnosis and treatment.

PATHOLOGY.

1. What pathologic conditions do we have in gonorrheal ophthalmia? 2. Describe the structural changes that take place in the spinal cord in locomotor ataxia. 3. Describe the early symptoms after occlusion of the popliteal artery by an embolus or thrombus. 4. Give the pathology and diagnosis of acute and chronic pericarditis. 5. Give the pathology and diagnosis of each: Scarlet fever, pneumonia and pertussis. 6. Give the pathology of acute and chronic endocarditis. 7. Describe the usual pathologic lesions in diabetes mellitus. 8. Give the pathologic and bacteriologic characteristics of tetanus. 9. What are the anatomic lesions of enterocolitis in children and of acute and chronic dysentery? 10. Describe tissue repair as exemplified in the healing of a skin wound with the loss of substance.

Oklahoma June Report.—Dr. J. W. Baker, secretary of the Territorial Board of Medical Examiners, reports the written examination held at Guthrie, June 27, 1906. The number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 66 2/3 in each branch. The total number of candidates examined was 45, of whom 35 passed, including one undergraduate, and 10 failed, including 4 who were admitted to examination under the 10-year practice act. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Arkansas	(1906)	80.1
Georgetown University	(1905)	82.2
Northwestern University	(1906)	80.2, 86.
Indiana Medical College	(1906)	86.2
Keokuk Med. Coll., College of P. & S.	(1888), 76.7; (1901) 90.8; (1906)	81.3.
University of Louisville	(1906)	77.8
University of Kentucky	(1905)	82.
Kentucky School of Medicine	(1894)	73.2
Tulane University	(1906)	83.8, 83.8
Maryland Med. Coll	(1905)	78.4
Hahnemann Med. Coll., Kansas City	(1906)	75.7
Ensworth-Central Med. Coll	(1906)	78.1
Barnes Med. Coll.	(1893) 65.7; (1901) 71.2; (1906)	73.2
Washington University, St. Louis	(1901)	77.5
St. Louis University (Marion-Sims Beaumont Med. Coll.)	(1905) 70. (1906)	71.7
Kansas City Med. Coll.*	(1901) 73.2 (1905)	82.2
University Med. Coll., Kansas City	(1906) 78.4, 78.4, 78.7	80.
North Carolina Med. Coll	(1906)	75.
Medical College of Ohio	(1890)	77.8
Meharry Med. Coll	(1906)	66.1
Physio-Medical College of Texas	(1906)	71.8, 81.8
Fort Worth University	(1906)	82.2

FAILED.

College.	Year. Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1882)	75.2
Rush Med. Coll	(1874)	59.1
Physio-Medical College of Indiana	(1890)	50.
University of Louisville	(1893)	67.8
Louisville Med. Coll	(1893)	71.4
University of Nashville	(1906)	69.5

* Merged with the University of Kansas.

Medical Organization

DEFECTIVE ORGANIZATION IN TENNESSEE.

By J. N. McCormack, M.D.
Chairman of the Committee on Organization of the American Medical Association.
BOWLING GREEN, KY.

In the absence of the Councilor system in Tennessee an extended itinerary was kindly planned for me by Drs. Savage, McSwain and Miller, who have general supervision of the work of organization in the central, western and eastern grand divisions of the state respectively. The appointments covered full four weeks, but, on account of important matters pressing for my attention before the legislature of my own state, they were arranged with intervals of one or more weeks between those made in the sections named. They were for Gallatin, Springfield, Winchester, Clarksville, Huntingdon, Jackson, Somerville, Memphis, Union City, Trenton, Paris, Chattanooga, Cleveland, Knoxville, Morristown, Bristol and Johnson City. No meeting was held at Winchester as it was impossible to find any physician in the town except one who had retired from practice, although two from out in the county and a number of ladies had assembled in the unwarmed courtroom in response to the newspaper invitation. In order to make up for this, hurriedly called but fairly well attended meetings were held at Covington and Humboldt.

Unfortunately for its own best interests, probably, Tennessee was the first state to act on the new plan of organization, almost before the ink was dry on the first issues of the constitution and by-laws. Under their old system the judicial council, composed of the ex-presidents, had virtual control of all legislative and business matters, including changes in or amendments to the constitution and by-laws. With natural doubts as to the expediency and practicability of what was being proposed by the Association and urged by me in person, their judicial council was retained as a substitute for the comprehensive Councilor system of the standard plan, which has proven so effective in organizing, and especially in maintaining the interest in county societies in other states.

Even with this handicap, under the leadership of Dr. Savage and his colleagues in the two other divisions, a great revival of professional interest followed the reorganization. Outside of the counties containing large cities few societies existed, the total membership was small, and nearly every professional interest was at low tide. Almost entirely by correspondence, societies were rapidly organized in nearly all of the more populous counties, and in one year's time the membership had grown to over 1,000. There, so far as I could gain information, things came to a standstill in a large majority of the counties. The purposes and possibilities of a real, compact and practical organization of the profession had never been personally explained to them, and, in the absence of the Councilor supervision provided in other states, where an active, trained leader visits each county in a small and conveniently organized district by special appointment as often as is practicable, and advises and stimulates its society in the light of his larger experience, broader information and greater enthusiasm, and in the absence of a state journal as a constant means of communication between the county societies themselves, and between them and their state officials, a great many of the county societies soon existed only in name, and for the purpose of holding membership in the Tennessee State Medical Society. In such counties the meetings were held at long or irregular intervals, and in a number, with a large medical population, no meetings had been held for a year or more, and, without a well kept card index or other directory; it was difficult to call meetings. For this reason, probably, while both the professional and lay attendance at my meetings was generally fair for the towns or cities, that from the country districts was small in most counties. In most sections also there was the usual jealousy and lack of coöperation, and the low fees and defective business methods, inseparable from an unorganized profession, and in some these were so pronounced as to be a matter of public reproach. This was true in some counties where the profession was strong, where both the profession and public took an active and intelligent interest in the reforms which the Association is proposing, and where organization ought to be comparatively easy under a proper system.

A gratifying and notable exception to the conditions above named was found in the Nashville Academy of Medicine, the Society of Davidson County. This is by far the best local organization I have found south of Mason and Dixon's line. It meets weekly, has an excellent program, arranged in advance for the year, the papers and discussions are in keeping with their strong profession, and the general harmony and good feeling—ascribed by all, so far as I could learn, to the work of the Academy—was most commendable. It is recognized that the membership can be increased, and the usefulness of the organization greatly extended in other ways, and I found the spirit existing there to do these things. Exception should also be made to a degree of the societies at Clarksville, Murfreesboro, Covington, Bristol, Memphis, Chattanooga, Cleveland and Paris, but none of these impressed me that they were living nearly up to their opportunities for usefulness, or that many of their leaders had caught the real spirit of organization and coöperation in the modern sense.

As in my own and most other western and southern states, the question of reform in medical education here is one pressing for solution. There are eight schools in active operation, and a new one is just being organized at Memphis. The entrance requirements are still in the hands of the faculties, with all that this means, and in some of them the requirements for graduation are not exacting. The necessity for consolidation is as great here now as it was in Cincinnati, Indianapolis, St. Louis, and Kansas City, and as it is in Louisville, Baltimore and Chicago, but I was unable to hear of any movement on foot in this direction.

There is also great need for improvement in their medical legislation. Dr. Happel and his colleagues have done excellent work in gradually raising the standard of requirements, and the law works well and is probably sufficiently exacting under present educational conditions for those who desire to practice medicine honestly. There is no workable authority given, however, for revoking certificates, and the state is a paradise for quacks and street fakers of every description. The board has the confidence and support of the profession throughout the state, and, with systematic organization, it ought not to be difficult to secure such amendment and enforcement of the law as would put an end to this condition of affairs. Improvements are likewise needed in the health laws, state and local. The State Board of Health has ample authority in the emergency of an epidemic, but its power is defective, and its local machinery is very imperfectly organized, for handling the more important, because far more common, domestic pestilences which are always present in some section, and which contribute so largely to the preventable sick and death rate. I received the impression also that, although probably equally deserving it, the State Board of Health has made little effort to keep in the same close touch with the State Medical Society as the State Board of Medical Examiners had done.

I received such courtesy and hospitality on every hand, even in counties where there was the least organization, that I am reluctant to record anything of my visit which is not commendatory. I conceive it to be my duty, however, to write and advise critically, frankly, albeit kindly, of conditions as I find them, in the hope that improvement may follow. Influenced by this spirit entirely, candor compels me to say that I found little real organization in Tennessee outside of the counties named, and that it was very imperfect in some of these. It is a great state, with strong men in nearly every county. Nowhere else have I found both the profession and people more responsive to appeals for a new order of things. With a proper Councilor system, and with an active state journal, and the power and enthusiasm which these would bring, the membership ought to be doubled easily in a year, most of the county societies could be vitalized and made the agencies or sources of strength and influence they were intended to be, and the reforms indicated, so important to both the profession and people, would soon be started.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.
CHICAGO.

(*Continued from page 226.*)

Beira, East Coast of Africa, June 5, 1906.

MEDICAL ZANZIBAR.

Zanzibar is a sultanate of East Africa under British protection. The island is near the African coast, the channel separating it from the mainland, being only twenty-seven miles wide at its narrowest point. It is fifty miles long, on an average thirty miles wide, and has a very mixed population of 150,000, of whom nearly one-half live in the city of Zanzibar. The island is of coral formation, having a thin layer of sandy soil with a layer of clay between it and disintegrating coral rock. In the interior, low wooded hills break the monotony of the scenery; vegetation everywhere is luxuriant. It is the island of clove-tree groves and the cocoa palm flourishes wherever it is planted. The prosperity of the island has suffered since slavery was abolished in 1895. Thousands of the old slaves remain with their masters, but all children born since the act abolishing slavery came into force are free. At one time Zanzibar was the greatest slave market in the world. This vile business was conducted chiefly by Arabs, many of whom accumulated great wealth by stealing, buying and selling slaves. The site of the former slave market is now occupied by the fine cathedral of the English church and the Universities Mission Hospital. About 150 whites, 5,000 Arabs and 10,000 Eastern Indians make up the foreign population.

CLIMATE.

Since our arrival at Mombasa there has been very little change in the atmospheric conditions. Most of the time the sky has been cloudy and rain has been almost a daily occurrence. The thermometer in the shade continued to range between 79° F. and 87° F., and the air has been saturated with moisture. Strangely enough, even during pouring rains, thunder and lightning have been absent. The climate of Zanzibar has been carefully studied by Dr. Friedrichsen during his long residence on the island. He published an important article on this subject in 1901, from which I will quote briefly. The air temperature is generally very high and without much variation. The medium temperature for the years 1898-1899 was 26.9° C., maximum, 31.50° C., minimum 22.60° C. The relative and absolute moisture of the air is very considerable, especially during the rainy season, during which he observed dew and fog, with a temperature of 27° C. The sky, except during the hottest season, is, as a rule, slightly cloudy. Heavy clouds appear during the monsoon change. The average rainfall varies from 140 to 160 cm. More or less rain falls during every month of the year; but the heaviest rains occur during the months of March, April and May. Thunderstorms are very rare and only during the change of the monsoon. The prevailing winds are from the southwest and southeast, and during the monsoon, from the northeast. Cyclones are very rare, the last one having occurred during the early seventies.

PREVAILING DISEASES.

In another publication the same author gives a short account of the prevailing diseases of the island. The city is abundantly supplied with pure water from a small river. Many of the natives obtain their drinking water from shallow wells on an average 10 to 15 feet in depth. Some of the houses of the Europeans have tanks for rain water. Contents of cesspools and all waste materials are removed in hand carts and deposited outside the city limits.

Malaria is the most important and most prevailing disease. It is expected that every new-comer from Europe will suffer from fever some time during the first year of continuous residence here. Men are more liable to fever than women and children. Malaria prevails at all times of the year, but occurs most frequently during the latter part of November and December and during April, May and June; that is, during the two rainy seasons. In the European the fever generally pursues a comparatively mild course. During the first and second day the thermometer usually reaches 39.5° to 40° C. If treated promptly with quinin the attack is over in from five to seven days. During this time there is a loss in body weight of from five to ten pounds. This form of fever is generally of a remitting type. Pure intermittent fever is much less frequent. In negroes and Arabs the fever is more severe than in Europeans.

Black-water fever is rare and attacks only Europeans, the subjects of neglected malaria.

Infantile debility. Children of European parents do not prosper well during the first few years. They remain in poor flesh and are pale, in spite of the utmost care to maintain their health.

Dysentery seldom attacks Europeans, but is very prevalent among the negroes and the Arabs, and is quite fatal, especially during the rainy seasons.

Hepatitis and *abscess of the liver* do not occur or are, at least, very rare complications of dysentery.

Beriberi is endemic from time to time, and has proved fatal in a few instances.

Smallpox epidemics make their appearance every few years, and Dr. Friedrichsen believes that three-fourths of the colored population have at some time suffered from this disease. From the many scarred faces I saw on the streets, in shops and market, I believe his estimate is not too high. During the severe epidemic in 1897, 2,000 deaths occurred from this disease in the short space of three to four months. Since that time the government has received vaccine virus from Paris and London every month and encourages, but does not enforce, vaccination. During the smallpox epidemics the negroes inoculate themselves with the disease, taking the virus from the pustules, the operation being performed by a "zanaga" (medicine man, sorcerer). Those inoculated contract the regular smallpox.

Lepra occurs, but is not widely diffused. The whole number of lepers in Pemba and Zanzibar is estimated at 200.

Syphilis is common and widespread, and in the blacks, who seldom apply for early treatment, it often pursues a very severe course.

Elephantiasis is quite common among the negroes, Arabs, and East Indians.

Acute infective diseases. Of these diseases are enumerated measles, influenza, whooping cough, tetanus and puerperal sepsis (frequent in East Indian women).

Pulmonary tuberculosis is very common among the Arabs and East Indians, less so among the negroes.

Cholera has not visited Zanzibar since 1860.

Sandflea. Since 1898 the sandflea has become a pest for the blacks. It often happens, especially in syphilitic subjects, that those infested with this insect lose one or more toes, in consequence of a violent, rapidly spreading inflammation which terminates in gangrene.

Skin diseases are common and much more so in the blacks than in the whites. Tropic ulcer, which always has its seat on the extensor side of the leg, is a very common affection among the poor Arabs and negroes who walk about barelegged and barefoot.

Sleeping disease. This disease has never been known to originate in Zanzibar. Two patients, both of them negroes, came from Africa affected with this disease. The morning temperature was normal; evening temperature, 37.5 to 38.5 C. Hebetude and somnolence were the most prominent symptoms. In one of the cases lumbar puncture was made and in the clear fluid removed trypanosomes were found. The patient died the next day. In the other case these parasites were detected in the blood during the life of the patient.

A CASE OF GOUNDOU DISEASE IN ZANZIBAR.

Dr. Friedrichsen has also given an account of a case of goundou disease in a paper under the title, "Symmetrical Swelling of the Nose in Tropic Countries," to which he added an extensive literature on this subject. It was the first case observed on the East Coast of Africa and the only one at the time the report was made. The disease was first mentioned and described by MacAllister and Lamprey, in 1882, under the heading, "Horned Men of Africa." It is most frequently met with in the tropics of the West Coast of Africa, but has also been observed in the West Indies, Java, Sumatra and China. In most instances, if not in all, the disease affects syphilitics and the nasal affection is preceded by ulcers in the nares. The tumors consist of spongy bone and must be regarded as the product of a chronic plastic periostitis of the nasal process of the frontal bone, usually, if not always, of a specific nature. Dr. Friedrichsen's patient was a Swahili boy, twelve years old, who was born in German East Africa. He was unusually small for his age. He was brought by his parents to Zanzibar when he was three years old, and has never left the island since. His disease began soon after coming to Zanzibar. It commenced with a swelling of the legs and "buba" (Swahili for framboesia). In the course of this disease, large ulcers appeared on the legs and on the back, which left large scars. Shortly after he was attacked with smallpox. About two months later, ulcers formed in the nose which bled often. The nasal breathing became difficult. Slowly a swelling made its appearance at the base and the side of the nose, first on the right, then on the left side. At first the growth was very slow, later it increased more rapidly in size. These swellings, in the course of time, developed into real tumors springing from the nasal process of the frontal bone. Above they extend as high as the internal angle of the eye, their lower margins to within a finger's breadth of the alveolar process, and laterally a finger's breadth from the tuberosity of the maxilla. In the median line, they are separated by a furrow over the nasal ridge. The nasal bones are not involved. The surface of these tumors is smooth, the skin movable and intact. The form is oblong; laterally very prominent, and on the inner side sloping gradually to the level of the nasal bone. The consistence of the tumors is of a bony hardness. They are somewhat tender on pressure and percussion. They encroach on the lumen of the nasal passage, narrowing it. The septum is free. Between the lips and alveolar process, the one on the left side can be felt; the right one is beyond the reach of the palpating finger in the mouth. The mucous lining over the tumors is swollen, at different points almost polypoid, and tender to the touch. There is a scanty, serous discharge from the nose. Both tibiæ are curved forward, the right one enlarged in the middle and tender on pressure. Below the first are several ulcers, the seat of a foul discharge. The teeth are irregular and crenated. The cervical and epitrochlear glands are enlarged, but not tender. This patient was evidently the subject of a grave form of hereditary syphilis on the basis of which this strange form of tropic plastic periostitis engendered itself. There can be but little question as to the direct etiologic relationship of constitutional syphilis to goundou disease, but there are evidently climatic or dietetic influences which are concerned in exciting the periostitia. I have just learned from an eye-witness, a German officer, that an identical case was operated on two months ago at Muansa, German East Africa, by Dr. Radloff. The patient was a girl 14 years old. The operation was successful and the result satisfactory.

HOSPITALS.

The city of Zanzibar has three hospitals and a leprosery.

St. Joseph's Hospital.—This hospital is the oldest, largest and most influential. It is under the care and management of twelve Sisters of St. Joseph, with Sister Lucie at the head. Sister Lucie served her order fifteen years in America, and has been connected with this hospital in her present capacity for many years. These sisters are at the same time in charge of the leprosery. The original cost of the hospital, built twenty years ago, was about $30,000. It is a large, square, solid two-story building (Fig. 1) on the beach facing the harbor, with a small garden in front of the main entrance. It has accommodations for forty patients who are divided into three classes. The hospital has ten private rooms, and each occupant pays $2.50 per day. The patients of the second class are placed in small private wards, and pay what they can, and the third class is made up of the charity patients, almost exclusively blacks, who by far outnumber the pay patients. The demands made on the hospital by the sick poor make the struggle for existence often difficult. The hospital has no regular staff, but any physician is privileged to attend his own private cases. Dr. Friedrichsen, the only German physician residing in Zanzibar, has the bulk of practice in the hospital. The hospital has neither an operating room nor instruments. If an operation is to be done, it is performed in the patient's room or ward, and the physican must make the preparations and bring his own instruments. No wonder that under such circumstances, physicians refrain from performing capital operations when they are not urgently indicated.

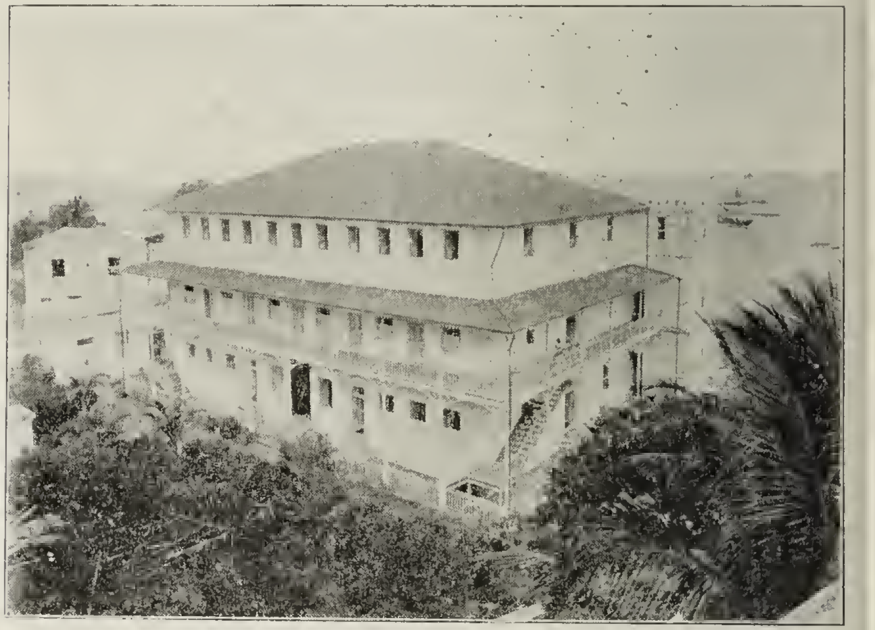


Fig. 1.—St. Joseph's Hospital, Zanzibar.

Military Hospital.—The military hospital consists of several one-story cottages within the enclosure of the barracks. It is in charge of the government physician, Dr. McDonald, who at the same time is the health officer and supervises the battle against bubonic plague and other tropic diseases. The hospital has thirty beds. It is intended for the government officials and soldiers, but its doors are also open for the native sick poor, including women and children. The wards are plainly furnished, but clean. The nursing is in charge of an English trained nurse. She makes this hospital her headquarters, but does private nursing besides. In her hospital work she is assisted by orderlies of the hospital corps. Like the other hospitals in Zanzibar, there is no room set aside for operating. The most interesting feature of the military hospital is the small bacteriologic laboratory in which blood examinations are made and from which the battle against recurrence of the plague is conducted by Dr. McDonald. The last serious invasion of Zanzibar by the plague has stimulated the government and health authorities to resort to energetic measures to prevent a repetition of the epidemic. The war of extermination on rats has been waged since the epidemic made its appearance, and is now in active operation. Every day 1,000 pieces of bread, cut in the form of small squares and charged with an arsenical preparation, are distributed all over the city in places frequented by rats. The government, besides, pays a small amount for live rats caught and brought to the laboratory. From 200 to 300 rats are secured in this way every day. The spleen of every rat is examined microscopically for the plague bacillus. At present only three-fourth of one per cent. of the rats are found to be infected. This precaution against one of the most dreaded diseases of the coast is timely and will minimize the risks of future recurrence. During the prevalence of the disease Haffkine's serum was used on a large scale and contributed largely to the limitation of the extention of the disease and in cutting short the duration of the epidemic.

The Universities Mission Hospital.—This hospital, the most modern one in Zanzibar, has room for thirty patients. It is located adjoining the cathedral of the Church of England. It is in charge of Dr. Francis Charlesworth, who has lived in Zanzibar twenty years. The patients are cared for by five trained English nurses. The private rooms and wards are comfortably furnished and are kept scrupulously clean. The central court and porticos of the two-story substantial building add much to the comfort of patients by the free admission of the sea breeze. Most of the patients are blacks, who are cared for by the mission. The operative work is light, as the natives, who are not often affected with surgical diseases, have a strong aversion to operations. In the absence of an operating room proper, a room on the first floor is cleared and made use of for this purpose. Dr. Charlesworth, in his long experience, has never seen a case of appendicitis or carcinoma among the negroes.

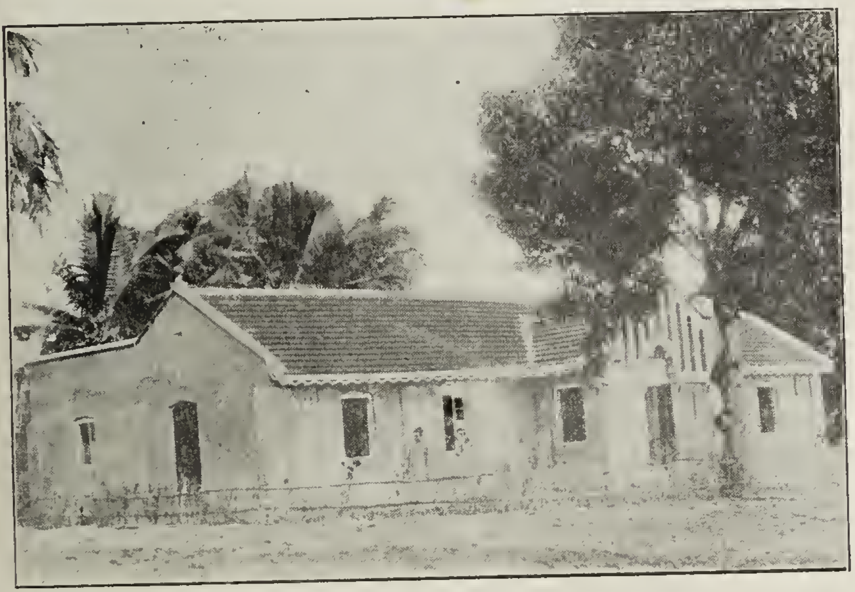


Fig. 2.—Zanzibar Leper Asylum.

Thania Topan Hospital.—This is a veritable *lucus a non lucendo.* Many years ago a wealthy East Indian merchant, by the name of Lewa Hadji, made a donation of about $50,000, to be expended in the building of a hospital for the blacks, and to be known by the above name. A building on too large a scale was commenced, and when the money gave out it was never completed, and the unfinished structure remains as a silent witness of lack of foresight and good judgment of those who had charge of the fund.

Zanzibar Leprosery.—The Zanzibar Leprosery (Fig. 2) is a government institution, located in the country, about two miles from the center of the city. It consists of six one-story stone cottages, roofed with corrugrated iron, and a few native huts made of sticks and palm leaves, all in the same barbed-wire inclosure. The huts are occupied exclusively by women. The buildings occupy the summit of a low wooded hill, surrounded by several low, marshy places, excellent breeding grounds for the anopheles. The entrance door is kept locked so as to prevent the wandering away of the inmates. The institution is managed by the Catholic Mission, and the patients are taken care of by five sisters of the St. Joseph's Hospital, who spend the day here, but return to the hospital in the evening. In their absence order is maintained and the needs of the patients attended to by native helpers employed for this purpose. A physician visits the hospital at stated intervals or when his services are required. The number of inmates at this time is 47, 24 men and 23 women, all negroes. The youngest patient is a girl 15 years old. Among the patients of both sexes, I noticed several who, from their appearance, were near to or over the seventies. The anesthetic and tubercular forms are about equally represented. Many affected with the anesthetic form had lost their fingers and toes. Several were nearly blind, two had marked facial paralysis, and one, a man advanced in years, who had suffered from the anesthetic form for twenty years, was insane. His eyes were staring, and the muscles of his face, more especially the labial, were constantly twitching. The type of insanity was happy and hilarious; the patient laughed and talked alternatively and gesticulated wildly with his mutilated hands. I was somewhat astonished to find that the sexes were not separated, men and women mingling freely with each other. The wards are clean, but the furnishings are of the simplest, cheapest kind. Segregation, in a strict sense of the word, is not enforced on the island. So far as I could ascertain, if a leper is found, he is apprehended and sent to the leprosery. The exact proceedings for commitment I could not learn. The location of the leprosery is bad, as it is in a very malarial surrounding, and some of the sisters have contracted a severe form of malaria, including black-water fever, which has proved fatal more than once. The lepers themselves appear to be almost, if not entirely, immune to malarial infection. The leprosery should be on the near-by seacoast, where the patients could enjoy the sea breeze and surf bathing. The grounds should also be large, to give those who are able to work, outdoor employment, which would not only exercise a good influence on their mental and physical condition, but would also contribute something to the financial support of the institution.

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Acad. of Ophthal. and Otol., St. Clair, Mich., Aug. 30-Sept. 1.
Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7.
Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Twelfth Annual Meeting, held in Kansas City, Mo.,
June 11-13, 1906.

(Concluded from page 230.)

Case of Stammering, Illustrating the Importance of Early Treatment.

Dr. G. Hudson Makuen, Philadelphia, reported two instances in which phonetics were largely used and dietary restrictions were imposed, and the children carefully watched, resulting eventually in recovery.

Herpes Zoster Auris.

Dr. Derrick T. Vail, Cincinnati, reported a case in which this rare condition occurred and in which the very terrific pain which nothing was able to relieve seemed diagnostic. The blebs formed behind the ear in the mastoid region. He came to the conclusion that herpes zoster auris was like true zoster elsewhere, a definite disease usually running an acute course; that it is very rare, but has been observed by a number of noted authorities; that it may involve the membrana tympani, as well as deeper parts of the auditory canal; that it is an acute infectious disease, causing neuritis, the storm center being in the ganglion of a sensory nerve; that lymphadenitis is almost invariably present and probably precedes the attack; that the treatment is of little avail, the disease usually running a rapid course and healing spontaneously.

Dr. E. M. Holmes, Boston, saw a case occurring in a woman, 30 years of age, with a perfect past history. The pain had been intense for over two hours. It was of a neurotic and spasmodic character. Examination of the ear showed nothing abnormal, as did the nose and throat. He was at first inclined to think it was a reflex pain from a tooth. Morphia was administered in large doses, but the pain persisted. Heat and cold was tried, but nothing relieved it. In thirty-six hours blebs began to form; the pains subsided in a few days and then began again. Three months later she showed a general herpes extending over several intercostal nerves. He failed to find a cause, and thought the ganglion theory rather hard to prove.

Dr. W. C. Phillips, New York, thought that herpes appearing about the ears is as common as the same affection appearing in other parts of the body.

Treatment of Tuberculosis of the Upper Air Passages and the Ear.

Dr. W. C. Bane, Denver, divided the treatment into constitutional and local. He placed great importance on rich blood as the destroyer of the tubercle bacilli, hence the importance of a full nourishing diet. Forced feeding with rest, and guaiacol and creosote and calcium chlorid are the best aids. For the local treatment of tubercular laryngitis a 4 per cent. solution of resorcin is very beneficial. The most efficient remedy at the present time is formalin. Its administration should be preceded by an application of a 5 or 10 per cent. solution of cocain or beta eucain. As a local anesthetic, orthoform, inhaled or insufflated is of value.

Dr. Robert Levy, Denver, said that surgical measures are controlled by the character of the lesion, their nature, extent, and other complications, whether primary or secondary, and by the limitations placed on the possibility of early diagnosis; that all cases of chronic suppuration of the middle ear in tuberculous individuals are not necessarily tuberculous; that the objects of surgical measures in tuberculosis of the ear are the removal of all available foci of disease, the removal of diseased bone and the establishment of drainage; that tuberculosis of the nose responds readily to surgical treatment, the methods used being curettement and excision by cold wire or galvanic cautery snare; that pharyngeal tuberculosis is a manifestation of the most asthenic form of the disease, presenting all conditions which contraindicated surgical intervention; that operative intervention in pharyngeal tuberculosis is only palliative; that in laryngeal tuberculosis, deep incisions are valuable in edema and in uniform firm infiltration, their usefulness being increased by rubbing with lactic acid; that excision of tuberculous deposits is limited to those cases in which there is a certainty of completely removing the entire disease focus; that the extent of the involvement is often greater than can be determined by laryngoscopic or macroscopic examination; that curetting is valuable in ulcerations and soft excrescences, the character of the ulceration, however, modifying its applicability; that repeated and extensive operations can be performed, provided the lesions develop progressively; that the galvanic cautery is useful in small, easily accessible tuberculous ulcerations; that tracheotomy might prove of value in children and is always indicated for the relief of dyspnea; and that laryngectomy is probably never indicated.

Dr. Levy, New York, emphasized strongly the necessity of giving tubercular patients the benefit not only of medicinal and surgical, but also of climatic treatment. That if, after thorough trial, the patient does not do well in one climate, he should be sent to another. He does not think it wise to become pessimistic after having tried one specific kind of climate or treatment without success; that whatever the method of treatment, the physician should constantly maintain a spirit of optimism which would be an inspiration to both himself and his patient.

Dr. J. E. Logan, Kansas City, emphasized the point that general tuberculosis or of the air passages varies so greatly in different parts of the country that it is hard to make a separate division of treatment. The cardinal principle should be to maintain the general systemic condition.

Dr. W. C. Phillips, New York, has no doubt that the greater percentage of chronic purulent affections of the ear are of tubercular origin. He has experienced great difficulty in making the diagnosis of tubercular conditions of the ear. The microscopic discharges, on examination, do not reveal the presence of the tubercle bacillus. A diagnosis can never be made positively except by culture experiments.

Dr. H. Bert Ellis, Los Angeles, thinks that if the diagnosis is made early, the local, surgical or climatic treatment will result favorably.

Dr. H. W. Loeb, St. Louis, operated on cases of tuberculosis of the larynx with slight abatement of the symptoms and slightly increased length of life, but came to the conclusion that he would not interfere surgically in these cases. One patient treated in this way lived seven years and died later of tuberculosis of the lungs. The patient stands a better chance if he is sent to the proper climate and then is operated on.

Ether Narcosis by Rectum.

Dr. J. A. Stucky, Lexington, Ky., reported four cases in which this method was used. The patient passes under the influence of the drug rapidly and with no sense of suffocation; less ether is used, not only in producing the narcosis, but in maintaining it; the stage of excitement is lessened or absent; the ether recovery is more rapid, and the disagreeable after effects of ether inhalation are diminished or absent. The use of this method in diseases of the lungs, especially tuberculosis, abscess and pneumonia immediately suggests itself; also in empyema, mediastinal and new growths. The greater part of the ether is also eliminated through the lungs, the direct irritation of the concentrated vapor is overcome and postoperative pneumonia should be lessened. The absence of bronchial secretions and vomiting has been a striking feature.

The apparatus used was suggested by Cunningham and consists of a bottle, the body of which is 7½ inches in height, 5 inches being used for ether space, 2½ inches and the neck for vapor space; the diameter is 4 inches and the capacity in the ether space 29 ounces, so that a large amount of ether may be used without materially lowering the ether column. The afferent tube which leads to the bottom of the ether column ends in a bulb with several small perforations so that air ascends in several small bubbles. The stopper and connections should be tight. The bottle is placed in a water bath at a temperature between 80 and 90 F. Ether boils at 98.6 F. The efferent tube should be long enough to allow moving the wash bottle away in case the operator desires to change his position. A stiff rectal tube with a single eye at the end is used. The patient is placed on his back with the legs in slight flexion, and the tube is inserted for a distance of from 10 to 14 inches. The efferent tube is connected with a rectal tube and the vapor is forced in until considerable gas is pressed around rectal tube. Keeping the forefinger in the rectum, unless it causes pain, hastens the expulsion of rectal gases. It is essential that the rectum be distended to the point of emptying itself around the tube, for without removing the gas normally in the bowels the patient absorbs the ether much more slowly. After the gas has been expelled, the ether should be forced in by a few squeezes of the bulb, every five or ten seconds, or until it is expelled about the tube.

The breath becomes ether laden in from one to five minutes, and the patient becomes drowsy, the breathing stertorous and he passes into complete surgical narcosis without a stage of excitement. After narcosis is complete two or three squeezes of the bulb a minute will keep it so, and the position of the tongue should be looked after and watched. If the patient becomes too profoundly anesthetized the efferent tube should be disconnected and such ether as is in the bowel forced out through the rectal tube by abdominal massage. An oxygen tank should be connected with the rectal tube and this gas made to distend the bowel.

AMERICAN ACADEMY OF MEDICINE.

Thirty-first Annual Meeting, held in Boston, June 2 and 4, 1906.

(*Continued from page 229.*)

Manual Training for Medical Students and Instruction in Principles of Psychotherapy.

Dr. Gershom H. Hill, of Des Moines, Iowa, referred to the present day tendency in business and education toward specialization. While believing that medical education should be technical, he also believed that it should be well balanced and as general as ever before. Since livelihoods to-day are gained with brains rather than with muscle, and life is indoors and sedentary, neurotic conditions, nervous diseases and psychopathic ailments are very frequent. While drugs and surgical operations could cure many diseases, there are many patients suffering from impaired physical or mental ability whose condition was said to be functional. Here it has been demonstrated that great benefit has been secured from baths, massage, osteopathic manipulation, and the application of electricity. Therefore, medical students and internes should be taught more completely how to apply these methods in order that they may instruct nurses and patients.

DISCUSSION.

Dr. Casey A. Wood, of Chicago, thought that the curriculum of the medical school already is overcrowded. He suggested that the preliminary education of the medical student be extended beyond the time required at present.

Dr. Woods Hutchinson thought there was danger of overdoing in mental therapeutics. Admitting the influence of the mind over the body, it is equally true that no amount of confidence in the doctor or nurse would avail in cancer of the stomach, Bright's disease, or diabetes. He believes that the real reason that suggestion does so much is that two-thirds of the patients for whom prescriptions are written would get better at all events.

Dr. A. P. Clarke cited an instance of a patient suffering much pain with general depression of spirits. She had been much encouraged by her own physician who was unable to find important physical derangement. It proved to be a case in which mental science was not applicable, an exploration of the rectum revealing a mass of impacted fecal matter.

Heredity and Environment as Causes of Delinquency and Crime.

Dr. Donly C. Hawley, of Burlington, Vt., said that while scientists admit the heredity of physical and psychological peculiarities, the weight of their testimony is to the effect that this phenomenon, while frequent, is not constant. The influences especially opposed to heredity are: (1), Education; (2), the instinct of initiation; (3), the innovative force of individual initiative. In studying heredity a prominent place must be given to the inheritance of acquired characters which are constantly changing through the modifying influences of environment. While a thorough knowledge of the biologic law of heredity is of vital importance, there is need for a wider recognition of the tendency of Nature to "throw back" to the normal or average. Disease is not so much an inheritance as is the tendency to disease. The tendency of the delinquent and the criminal, so far as inheritance is concerned, is to repeat the sins of the fathers under like unhealthful and perverse conditions. Criminals may in some instances inherit direct tendencies to crime. The views of such extremists, such as Lombroso, and especially in regard to the criminal classes, should not be accepted without challenge until better evidence can be adduced to show that the defects are a positive inheritance rather than a result of defective development due to bad environing circumstances, drunkenness, etc. To prevent habitual crime there must be the saving of the young offender from the acquisition of fixed habits of crime, largely the result of degenerate social conditions. Experience in the rescue of the young from conditions of delinquency and depravity seem to point to the fact that heredity has been over-estimated as a cause of these conditions, and that bad environment is oftenest the cause of abnormal physical, mental and moral growth. Future effort in the prevention of delinquency and criminology should be directed to the proper culture of the child. While the full accomplishment of this end may not be realized, factors in the production of delinquency and crime in the young might be greatly minimized.

How May the Medical and Teaching Professions Coöperate to Improve the Moral, Mental and Physical Condition of the Young.

Dr. S. A. Knopf, of New York City, said that the beginning should be made by preventing by law, or by the persuasion of the family physician, the marriage of the idiot, the syphilitic, the acute tuberculous, the chronic insane, and the chronic alcoholic. Also, there should be prohibited by law, factory labor of the pregnant woman at least two months before and one month after childbirth. Only in rare instances should artificial feeding be substituted for food from the mother's breast for the newly born infant. Artificial feeding of the female infant lessens her chances of ability in after life to nurse her own child. Child nursing, cooking and housekeeping should be taught married women ignorant of such attainments. He emphasized the importance of kindergartens, private and public schools having attached thereto school physicians who shall examine the children on admission, inspect them daily, and re-examine them periodically for tuberculosis and other chronic affections, and bad teeth. Until the completion of the seventh year he would not have children enter public schools for regular attendance. The children of the poor should be provided, gratuitously or at cost, with luncheon. The value of breathing and swimming exercises and school gardens was mentioned. Co-education was recommended up to the age of 12 and in the higher schools and colleges after the age of 17. Popular hygiene, physiology and prevention of infectious diseases should be taught in lessons adapted to the age and understanding of the pupil, and embryology and prevention of venereal diseases, he would not exclude, particularly in the higher grades. Attention was directed to the care of the nervous system of the child, likewise of the teacher. For the atypical, mentally and morally deficient he would have separate classes in charge of specially trained teachers. The tuberculous child should be educated and treated in school sanatoria, where the teacher afflicted with early tuberculosis might also find employment. The suggestion was made of a pension for school teachers having contracted tuberculosis in the performance of their duty. No state or municipal sacrifice should be considered too great for the improvement of the moral, mental and physical condition of the young who constitute the future citizens.

Duty of Family Physician in Regard to Proper Mental and Physical Development of Children Under His Care.

Dr. Dudley A. Sargent, of Boston, referred to the lessened number of young men adopting medicine as a profession in the past ten years and to the increased number of pharmacists, druggists, osteopaths, Christian scientists, and mental healers of varied discriptions. He suggested that the medical profession should take the public into its confidence, admit the impossibility of curing disease as such, and ask for its sympathetic aid and coöperation in trying to prevent it. The knowledge of the self limitation of most diseases, provided the individual has sufficient resistance, has placed new responsibilities on the medical profession; and when the community once learns that the physician's advice before sickness is often worth much more than his prescription afterwards, it will readily come into more intimate relations with him. Every child in the public schools should be given a thorough physical examination at least once a year, and this yearly examination followed by a daily inspection. Such practice in the cities where it has been followed has shown remarkable exemption from the contagious diseases among school children. The practice should also be extended to factories, department stores, and establishments employing many persons.

The remarkable success of the Health Education League of Boston was referred to as indicative of the possibilities of such a movement. The object of the league is to spread the knowledge of the laws of health by means of literature and lectures and practical talks. Dr. Sargent has seen great benefit in his patients by having them form correct habits of living and relinquish those things which have made them ill. In the light of the present knowledge of the cause of moral, mental and physical disease he believes that there is a much greater necessity for the physician to make periodic professional calls on his neighbors and patients than for the pastor to do so. Before the physician can assume this function the public must realize the value of preventive medicine and make its practice possible by an assured income to the physician. There should be common sense talks to prospective fathers and mothers relative to physical fitness to rear a family. Those anticipating marriage and known to the physician to be mentally, physically and temperamentally unfitted for each other, should be so informed in the most delicate way possible. A little more common sense advice from the family physician on sexual matters, it was urged, would relieve the gynecologists from overwork, put the divorce courts out of business, and prevent untold misery to thousands.

The responsibility of the physician in giving instruction on the arrival of the first infant was shown. All through the first seven or eight years of the child's life the physician should look to the enhancement of the child's growth and development through its natural activity. In order to guard against the acquirement of school furniture deformities children should be frequently examined by the family physician. At the approach of puberty the children should be talked with by the physician concerning the mysteries of the generative functions. A natural approach to this subject was suggested to be through the nature studies of plants and animals. Up to the age of puberty the mental and physical activities of the boy and girl should be the same; afterward much of this activity should be essentially different. On the question of venereal diseases the family physician should talk very plainly to both sexes. The question of school athletics should be calmly and judiciously discussed with parents and children by the family physician.

(*To be continued.*)

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, held July 10, 1906.

The President, Dr. Wallace I. Terry, in the Chair.

The society resumed its regular meetings July 10 in Lane Hall, and the attendance was very good, considering the circumstances.

Splenic Anemia.

Dr. Jellinek presented a patient exhibiting an exceedingly interesting condition of anemia, which had been diagnosed as splenic anemia, or Banti's disease. As all the records and history of this case were destroyed by fire, the history, as reported, was from memory. The patient first presented himself to the attention of the recording physician some six or eight months previously, at which time he was exceedingly anemic, the hemoglobin being only about 10 per cent., red blood corpuscles about 200,000 and white corpuscles less than a thousand. Shortly thereafter he developed very severe hemorrhage from the stomach, which recurred at intervals. He was watched very carefully and put on a treatment designed to build up his physical condition. At the time the patient was presented to the society he had hemoglobin about 40 per cent., red blood cells about 2,000,000 and white cells about 1,200. In view of the condition and diagnosis the patient is to be subjected to an operation for the removal of the spleen in about a week.

Adams-Stokes Disease.

Dr. C. M. Cooper reported an interesting case of Adams-Stokes disease, in which a lesion of the bundle of His was demonstrated postmortem. He also presented two patients exhibiting the same phenomena and demonstrated the venous and arterial tracings.

Digitalis and Heart-Block.

Dr. A. W. Hewlett demonstrated tracings showing the heart-block due to administration of digitalis, and called attention to the fact that the use of atropin in connection with digitalis might possibly stimulate the bundle of His and prevent the occurrence of heart-block in cases where it is necessary to administer digitalis, and where this unpleasant symptom follows such administration.

Scopolamin-Morphin Anesthesia.

Dr. W. H. Winterberg presented a paper giving his results in the use of scopolamin-morphin anesthesia. As a result of his experience he believes that this method, when properly followed, is of very great benefit, for even if it is necessary to resort to ether anesthesia a very much smaller amount of the anesthetic is required, and the reaction of the patient would be markedly less.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Acne Papulosa.

In the treatment of this form of acne involving the back and shoulders, Shoemaker in the *Med. Bulletin* recommends the following outline of treatment:

Begin by treating the gastrointestinal tract. Careful attention must be given to the diet and to bathing with hot water and using a mild soap.

The following is recommended internally:

℞. Tinct. nucis vomicæ		
Acidi nitrohydrochlorice, dil., āā	℥ss	15
Fld. ext. xanthoxyli		
Fld. ext. lappæ, āā	℥i	30

M. Sig.: One teaspoonful in water after each meal.

Locally the following combination is of value:

℞. Sulphuris precip.	gr. xxx	2
Ung. zinci oxidi		
Ung. aquæ rosæ, āā	℥ss	15

M. Ft. unguentum. Sig.: Apply locally twice a day.

Diarrhea.

The most common cause of diarrhea, according to Yeo in *Clin. Ther.* is local irritation due to some offending substance and secondarily setting up a catarrhal condition of the intestinal mucous membrane. Some attacks of diarrhea are eliminative in character, excited by some toxic substances from the blood, as in cases of uremia. In infancy the too early use of farinaceous foods is responsible for many of the gastrointestinal disorders. One of the important points to observe in the treatment of diarrhea, according to Yeo, whether acute or chronic, is a proper regulation of the diet, together with rest in bed. In all forms of diarrhea those foods containing indigestible residue must be completely eliminated from the diet, using only such foods as will leave an unirritating residue and have no tendency to undergo decomposition into acid irritating substances in the intestine. As to the medicinal treatment this author recommends that the intestine be emptied of any irritating products by means of a mild but efficient cathartic such as the mild chlorid of mercury in two to three (.12/20 gr.) doses. A small dose of castor oil will answer the same purpose. It may, with advantage, be combined as follows:

℞. Olei ricini	ʒvi	24
Pulv. tragacanthæ co.	ʒi	4
Syrupi simp.	ʒiv	15
Aquæ feniculi, q. s. ad.	℥iii	90

M. Ft. mistura. Sig.: One tablespoonful every hour or two until relieved. A smaller dose must be given to the very young.

Many of the diarrheas depend on an acid condition of the intestinal contents. In such instances alkaline medicines may be given or a few doses of the following combination:

℞. Sodii bicarb.	ʒi	4
Spiritus ammon. arom.	ʒiii	12
Tinct. cardamomi co.	ʒvi	25
Aquæ cinnamomi, q. s. ad.	℥vi	180

M. Sig.: Two tablespoonfuls to be taken every two or three hours until relieved.

There is a great advantage, according to Yeo, in curing a diarrhea by simple means rather than by resorting to astringents and opiates, as opiates greatly interfere with the action of the liver and produce constipation, loss of appetite, headache and other discomforts.

Opium, however, is required in cases in which there is great pain and spasm. It may be given in pill form gr. ½ (.03) of the extract for two or three doses. One must not forget that young children bear opium badly unless given in very small doses, while, at the same time, they may be in need of such treatment owing to the excessive hypersensitiveness of the intestinal mucous membrane.

The following combination acts well in some cases:

℞.	Pulv. kino comp. (N. F.)	gr. iv		25
	Pulv. cretæ comp	gr. xvi	1	06
	Sodii bicarb	gr. viii		50

M. Ft. chart No. iv. Sig.: One powder to be given in a teaspoonful of arrowroot water every three or four hours, until relieved.

In infants under three months of age one-half of a powder (equal to 1/40 gr. of opium) may be given. Opium preparations may be given by rectum safely to relieve the pain and diarrhea in the following form:

℞.	Pulv. opii et ipecac	gr. iv		25
	Acidi tannici	gr. xii		75
	Mucilag. acaciæ	℥ii	60	

M. Sig.: One tablespoonful added to an ounce of starch water and given as an enema.

In this way only a small amount of opium is given and it is absorbed very slowly, making it a comparatively safe method of administering opium to infants.

Bismuth is one of the reliable preparations with which to combat diarrhea. It may be given in one of the following combinations:

℞.	Bismuthi subnit.	ʒss	2	
	Cretæ preparatæ	gr. xviii	1	20
	Sodii bicarb	gr. xii		75
	Pulv. tragacanthæ co.	gr. xx	1	30

M. Ft. chart No. vi. Sig.: One powder in a dessertspoonful of arrowroot water every three to four hours. Half this amount may be given to very young children.

For adults the following is of use:

℞.	Bismuthi carb	gr. lxxx	5	30
	Pulv. cretæ arom	ʒiiss	10	
	Sodii bicarb	gr. xl	2	60
	Spiritus ammon arom	ʒiv	15	
	Mucilag. tragacanthæ			
	Aquæ chloroformi, āā	℥ii	60	
	Aquæ cinnamomi, q. s. ad	℥viii	240	

M. Sig.: Two tablespoonfuls every two or three hours.

In the treatment of the acute diarrheas Stevens states that if much pain be present either Dover's powder or paregoric are of value, but in most cases he recommends mild astringents such as bismuth and chalk. They may be combined with advantage with an intestinal antiseptic as follows:

℞.	Bismuthi subnitratis	ʒiii	12
	Bismuthi subsalicylatis	ʒi	4

M. Ft. chart. No. xii. Sig.: One powder every two to three hours.

Or,

℞.	Salol	ʒss	2
	Bismuthi subnitratis		
	Cretæ preparatæ, āā	ʒii	8
	Pulv. acaciæ, q. s.		
	Aquæ cinnamomi, q. s. ad	℥iii	90

M. Sig.: Shake bottle and take one dessertspoonful every two to three hours.

He advises that opium preparations when they are indicated, be given alone and not in combination with other preparations in order that they may be discontinued more readily when no longer required. When the colon is especially involved copious injections of warm water are recommended both to cleanse the bowel and to exert a soothing effect on the irritated mucous membrane. The following formula is advised for this purpose:

℞.	Tinct. opii	m. v-x	30-65
	Aquæ amyli	℥i-ii	30-60

M. Sig.: To be introduced into the bowel by high injection.

Intestinal antiseptics such as salol and bismuth salicylate should be given at the same time by the mouth.

The following combination is recommended by Stevens:

℞.	Bismuthi subnitratis	ʒii-iv	8-15	
	Salol	gr. xxiv	1	60
	Misturæ cretæ	℥iii	90	

M. Sig.: One teaspoonful every two hours.

Chronic Metritis.

In the treatment of chronic metritis A. Robin in *Jour. de Med. de Paris*, recommends a hot douche on rising in the morning and on retiring at night. The temperature of the water should be gradually increased with the ability of the patient to stand it. Added to the water he recommends potassium permanganate, corrosive sublimate, or tannin as the individual case may require. During the douche the patient should lie down on her back with the hips elevated, and she should be instructed to remain in that position for ten minutes following the douche.

Robin also recommends rectal irrigations with hot water and warm alkaline baths.

Any deviation or flexions of the uterus should be corrected, and in some cases massage of the uterus is advised.

Locally, in addition to the hot douches, he applies tampons soaked in glycerite of tannic acid or vaginal suppositories of tannin and ichthyol. When ulcerations are present around the os they should be touched with applications of the tincture of iodin.

Successful Treatment of Ozena with Paraffin Injections.

An interesting feature of the last few months has been the testimony accumulating abroad in regard to the favorable results of treatment of ozena with paraffin prothesis. It is not settled whether hard or soft paraffin is better. Brindel and Moure of Bordeaux claim the priority, and Brindel reports 150 patients treated with soft paraffin with most excellent results. His trials of hard paraffin, that is, not melting under 45 or 50 C. were by no means so good. In some instances the paraffin gangrened out, even when very small amounts had been injected. Brockaert of Ghent ascribes ozena to the action of certain micro-organisms which generate a toxin that irritates the vessels, inducing obliterating endarteritis and endophlebitis with diffuse sclerosis of the mucosa, especially of the hypophysis. He prefers paraffin not melting under 50 C., and has had 25 patients completely cured out of 30 thus treated, with 7 much improved, but no benefit in 10 cases. Guiser thinks that the best results can be obtained with the use of paraffin softened, not by heat, but by pressure, using a special syringe, compressing the paraffin till it issues from the tip in a soft stream. He has thus cured 15 out of 22 patients. He never injects more than 1 c.c. at one point, repeating the injection every five or six days. It is impossible to hope for success, he says, if the atrophy of the mucosa has proceeded beyond a certain point.

Medicolegal

When Information from Observation Becomes Privileged.

The Supreme Court of Missouri, Division No. 2, says that in the personal injury case of Smoot vs. Kansas City, the question was asked a physician as to whether or not he saw the plaintiff spitting any blood, while on the sidewalk or in the street, before getting into the ambulance. The answer was excluded. The witness was assistant police surgeon of the city, but stated that he was not on the city pay-roll, but handled rich and poor alike, that is, those who could pay him, paid him, and those that could not pay him he gave attention just the same. The court says that in order to render observations and opinions acquired by a physician privileged it must appear that the relation of physician and patient must first be established. After a patient has submitted himself to an examination by the physician then information acquired by observation would be excluded on the same ground as a direct communication by the patient to the physician. So far as the question propounded in this case was concerned, it did not appear as to whether or not the information desired from the physician as to the spitting of blood was from observation prior to any sort of examination of the plaintiff. It was clear that when the physician first appeared on the scene of the accident if he observed the plaintiff and that he was not at that time spitting blood, there was no reason why such testimony should be excluded, for that was prior to any submission by the patient to the examination of the physician. If on the retrial of the cause it appeared that the relation of physician and patient had been established and that the plaintiff had submitted himself for examination by the physician, then any information acquired by observation after that time would be incompetent. But, on the other hand, if prior to the establishment of this relationship, the physician observed the patient and acquired information from such observation, the court knows of no rule of evidence that would make such information privileged.

Employment by Conductor of Physicians for Trespasser.

The Court of Civil Appeals of Texas says that the case of Wills and others vs. International and Great Northern Railroad Company was brought to recover for professional services rendered by the plaintiffs as physicians and surgeons on alleged employment by the conductor of a freight train which had run over the patient, through his fault alone, while he was a trespasser on the company's right of way. The trial court concluded as a matter of law: 1. That the burden of proof was on the plaintiffs to show authority on the part of the conductor to employ them. 2. That the said conductor was acting beyond the scope of his authority as agent of the company in employing the plaintiffs; and that there was no sufficient reason why the company should not be permitted to deny the conductor's authority to make such employment; and that therefore the company was in no way liable to the plaintiffs. The Court of Civil Appeals is of the opinion that these conclusions of law were correct, as based on the facts, and that the proper result was reached in the disposition of the case by a judgment in favor of the company. It says that under the particular facts of this case, the conductor had no authority to bind the railway company to a contract to pay for the services rendered by the plaintiffs. The facts in the record did not raise the issue of estoppel and ratification. This court does not undertake to say what would be the power of a conductor of the railway company where a passenger or employé was injured. Here the party injured was a trespasser. The condition that called for treatment was attributable to his own negligence; and the court cannot see how the railway company could be held liable for the medical expenses incurred in treating such a person, unless it had obligated itself through some authorized agent to incur such liability. The court can find nothing in the power usually delegated to a conductor, or in the duties that he is required to perform, that implies the authority to make contracts binding his principal, whereby it should be burdened with the cost and expense of the treatment of injured persons, for whose condition it could in no wise be held responsible.

Validity and Force of Rules of State Board of Health.

The Supreme Court of Iowa holds, in the case of Pierce vs. Doolittle, that Section 2573 of the Iowa Code is not unconstitutional in providing that any one who knowingly fails, neglects or refuses to comply with and obey any order, rule or regulation of the State Board of Health is guilty of a misdemeanor. It says that it was contended in this case that the crimes which are punishable under the statutes of the state must be prescribed by statute and that they cannot be left for determination to boards or tribunals whose rules and regulations are not prescribed by the legislature itself. In support of this contention cases were cited in which it has been held that the power of the legislature to enact and repeal laws cannot be delegated. But the court does not see the applicability of that well-recognized principle to this case. It says that the offense defined by Section 2573 of the Code, the punishment of which is provided for in Section 4906 of the Code, is not made to depend in any way on any other legislative authority than that on which the Code itself is founded. The act to be punished is the violation of the rules of the State Board of Health, a tribunal constituted by law and having authority conferred on it by law, and no other authority. The court thinks it clear that the legislature may provide for the punishment of acts in resistance to, or violation of, the authority conferred on such subordinate tribunal or board. "When these boards duly adopt rules or by-laws by virtue of legislative authority, such rules and by-laws, within the respective jurisdictions, have the force and effect of a law of the legislature; and like an ordinance or by-law of a municipal corporation, they may be said to be in force by authority of the state."—Blue vs. Beach, 155 Ind., 121. Every person affected by the rules and regulations of such a board or tribunal is required to govern himself in accordance with such rules and regulations if within the scope of the authority granted by the legislature, and adopted and published as required by law. Furthermore, the court holds that it was competent to show by the secretary of the State Board of Health what the rule in question, as to reporting the existence of scarlet fever, was; and that, if it was further shown that the accused had notice and knowledge of such rule, then the violation by him would constitute a crime. A certified copy of the publication containing the rules of the State Board of Health was properly admitted in evidence.

Divorce for Opium "Drunkenness" from Medicine.

The Supreme Judicial Court of Massachusetts says, in the divorce case of Gowey vs. Gowey, where it overrules exceptions to a decree, that it is not easy to define the word "drunkenness" as applied to the use of opium, morphin, or other drugs. But the evil effects resulting from the continued use of opium or morphin are well known. They interfere as much, to say the least, with the happiness of married life, and produce other effects on the marriage relation as deplorable as those resulting from the excessive use of intoxicating liquors. And it was the state thus resulting from their excessive use which the legislature intended, the court thinks, to describe by the word "drunkenness" as applied to the use of opium, morphin and other drugs, and from which it is intended to afford relief to the innocent party. In order to warrant a decree, the evidence must be such as to justify a finding that the habit was gross and confirmed, and existed when the libel was filed. But if a gross and confirmed habit is once shown to exist, the reasonable probability that it will continue to exist, furnishes some ground for an inference which the court may consider in dealing with a litigated matter. In this case there was evidence warranting a finding that the libelee (defendant) had become addicted to the excessive use of opium, and that the habit had become gross and confirmed. She took for many years a medicine called "Tincture of Sudorific," which, there was evidence tending to show, she admitted contained opium. At first the libelant (husband), who did not know what it was, bought it for her in half pints and pints, and later in pints and quarts. There was evidence tending to show that she had the appearance of one addicted to the excessive and continued use of opium, and that her conduct was, at times, such as might fairly be attributed to the excessive use of that drug. Nor does the court think that there could be said to have been a connivance on the part of the husband, he having testified that, though he knew that his wife had been taking the medicine for a long time, he did not know until a physician was called to attend her in an attack of illness that the medicine contained opium, when he was told that she must have it, but to wean her from it, and other evidence showed that he did, and offered to do, all that could be reasonably required to assist her in overcoming the habit.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

July 14.

1 *New Method of Incision for Removal of the Breast. C. Beck, New York.
2 *Contagiousness of Gumma. C. M. Williams, New York.
3 *Carbon Dioxid Gas Retention as a Frequent Factor of Disease. L. B. Couch, Nyack, N. Y.
4 Address of the President of the Twenty-eighth Meeting of the American Laryngological Association at Niagara Falls. J. W. Gleitsmann, New York.
5 Case of Papilloma of the Larynx in a Child. F. R. McCreery, New York.

1. **Incision for Removal of the Breast.**—Beck describes his method as follows: The incision line around the breast is in the form of a rectangle. The interior line of this rectangle is continued on both ends to the extent of about three inches. The same is done with the lower end of the external side, while the upper exterior end is extended along the outer margin of the pectoralis major up to its humeral insertion. The axilla itself is not touched, in order to avoid cicatrization in the axilla, which is apt to produce edema of the arm. After the rectangle is excised the upper skin flap is formed and reflected. This fully exposes the area of the operation. Whether the operation be radical or not, the principle of access remains the same.

2. **Contagiousness of Gumma.**—Williams says that if the spirochete is the specific organism of syphilis it must exist in gummata, though in such small numbers that up to the present it has escaped detection. The cases in which exposure to tertiary lesions have been followed by contagion are not sufficiently numerous and carefully reported to bring conviction to even a conservative mind. The experiments which have been conducted in relation to this problem are conclusive and prove that a gumma may be capable of transmitting the disease. This does not mean that a gumma is always contagious. Williams thinks that it is probable that the living growing border is always infectious. He explains the rarity of examples of infection by the fact that the organism is present in such scanty numbers and has so little chance to reach fertile soil. But this belief is not proven. Whatever may be the explanation of the various questions relating to the contagiousness of gumma, however, the practical lesson is the same. So long as a man shows any sign of syphilis, so long must he be considered a source of danger to the community.

3. **Carbon Dioxid Factor in Etiology.**—Couch believes that all varieties of rheumatism are caused by a carbon dioxid or a carbonic acid toxemia, due largely to fermentation of starchy substances in the stomach and bowels. This fermentation is the result of improper salivation and mastication, aided by the pernicious use of liquids during and after meals. These liquids dilute and weaken the ferments which properly digest such food. Couch goes on to explain his belief that many of the diseases common to man are due primarily to retention of carbon dioxid in the system, through failure of the excretory organs properly to eliminate it. From this point of view he discusses gastric and enteric cartarrh, intestinal ulcers, pneumonia, shock, heart failure, angina pectoris, rheumatism, nephritis, scarlet fever, cataracts and albuminuria. He emphasizes the necessity of eliminating from the body this poisonous excretory gas.

New York Medical Journal.

July 14.

6 *Therapeutic Value of Ergot. O. T. Osborne, New Haven, Conn.
7 Principles of Treatment in Diseases of Children. J. M. Taylor, Philadelphia.
8 Differential Diagnosis and Clinical Significance of Peritonitis. G. P. LaRoque, Richmond, Va.
9 *A New Form of Intestinal Obstruction. The Methods for Preventing a Recurrence of Volvulus of Sigmoid Flexure. A. V. Moschcowitz, New York.
10 *Death from Suppurating Tonsil. V. Kenerson, Buffalo, N. Y.
11 Deformities of the Trunk in Children. L. C. Ager, Brooklyn.
12 *Inguinal Hernia. J. M. White, Meridian, Miss.
13 Hernia of the Bladder. C. F. Kivlin, Troy, N. Y.

6. **Therapeutic Value of Ergot.**—Osborne, in discussing the therapeutic value of ergot, lays down the indications for its use as follows: 1. To contract the blood vessels, to raise the blood pressure and to stimulate the heart in conditions of shock, collapse and circulatory depression. 2. To contract the blood vessels of the brain and spinal cord, especially of the meninges, when they are acutely inflamed, irritated or congested. 3. To quiet the nerve pains in inflammation and irritation of nerves, and especially if the origin of such irritation is central. 4. To promote activity of the bowels when there is intestinal muscular debility, paresis or paralysis, as in tympanites after operations, or when there is obstinate constipation. 5. To contract the uterus in uterine hemorrhage. 6. To ameliorate asthma which is due to nervous irritability or reflexes. 7. To modify or to diminish excessive secretion of the thyroid, as occurs in some forms of hysteria and in exophthalmic goiter. 8. To quiet the nervous system and to aid in overcoming the morphin, opium, alcohol or other drug habits, and to increase the potency of any dose of morphin that may be required for nerve pain.

He has also found ergot useful in one other condition, a most inveterate diabetes insipidus occurring in a boy 10 years old. Osborne gave ergot, one-half teaspoonful of the best fluidextract, four or five times a day at first and later the same size dose only twice a day. The result has been a remarkable one. All the constitutional symptoms have disappeared. The quantity of urine was reduced from twelve to about five quarts a day. In fact, the ergot has done the boy nothing but good, although he has taken it continuously for a year and a half. He does not show any symptoms of ergotism.

9. **Treatment of Volvulus of Sigmoid.**—Moschcowitz has operated in five cases of volvulus of the sigmoid flexure, doing a sigmoidopexy in each instance with most satisfactory results except in one case, in which an internal strangulation occurred following the operation.

10. **Death from Suppurating Tonsil.**—A case of suppurating tonsil with sepsis and edema of the glottis causing strangulation is reported by Kenerson. The patient, a woman, aged 33, within two days developed an enormous abscess of the tonsil, which opened as soon as touched with the finger, although every precaution was taken in the way of antisepsis, the abscess refilled and strangulation became imminent. Artificial respiration became necessary, and finally, the relief proving only temporary, a tracheotomy was performed. The edema spread rapidly all over both sides of the neck and well down to the clavicle; the discharge came almost constantly from the nose and in large quantities. Death ensued on the fourth day.

12. **Inguinal Hernia.** — White questions the possibility of union occurring between two muscles or the edges of muscular tissue unless the edges are freshened. In operations for the cure of hernia this is important, because otherwise there will be left a weak spot in the abdominal wall, which, White thinks, may account for some of the failures in Bassini's operation. To obviate this he suggests cutting out an inverted V-shaped piece of tissue in the external oblique muscle, which makes this muscle reinforce the weak place in the abdominal wall at the internal oblique and Poupart's ligament. He presents a variety of different plans that can be used to close the hernial openings with muscular tissue. In cases in which the muscular walls have been stretched and are very lax he suggests raising the edge of the internal oblique and exposing the outer edge of the transversalis. An inverted V-shaped piece of this muscle is excised, making a round opening for the cord to pass through; a piece is also cut out of the transversalis. The cut edges are united with sterile catgut. This will make tense the lower edge of the transversalis muscle, drawing it down and closing the opening of the internal wound with muscular tissue. The lower edge of the internal oblique is replaced and the cord raised; the sutures are then inserted into the internal oblique and Poupart's ligament, as in Bassini's operation, thus making a combined operation.

Boston Medical and Surgical Journal.

July 12.

14 Therapeutic Effect of Sound Waves, or Mechano-Therapeutics of the Ear. C. J. Blake, Boston.
15 *Method for the Differential Staining of Blood Plates. J. H. Wright, Boston.
16 *Occurrence of Occult Hemorrhages in Typhoid Fever. W. Tileston, Boston.
17 Sore Throat, Etiology and Therapeusis. E. D. Spear, Boston.

St. Louis Medical Review.

July 7.

18 Further Series of Ennucleations of the Prostate. W. Thomson, Dublin.
19 Cold Air in the Treatment of Tetanus and Yellow Fever. W. W. Crane, Sinclair, Ill.

Lancet Clinic, Cincinnati, Ohio.

July 14.

20 The Forceps and its Alternatives when the Head is Arrested in the Pelvic Brim. W. Gillespie, Cincinnati.
21 Expert Medical Testimony. A. N. Ellis, Maysville, Ky.

15. **Differentiating Staining of Blood Plates.**—Because the blood plates stained by his method exhibit peculiarities of staining and structure which permit them to be definitely recognized, Wright has been able to show that the so-called granular material seen in sections of mixed thrombi consist exclusively of blood plates. Perfectly fresh tissue (the spleen of a young kitten is most suited for this purpose) is fixed in methyl alcohol, dehydrated by acetone, cleared in xylol and embedded in paraffin. The sections, two microns in thickness, are stained while fixed to a cover glass. A sufficient quantity of the stained fluid is placed on the cover glass to cover it, and then an equal quantity of water is added to the staining fluid drop by drop. The mixture remains on the preparation ten minutes. The cover glass is then rinsed in water, emmersed in a 1 to 5,000 aqueous solution of sodium hydrate for five seconds, washed in water, dehydrated with acetone, cleared with oil of turpentine and mounted in turpentine colophonium.

16. **Occult Hemorrhages in Typhoid.**—Tileston examined the stools in 68 cases of typhoid by means of guaiac and aloin tests, following practically the method of Boas. Eighteen cases out of the 68 gave positive tests at some time during the course of the disease. One of these was complicated with enteritis, to which the presence of blood was probably due; there remain 17, or 25 per cent., which showed the presence of occult blood. In all, 422 stools were examined, of which 42 were positive, i. e., 10 per cent. A division into groups, according to the severity of the disease, gave the following results: Fifteen mild cases, 3 positive, 20 per cent.; 39 moderately severe, 10 positive, 26 per cent.; 14 severe or fatal, 5 positive, 36 per cent. A study of the positive cases brought out the following facts: The temperature on the day of positive reactions was considerably elevated in most cases; in 5, however, it had nearly or quite reached normal. Diarrhea was present in 11, absent in 6 cases. The number of positive results was not large, averaging 2.4 per case.

The relation to gross hemorrhages is interesting but disappointing. Hemorrhages occurred in 7 cases (10 per cent.); in 6 of these, although stools were examined in all within the preceding twenty-four hours, the tests were negative. In one case only were positive results obtained before the bleeding became manifest. The prognosis was certainly not unfavorably affected by the occurrence of occult hemorrhages, for the mortality of the positive cases was 5.5 per cent, while that of the whole series was 7 per cent. Of the 6 patients in whom gross hemorrhages occurred without premonitory positive tests 4 died.

American Journal of Medical Sciences, Philadelphia.

July.

22 *Further Observations on the Anatomy of the Duodenum. A. J. Ochsner, Chicago.
23 *Sufficiency of Simple Intercostal Incision in Acute Empyema. J. F. Leys, U. S. N.
24 *Traumatic Intraperitoneal Rupture of the Bladder. A. P. C. Ashhurst, Philadelphia.
25 Experiments on the Great Omentum. L. S. Dudgeon and A. Ross, London.
26 Sauerbruch's Operative Chamber; History, Experiments, and Experiences. B. Hahn, Tacoma, Washington.
27 Surgical Treatment of Hepatic Cirrhosis, with Special Reference to Biliary Drainage. C. G. Cumston, Boston.
28 *Case of Partial Dislocation of the Fifth Lumbar Vertebra on the Sacrum. H. O. Feiss, Cleveland, O.
29 *Practical Significance of a Trace of Albumin in the Urine. J. P. Tunis, Philadelphia.
30 Alcoholic Multiple Neuritis. C. W. Burr, Philadelphia.
31 Acute Paranoia Exhibiting Cyclical Relapses. T. J. Orbison, Philadelphia.
32 *The Breus Hematom-mole. A. H. Bill, Cleveland.
33 *Method for the Isolation of Typhoid and Colon Bacilli from Drinking Waters, etc. T. A. Starkey, Montreal, Canada.
34 Epithelial Lined Fistula-in-Ano in an Infant. M. W. Ware, New York.
35 *Advisability of Eliminating the Terms Meniere's Disease and Meniere's Symptoms from Otologic Nomenclature. E. Amberg, Detroit.

22. **Anatomy of Duodenum.**—Ochsner reports the histories of 16 patients operated on in the course of one year in whom there was dilatation of the upper portion of the duodenum.

23. **Intercostal Incision in Acute Empyema.**—Leys points out that the majority of cases of empyema are acute in their origin and course, the condition being a sequel of an acute infectious disease. The best treatment for such cases, as soon as the diagnosis of empyema has been made on the signs and symptoms and confirmed with the exploring needle, is simple incision through an intercostal space. Resection of a rib is not only quite unnecessary, he states, but positively undesirable in practically all acute empyemas. Leys reports 5 cases of acute empyema occurring in boys between 16 and 17 years of age. In 4 of them the empyema was an immediate sequel of lobar pneumonia. A rapid and complete recovery ensued in each of these cases. In the other case the empyema was developed from a sero-fibrinous pleurisy. Recovery proceeded more slowly in this case.

24. **Traumatic Intraperitoneal Rupture of Bladder.**—Ashhurst reports two cases of this kind and analyzes 110 cases found in the literature that had been treated by laparotomy.

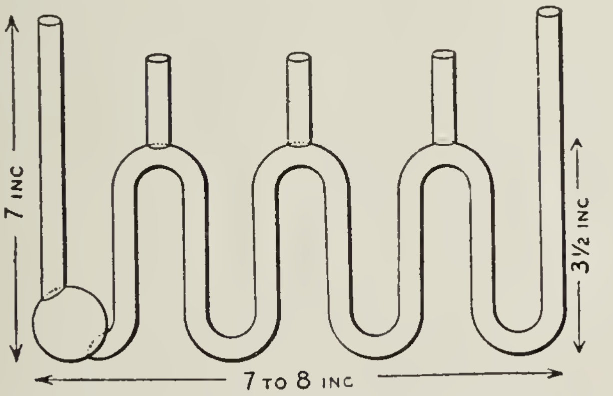
28. **Partial Dislocation of Lumbar Vertebræ.**—Feiss reports the case of a man, aged 20, who was injured in the right side by a trunk falling on him. After the injury he had severe pain and limped, and there was ecchymosis of the right buttock. He limbered up and later got stiff again. Soon he had to go to bed on account of pain. His legs became swollen and drawn up, the swelling occurring at the ankles, calves and knees; the calves became hard. He was troubled chiefly on account of pain and stiffness in his back and severe pain in the ankles and calves. This pain was worse at night. He was also troubled with numb feelings and paresthesia. He believed his legs were growing thinner. There were no bladder or bowel symptoms. There was some cough. His gait resembled that of a tabetic, although it was not characteristically so. He threw his legs forward rather forcibly, but landed on the ground gently with his feet. Chest and abdomen were negative. Arms, hands and shoulders were negative. The examination of the spine showed that motions were quite free, except for a slight rigidity in the lowest lumbar region. The hip joints were limited in abduction. The knees showed nothing except a sharp click of the left one on flexion. The feet were in a position of marked valgus, with redness and swelling under the inner ankles, but motions were quite free and there was no spasm—they were cold, clammy and bluish. There was no evidence of motor paralysis. The sensation to touch was normal. Hot and cold sense seemed uninjured. Knee jerks were present and normal; there was neither clonus nor Babinski sign. Measured from the umbilicus to the internal malleolus, the right leg was three-fourths of an inch shorter than the left. Both thighs and calves were thin and atrophic and the perineum was slightly broadened. The spinous processes showed a long left dorsal curve and a slight right lumbar curve. A Roentgen picture of the lumbar region showed an apparent displacement of the fifth lumbar vertebra, three-sixteenths of an inch to the right of the middle line, and a compression of the left side of the body of the same vertebra. A plaster spica was applied from the costal border, including the right hip, so as to immobilize the lowest region of the spine. This case shows, first, at least a partial dislocation of a lumbar vertebra may exist without complication of fracture; second, it may persist unreduced and yet with improvement in the symptoms; third, that the physical signs may not be sufficient for diagnosis, and that a Roentgen picture is necessary for proof; fourth, there is very likely play in the articular facets, else there would be fracture; fifth, the chief sign of dislocation low down may be the change in the gait; sixth, fixation is probably indicated in old unreduced cases.

29. **Significance of Trace of Albumin in Urine.**—Tunis summarizes his paper as follows: From any point of view the term physiologic albuminuria is almost universally regarded as misleading, unsatisfactory and inadequate. So long as albumin is a constituent of the urine the individual voiding it can not be regarded as normal. The mortality among such persons must necessarily be higher than among an equal number of individuals who do not show this phenomenon. The actual mortality rate among this class can best be approximated by a comparison of the records of half a dozen of the largest life insurance companies (dealing with hundreds of thousands of cases) over a period of twenty years at the least. The prompt means of discriminating between the transient forms

of albuminuria and those of real clinical significance may be found in some such therapeutic test as that of calcium lactate rather than by any further developments in the chemistry of the urine. Experience proves that a faint trace of albumin in the urine of an individual past middle life is often of greater significance than a decided trace by unexpectedly directing attention to the finding of casts of pathologic importance, which might otherwise have been easily overlooked. For practical purposes the heat and nitric acid test for albumin is the best one, and the careful use of Roberts' solution is the most satisfactory control test in doubtful cases. For the proper diagnosis and prognosis too much stress can not be laid on a thorough consideration of the clinical conditions as a whole.

32. **Hematom-Mole.**—Bill reports a case of this kind in a very early stage of its development, which seems to show some of the essential characteristics more clearly than the more advanced cases, in which the early features of the formation are overshadowed or lost sight of entirely in the completely developed mole. A summary of the clinical and pathologic characteristics which will serve in the diagnosis is as follows: 1. The marked disproportion between the size of the embryo and the period of gestation. 2. The relative absence of symptoms of intoxication from the long retention. 3. The disproportion between the size of the embryo and that of the ovum. 4. The presence of the tuberous hematomata, which may be lobulated and have constricted bases. 5. The lack of blood vessels in the chorionic villi. 6. The poor development of the epithelium of the chorionic villi, which may be entirely absent, the layer of Langhan's cells being particularly poorly formed. 7. The persistence of the trophoblasts. 8. The poor development of the embryo, which may not be found at all, having been absorbed. It usually corresponds in size to that of from four to six weeks' development.

33. **Isolation of Typhoid and Colon Bacilli.**—The method put forward by Starkey is based on three facts appertaining to the colon and typhoid bacilli: First, their motility; second, their power to grow in some medium which possesses a restraining action on many other bacteria; third, their ability to grow anaërobically. Expressed briefly, the rationale of the work is as follows: 1. The motility will separate the colon and typhoid bacilli from non-motile organisms and from those less motile than themselves. 2. The restraining medium prevents the ready growth of most organisms except colon and typhoid bacilli. 3. The anaërobic conditions prevent the development of aërobic organisms which form the majority of bacteria with which one comes into contact in ordinary bacteriologic examinations. These three factors, when acting together, at the same time practically insure colon and typhoid bacilli having the same ascendency. The following are the details of the method of applying the principles: A piece of glass tubing one-quarter, or, better, three-eights of an inch in diameter is bent in the manner shown in the accompanying illustration. A bulb is blown near the lower part of the first limb (bulb about 8 or 10 c.c. capacity), and observation openings are made in the uppermost parts of the bent portions. This apparatus is filled with ordinary nutrient broth (liter+1 per cent., normal acid), to which 0.05 per cent. pure carbolic acid has been added. The openings are plugged with wool and the whole sterilized in Koch's sterilizer for one hour. Inoculations are made at the bulbous end. The tube is then placed beneath a bell jar, in which perfect anaërobic conditions can be assured. This latter point is extremely important, because if not carefully carried out it will lead to endless failures. The whole apparatus is then placed in the incubator at 37.5 C. At the end of twenty-four, thirty-six or forty-eight hours samples are taken (about 1 c.c. in quantity) from the observation tubes in order, starting from the one next the bulbous end, and then spread out on Conradi-Drigalski medium. These plates are then incubated at 37.5 C., and during the next twenty-four hours colon and typhoid bacilli will be revealed if present in the original inoculations.



35. **Meniere's Disease and Meniere's Symptoms.**—After discussing the advisability of eliminating these terms from otologic nomenclature, Amberg concludes as follows: 1. The triad, hardness of hearing, vertigo and tinnitus, is given as constituting the functional disturbance observed in the so-called Meniere's disease. 2. These symptoms occur also in numerous affections which are not based on the pathologic findings as described by Meniere in his historical case. 3. The observation that not always a typical picture is present has led to the introduction of other terms, such as Meniere's symptoms, etc., which has proved to be confusing. 4. Even affections of the middle ear, of the outer ear or of other parts of the body can cause the symptoms described by Meniere. 5. These latter causes can be diagnosed in many instances and prove the existence of a great group of affections characterized by functional disturbances of the inner ear. 6. By abandoning the terms Meniere's disease and Meniere's symptoms a more definite nomenclature can be introduced. This is important, not only from a physiologic and pathologic but also from a clinical standpoint. By using, for instance, the terms internal syphilitic otitis, or leukemic, or angioneurotic, or gastric, a clearer conception of some affections would ensue. 7. The various terms should be agreed on. The many international medical meetings give ample opportunity for such a procedure.

Buffalo Medical Journal.

July.

36 Migraine. C. King, Machias, N. Y.
37 *The Lower Extremity of the Ulna as a Factor in Colles' Fracture. D. M. Totman, Syracuse, N. Y.
38 Obstetric Amenities. S. Y. Howell, Buffalo, N. Y.
39 Condition of Sleeplessness and its Treatment. W. H. Birchmore, Brooklyn.
41 Interstate Reciprocity in Licensing. W. W. Potter, Buffalo, N. Y.

37. **The Ulnar in Colles' Fracture.**—Totman contends that cases are occasionally met in which the injuries of the lower end of the ulna are such that bony formations will occur from the injury to the periosteum and the other adjacent structures. In certain cases deformity will result in spite of the very best care. He agrees with Moore that the care of the lower end of the ulna is the key to the successful treatment of Colles' fracture. If the luxation is reduced successfully, and if the ulna is held up in its proper normal place, it makes the best possible splint for the fractured radius. This can best be accomplished by the use of a small roller under the outer and anterior surface, which is held in place with a firm encircling adhesive plaster.

Journal of Cutaneous Diseases, New York.

July.

42 *Two Cases of Paget's Disease Treated by the X-ray, with Report of the Microscopic Findings in one of Them After Prolonged Treatment. M. B. Hartzell, Philadelphia.
43 Case of Pityriasis Rubra of Hebra's Type. F. H. Montgomery, Chicago.
44 Pemphigus Vegetans. A. Ravogli, Cincinnati.
45 Intramuscular Injections in the Treatment of Syphilis and the Use of the Sozoiodolate of Mercury. A. Garceau, San Francisco.

42. **Roentgen Ray in Paget's Disease.**—The first case reported by Hartzell occurred in a woman, 53 years old, the disease having been of thirteen months' duration. After employing the usual remedies for some months without producing more than a slight temporary improvement, the *x*-ray was resorted to. Exposures were made daily at first, each treatment lasting 10 minutes, with the anode first at 10, and later at 8 inches from the patch. After the thirteenth sitting the improvement was quite evident, and after the nineteenth exposure, made five weeks from the beginning of the treatment, the diseased area was completely healed. Several slight recurrences yielded promptly to the ray. Finally, an induration of the gland, with increasing impaction of the nipple, made a

removal of the breast necessary. The second case occurred in a woman 60 years old and is almost the exact counterpart of the first case, both in its clinical features and as to the treatment and its results.

American Journal of Urology, New York.

July.

46 *Renal Decapsulation and Nephrotomy in the Treatment of the Serious Forms of Eclampsia. Pousson and Chambrelent, Bordeaux, France.
47 Surgical Aspects of Anuria. C. G. Cumston, Boston.

46. **Renal Decapsulation and Nephrotomy in Eclampsia.**—Pousson and Chambrelent point out that the methods usually employed for treating eclampsia do directly with the toxemia but neglect the renal and hepatic lesion, which are only indirectly influenced by these methods. In order to remedy bad effects resulting from the treatment by lavage of the blood, and in order to render blood letting more efficacious, and to do away with the renal lesions, they have decided to interfere surgically with the kidneys in cases of eclampsia, although they do not teach the substitution of operative for medical treatment. They believe that in instances of serious intoxication which has existed all the medical means, particularly in cases accompanied by oliguria, with a decrease of urea and other extractive matters of the urine, along with a large quantity of albumin, surgical interference is justified and is even absolutely necessary when a histologic examination of the urinary deposit shows the presence of the characteristic figured elements of acute nephritis. They performed renal decapsulation in one instance 36 hours after the labor had terminated. The patient recovered.

Albany Medical Annals.

July.

48 Sanitary Department of Armies and the Military Medical Officer. (To be continued). J. V. Hoff, U. S. A.
49 *Intermittent Claudication, due to Angiosclerosis of the Extremities. R. H. Irish, Troy, N. Y.
50 Osteomyelitis of the Femur. G. G. Lempe, Albany, N. Y.

49. **Intermittent Claudication.**—Irish examined the foot pulse in both feet in 80 cases, 40 males and 40 females. Twenty of them were cases of arteriosclerosis, the other 60 included a variety of other medical and surgical cases. In the 60 cases he obtained a positive result in all. In the 20 cases, pulsation was absent in one or both of these arteries in 10 instances. In 4 cases there was absence of pulsation in one posterior tibia. In 8 cases the pulsation in the dorsalis pedis of one or both sides was absent. Irish believes that in cases exclusively of arteriosclerosis the foot pulses may be regarded as fixed and constant, but that absence of pulsation in one or both of these arteries in cases of general arteriosclerosis is not such an infrequent symptom as the reports of some observers that indicate it. He reports one case, that of a man, aged 89, in which the etiologic factor was undoubtedly the advanced age of the patient. The diagnosis was based on the intermittent character of the symptoms, the changes and absence of pulsation observed in the foot arteries with coldness, numbness and other evidence of local circulating disturbances. The condition has improved under treatment which consisted of hot salt-water foot baths and 15 grain doses of potassium iodid three times daily.

American Medicine, Philadelphia.

June.

51 *Syphilis of the Stomach. W. G. Morgan, Washington, D. C.
52 Diagnosis of Incipient Pulmonary Tuberculosis. G. W. Norrls, Philadelphia.
53 Pulmonary Tuberculosis in its Relation to Obstetrics. F. H. Washburn, Jefferson, Mass.
54 Metabolism of Water. H. Ricbardson, Baltimore.
55 Recent Studies in Measles. R. C. Rosenberger, Philadelphia.
56 Lesions of the Neurofibrils in Pathologic States. G. E. Price, Philadelphia.
57 *Foreign Body in the Crystalline Lens, Extracted by the Electric Magnet. H. F. Hansell, Philadelphia.
58 Static Electricity in General Practice. W. P. Glendon, Cedarville, N. J.
59 State Care of the Insane in New York. F. Peterson, New York.

51. **Syphilis of Stomach.**—Morgan reports one case of gastric syphilis, of the pseudocancerous type, in which the diagnosis rested on the therapeutic result. The gastric symptoms had been present for four years. A specific history was denied. A tumor could not be palpated. A little later a movable tumor was palpated occupying the pyloric region. This, together with a dilatation of the stomach seem to warrant a diagnosis of carcinoma of the pylorus. A history of syphilis was then admitted and Morgan prescribed a saturated solution of potassium iodid in increasing doses, on a supposition that the tumor in the stomach was a gumma. The treatment was continued for some months, the patient eventually regaining perfect health.

57. **Foreign Body in Crystalline Lens.**—Hansell reports the case of a woman of 35 who, while attempting to loosen the lid of a box by pounding the head of a hatchet with a hammer received an injury to the left eye. Within 24 hours of the time of the accident a delicate linear scar was visible at the junction of the upper and middle thirds of the cornea opposite the upper pupillary margin, a punctured iris and a swollen and partially opaque lens. A skiagraph located the steel partly in the lens and partly in the vitreous lying horizontally and about 4 mm. in length. The eye was moderately congested, sensitive to light, and vision was reduced to the perception of large moving objects. Under antiseptic precautions and cocain anesthesia removal was safely accomplished. The operation was divided into two stages. First, the magnet was cautiously approached toward the cornea in the line with the presumed passage of the body, until it was three-fourths of an inch distant, when the steel fragment was raised from its bed in the lens and drawn, accompanied by lens matter, into the anterior chamber. The current was cut off and the steel dropped into the bottom of the chamber. Second, the cornea was opened in as near as possible the line of the scar, the blunt tip of the magnet applied to the opening, the current turned on and the steel extracted. The greater part of the cataractous lens was expressed through the corneal cut without loss of vitreous and the eye was bandaged. Two days later, the patient was allowed to go to her home. According to the last report of her attending physician she had a low grade of iritis, probably induced by the traumatism and by the retention in the anterior chamber of a small mass of lens matter.

The Medical Fortnightly, St. Louis.

June 25.

60 Sudden Abdominal Pain—Its Significance. (To be continued.) B. Robinson, Chicago.
61 Relation of Man to Nature (A Study Prompted by "Testimonies of the Sepulchres"). A. S. Ashmead, New York.
62 *Rupture of the Coronary Artery. J. S. Dean, Wheatland, Ia.
63 Unilateral Ascending Paralysis and Unilateral Descending Paralysis as New Clinical Types. C. K. Mills, Philadelphia.
64 Doses: "Maxima and Minima." J. R. Landers, Bernadotte, Ill.
65 Two Cases of Tricbiniasis and Reference to Four Other Cases Infected from the Same Source. E. F. Taake, St. Louis.

62. **Rupture of Coronary Artery.**—Dean was called suddenly to see a woman who was breathing with great difficulty and expectorating frothy mucus. She was in a sitting posture and unable to lie back in the chair. Previously her health had been good, except for occasional headaches. The pulse was intermittent and labored, 60 a minute. On auscultation he found loud blowing from fourth to sixth intercostal space. The heart was laboring so intensely that lifting was plainly seen through the chest wall. There were no valvular murmurs, but there was a very distinct churning sound, and there were many coarse râles over the left lung. He gave 30 minims of ergot, hypodermically, followed by 25 minims of adrenalin chlorid, 1/1000 as soon as it could be obtained. This dose was repeated in 30 minutes. The patient began to be relieved in 30 minutes. In two hours she could lie down. Adrenalin was continued in 10 minims doses by mouth for three days, followed by 8 grains of potassium iodid, every three hours, until the clot was absorbed. The lifting of the chest wall gradually subsided and at the end of a month the heart action was normal. Dean believes that this was a case of rupture of a branch of the coronary artery, and the interesting points about it are its abrupt beginning, the patient's previous good health, the sudden increase in bronchial secretion, and the prompt subsidence of the symptoms after the administration of adrenalin. In a second attack the action of adrenalin was positive. In the first one it was not possible to draw conclusions because ergot had been administered.

Adrenalin by the mouth failed to give results, but relief was immediate after the preparation was administered hypodermically.

The Medical Fortnightly, St. Louis.

July 10.

66 Sudden Abdominal Pain—Its Significance (concluded). B. Robinson, Chicago.
67 *Case of Diagnosed Carcinoma Ventriculi, with Rare and Unexpected Findings. J. E. Cook, St. Louis.

67. **Perforating Foreign Body in the Esophagus.**—The clinical findings and the previous history given by his patient led Cooke to make a diagnosis of carcinoma of the stomach. There was a steady loss in gait, cachexia, passage of a little fresh blood from the mouth with large tarry stools, epigastric tenderness, pain and difficulty in swallowing. The patient died. At the postmortem the following condition was found: Opposite the cricoid cartilage a piece of sharp triangular shaped tin measuring about an inch on each side had lodged in the esophagus perforating the walls on both sides into the posterior mediastinum, and causing a gangrenous abscess behind the esophagus, extending from the first to the fourth dorsal vertebræ.

Quarterly Journal of Inebriety, Boston.

June.

68 Unrecognized Toxic Insanities. T. D. Crothers, Hartford. Conn.
69 Relation of Alcohol to Tuberculosis. J. W. Grosvener, Buffalo. N. Y.
70 Morbid Predisposing Causes in Dipsomania. W. L. Howard. Westboro, Mass.
71 Reflexes from the Eye in Narcosomania. T. H. Evans. Philadelphia.
72 The Alcohol Cult. (To be continued.) J. Madden, Portland. Ore.
73 Farmfield Reformatory for Inebriate Women. Horley England. T. D. Crothers. Hartford, Conn.
74 Comparison of the Effects of Alcohol and Opium. W. H. Park, China.

Texas State Journal of Medicine, Ft. Worth.

June.

75 Diagnosis of the Different Forms of Nephritis, and the Unreliability of the Nitric Acid Tests. A. Woldert, Tyler, Texas.
76 Medical Supervision of Public Schools. J. S. Lankford. San Antonio.
77 Laboratory of Clinical Pathology and its Relation to the Practice of Medicine and Surgery. J. T. Moore, Galveston.
78 Examination of Sputum by Expert Laboratory Methods, and its Clinical Significance. W. R. Howard. Ft. Worth.
79 Education in Sanitation. W. S. Carter. Galveston.
80 Facial Neuralgia and Subcutaneous Operation on the Infraorbital Nerve. E. H. Cary, Dallas.
81 Diabetes Mellitus—Etiology and Therapeutic Possibilities. W. Wilson, Dallas.
82 A Plea for Higher Ideals in Medical Diagnosis and Therapy. S. A. Foote, Matagorda.
83 Skin Cancers and their Treatment. J. S. Shelmire. Dallas.
84 Atypical or Irregular Typhoid. J. E. Simons, Bay City.
85 Uncinariasis. W. P. Dunbar, Campbell.

Texas State Journal of Medicine, Ft. Worth.

July.

86 Imperfections of the Present Medical Practice Act of Texas. I. C. Chase, Ft. Worth.
87 Case of Multilocular Fibrocystoma Involving the Uterus. C. E. Cantrell, Greenville.
88 Our Commercial Relations With Central America, with Special Reference to Yellow Fever. W. M. Brumby, Houston.
89 Care of the Parturient Woman. G. B. Foscue, Waco.

Journal of the Michigan State Medical Society. Detroit.

June.

90 Education. D. Inglis, Detroit.
91 Popular Synthetic Remedies, their Use and Misuse. J. O. Schlotterbeck, Detroit.
92 Therapeutics of the Synthetics in General Use. F. L. Newman, Detroit.
93 Important Discoveries and Progress in Medical Science Since the Time of Hippocrates. P. H. Quick, Olivet.

Journal of the Michigan State Medical Society. Detroit.

July.

94 Small Hospitals for Small Places. B. H. McMullen, Cadillac.
95 Cytodiagnosis of Organic Psychoses. C. E. Simpson, Pontiac.
96 Uric Acid Diathesis. W P. Gamber, Stanton.
97 Looking Backward. D. L. Walmsley, Detroit.
98 Principles of Treatment of Corneal Ulcerations. C. R. Elwood, Menominee.

Indiana Medical Journal, Indianapolis.

July.

99 Symptoms and Management of the Early Stages of Increased Blood Pressure. A. C. Kimberlin, Indianapolis.
100 *The Medical Profession and the Issues which Confront it. W. J. Mayo, Rochester, Minn.
102 Bites of Insects. I. Dyer, New Orleans.

100. See The Journal, June 9, 1906, page 1737.

Maryland Medical Journal, Baltimore.

July.

103 Present Aspects and Needs of the Milk Supply of Baltimore. C. H. Jones, Baltimore.
104 Medical Ethics. R. Brooke, Sandy Spring, Md.

Interstate Medical Journal, St. Louis.

July.

105 Classification of the Causative Factors of Railway and Allied Injuries, Based on the Kinesic States Assumed by the Injured Individuals—Along with an Analysis of 82,361 Railway Injuries. W. B. Outten, St. Louis.
106 Head Injuries, Scope and Importance of the Subject. F. R Fry, St. Louis.
107 Indications for Immediate Operation in Head Injuries. M. A. Bliss, St. Louis.
108 Relation of Late Epilepsy to Head Injuries. S. I. Schwab. St. Louis.
109 Head Trauma and Psychoses., G. Campbell, Jr., St. Louis.

International Journal of Surgery, New York.

July.

110 Diagnosis and Treatment of Abdominal Contusions Associated with Visceral Injuries. J. R. Wathen, Louisville, Ky.
111 Some Untoward Effects of Prostatic Massage. H. Stern, New York.
112 Lavage of the Pelvis of the Kidney. A. M. Wose, Syracuse. N. Y.
113 Puerperal Septicemia. H. P. Jack, Canisteo, N. Y.
114 Operations on the Pelvic Organs During Pregnancy. S. E. Sanderson, Detroit, Mich.
115 Circumcision; Its Importance in the Treatment and Prevention of Certain Reflex Nervous Phenomena. M. H. O'Daniel. Bullards, Ga.
116 Three Year's Practice in Chinatown, New York. E. M. Bok. New York City.

Louisville Monthly Journal of Medicine and Surgery.

July.

117 Adenoids. P. R. Taylor, Louisville.
118 Cancer of the Gall Bladder and Ducts. J. G. Sherrill. Louisville.
119 Methods of Conserving the Natural Resistance in Surgical Cases. L. P. Spears, Louisville.
120 Four Cases of Prostatectomy. J. B. Bullitt, Louisville.
121 Dysmenorrhea. J. A. Freeman, Louisville.
123 George R. Tabor, M.D., State Health Officer and Surgeon General of Texas. F. E. Daniel, Austin.

Texas Medical Journal, Austin.

July.

124 Use and Abuse of the Stomach Tube. J. W. Torbett, Marlin.
125 Importance of some Symptoms of Uterine Fibroids. F. L. Barnes, Trinity.
126 Difficult Diagnosis of Yellow Fever Cases. L. Sexton, New Orleans.

St. Paul Medical Journal.

July.

127 Etiology of Syphilis. J. M. Armstrong, St. Paul.
128 Significance of Pain in Gynecologic Diagnosis. J. L. Rothrock, St Paul.
129 Tetany. C. R. Ball, St. Paul.
130 Rupture of the Quadriceps Extensor Tendon. H. Gage, Worcester, Mass.

Journal of the Kansas Medical Society. Lawrence.

July.

131 Conjunctivitis. D. F. Longenecker, Emporia.
132 What shall the Medical Profession do to Prevent Abortions? R. H. McDonnell, Pittsburg, Kansas.
133 Blood Analysis in Private Practice. L W. Shannon, Hiawatha.
134 Neuroses of the Stomach. J. A. Milligan, Garnett.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

1 *Prevention of Difficult Labor. G. E. Herman.
2 *Management of a Case of Labor. C. E. Purslow.
3 *Case of Burrowing Tubo-ovarian Cyst, with Remarks on its Pathogenesis. W. S. Handley.
4 Achondroplasia. G. Rankin and E. C. Mackay.
5 *Meaning and Mechanism of Visceral Pain. J. Mackenzie.
6 Past, Present, and Future of the British Medical Association H. R. Ker.

1. **Prevention of Difficult Labor.**—Herman reviews the causes of difficult labor and the management of this condition, but does not offer anything new.

2. **Management of Labor.**—Purslow discusses the doctor and the nurse, asking that both be well and healthy, as well as competent; the choice and preparation of the lying-in room; the preparation of the patient for the labor; the preparation of the hands of the obstetrician; the use of vaginal douches, which he absolutely forbids before labor; the use of forceps and the after-treatment. He describes his method of passing the catheter as follows: Place the patient on her back, with the knees drawn up. Cleanse the parts by gently wiping them with wool dipped in 1 in 2,000 sublimate solution. Take the

catheter in the right hand and hold it about two inches from the tip. (It is a good thing to put about three feet of India rubber tubing over the open end of the catheter; the urine is then conveyed out of the bed into a utensil on the floor.) Stand on the patient's right side and pass the right hand, holding the catheter under the patient's right thigh. Pass the left forefinger over the abdomen between the labia into the vagina. Then draw it upward exactly in the middle line until the pulp of the forefinger feels the orifice of the urethra. The meatus urinarius feels very like one of the small linen-covered buttons with which underclothing is often fastened: a little ring, with a slight depression in the center. When you feel this, draw the finger upward till it is just above the meatus, and then with the right hand pass the point of the catheter below the tip of the left forefinger into the urethra. If you can not succeed in thus quickly finding the meatus by the touch, it is better to look than to annoy the patient by prolonged attempts at passing the catheter by touch alone.

3. **Tubo-ovarian Cysts.**—Handley reports the case of a woman, aged 31, who five years ago began to suffer from pain in the lower part of the abdomen, worse on the left side, and eased by lying down. There was no increase in the size of the abdomen. Micturition was frequent; there was a feeling of weakness and some loss of flesh. A colleague diagnosed a broad ligament cyst and advised operation. The abdomen was opened and a left-sided cyst was exposed, lying in the broad ligament. The cyst burrowed right up to the point of the uterus. This tumor proved to be a tubo-ovarian cyst. The outer portion of the right tube was distended into a hydrosalpinx, which had burrowed in the broad ligament until it came in contact with the ovary. Within the ovary was a single cyst. The left ovary was not to be found.

5. **Visceral Pain.**—In this paper, the third in the series, MacKenzie discusses the mechanism by which visceral pain is produced, citing a number of cases in support of his views. He says that to begin with the viscera are insensitive to those stimuli which produce pain when applied to the external body wall. The visceral tissues can be cut, torn and burnt, and the individual remain unconscious of any sensation. Nevertheless, we all know that the viscera are capable of giving rise to pain of the most excruciating character, so that the reason the methods employed to produce pain in stimulating the external body will fail to produce visceral pain is manifestly that they are inadequate, and from this fact alone we are forced to conclude that a satisfactory explanation of how visceral pain arises has yet to be found.

The Lancet, London.

June 30.

7 Two Cases Illustrating Points in the Diagnosis of Tumor or Other Lesion of the Uncinate Region of the Temporosphenoidal Lobe. T. Buzzard.
8 *Submucous Excision of Deviations and Spurs of the Nasal Septum. St. C. Thomson.
9 *Epidemic Cerebrospinal Meningitis. W. Wright and W. Archibald.
10 *The Cammidge Reaction. A. E. Taylor.
11 *Treatment of Consumption in Sanatoriums. R. J. M. Buchanan.
12 Nervous Phenomena Following Attempted Suicide by Hanging. R. N. Hart.
13 *Salicylate Poisoning in Children. F. Langmead.
14 The Nature of Surgical Shock. W. Sheen.
15 *Cancer of the Esophagus Communicating with the Right Bronchus in which there was a Complete Absence of the Usual Symptoms. F. W. Price and J. G. Gibb.
16 Local Anesthesia and Anesthetic as Employed in Dental Extractions. Rhinologic and Minor Operations. D. L. Smith and J. T. Hughes.

8. **Submucous Excision of Nasal Septum.**—Thomson describes an operation which he recommends as entirely satisfactory for even the most marked deformities. The design of the operation is to excise all obstructing cartilage and bone, with any projecting spurs or ledges, while preserving intact the mucous membrane on each side. Anesthesia is produced by applying to the septum on each side inch-wide strips of sterilized ribbon gauze soaked in adrenalin chlorid containing 10 per cent. of cocain. The author describes in detail the technic of the operation, the making of the first incision, the raising of the convex flap, the incision through the septal cartilage, raising the concave flap, the excision of the septal cartilage and of bony spurs and deviations, stitching the wound and the after-treatment. The operation is in most respects similar to the one carried out by Killian. The advantages of this operation may be summarized as follows: (1) No general anesthetic is required; (2) no hemorrhage results; (3) there is absence of pain and of shock; (4) there is no reaction (the postoperative temperature seldom rises above 99 F); (5) there is absence of sepsis, with its possible extension to the ears, the sinuses or the cranial cavity; (6) no splints are required and no plugs after forty-eight hours; (7) rapid healing takes place, without crust formation; (8) there is no risk of troublesome adhesions; (9) the after-treatment is of short duration; (10) there is speedy establishment of nasal respiration; (11) it is suitable for all deformities of cartilage or bone in the septum requiring treatment; (12) the space gained is not only that resulting from a vertical septum, but the extra room secured by removal of the cartilage, which is sometimes one-eighth of an inch in thickness; (13) no ciliated epithelium is sacrificed; (14) accuracy of result can be depended on and the prognosis is, therefore, the more definite, and (15) improved appearance of the nose externally.

The special indications of this operation would appear to be: (1) Cases in which it is desirable to establish normal nasal respiration and to remove mouth breathing, with its numerous consequences; (2) correction of the disfigurement caused by the lower end of the quadrilateral cartilage projecting into one nostril; (3) the cure of reflex neuroses of the nasal organ; (4) the relief of Eustachian catarrh, and (5) the facility of treating nasal polypi and affections of the accessory sinuses.

9. **Epidemic Cerebrospinal Meningitis.**—Of the 17 cases reported by Wright and Archibald, 10 occurred in females, 5 in males and in 2 the sex was not given. Eight were in children under 5 years of age, all of which were fatal. Seven patients were between 6 and 11 years of age, among whom there were 3 deaths. In 11 cases the illness was ushered in with rigor, while this was not noted in the remainder. All the patients suffered from vomiting at the onset, and in 12 cases it is specially noted that this symptom was more or less continuous for hours or days. In 14 cases hyperesthesia associated with neuralgic pains was a prominent feature of the illness. The temperature was high and the pulse rapid in all instances except in one, where the pulse would appear to have continued slow. The tongue was furred and foul in five cases and sordes on the teeth occurred in three cases. There was retraction of the head in 11 cases with opisthotonos in three and tenderness of the spine in seven cases. Spasm of the muscles was specially noted in 8, in 2 temporary paralysis of one arm, and in another case of one leg is mentioned. In only 2 cases was it stated that the legs were drawn up on the abdomen. There were convulsions more or less continuous in 8 cases, restlessness in 7, moaning or screaming with pain in 5, grinding of the teeth in 1 case, delirium in 7 cases, squint in 5, severe headache in 8, unequal pupils in 3, dilatation in 4, and photophobia in 3. There were flushing and pallor at intervals in 6 cases the *tache cérébrale* only in 2. Herpes occurred in 3 cases, mottled purple on the body in 2, and a definite petechial rash in 5. Coma more or less profound preceded death in all instances and only in 2 cases in which recovery took place is it not mentioned. Of a total of 17 cases only 4 patients recovered, 2 within three weeks and 2 after a protracted illness.

10. **A Cammidge Reaction.**—Taylor considers this reaction a very valuable aid in the diagnosis of pancreatic disease, but by no means an infallible one. He has kept accurate analyses of the urines of 110 patients. Of these 110 urines, 9 gave a positive reaction and 101 a negative one; of the 101 negatively reacting urines, 21 gave a crystalline deposit with phenylhydrazin after hydrolysis with hydrochloric acid (these 21 urines gave no crystalline deposit with phenylhydrazin before hydrolysis, except one or two, which contained sugar: those which contained sugar were fermented with yeast until they no longer gave the crystalline deposit with phenylhydrazin), but the other tests of the Cammidge reaction series showed them to be cases other than of pancreatic disease or negatively reacting.

11. **Treatment of Consumption and Sanatoriums.**—Buchanan believes in the efficacy of the sanatorium treatment of phthisis, not only in mild cases, but in the more serious cases. He

says that the sanatorium method of treatment should be the first essential procedure and on it, as a foundation, all other therapeutic measures, whether medicinal or by the use of such agents as tuberculin, should be built.

13. **Salicylate Poisoning in Children.**—Langmead analyzes 8 cases, which make it evident that there is a great variation in the amount required to produce toxic symptoms, some children being poisoned with small doses, others with unusually large doses. The time to use the drug most cautiously is at the beginning of its administration, so that the personal factor may be estimated and any idiosyncrasy detected. The fact that all the patients were constipated before the onset of the symptom indicates clearly that the bowels must be kept well open while the salicylate is being given. The general similarity of the symptoms to those of diabetic coma suggests the giving of bicarbonate of sodium as a prophylactic and remedial measure. Langmead summarizes his paper as follows: 1. Salicylate of sodium sometimes causes in children symptoms resembling the acid poisoning of diabetes. 2. The toxic dose is variable, depending on the idiosyncrasy of the patient and the presence or absence of constipation. 3. Acetone may be detected in the urine and in the breath, its presence constituting one of the first symptoms of the poisoning and affording a valuable danger signal. 4. Treatment should be directed to keeping the acidity of the urine low and the bowels opened in cases of patients taking this drug. 5. If acetone is found or the urine gets more and more strongly acid, the salicylate should be omitted and alkali given alone.

15. **Cancer of Esophagus.**—In the case reported by Price and Gibb, from the time the patient came under observation to the time of his death there was no difficulty in or pain on swallowing, no regurgitation of food, no pain in the thorax or epigastrium, and no fetor of the breath; the voice was quite normal and there was a complete absence of paroxysms of coughing and dyspnea on attempting to swallow or after taking food, though food material must undoubtedly have reached the lungs, since the communication between the esophagus and the bronchus must have existed for some time before death. From the first to the last the patient swallowed perfectly comfortably and naturally and there was a complete absence of symptoms. Death was due to cachexia and pneumonia. On postmortem examination there was found in the anterior wall of the esophagus, at the level of the tracheal bifurcation, a malignant ulcer, two and a half inches in diameter, with hard white raised edges and a sloughing base, which had perforated, by a large aperture, the right bronchus near its origin. The perforation had the appearance of having existed for some time. The growth had given rise to no esophageal constriction. There were a few infiltrated glands in the neighborhood, but the tracheal glands were normal.

Dublin Journal of Medical Science.

May.

17 Bradycardia, with Arrhythmia and Epileptiform Seizures. J. M. Finney.
18 Case of Infantile Splenic Anemia. T. G. Moorhead.
19 Carcinoma Cutis, with Notes of Two Cases.—Cancer en Cuirasse; Paget's Disease of Nipple. C. M. O'Brien.
20 Intubation of the Larynx in Cases of Diphtheritic Dyspnea. G. B. McCaul.
21 Intramuscular Injection Treatment of Constitutional Syphilis. H. R. Ross.

Dublin Journal of Medical Science.

June.

22 Frontiers of Death in Surgery and the Question of Operation in Extremis. C. G. Cumston.
23 Urticaria Pigmentosa. W. Beatty.
24. Appendicitis. D. Kennedy.

Bulletin de l'Académie de Médecine, Paris.

25 (Year LXX. No. 25.) *L'indican et le scatol urinaires. G. Daremberg and T. Perroy.
26 *L'avortement epizootique, ou infectieu. des femelles domestiques, peut-il être une cause d'avortement chez la femme (Can epizootic abortion in domestic animals induce abortion in women)? E. Thierry.
27 Observation parisienne de pied de Madura (Madura foot, mycetoma). P. Reynier and Brumpt.

25. **Indican and Skatol in the Urine.**—Daremberg has been examining with various chemical tests the urine from 300 patients. The findings confirm his previous assertions that not every one with kidney disease has necessarily albumin in the urine, but that every one with albumin in the urine has some kidney affection. He found further that in 95 per cent. of the cases in which the urine contained an excess of skatol or of indican, there was likewise albuminuria. He concludes that the discovery of skatol or of indol indicates some functional disturbance in the kidney. Only 25 per cent., however, of the patients with albuminuria had any excess of skatol or of indol in the urine, and he believes that they must be due to some concomitant liver trouble. The larger the proportion of skatol, the greater the disturbance in the liver. He advises, therefore, examining the kidneys with especial care in case of an excess of indican, while an excess of skatol should direct special attention to the liver.

26. **Epizootic Abortion.**—Thierry relates a case and says that he knows of 2 or 3 others in which an epizootic and infectious affection causing abortion in cows was followed by the similar abortion of the women who had charge of the cows. The conditions of the abortion seemed to be identical in the women and in the animals. It occurs in the midst of apparent health, and the fetus and membranes are expelled together all at once, at about the fourth month. He advises warning pregnant women having to do with domestic animals suffering from this epizootic abortion of the attendant dangers.

Presse Médicale, Paris.

28 (XIV, No. 36.) The Physician and Truth.—Le medecin et la vérité. P. LeGendre.
29 (No. 49.) Médication phosphatée. A. Martinet.
30 *De la tuberculose genito-urinaire. F. Legueu.
31 (No. 50.) L'alimentation des classes laborieuses parisiennes dans la famille et aux restaurants populaires d'apres 2 enquêtes récentes., I. Bernard.
32 (No. 51.) *Surcharge graisseusse et zone de rupture dans le foie cardiaque (liver). E. Geraudel.
33 De l'examen du suc gastrique chez les gastropathes. L. Salignat.

30. **Genitourinary Tuberculosis.**—Legueu reviews recently published experimental researches which confirm the clinical findings and demonstrate that the genitourinary apparatus almost invariably becomes infected with tuberculosis by way of the blood, the bacilli first finding their way into the kidneys. Washed along by the urine, they pass into the ureter, and thence into the bladder. The prostate and the openings of the ejaculatory ducts readily become infected, the bacilli settling in these nooks before even the urethra or the bladder is definitely infected; from here the bacilli pass to the seminal vesicles and to the vas deferens, down to the epididymis, and finally to the testicle. Treatment, therefore, should go to the root of the trouble, which is in the kidney. There is no reason in removing the testicle, as it is the last to become infected, and is generally intact, the infection being restricted usually to the epididymis and the parts above. The only justifiable operations at this point are partial resection of the testicle, with removal of the epididymis and vas deferens. The kidney should be the main object of attack. It dominates and controls all the other lesions in the genitourinary apparatus, and it should be removed early, since it is from this source that the infection of the bladder, seminal vesicles, etc., has its origin and is kept up. The bladder receives the infectious materials from all sides, as it were, but it does not require surgical treatment. Once remove the sources infecting it and the bladder will soon recover its integrity.

32. **Zone of Rupture in the Liver in Heart Disease.**—Géraudel presents arguments to prove that the lesions in the liver in case of heart disease are primarily epithelial. These lesions favor the production of phenomena of enlargement and rupture. They are due to the hepatitis in the region of the hepatic vein. Mechanical phenomena come into play only secondarily.

Semaine Médicale, Paris.

34 (XXVI, No. 26.) *Les cholecystites typhoidiques suraigues. F. Lejars.

34. **Typhoid Cholecystitis.**—Lejars relates the case of an obese female patient, convalescing from typhoid fever, who suddenly exhibited symptoms suggesting perforation. The laparotomy revealed nothing but an inflamed and swollen gall bladder. It was removed and five gallstones were found in it. They had evidently lain latent for years until the typhoid fever had set up inflammation in the gall bladder. Operative treatment in such a case is as imperative, he states, as in case

of appendicitis or of intestinal perforation, and he urges physicians not to overlook the possibility of complicating cholecystitis in these cases.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

Last indexed, XLVI, page 1733.

35 (XII, No. 3.) *Experimentelle und klinische Untersuchungen über den Einfluss der Homburger Mineralwässer auf die sekretorischen Magen-Funktion (Homburg waters and gastric secretions). R. Baumstark.
36 *Influence of Various Mineral Waters on the Secretion of Gastric Juice.—Kasuistischer Beitrag zur vergleichenden Untersuchung des Einflusses verschiedener Mineralwässer auf die Magensekretion. K. Sasaki.
37 Chemistry of Gastric Digestion.—Zur Chemie der Magenverdauung mit bes. Berücksichtigung von H. Salomons Magen-Carzinom-Probe. K. Reicher.
38 *Neue Gesichtspunkte über Wesen und Behandlung der Gicht (of gout). P. Roethlisberger.

35 and 36. **Influence of Mineral Waters on Gastric Secreting Function.**—Baumstarks' various tests and experiments resulted in an augmentation of the secretion of gastric juice in man and in animals, the average increase being over 74 per cent. of the increase after ingesting ordinary water. Sasaki's experiments showed that the secretion of gastric juice was always influenced by the mineral water, but that the proportions of the various elements of the gastric juice remained about the same. His tests were made on dogs with a Pawlow fistula.

38. **Essence and Treatment of Gout.**—Roethlisberger believes that constitutional gout and acute attacks of gout are two quite different things. The constitutional uric acid diathesis exists permanently, and on this soil the acute attack of gout develops which, in its essence, is more like acute articular rheumatism and is of infectious origin. Acute articular rheumatism affecting a single joint is called gout if the big toe happens to be affected, and not if it happens to be in another joint. Retention of uric acid seldom occurs in the young. The resistance to infectious diseases of persons during and past the prime of life, he attributes to the accumulation of immunizing substances in the body. The periodicity of recurring attacks of gout may be due, he thinks, to some transient immunization left from one attack, which dies out in time, leaving the way clear for renewed infection. The necrosis resulting from the compression of the accumulating urates offers a favorable soil for the development of an infectious process, and the local phenomena of an acute attack of gout certainly indicate the existence of some such process. Some infection, especially autoinfection, can generally be learned in the history of a case of gout. Digestive disturbances, catarrhal affections, bronchitis, influenza, erysipelas, pneumonia or the like are frequently mentioned as having preceded the acute attack. Premonitory pains in the limbs, palpitations, etc., are not rare, and indicate some intoxication from the intestines or from some focus of infection. The infectious germs in question are not very virulent, and an infectious process does not result until after the organism has been depressed from some cause. The prevalence of attacks of gout in the spring and fall is probably connected with the frequency of catarrhal affections of the upper air passages during these seasons. Severe purging is liable to bring on an acute attack of gout, probably from some superficial lesion of the intestinal epithelium. Another argument in favor of the infectious nature of the acute attack of gout is the frequent discovery of swollen lymphatics on the limb affected. In some instances these swollen lymphatics can be traced up the leg of the groin where enlarged glands can be palpated. Treatment should first aim to spare the kidneys and to favor elimination of uric acid. The clothing, exercising, etc., should be that found most beneficial in case of kidney affections. In case of an impending acute attack, search must be made for the portal of entry of the infectious agent, and antiseptics and the salicylates should be given, he states, with possibly disinfectants injected directly into the affected joint, and other antiphlogistic measures. The diet must be regulated to supply plenty of water. Bier's artificial hyperemia has been successfully tried. In the prevention of acute attacks the latent primary and metastatic foci of infection must be sought and exterminated, and the intestinal tract kept disinfected. Natural sulphur waters have long been found beneficial in this respect. They are particularly useful in the uric acid diathesis as they act as diuretics, while they spare the kidneys in other respects.. The internal use of sulphur and guaicum has recently been highly recommended by C. W. Hufeland. Also hydrochloric acid by Falkenstein. Balneotherapy and all measures to stimulate metabolism are also useful aids in the breaking up and elimination of the deposits of urates.

Berliner klinische Wochenschrift.

39 (XLIII, No. 15.) Die paravertebrale Aufhellungszone bei pleuritischen Exsudaten (sogen. Garland'sches Dreieck) (resonant triangular area). O. Rosenbach.
40 Ueber die Komplementablenkung bei Präcipitations-Vorgängen (deviation of complements). H. Liefmann.
41 *Altes und Neues zur hydriatischen Technik. Winternitz.
42 Ueber abdominale Netztorsion und retrograde Incarceration bei vorhandenem Leistenbruch (torsion of omentum with inguinal hernia). M. Litthauer.
43 Typhus, Wasser und Nahrungsmittel (typhoid, water and food). K. Kutscher.
44 (No. 16.) Einige Bemerkungen zur Methodik der experimentellen Krebsforschung (cancer research). E. F. Bashford.
45 Transitorische doppelseitige Amaurose mit erhaltener Pupillenreaktion und amnestische Aphasie nach Krampfanfall (transient amaurosis, etc., in an epileptic). H. Schmidt.
46 Zur Würdigung der Bottini'schen Operation. J. Cohn.
47 *Ueber Hämaturien. J. Vogel.
48 *Zur Erleichterung der Paracentese (improved technic. Stiel. (Cologne).

41. **Old and New in Hydrotherapy.**—Winternitz reiterates that the special procedure in hydrotherapy is of minor importance. The main point is the proper dosage of the thermic and mechanical stimuli. He has long advocated extreme simplicity in hydrotherapeutic measures so that any practitioner can carry them out in the patient's house, without the necessity for complicated apparatus or trained attendants. His simple appliance to allow a steam bath to be taken in an ordinary bathtub was described in 1893 (*Zeitft. f. Krankenpfl.* No. 1). The cold douche can be given after it by pouring a few pailfuls of water on the patient still reclining on the support of the bathtub. Winternitz has long preached the efficacy of roller bandages, wrung out of cold water, in the treatment of burns and ulcerative processes. The stimulus from the cold, the steaming and the reactive fluxion induce artificial hyperemia the same as Bier's technic. He has recently devised a special wet pack for the sacral region which can be applied under the bed clothes without assistance. The general practitioner, Winternitz states, will soon learn the value and benefit of stimulating packs when he can use these simple contrivances for hydrotherapy at the patient's home. Winternitz mentions in conclusion an appliance for thermic massage of vagina and rectum which he has recently invented. His communication was presented at the recent German Congress of Balneology, with demonstrations.

47. **Hematuria.**—Among the causes of hematuria reviewed by Vogel are hypertrophy of the prostate, tumors, pus pockets and pregnancy affecting the circulation in the small pelvis. He has lately had occasion to observe the case of a healthy young primipara who had suddenly a serious hemorrhage from the bladder at the seventh month. The urine was of normal amount and density and became clear on standing. The hematuria was not influenced by rest in bed. The patient was advised to keep about and to exercise a little, to promote the circulation in the parts, and the hematuria soon vanished. The fetus proved to be unusually large in this case. Varices are also liable to occur in the bladder, and bleed, as in a case personally observed. The tendency to hemorrhage in this case was successfully combated by injection into the bladder of 100 gm. of a 2 per cent. solution of gelatin, with rest in bed for several days.

48. **Improved Technic for Paracentesis.**—In country practice Stiel has found it difficult at times to incise the tympanic membrane on account of the dread of the patient or the restlessness of the child. All difficulty from this source has been obviated since he combines the ear speculum and needle. The needle is held in a hollow groove in the ear speculum and is introduced in the latter without knowledge of the patient, who submits readily to the introduction of the speculum. Another advantage is that the path of the needle is thus prepared for it and it can not go astray.

Deutsche Medizinische Wochenschrift, Berlin and Leipsic.

49 (XXXII, No. 22.) Maximal Doses of Drugs not in German Pharmacopeia.—Ueber Maximaldosen von Arzneimitteln. welche in dem Deutschen Arzneibuche nicht enthalten sind L. Lewin.
50 *Ueber spontane Affen-Tuberculose (in monkeys). L. Rabinowitsch.
51 Weitere Mitteilungen ueber den Nachweis der Spirochæta pallida im Gewebe (in tissues). E. Hoffmann and A Beer.
52 *Vermertbarkeit der Sahlischen Desmoid—Reaktion. A. Alexander and A. Sehlesinger.
53 Ueber das Auftreten von Spirochäten verschiedener Form in Mageninhalt bei Carcinoma ventriculi. W. Krienitz.
54 *Zur Frage der visceralen Gicht, speziell ihrer gastro-intestinalen Formen (gout). H. Richartz.
55 Ueber die Wirkung des Iods auf das durch Adrenalin erzeugte Atherom der Aorta. P. Boveri.
56 Abdominal Pregnancy carried to term with Placenta implanted on under surface of Liver and Gall Bladder.—Fall von ausgetragener Bauch-Höhlenschwangerschaft. L. Seeligmann.
57 *Sind die bei der akuten Gonorrhoe des Mannes üblichen Injektionen eine rationelle Behandlungsweise? Canon.

50. **Spontaneous Tuberculosis in Monkeys.**—Rabinowitsch has examined 45 monkeys of various species affected with spontaneous tuberculosis. The monkeys had all been kept in captivity in Germany. The majority were found infected with human tubercle bacilli, others with bovine, and one monkey with fowl tubercle bacilli.

52. **Sahli's Desmoid Test of Stomach Functioning.**—Alexander and Sehlesinger state that the irregularity in the findings of this test detract materially from its reliability. The reaction was occasionally positive in cases in which the secretion of gastric juice was reduced to the minimum, and it was sometimes negative when the gastric functions were quite normal. For comparison, they tabulate the details in 48 cases. Sahli's test was described in these columns, page 1820 of volume XLIV, 1905.

54. **Visceral Gout.**—Richartz writes from Homburg to describe 2 cases of supposed gastrointestinal troubles benefited by anti-gout measures. In one instance there was nothing to indicate gout. The symptoms were sudden attacks of severe pain in the abdomen, lasting sometimes for three days, but subsiding as soon as vomiting occurred naturally. Artificially induced vomiting did not relieve. The attacks recurred three or four times a year and were followed by loss of appetite and physicial depression for several days. The affection had lasted for 22 years, and owing to the missing kneejerk had been diagnosed by Chareot as tabetic gastric crises. There were no signs nor history of syphilis and no benefit had been derived from mercurial or other treatment. No symptoms of tabes had developed, and the patient, a man of 63, was otherwise in good condition. There were no joint symptoms but a small nodule resembling a tophus was found just above the elbow, and the patient said that he had a tendency to lumbago and that his grandfather and uncle had suffered from gout. The trouble was therefore ascribed to atypical gout, especially as the blood just after an attack contained crystals giving the murexid reaction, and a large percentage of uric acid was found in the urine. The patient was ordered to restrict himself to a "purin-free" diet, and during the nine months since he has been entirely free from any attacks. In another case there were subacute, inherited joint symptoms, accompanied at times by violent pains in the epigastrium, nausea and vomiting, the gastric attack lasting from two to five hours and leaving the patient, a woman, depressed for a couple of days. When the gastric attacks came on the patient always noticed amelioration of the joint symptoms. After complete failure of the usual measures the patient was ordered to refrain from meat, and to supply the needed albumin with milk. Bread, occasionally eggs, and free use of vegetables and fruit supplemented the milk. The improvement in the joint troubles was rapid and pronounced. During ten months there was no recurrence of the gastric attacks which used to come on every month or so. The joints subsided to their normal aspect and were entirely free from pain. Then the patient was advised by her home physician to resume eating meat during convalescence from an intercurrent disease. Very soon the old joint pains and swelling returned, and in two weeks she had one of the old violent gastric attacks which relieved the joint troubles for a few days as of yore.

57. **Disadvantages of Injections for Acute Gonorrhea.**—Canon thinks that the urine performs the task of washing out the urethra better than it can be done artificially. He advises measures to promote diuresis and to medicate the urine by internal drugs. Injections are liable to do far more harm than they can possibly do good, he says. The gonococci pass almost regularly into the blood but soon succumb there unless they find a place of lessened resistance where they can colonize. Such an opportunity is liable to follow urethral injections as they may set up inflammation, both by eroding the mucosa and by introducing pyogenic germs from without.

Münchener Medizinische Wochenschrift.

58 (LIII. No. 15.) Die Diagnose und Prophylaxe der Labyrinth Entzündung bei der Akuten Mittelohrentzundung (otitis media). Ostmann.
59 The Incisions in Abdominal Operations.—Ueber die Anlegung der Schnitte bei den Bauch-Operationen. Heusner.
60 Differentiation of Serious Appendicitis.—Können wir die schweren, die sofortige Operation erfordernden Appendizitisfälle erkennen? Krecke.
61 *Zur geburtshilflichen Therapie der Eklampsie (obstetric therapy). Eseh.
62 *2 Fälle von Milz-Ruptur (of spleen). Georgi.
63 Diaphragma der Trachea im Anschluss an Diphtherie und erschwertes bezw. unmögliches Decanulement. H. Strohe.
64 *Zur Kasuistik der Fremdkörper im Magen und Darmkanal (foreign bodies in stomach and intestines). Weissbart.
65 *Hot Baths in Treatment of Superficial Inflammations.—Ueber die Behandlung entzündlicher Prozesse der Haut mit heissen Bädern. Richter
66 2 Apparate zur Sehscharfenprüfung (to test vision). Hoppe. Cologne.
67 Synthesis of Proteids.—Die Untersuchungen von Prof. Emil Fischer seiner Schüler ueber Synthese der Polypeptiden. N. Seiber.
68 Das Neueste Ueber Organtherapie. Hager.
69 (No. 16.) *Der Alkoholismus in München. E. Kraepelin.
70 Ueber Pupillenstarre im hysterischen Anfall (immobility of pupils). Bumke.
71 *Ueber uraemische Neuritis. R. Dunger.
72 Wearing-out from Over-function.—Aufbrauch durch Hyperfunktion. Lilienstein.
73 *Ein eigenartiger Verlauf und Obduktionsbefund von chronischer Herz-Tuberkulose (of heart). Knauth.
74 Zur Frage der konservativen Myom-Operationen. A. Hengge
75 *Schalldämpfer (to shut out sounds from the ear). Küppers. Düsseldorf.
76 Weiteres aus der modernen Immunitäts-Lehre. W. Weichardt.
77 Zur Geschichte des Deutschen Vereins für Psychiatrie (historical sketch). Pelman.

61. **Obstetric Treatment of Eclampsia.**—Eseh writes that in at least three-fourths of the cases of eclampsia at Olshausen's clinic the convulsions did not recur after delivery. The mortality was only 16.8 per cent. among the women artificially delivered, and 20.8 per cent. among those spontaneously delivered. The mortality was higher in elderly primiparæ; the mortality in 145 patients treated expectantly was 28.9 per cent., while it was only 19.8 per cent. in 101 cases with active intervention. Zweitel has reported a mortality of 32 6 per cent. with expectant and of 15 per cent. with active measures. In the last series of 36 cases in the Olshausen clinic the mortality was 22.2 per cent., notwithstanding extremely active treatment. The fact that the first attacks came on during the puerperium in 15 per cent. of all the cases speaks against the assumption that immediate delivery is indicated in all cases. Treatment must be individualized principally according to the degree of eclamptic intoxication. The prognosis is grave when profound coma is observed without previous convulsions or with the first attack. He has found 7 such cases in the literature and observed 3 in the clinic. These patients all died. The patients all died also in the 8 cases with icterus and in 10 of the 13 cases with hemoglobinuria. In 59 out of the 83 fatal cases albumin and formed elements had abounded in the urine. Patients who have been weakened by numerous attacks are also in a serious condition. In all these cases prompt delivery is indicated, but expectant treatment is justified when the signs of intoxication are less severe.

62. **Rupture of Spleen.**—The hemorrhage in the child in the first case was so severe that the symptoms of shock and of internal hemorrhage blended and grew constantly worse in less than half an hour and the child succumbed in three hours. notwithstanding the prompt removal of the ruptured spleen. In the second case a girl of 4 had been run over by a cab. The symptoms of shock subsided. the pulse become slower and fuller. and not until after seven hours were signs of internal

hemorrhage observed. The abdominal walls did not become rigid until ten hours after the accident; the child had vomited blood twice during the interim. The abdomen was opened at about the twentieth hour and the ruptured spleen removed with the apparent complete recovery of the child. The lower pole of the organ had been partly torn off. In a third case in which the symptoms indicated rupture of the spleen the exploratory laparotomy revealed merely a few small subserous hemorrhages, and the abdomen was sutured without further intervention, followed by the complete recovery of the patient.

64. **Foreign Bodies in Digestive Tract.**—Weissbart relates a case diagnosed as a gallstone impacted in the cystic duct with enlargement of the gall bladder. The patient suffered from colics, which even morphin was unable to relieve. There was a history of long preceding gallstone and kidney stone attacks and a gouty family history. The patient suddenly experienced complete relief from all her pains, which suggested the possibility that a foreign body might have been the cause, and search in the stools revealed a piece of bone 3.5 cm. long by about 1 cm. in diameter. The patient had no knowledge of ever having swallowed the bone. It had probably become impacted in the duodenum and obstructed the bile duct, hence the alcoholic stools and the congestion in the gall bladder.

65. **Hot Baths in Treatment of Superficial Inflammations.**—Richter reports his success with the old hot-bath treatment. He has treated 330 workingmen with various injuries of the soft parts, felons, furuncles and phlegmons, with the systematic use of local hot baths. He orders the patient to put the hand, arm, foot or leg into water as hot as can be borne and to keep it in the water for from half an hour to an hour, pouring in hot water from time to time to keep the temperature at about the same point. This procedure is to be repeated several times a day. A little soda, about half a tablespoonful to a quart of water, is added. He believes that the principle of this treatment is about the same as that of the Bier method, attracting the blood more actively to the part to aid in combating the local infection. The results have been extremely satisfactory. Pus was evacuated by an incision at the proper time.

69. **Alcoholism.**—Kraepelin remarks that alcohol is the direct cause of about one-third of all the mental affections observed at Munich, besides the havoc otherwise wrought. If alcohol could be swept out of existence, he states, his clinic would lose half its patients. As this can not be done, at least sufficient arrangements should be made for the prompt and proper treatment of alcohol addictions. If this were done, two-thirds of the present evils, he thinks, could be eliminated, and the hospitals, asylums, prisons, poorhouses and courts would be immeasurably relieved.

71. **Uremic Nephritis.**—A previously healthy man of 27 became affected with acute hemorrhagic nephritis. As it subsided a typical severe neuritis developed in the left brachial plexus and median nerve, manifestly of uremic origin.

73. **Tuberculosis of the Heart.**—In the case reported autopsy revealed the heart to be in a condition of almost complete caseous degeneration, the result of a chronic tuberculous process, which, in the course of a year, had entailed miliary tuberculosis, with death from tuberculous meningitis. The surprising feature of the case was the fact that the patient had been able to perform military duties for nine months of this period, and that the organ showed no signs of weakness until toward the very last, although only a few of the columnæ carneæ were still sound.

75. **Stopper for the Ear.**—Küpper uses a small loop of silver wire, the ends twisted together in a small coil. Wax is then molded over this coil to make a small ball, with which the ear is plugged. The wax adapts itself to the shape of the meatus and can scarcely be called a foreign body, while it shuts out external noises completely.

Wiener Klinische Wochenschrift, Vienna.

Last Indexed XLVI, page 848.

78 (XVIII, No. 48.) Ueber die Beeinflussung des hämolytischen Komplements durch Agglutination und Präzipitation. A. Klein.
79 Ueber das Wachstum obligatorischer Anaeroben auf Kulturmitteln in aerober Weise (aerobic growth of anaerobics). A. Wrzosek.
80 *Ueber ein anatomisches Stigma angeborener tuberkulöser Disposition. J. Sorgo and E. Suess.
81 Bericht ueber weitere 50 operierte Gallensteinkranke. F. Fink (Carlsbad).
82 Ueber das Mosersche Scharlach-Serum (scarlet fever serum). R. Bukowski.
83 (No. 49.) Relations between Composition and Tension of Blood.—Ueber die Beziehungen zwischen Blutdruck und Zusammensetzung des Blutes. T. Holobut.
84 Die lokale Behandlung der Prostatahypertrophie mit den radioaktiven Thermen in Gastein. S. Altmann.
85 Zur endoneuralen injektion des Tetanus-Heilserums. P. Clairmont.
86 Ueber ungewöhnliche Erscheinungsformen des Lupus erythematodes. W. Pick.
87 *Vorläufige Mitteilung ueber interne Urethrotomie. C. Ravasini.

80. **Sign of Congenital Tendency to Tuberculosis.**—Sorgo and Suess have found in their experience that the mamma on the side of a unilateral tuberculosis process is always smaller in all respects than its mate. Among 111 tuberculous female patients examined the areolæ were of unsymmetrical size in 52, and among these the tuberculous process was unilateral in 18. In every instance the smaller nipple and areola were on the side of the morbid process (right 12, left 6). In 19 others the process was predominantly on one side, and this side was always that of the smaller areola (right 5, left 13). Similar proportions were found in 168 male tuberculous patients examined. The findings suggest an unmistakable connection between the comparative atrophy of the one breast and the predisposition to tuberculosis of the lung beneath.

87. **Internal Urethrotomy.**—Ravasini reports that internal urethrotomy has been done in 436 cases at Nicolich's clinic at Trieste. The results have been extremely satisfactory, with no mortality from this cause during the last ten years. He uses a special urethrotome of his own devising, described in the *Paris Ann. d. Mal. Org. Gén.* for January, 1901. He leaves a catheter in the bladder for thirty-six hours and warns the patient to introduce a bougie occasionally, as there is danger of recurrence of the stricture after this as after other methods of treatment.

Zeitschrift f. Geb. und Gynäkologie, Stuttgart.

Last Indexed XLVI, page 1406.

88 (LVII, No. 2.) *Protection of Parturients.—Zum Schutz der Gebärenden. S. Rosenfeld (Vienna).
89 *Neuritis puerperalis lumbalis peracuta. E. Hauch.
90 Seltenere Formen der Ovarial-Dermoide. A. Falkner.
91 *Rückblicke und Ausblick über Operabilität, Operation und Operations-Resultate des Uterus-Karzinoms an der Hand einer 11—jährigen Beobachtung. W. Hannes (Küstner's clinic, Breslau).
92 *New Frozen Section of the Body of a Parturient Dying at the Expulsion Period.—Ein neuer Gefrierschnitt durch die Leiche einer in der Austreibungsperiode verstorbenen Kreissenden und seine Bedeutung für die Lehre vom unteren Uterin-Segment. E. Bumm and L. Blumreich.
93 Treatment of Postpartum Period.—Zur Behandlung der Nachgeburtszeit. F. Strassmann.

88. **Protection of Parturients.**—Rosenfeld reviews various statistics and his own and others' experience (all in Austria), coming to the conclusion that obstetric operations are done unnecessarily in a great many instances. He thinks this is due partially to the fact that the physicians, being private practitioners, display much greater deference to the wishes of their clients than would be the case if they were salaried officials, independent of fees. The larger fee in case of an operation he leaves out of the question. He refers to the eventuality of the entire medical profession becoming a salaried branch of the public health service, but adds that this is still a very remote possibility. "Only, however," he adds, "when a physician is entirely independent of the fee from case to case can he carry his scientific convictions to their ultimate consequences. The unnecessary operations are not done from scientific conviction." Another safeguard, he thinks, would be to insist that no obstetric operation could be performed without the presence of a second obstetrician or of a medical assistant. All these propositions, he concludes, are merely "pious wishes," with no chance of their realization at present. All that can be done now is for the professors in the medical schools to preach more forcibly than hitherto the necessity not to do harm in obstetric practice. He seems to think that, in obstetric cases especially, "fools rush in where angels fear to tread."

89. **Puerperal Lumbar Neuritis.**—Hauch states that this form of neuritis was observed in 32 out of 680 parturients at Leopold Meyer's maternity at Copenhagen. The symptoms were tenderness of the nerves of the leg, paresis, pains, hyperesthesia of the skin and in some cases exaggeration of the knee jerk. The symptoms observed indicate that this extremely severe puerperal lumbar neuritis is due to puerperal intoxication, inducing transient inflammation of the nerves connected with the lumbar plexus. The affection and the pains originate or are aggravated by various occasional causes. The pains and heaviness in the legs are seldom mentioned by the patients, as they assume them to be part of the phenomena of childbirth. The neuritis can be differentiated from phlebitis by the fact that with the latter the tenderness is more toward Scarpa's triangle than in case of neuritis; fever and edema are usually observed, and the swollen veins can be palpated. With phlebitis there is nothing like the radiating pains extending along the inflamed nerves, nor the superficial hyperesthesia, nor the tenderness at the merging points of the nerves. The neuritis subsides completely in from four to eight days, as a rule, although it has been known to last for three weeks. Electrotherapy is not necessary. Boers has witnessed good results from blisters. Basedow recommended bandaging the limb, and Krieg gave ergot, as he said, "to bring back to the uterus the runaway labor pains."

91. **Carcinoma of the Uterus at Breslau.**—A reply postal card was sent out from Küstner's clinic to all the women who had been operated on for cancer of the cervix from 1895 to 1901, asking the present condition of their health, whether they have any disturbances at present like those before the operation, and in case of death requesting the family or the local authorities to give the date of death. About 122 replies were received, 31 referring to vaginal and 91 to abdominal operations. It was found that 8.7 per cent. of the abdominal and 15 per cent. of the vaginal patients had died. A personal letter was then written to the women found to be still living, asking them to come to the clinic for examination; about half of them came. All were healthy and free from signs of recurrence. The various features of this material of 145 cases of carcinoma of the cervix are discussed at length. The operability of the cancers has increased from an average of 45 to nearly 69 per cent. in 1905-1906. In conclusion Hannes remarks that Küstner has almost entirely abandoned the vaginal route at present. It is possible that much careful study of the patients operated on by a laparotomy may enable conclusions to be drawn in regard to glandular involvement which will demonstrate that certain special forms of cancer of the cervix are free from glandular metastasis. If this can be demonstrated, then this form can be operated on safely by the vaginal route.

92. **Section of Parturient Cadaver.**—Bumm and Blumreich give an illustration of a frozen section of a cadaver of a parturient in the expulsion stage. They also reproduce illustrations of the similar sections that have been made heretofore by Mars, Zweifel, Chiari, Leopold, Barbour, Webster and others. They discuss the mechanism of birth from the conditions observed, especially in regard to the behavior of the lower segment of the uterus.

Zeitschrift f. Krebsforschung (cancer research), Berlin.

Last indexed XLIV, page 1155.

94 (III, No. 2.) *4 Fälle von osteoplastischem Prostata-Carcinoma. W. Fischer-Defoy.
95 Ueber Pseudo-Parasiten der Carcinome. P. G. Unna.
96 Die Beziehung gewisser Sarkome zu den Angiomen. D. v. Hansemann.
97 Resistenz-Fähigkeit der roten Blutkörperchen in den Fällen von Scheiden-und Gebärmutter-Krebs (red corpuscles with cancer). K. Schmidlechner.
98 Origin of Cancer.—Ursache des Krebses. G. Kelling. Id. H. Ribbert. Id. E. Krompecher.
99 (Nos. 3-4.) *Ueber die Bilharzia-Krankheit vorkommenden Blasen-Tumoren mit bes. Berücksichtigung des Carcinoms (in bladder). C. Goebel (Breslau).
100 Zum Stande der Krebs-Therapie (of cancer). O. Lassar.
101 2 seltene Carcinom-Fälle, zugleich ein Beitrag zur Metaplasie-Frage. R. Lewisohn (Heidelberg).
102 Histogenese des primären Leberkrebses (cancer of liver). L. Polak-Daniels (Hague).
103 Theory of Tumor Formation.—Kritische Bemerkungen zur Geschwulst-Lehre. D. v. Hansemann.
104 Origin of Plimmer's Bodies in Degeneration of Nuclei.—Entstehung Plimmerschen Körperchen aus Kerndegenerationen. H. Apolant and G. Embden.

94. **Osteoplastic Cancer in Prostate.**—Four cases of primary osteoplastic carcinoma are described as they have come under observation at Dresden. Twenty other cases are also reported in which the cancer or metastasis was in a bone. The etiology and symptoms are analyzed, and the point emphasized that the spleen was involved in the metastasis in only one of the total of 24 cases. The spine and femur are now examined regularly at the autopsy in every cancer case. Metastasis in spine or femur was found in 24.4 per cent., although diagnosed only once during life.

99. **Cancer in Bladder in Bilharzia Affections.**—Malignant tumors form fully 50 per cent. of the numerous tumors observed in the bladder in cases of bilharzia affections. There is an evident connection between the bilharzia cystitis and the malignant growth. It must be classed with cancer in chimney-sweeps, tobacco-smokers, etc., but affords no evidence in favor of a parasitic etiology for cancer. Goebel's article is accompanied by 54 plates, many of them colored.

Riforma Medica, Naples.

Last indexed XLVII, page 244.

105 (XXII, No. 14.) Origin of Rice Bodies in Tuberculous Processes.—Sulla genesi dei corpi orizoidei nelle tendovaginiti croniche tubercolari a granuli risiformi. O. Cignozzi.
106 5 casi di ragade anale post-partum (fissures). F. Pellizzari.
107 (No. 15.) *Contributo sperimentale alla patogenesi dell' ulcera rotonda dello stomaco. G. Zironi.
108 Malattia di Erb. A. Testi.
109 (No. 16.) Infantilismo con gastrosuccorrea di Reichmann ed accessi di tetania. M. Landolfi.
110 Action of Chloroform on the Blood.—Sull' azione della cloronarcosi sul sangue. A. B. Gianasso.
111 *Treatment of Pneumonia.—Un nuovo metodo di cura della pulmonite crupale. S. Pulverenti.
112. (No.17.) *Sull'etiologia e per la diagnosi di ascesso epatico (liver abscess). U. Gabbi.
113 (No. 18.) *Sul cancro dello stomaco in chirurgia. I. Tansini.
114 *L'embolia dell'arteria polmonale nella febbre tifoide. R. Massalongo.

107. **Pathogenesis of Round Ulcer of the Stomach.**—Zironi resected the vagus below the diaphragm in 14 rabbits. When killed, after an interval of 11, 17, 30 and 60 days, an unmistakable round ulcer was found in 6 out of the total material. In 4 the ulceration was single and in 2 double. The findings showed that the ulcers had developed soon after the operation and that they manifested a tendency to heal spontaneously.

111. **Treatment of Pneumonia.**—Pulverenti explains the onset of pneumonia as due to lowering of the resisting powers at some point. Getting chilled causes ischemia, and this is always followed by hyperemia. In hyperemia the walls of the vessels become distended and stretched and thus more porous, allowing abnormal osmosis and permitting the germs in the blood to pass through the walls of the vessels into the tissues and those in the tissues to pass into the blood. The same thing is liable to occur when there have been excessive demands on an organ, the overfunctioning inducing hyperemia and distension of the vessel walls. This is the reason why pneumonia is liable to develop after a person has been chilled. The causal factor common to all such cases is the reduced tonicity of the vessel walls. Besides the hyperemia, the increased warmth in the part and the transudation provide additionally favorable conditions for the proliferation of the infectious germs. The therapeutic indications, therefore, are to restore normal tonicity to the vessel walls and thus to arrest the process in its incipiency. He thinks that this can be done with the antipyretics. They owe their antithermic action, he asserts, to their influence in restoring normal tone to the vessel walls. This vasoconstricting action is beneficial in disease, but the blood vessels are not all capable of an equal degree of constriction. The blood forced out of the contracting vessels escapes into those which do not contract so readily. These are cutaneous blood vessels, and those in the mucosæ of the accessible cavities. This explains the injurious influence of the antipyretics on the digestive tract, as they induce congestion there as well as in the skin. He gives a number of examples from his clinical experience to sustain these views and to demonstrate the marked neurospastic and consequently antiphlogistic action of the antipyretics. He has treated 106 patients according to these principles, and the results have confirmed him more and more in the belief of their importance in the therapeutics of pneumonia. The disease

was aborted, he states, in 40 per cent. of the cases. He supplements the drug treatment with venesection at need, but prefers leeches applied directly to the thorax. The principle is similar to Bier's suction therapy. From 75 to 250 gm. of blood drawn by from 5 to 10 leeches proves more effectual than twice this amount taken from the arm. All drugs should be avoided which have a dilating action on the blood vessels, especially quinin. He restricts his patients to a liter of milk and 3 eggs a day, keeping the digestive functions working well by appropriate measures.

112. **Diagnosis of Abscess of the Liver.**—Gabbi gives the particulars of 6 cases. The pains in one case were paroxysmal and the liver was movable; the abscess was comparatively deep. The pains in this case must have been due principally to the rapid distension of the capsule. The intensity of the pain was never proportional to the size of the abscess, but only to its nearness to the surface. In one case in which the abscess was close to the capsule the pain was so intense as to require morphin, and yet the abscess was a very small one. When the pain was in the scapular region the abscess was found in the convexity of the liver, and when in the lumbar or ileocostal region it was in the lower half or the outer part of the right lobe. The pains in one case and the findings simulated a gallstone affection. The lower aspect of the liver in this case was adherent to the posterior abdominal wall, producing the lumbar and ileocostal pain. Gabbi states that the liver may apparently descend with the excursions of the diaphragm, when in fact its posterior aspect is adherent to the abdominal wall, and the apparent descent is merely a bending forward. This can be detected by watching the lower outline of the liver dullness during respiration. In 2 of his patients the liver felt hard, and yet the abscesses were found close to the surface. These findings were in alcoholics whose livers were more or less indurated, and they suggest the importance of the history in these cases. The diagnosis of abscess need not be discarded on account of the palpation of an apparently uniform hard surface.

113. **Cancer of the Stomach.**—Tansini, professor of surgery at Pavia, here remarks that surgery is not the ideal treatment of cancer, although it is the only effectual means at our disposal at present. The mysterious biochemical processes which generate and maintain cancer should be combated with measures of the same nature. As nations, however, are still obliged to go to war to decide certain controversies by the sword, so cancer has still to be subjected to the knife. He expatiates on the importance of an early exploratory laparotomy, which is comparatively harmless in the early stages, but is contraindicated, he adds, in case of icterus, as this indicates involvement of the bile duct. The presence of enlarged glands in the left clavicular fossa is also a contraindication, but if it is the only one he sometimes excises one of the glands for microscopic examination. It is possible that the swelling of the glands may be due solely to some ordinary inflammatory process. Another specific contraindication to an exploratory laparotomy is the prominent development of the subcutaneous veins in the abdomen, associated with ascites, the result of disturbance in the deeper vessels. The uterus and ovaries also should always be examined for metastatic involvement. In 2 cases recently he noticed a certain tumefaction of the abdomen; as a rule the abdomen is usually sunken in cancer patients. He refrained from the exploratory laparotomy on account of this tumefaction, and the autopsy later revealed cancerous lesions in the splenic flexure and descending colon. He remarks that "juxta-pyloric cancers" are most easily diagnosed and give the best results to operative measures. Cancer of the lesser curvature may exist for a long time without interfering with digestion and assimilation, so that the patients do not become emaciated. Tabora even had a patient gain in weight. The emaciation parallels the stenosis of the pylorus. The movability of the juxta-pyloric region may lead to errors in diagnosing a cancer in this region. In one of his patients the tumor was found in the center of the left hypochondrium and was mistaken for the spleen. It is frequently mistaken for a movable kidney, which sometimes induces gastric disturbances. In discussing the technic for exploratory laparotomy he remarks that he refrains from lavage of the stomach when possible, as the patients dread it so much. If there is hyperacidity the stomach content will not prove very infectious if some should escape into the peritoneum during the operation. He has witnessed cases in which the peritoneum was much soiled with the hyperacid stomach contents, and yet no septic peritonitis resulted. He regards pylorogastrectomy as far superior to gastroenterostomy, suggesting the advisability of doing the latter as a preliminary to the former, as tracheotomy is done as a preliminary to extirpation of the larynx. He has frequently had to perform a secondary pylorogastrectomy on account of disturbances persisting after a gastroenterostomy.

114. **Embolism of the Pulmonary Artery in Typhoid Fever.**—Massalongo has had occasion to observe 2 cases of fatal embolism of the pulmonary artery, occurring as convalescence from typhoid commenced. The patients were young women. He is inclined to believe that this is probably a more frequent cause of death in typhoid than is generally recognized.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Compend of Operative Gynecology, Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital, delivered by W. S. Bainbridge, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc., Compiled with Additional Notes, in Collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate School, etc. Cloth. Pp. 66. Price, $1.00 net. New York: The Grafton Press, 1906.

A Compend of Pharmacy. By F. E. Stewart, M.D., Ph.G., Charter Member of the American Therapeutic Society, etc. Based on Prof. Joseph P. Remington's Text-Book of Pharmacy and the United States Pharmacopeia, Eighth Revision (1905), Sixth Edition, Revised and Enlarged, with a very complete Index and Table for Converting English Measures into Metric and the Reverse. Cloth. Pp. 187. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

Eczema. A Consideration of Its Course, Diagnosis and Treatment, Embracing Many Points of Practical Importance, and Containing 146 Prescriptions, Illustrating Dosage in Local Applications. By Samuel H. Brown, M.D., Assistant Dermatologist, Philadelphia Hospital, etc. Cloth. Pp. 105. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

Value of Radiographs as Zoological Illustrations. By C. H. Townsend, Director of the Aquarium, report of the Director of the Aquarium to the Board of Managers. Reprinted from the Tenth Annual Report of the New York Zoological Society. Paper. Pp. 23. New York: Office of the Society, 11 Wall Street, 1906.

Charaka-Samhita (Translated into English) Published by A. C. Kaviratna, editor of Charaka-Samhita and of Susruta-Samhita (in original), with Commentaries. Parts XXXIV and XXXV. Paper. Calcutta: Printed by B. N. Nandi at the Kaviratna Press, 1905.

Influence of the Mind on the Body. By P. DuBois, M.D., Professor in the University of Berne. Translated from the Fifth French Edition by L. B. Gallatin. Cloth. Pp. 63. Price, 50c. net. New York: Funk & Wagnalls Company, 1906.

Inconvenients et Dangers des Dentiers et Autres Pieces de Prothese Dentaire et Maladie du Caoutchouc. Leur etude au point de vue de l'Hygiene, par L. Eilertsen. Paper. Pp. 214. Price, 3 fr. Paris: Jules Rousset, Editeur, 1906.

Thirty-Ninth Annual Report of the Columbia Hospital for Women and Lying-in Asylum for the Fiscal Year Ending June 30, 1905, Washington, D. C. Paper. Pp. 44. Washington, D. C.: Government Printing Office, 1905.

Technique du Traitement des Tumeurs Blanches. By F. Calot, Chirurgien en chef de l'hôpital Rothschild, etc. Paper. 192 Illustrations. Pp. 272. Price, 7 fr. Paris: Masson et Cie, Editeurs, 1906.

Twentieth Annual Report of the Portsmouth Cottage Hospital, Portsmouth, N. H., for the year ending October 1, 1905. Paper. Pp 23. Portsmouth, N. H.: John D. Randall, Printer, 1904.

Sixth Annual Report of the Hospital of Notre-Dame de Lourdes for the Year Ending Dec. 31, 1905, Manchester, N. H. Paper. Pp. 23. Manchester, N. H.: L'Avenir National, 1906.

Le Vieillissement Artificiel des Vins and Spiritueux. By Frantz Malvezin, Directeur de Pœnophile, etc., 16 Illustrations. Paper. Pp. 95. Price, 1 fr. Paris: Jules Rousset, 1906.

Twenty-Fourth Annual Report of the Hospital for Women and Children, 1905-1906. Central Ave., and South Tenth St., Newark, New Jersey. Paper. Pp. 64.

New Britain General Hospital Sixth Annual Report for Year Ending October 1, 1905. Also Charter, By-laws, Rules and Regulations. Paper. Pp. 59.

Annual Report of the Board of Health of the City of Winona, Minnesota. Year Ending March 31, 1906. Paper. Pp. 15.

Ninth Annual Report of the Episcopal Eye, Ear and Throat Hospital for the Year 1905. Paper. Pp. 63.

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Address

THE SCOPE AND AIM OF STATE SANATORIA FOR TUBERCULOSIS.*

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BOSTON.

During the past ten years, the civilized world has seen an astonishing change take place in the method of treating the disease which leads the mortality list in densely populated communities. Dr. Bodington, of England, over half a century ago, was one of the first, if not the first, to advocate the treatment of tuberculosis by fresh air in properly regulated sanatoria; but it is apparently authentic that before he could substantiate his opinions the poor man ended his days in an insane asylum. Whether he was placed there by friends on account of his advanced theories, which doubtless at that period were regarded as symptomatic of madness, or for genuine reasons, is thought by some to be a matter of doubt. It remained for Herman Brehmer not many years afterward, however, in the mountains of Silesia, to prove that consumption could be cured, and although ridiculed at first by his own profession, he had the happiness of living to see his ideas well established in his own country and finally take root and grow in other lands.

For years his followers abroad and in this country patiently carried out his ideas, finally convincing the skeptical that the new methods were holding out hopes of recovery to many who, in former years, would have been thought, by most observers, to be in the grasp of a hopeless disease. To Trudeau is the credit rightly given of having been the first in America to give practical proof of what can be done to lessen the ravages of consumption when, not long after Brehmer, he began his noble work in the Adirondack mountains. Gradually theories become facts, and the so-called fresh-air treatment began to be zealously adopted. This was a farther development of the ideas taught by Brehmer, and was chiefly the insistance of the necessity of absolutely fresh air for every moment of the twenty-four hours while the patient was under treatment. In later years it came to be shown that the same method could be successfully used not far from home; that surprising results could be obtained in a large percentage of cases at comparatively low altitudes and in what were formerly thought to be climates unfavorable for cure. Facing the popular cry that it was simply a fad that would sooner or later die down and disappear, to be placed with the forgotten histories of many so-called cures for consumption, this modern method has not only lived down this prejudice, but has given sufficient proof of its efficacy in large numbers of sufferers who, under other conditions, doubtless would have succumbed to the disease.

Within the last decade these ideas have taken a sudden and surprising hold upon the community, and have spread like a prairie fire in every direction throughout the country. Fortunately the simile holds in the rapidity of its growth only, for its effects are beneficial, not disastrous. With this rapidity of growth, however, come its attendant dangers from haste and ill-judged zeal. Those who have been preaching for years the doctrine of sanatorium treatment in properly selected cases, are obliged now to take a conservative position in order to counteract the extravagant statements of enthusiasts who, with too little knowledge, do harm to the cause by claiming too much. We have, as yet, no panacea for the treatment of consumption, although we are justified in the hope that we are on the eve of still greater advances than heretofore in this direction. We must remember, moreover, that no sane advocate of modern methods will ever claim that they are suitable for all classes of diseases. Fresh-air treatment pushed to an extreme with often marvelous results in cases in which the vitality can still resist the rigors of a northern winter, would be foolish and cruel for the far-advanced cases or in old people in whom vitality is low. Experience and judgment must be used in this as in every branch of medical or surgical science, otherwise disaster ensues. Disappointment, reaction of feeling, and condemnation follow quickly, and with them the pendulum swings far in the other direction, and great harm comes to a cause which, when judiciously advocated, can be of untold good to the human race. In this connection, the indiscriminate and hasty use of the word "cure" must be strongly condemned, for it only brings harm to the patient through the probability of relapse from disregard of watchfulness and care necessary for months after cessation of active symptoms. To others, also, it is apt to bring discouragement and distrust of methods which, fully understood, can, with time and patience, bring about lasting results.

Many thoughts and suggestions come to me as we touch on these matters, but it would be impossible within the scope of this paper to do more than suggest those which from experience I have learned to believe are most vital. With knowledge gained in over seven years as attending physician to the large State Sanatorium, at Rutland, Mass., from its incipiency up to a comparatively recent date, and recognizing the rapidly growing tendency of other states to follow the example of Massachusetts, I believe it will be well at this meeting of physicians and laymen to give briefly one or two words of caution to those who are urging the erection of similar institutions elsewhere. It is my firm conviction, which I have always held, that sanatoria, in the strict sense of the word, should be built away from the neighborhood of cities and kept solely for the use of incipient cases or for those in whom the disease has not so far progressed as to preclude a life of usefulness again. Far-advanced cases should not be sent to such institutions, but for them hospitals of different construction should be made within easy access of large cities and towns to enable friends and relatives to visit the patients without entailing much loss of time or expense.

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*Address of the Chairman of the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis at Washington, May, 1906.

It is of vital importance, moreover, if the best and most lasting results are to be obtained, that sanatoria intended for patients who are still in vigorous bodily condition should not be so large as to render personal supervision almost an impossibility. In the watchful care necessary for each individual at a critical stage of the disease, when ignorance may be the cause of fatal errors in mode of life, lies the great virtue of this method of treating tuberculosis. Just so surely as we increase the proportion of patients to the number of medical assistants beyond certain limits, just so surely do we diminish the chances of proper supervision of individuals and thereby run great risk of not gaining favorable results for those under our care.

One fact I believe now to be of great importance if we would keep public sanatoria for the tuberculous above the level of mere boarding houses with medical attendants. I have already alluded to the extraordinary interest awakened throughout the world in the last decade by the favorable results of fresh-air treatment. This is a great step in advance and of great educational value; but we should now keep something higher before us lest we stagnate and merely content ourselves with watching a large percentage of patients leave our sanatoria with the disease in a state of arrest, ready to act as missionaries in the world to teach others the simple but essential laws of hygiene. We should aim now to make our state sanatoria centers of scientific research, where clinical observation can go hand in hand with laboratory investigation. That this is not utopian scheme for public institutions, is well illustrated in the Boston City Hospital, which, although under municipal control alone, not merely offers practical aid to thousands of sufferers from acute diseases, but has built up slowly a pathological and bacteriological department which is an honor to Boston, and the fame of which is now established in America and Europe.

With a great clinic like that now at Rutland there is an almost unrivalled opportunity not only for giving immediate aid to hundreds of sufferers from tuberculosis, but for establishing, by comparatively simple means, the nucleus for laboratory research, which shall have for its special object the study of methods for stamping out tuberculosis, or at least of so keeping it under control that the awful mortality from this disease may be reduced to a minimum.

In order to place our state sanatoria on such a basis, it is essential that those in control should be men and women of broad vision and that the policy of such institutions should be left to those whose special training fits them to be guides for scientific as well as practical work.

With the example before us of what Trudeau has accomplished in the study of tuberculosis in his laboratory at Saranac Lake, and with the great hope ahead of us that the disease may yet be conquered, I can conceive of no more inspiring ideal for state institutions, nor anything in which our individual communities could take greater pride than to make such an ideal a reality. That this can be done I firmly believe. It only remains for others who have similar beliefs, to use their influence to this end, and we may yet live to see our wishes accomplished.

Original Articles

THE HOSPITAL PROBLEM.

BAYARD HOLMES, M.D.
CHICAGO.

The hospital as an increment in the advances of civilization is worthy of more serious attention than it has received. It is an example of the constant tendency in present social evolution to specialize our activities and standardize our services and public functions. Its growth is inherent in the gradual passage of man from a smaller, lower, simpler, less uniform and coherent family unit to a larger, higher, more complex and more uniform communal unit. Once the house contained and the household managed all the affairs of life; eating, clothing, sleeping, recreation, and the eventful ceremonials of marriage, birth and death. Now much of the preparation of food, almost all the production of clothing and furniture, a large part of the recreations of life, are outside of the household, and the affairs of the home are simplified, while the standard of life is raised and the mechanical efficiency of every trade and occupation is enormously increased. So complicated, technical and occasional a service as the care of the sick could not in the nature of things very long escape the spirit of concentration, specialization, and standardization. As a result we have the hospital as a factor in modern life—a factor increasing in its extent and intimacy with every phase of society, commerce, politics and war. This factor, the systematic and economical care of the sick, is far reaching and concerns every grade and station of life, but none more than the specialized surgeon. It is worth while then to look at the hospital as a modern economic and technical institution and consider its probable errors, dangers and abuses, that we may better adapt ourselves to the ethical and economic questions to which its rapid and sudden development finds us without precedent or custom to control.

From a purely economic and social point of view the hospital is as necessary as the bakeshop, the tailorshop and the theater. It supplies at a minimum expense, within the reach of all, the maximum of skill in the care of the sick and injured. Sicknesses are inevitable, though infrequent emergencies, in every household and in the life of every individual. It allows the standard of life in the community to rise everywhere, at least in the matter of medical services, to the maximum level. The manual tradesman at a moderate wage may have as prompt, effective, skillful and even luxurious medical and surgical services as the bloated bondholder or the munificently remunerated professional man. The heartrending sufferings of the afflicted poor in their narrow quarters, the revolting deformities and sickening diseases of the neglected, and the pitiable spectacles of the defective in our neighborhood or on our streets no longer disturb our over complacent sensitiveness. The sick and injured are quickly carried by our multifunctioned police department to the nearest hospital, our insane and epileptics are segregated from those of us who are accredited as of sound mind, and thus we are permitted to go serenely on in our chase for wealth without hearing the creak of the friction of civilization. At the same time it is cheap, The house may be smaller if the births, sicknesses and surgical operations are provided for in the hospital. The wages may therefore be reduced, and yet the standard of life remain the same, or even raised. From an economic point of view the hospital is a success. It is ready, quick and cheap. It is economy, therefore, for the employing class to build many hospitals at the expense of a few million rather than pay the wages necessary to keep their employés in equal decency in their confinements, sicknesses and surgical operations at home. Whether these hospitals are built as railway hospitals, as eleemosynary adjuncts of religious societies, or as monuments of national or racial pride, matters not either to the exploiting capitalist or to the suffering patient. The result is the same, a diminution of waste, an economic gain, and an increase in technical efficiency, and a gradual rise in the standard of life.

The character of the hospital is determined by the motive of its management. In our country the founders of hospitals have been largely influenced by the miserable condition of the poor in confinement and sickness. Pity, charity, and so-called benevolence has been the foundation on which emergency and eleemosynary hospitals have been raised. Their prime function, therefore, has been to relieve suffering rather than to restore to health and usefulness. Hence the great lack in all our hospitals of those postoperative gymnastics and hydriatic methods which form so large a part of the treatment of the hospitals of Europe in which the working people receive not only ordinary medical and surgical attention, but such orthopedic and general development as fits them to go from the hospital gymnasium immediately to their trade, whatever that may be. The whole construction of the hospital, from the location and the architecture to the minutest detail of administration, is modified, contracted, or extended by the motive of its foundation, and by a certain *Zeitgeist* which no amount of reason, argument or evidence can perceptibly modify or change. The superficial observer who visits the amphitheaters and operating rooms of the German hospitals may see little difference between them and our own. It is in this protracted after treatment, the general service and the authority and responsibility of the surgical staff, that they surpass us. Our hospital trustees are supreme and our medical and surgical staff their underlings and servants. Each department, the engineering, the culinary, the nursing and the pharmaceutical, stands in the same relation to the administration as the medical staff. It is often impossible for the medical and surgical staffs of our hospitals, except by the most undignified diplomacy, to secure what seems to them and all of us, the most rational and economical conduct.

The management and influence of the hospital is of the greatest interest to the profession. In no other walk of life are the emoluments and honors of each individual so dependent as in ours, on the ability, integrity and character of its most favored members. The members of our hospital corps have most fortunate opportunities. They receive an unearned increment of selected cases for treatment, and bring honor and profit to the profession, as well as health to its patients, if these cases are treated with scrupulous care and unflinching fortitude and fidelity.

A position on a hospital staff in our country does not carry a salary with it, but it gives to the intendant an unearned increment of cases which furnish a sufficient remuneration in money and reputation. Often, indeed, the interest of the religious sect or solidarity by which the hospital is organized makes each member of that association or body far and near a cryer and a drummer for their hospital, and incidentally for the members of its staff, and many patients are diverted from their natuarl channels through the general local practitioner to the consultant or operator he might for professional reasons select, to the staff man of a sectarian hospital to which the patient's religion, nationality or race allies him. To have a fervid religious sect, with a substantial, numerous and loyal hierarchy behind his hospital to sanctify it with devotion and fill it with its devotees, and the rich material for its propaganda, is worth more to a physician and surgeon than six columns a week of the most skillful exploitation or of blatant advertising in three daily newspapers, to the prevention of which method of securing patients our societies and their code of ethics is so strenuously devoted. In many of our public hospitals the staff, however appointed, serves absolutely without salary, and in one such institution at least, such a staff has been willing to submit to a competitive examination conducted by the political authorities.

The medical profession as a whole has a reasonable claim on the hospitals for some return for the gratuitous medical and surgical service which they receive. The legal profession is well remunerated for many public services, both directly in the salaries and honors to the bench and in fees to advocates and attorneys, and indirectly through law libraries and court publications. The commercial world does not serve the hospital at a less rate than it does hotels or private families. For gratuitous medical service some hospitals render little or nothing to the profession of medicine. The wards are closed to medical instruction. The clinics are hedged about with troublesome and useless restrictions. The necropsical and laboratory equipment are hampered and limited, and worst of all the gratuitous medical staff bears an impersonal responsibility without adequate authority, and the odium of each failure is born by the general medical profession. Even in the semipublic pay hospitals the medical and surgical staff whose members have such advantage over other practitioners owe the profession as a whole a loyalty, gratitude and service which is too often forgotten. The material over which such favored medical men preside is the material of the whole profession and should be considered sacred. Too often is it made the basis of personal exploitation or selfish greed. Few members of our hospital corps publish commensurate contributions to medical literature. They receive an unearned increment of material which another might get by open advertising, and yet they render to the profession no adequate return. That notable exceptions can be brought to the readers' mind at once only proves the rule. Both hospital trustees and medical staffs are unmindful and neglectful of their ethical relations and duties to the medical profession.

The organized medical profession ought to control the appointment of the staff in public hospitals and influence the appointment of staffs in private institutions, both as a safeguard to the interests of patients and as an earnest to the honor of the profession. The celestial or Confucian written examination falls as short of securing a rational result as the scales and yardsticks do in selecting officers of the navy. It required the battle of the Sea of Japan to demonstrate the folly of the one, but it hardly seems necessary to follow the centuries of China's inert bureaucracy to recognize the inherent inefficiency of the other. Not only should the staff receive the recognition and endorsement or appointment of the profession, but the professional fees which the staff commands should be subject to such revisions as would prevent the abuses so apt to creep in. The commercial spirit among trades-people, and even some of their betters, is so strong on the verge of the grave that they hesitate little to rob the profession of an adequate remuneration by simulating penury, or at least by suppressing the facts. A position on a hospital staff should not be a private sinecure for the satisfaction of personal ambition or financial greed, but a professional trust, carrying with it local duties to the organized profession, as well as worldwide obligations to render the most skillful and conscientious service and publish the most carefully studied and conscientious observations and results. It is the duty of the staff to make the hospital the most serviceable to the patient, and at the same time the center of medical progress and educational and professional good feeling in the community.

The exploitation of a hospital for the personal ambition or aggrandizement of an overshadowing member of a staff, or the exploitation of a staff for the interests of a solidarity or society, is inconsistent with the best interests of our profession, the unfortunate patient, and society as a whole. In the former case we have seen patients brought together by a department of publicity and promotion, examined and brought to the operating room through a method and by a machine patterned after the prevailing method and business machinery of a factory or department store, operated on by a rigidly systematized operative technic, taken to their rooms and nursed to convalescence according to a printed and inflexible after treatment. Such a mail order hospital does business and does it well on a standardized material, but unfortunately the material is not subject to standardization, and the machine which works perfectly well on ten cases fails to extrude the eleventh as a good machine should do, or turn it over to the "custom surgeon" as a sort of "made to order" or "special job." Even so simple a specialty as herniotomy can not be undertaken by a surgical machine and carried to unerring success. The man is more than his hernia and presents a problem greater than all the technical possibilities of a herniotomy. It is not the hernia that requires professional consideration and treatment. Herniotomy might become as systematized and technical as the morning shave or the Turkish bath, but the great army of hernia bearing men will each present a problem of illimitable possibilities and interests and will always require the most considerate, leisurely and personal investigation.

Each patient is always and in an overshadowing sense a man, and when he is sick he presents all the possibilities of disease. The only rational treatment that he can receive must come from the physician who is on his side more a man than a doctor, and more a doctor than a surgeon or other specialist. The higher the mountain peak of special professional excellence the greater, broader and more massive the plateau of general medical skill and human character on which it must necessarily depend. Under no circumstances can the care of the patient be divided up between several independent and unrelated physicians, whatever their special excellence or skill may be. The primitive relation is the only safe one, a sick man on the one side, a conscientious doctor on the other.

When the industrial revolution of the seventeenth century began it found Europe peopled with independent tradesmen, surrounded by their intimate and friendly customers, and possessed of all the tools, buildings and material necessary to the practice of their art. Now we find the homeless, tool-less dependent machine operators far removed from the people who furnish a market for the standardized product of their toil. The hospital is essentially a part of the armamentarium of medicine. The independence and the honorable position of medicine rests on the full control of its tools. If we wish to escape the thralldom of commercialism, if we wish to avoid the fate of the tool-less wage worker, we must control the hospital.

THE PATHOGENIC BACTERIA OF THE CONJUNCTIVA.*

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Our knowledge of the micro-organisms which produce pathologic conditions on the human conjunctiva, of their occurrence in various sections of the world and of the conditions necessary for their growth is becoming gradually more exact, although many points are still in dispute and await further accumulation of facts.

We know definitely that the same form of inflammation of the conjunctiva can be produced by various organisms. Examination of acute catarrhs, as well as of the purulent and pseudo-membranous forms of conjunctivitis, shows that cases which are clinically indistinguishable may contain bacteria that are morphologically very different. It is further definitely proven that one organism may produce various types of conjunctivitis, according to the conditions present and to the virulence of the organism, and that certain forms may exist in the conjunctiva at times without causing any reaction. Much, therefore, depends on the individual constitution or predisposition of the person affected and the conditions present in the conjunctival sac at the time of infection.

We recognize, moreover, that certain micro-organisms are more independent of these conditions than others, and that the earlier division of the bacteria into those which are "conditionally contagious," such as staphylococci, streptococci, pneumococci and diphtheria bacilli, and those which are "unconditionally contagious," such as the Koch-Weeks bacillus, the diplobacillus of Morax and Axenfeld and the gonococcus must be still considered as practically correct, despite the occasional occurrence of the last named organisms (with the possible exception of the Koch-Weeks bacillus) on the normal conjunctiva. The special conditions which favor the growth of the various organisms have been developed in a series of valuable papers by Uhthoff,[1] Sourdille,[2] Lagrange,[3] Wolkowitsch,[4] Cramer,[5] Lobanow[6] and Römer,[7] which have been critically reviewed by Professor Axenfeld.[8]

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Uhthoff: "Bakteriologische Untersuchungen bei Diphtherie d. Bindehaut," Wiener Naturforscherversammlung, 1894.

[2] Sourdille: Arch. d'Ophtal., vol. xiv, January, 1894.

[3] Lagrange: Ann. d' Oculistique, vol. cxxi, p. 128.

[4] Wolkowitsch: "Versuche über die Bedingungen der Infektion der Conjunctiva," Diss., St. Petersburg, 1899.

[5] Cramer: Centbl. f. Gyn. No. 9, 1899.

[6] Lobanow: Westnik ophth., vol xvi, p. 560, 1899; also vol. xv, pp. 3 and 215.

[7] Römer: Zeits. f. Hygiene, vol. xxxii, No. 2, 1899.

[8] Axenfeld: Lubarsch and Ostertag's Ergebn. d. Allg. Path. u. path Anat. d. Mens., 1899.

METHODS OF INFECTION.

It is to another phase of the subject, however, that I desire to call attention, viz., the method of conveyance of the contagion.

Direct Contact.—It is no doubt true that the method of direct contact, of conveyance of the secretion containing the specific micro-organism from the eyes of the affected individual by means of fingers, towels, handkerchiefs, washing utensils, etc., must still be considered as the one which obtains in the majority of cases. That this, however, is the only way, as has long been taught, is open to doubt.

Dust Infection.—The spread of acute contagious conjunctivitis in schools and asylums, despite careful precautionary methods adopted by those in charge, and in an epidemic form in places where the individuals do not come in close contact, raises the question of whether infection can or can not be transmitted by the air. On this subject a great deal of experimental work has been done, particularly in the German laboratories and also in this country.

The important work of Flügge,[9] published in 1897, proved conclusively that the contagious diseases can be so carried, and that bacteria mixed with dust remain flying in the air for hours, and that very slow currents of air are capable of spreading the ordinary room-dust throughout a room and into adjoining chambers. He showed that the requisite condition for the transmission of organisms in the air was their ability to withstand drying, and as the result of his experiments and those of investigators working along the same lines, notably Neisser,[10] Laschtschenko,[11] Germano[12] and others, bacteria have been divided into separate classes.

The first group contains the cholera, plague and typhoid organisms, which die rapidly in the dust, and so under natural conditions are probably not carried through the air. In this class are probably to be placed the influenza bacillus and gonococcus.

A second group includes streptococci, pneumococci and diphtheria bacilli which resist drying for from three to six months, especially in secretion, although some forms of the pneumococcus are as susceptible as the cholera bacillus.

In a third group are the *Diplococcus intracellularis*, the cause of epidemic cerebrospinal meningitis, which possesses extremely high resisting power to drying, *Staphylococcus pyogenes* and the tubercle bacillus.

In a fourth group might be placed the spore-forming organisms, such as anthrax and tetanus, which have an almost unlimited vitality in a dried condition (Germano[12]).

Droplet Infection.—In addition to this method of dust infection we are indebted to Flügge and his assistants for the discovery of a second method of contagion, which is of almost equal importance, viz., by means of fine drops. It has been shown that by an ordinary spray apparatus a solution containing prodigiosus culture may be atomized and the drops will be carried to all parts of a room and remain suspended in the air for from two to five hours. The method is of especial importance in connection with diseases which are accompanied by coughing and spitting; Flügge's experiments proved that every cough, sneeze or outcry sends fine drops of sputum in large number into the air and that these droplets may likewise remain flying in the air for hours. This method for the spread of pulmonary tuberculosis was recognized as early as 1884 by Koch, and was fully demonstrated by Laschtschenko[11] in Flügge's laboratory and by Curry[13] in this country, while Goldie[14] and Boston[15] have shown that in ordinary talking consumptives expel droplets which can be caught on a glass plate held in front of the mouth, and that these drops can be shown to contain tubercle bacilli.

> For these diseases of the respiratory organs, therefore, the causes of which do not retain their vitality after drying, and can not exist in the air, in the form of dust, the inhalation of atomized drops is doubtless a frequent and dangerous way of infection, ranking with contact, especially for persons who are only visitors to the patient and are not nursing or washing utensils, linen, etc. (Flügge).

The importance of this matter in connection with the diseases of the eye, while hitherto but little considered, must be appreciated.

In all forms of catarrhal conjunctivitis which are associated with well-marked secretion, the organisms may be carried downward through the lachrymonasal duct into the nose and throat and from there be expelled in the acts of talking, sneezing and coughing. Lobanoff's[16] article was a valuable contribution to the subject. He reported a case in which diplobacilli were present on a sore spot at the angle of the mouth for a long while. Biard[17] found diplobacilli in the nose in twenty-eight out of thirty cases examined, even in the absence of conjunctivitis, although the correctness of his results has been disputed by Morax and Petit[18] and by Zur Nedden.[19] Erdmann[20] in 1905 found an organism corresponding exactly to the Morax-Axenfeld bacillus in the nose in forty-two out of sixty-seven cases of diplobacillus conjunctivitis. For the pneumococcus and Koch-Weeks bacillus this infection of the nose as a result of the well-marked conjunctival secretion is especially to be considered.

Pneumococcus rhinitis and bronchitis are often associated with pneumococcus conjunctivitis, and as the spread of pneumonia and influenza must be accounted for at times by the occurrence of drop infection, so the possibility of this drop infection in contagious diseases of the conjunctiva must always be thought of, particularly in schools. The spread by dust infection is of less importance, as the special bacteria of the eye are but slightly resistant to drying. The carrying of the secretion by flies must also be a factor of importance, particularly in regions such as Egypt, where there is a lack of the ordinary hygienic precautions and care in cleanliness, and even in hospital and infirmary wards unless patients are screened. It is important, moreover, to recognize that the organisms are much more resistant to drying when they are protected by the secretion than when in pure culture, and many retain their virulence as long as they remain moist. Further experiments along these lines, such as were conducted by Erdmann[20] for the diplobacillus, should prove of value in making our knowledge of the transmission of the contagion more definite.

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[9] Flügge: "Ueber Luftinfection," Zeits. f. Hyg. u. Inf., vol. xxv, 1897.

[10] Neisser: "Ueber Luftstaubinfection." Thesis, 1898.

[11] Laschtschenko: Deuts. med. Wochft., 1898, p. 134.

[12] Germano: Zeits. f. Hyg. u. Inf., vols. xxiv, xxv, xxvi, 1897.

[13] Curry: Boston Med. and Surg. Jour., Oct. 13, 1898.

[14] Goldie: Canadian Pract. and Rev., August, 1899.

[15] Boston: The Journal A. M. A., Sept. 14, 1901.

[16] Lobanoff: "Ueber die Bedeutung der Luftinfektion für des Auge," Arch. f. Ophth., vol. li, p. 431, 1900.

[17] Biard: "Etude sur la Conjunctivite subaigue," Thése de Paris, 1897.

[18] Morax and Petit: Ann. d'Oculist., vol. cxx, p. 161.

[19] zur Nedden: Klin. Monats. f. Augenhk., January, 1902.

[20] Erdmann: Klin. Monatsbl. f. Augenhk., vol. xliii, May, 1905.

BACTERIA ENUMERATED AND DESCRIBED.

The morphology, staining and cultural peculiarities of the individual organisms which are pathogenic for the conjunctiva are now fairly well determined, and in considering the bacteria I shall place particular stress on the facts which have been determined concerning the resistance of the cultures, the probable methods of conveyance of the infection and the conditions necessary for their growth in the conjunctiva. As the bacilli of tuberculosis and leprosy have been discussed in another paper in connection with the pathogenic bacteria of the lids, they will be omitted here.

1. *The Koch-Weeks Bacillus.*—This minute organism, first discovered by Koch,[21], and later more carefully studied by Weeks,[22] Kartulis,[23] Morax,[24] Weichselbaum and Müller[25] and Hofmann,[26] is 0.25 micron wide and from 0.5 to 1 micron, more rarely 2 microns, long. The shorter forms are often found in pairs; their ends are rounded and there is occasionally a polar staining. The bacillus is decolorized by Gram's method and is best stained with dilute carbol-fuchsin and watery solution of gentian violet, but does not stain so deeply as the ordinary pus cocci.

In the secretion it is found both in and between the pus cells and is often associated with the xerosis bacillus, occasionally with isolated cocci, which are liable to conceal it in the culture media. It is obtained in pure culture with considerable difficulty. Of the ordinary media only very moist dilute 0.5 per cent. peptone agar of not too great alkalinity is available, and only when the organism possesses full virulence. Ordinarily it requires special media, of which the best are serum agar and serum bouillon. The presence of xerosis bacilli or staphylococci in the culture favors its growth (Rymowitsch[27]). The colonies appear at the end of from twenty-four to forty-eight hours as round, transparent, glistening drops, which resemble those of the influenza bacillus. In serum bouillon a delicate diffuse opacity is formed, which sinks to the bottom of the tube. In cultures the organisms show long involution forms and are non-motile.

They lose their vitality rapidly, and after five days can usually not be reinoculated. They are readily killed by heat, a temperature of 60 C. destroying them within fifteen minutes. The experiments of Weichselbaum and Müller[25] showed that after drying the secretion in Petri dishes for six and one-half hours the organisms could not be cultivated, and after eight hours they were unable to infect the human conjunctiva. Hofmann likewise found that the bacilli lost their vitality after exposure to drying for three hours at a temperature of 20 C. They are, therefore, but little resistant to drying and can probably not be carried by the dust.

On the other hand, in the presence of abundant secretion they may be readily carried into the nose and communicated by Flügge's drop method or be carried by flies. Water may serve for a short time as a carrier of infection, but infection by direct contact is probably the most frequent method.

The bacilli are unconditionally contagious for the human conjunctiva, all inoculations of the pure culture proving successful, and an immunity after one attack is rarely found. Culturally and morphologically they resemble closely the influenza bacillus and the bacillus described by L. Müller[28] as the cause of trachoma. The latter is now held by the best authorities to be probably an accidental infection, and perhaps a modification of the Koch-Weeks bacillus, which in its turn is closely allied to the influenza organism. The influenza bacillus is also capable of producing a well-marked catarrhal conjunctivitis, which is usually associated with catarrhal conditions of the air passages during epidemics of influenza (zur Nedden,[29] Jundell[30]).

Jundell claims that the Koch-Weeks and influenza bacilli are identical, but Morax,[24] zur Nedden[29] and others who have most carefully studied them, consider that their cultural peculiarities are sufficient to distinguish them, although on a smear they are difficult to differentiate. Like the Koch-Weeks bacillus, the influenza bacillus is very sensitive to drying (Kruse[31]), but the rapid spread of epidemics can hardly be explained unless we accept the drop infection of the air during the coughing and sneezing paroxysms of the affected persons.

2. *Morax-Axenfeld Diplobacillus.*—This was discovered independently by Morax[32] and Axenfeld[33] in 1896, and is now recognized as a widespread and frequent cause of a form of conjunctivitis which is usually subacute, but at times is acute and occasionally complicated with severe ulcerative processes on the cornea. It occurs in large numbers in the secretion, as a large bacillus 1 micron broad and 2 microns long, with rounded ends. The individuals are found in pairs, end to end, sometimes also in chains. It stains readily with ordinary anilin dyes, and is completely decolorized by Gram. Special staining methods have shown that a capsule is probably present, although it is usually invisible by ordinary methods, in contradistinction to the Friedlander's pneumonia bacillus and the ozena bacillus, with which it has often been confused, probably, in examination of the nasal secretion. It can not be cultivated except in the incubator, and usually only on blood serum or serum agar. Blood serum is gradually liquefied, and the media must be alkaline in reaction.

On the conjunctiva the bacilli are present ordinarily in pure culture, sometimes mixed, however, with pneumococci, streptococci or Koch-Weeks bacilli (Hofmann[34]). In culture they are non-motile, obligate aërobes and rapidly show involution forms. They are non-pathogenic for animals, but unconditionally so for human beings. As they are very sensitive to drying and low temperature, they probably can not be carried by the dust, but they have been demonstrated frequently in the nose (Biard,[17] Erdmann,[20] Axenfeld), and the drop infection must be accepted for them. Erdmann's experiments showed that the organisms retained their vitality after drying of the conjunctival secretion on small linen squares, at room temperature, for fourteen

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21. Koch: Arbeiten aus dem Kaiserlichen Gesundheitsamt, vol. iii, p. 19.
22. Weeks: Arch. f. Augenhk., vol. xvii, p. 318, 1887.
23. Kartulis: Centbl. f. Bakt., vol. i, 1883.
24. Morax: "Sur l'etiologie des Conjunctivites aiguës." Thêse de Paris, 1894: Ann. d'Oculist., vol. cxxix, 1903, p. 156.
25. Weichselbaum and Müller: Arch. f. Ophth., vol. xlvii, p. 108, 1899.
26. Hofmann: Zelts. f. Hyg. u. Inf., vol. xxv, 1897; Centbl. f. Bakt., vol. xxviii, p. 353, 1898.
27. Rymowitsch: Wratsch., vol. xx, p. 638, 1900 and 1901.
28. Müller: Arch. f. Augenhk., vol. xl, p. 13, 1900.
29. zur Nedden: Klin. Monats. f. Augenhk., vol. xxxviii, p. 173, January, 1900; also vol. xli, March, 1903.
30. Jundell: Mitteilungen aus der Augenklinik des Carolinischen med. Chirurg. Instituts, Stockholm, vol. iii, p. 11, 1902.
31. Kruse: "Die Mikroörganismen," etc., Flügge. Chapter on Bacilli, vol. ii, p. 435.
32. Morax: Ann. de l'Inst., Pasteur, June, 1896; also Ann. d'Oculist., January, 1897.
33. Axenfeld: Heidelberger Kongress, 1896. Centbl. f. Bakt., vol. xxi, No. 1, 1897; also Berl. klin., Wochft., 1897, p. 847.
34. Hofmann: Archiv. f. Ophth., vol xlviii, p. 639, 1899.

days, and that they could produce conjunctivitis after fifty-four hours, so that infection by means of handkerchiefs and towels must be of frequent occurrence, especially in house epidemics.

3. *The Pneumococcus* (*Fränkel-Weichselbaum*), or *Diplococcus Lanceolatus*.—This is now recognized as one of the most common causes of acute conjunctivitis. It is occasionally found on the normal conjunctiva, but not so commonly as Gasparini[35] first claimed (80 per cent.). It is only conditionally contagious, some predisposition being required on the patient's side, despite the occasional occurrence of pneumococcus conjunctivitis in epidemic form. It is a frequent cause of conjunctivitis of the new-born, in whom it often causes a blennorrhea, which, however, is not so severe as the gonorrheal form. It has been found occasionally in croupous and diphtheritic pseudo-membranes, alone and mixed with other organisms. On cover glass preparations the diplococci occur in pairs, the individuals being lanceolate in shape, with the flattened ends opposed; chains of four or five members are also found. They are less likely to show capsules in the conjunctival secretion than in sputum and blood. They stain readily and are not decolorized by Gram (being thus differentiated from the meningococcus). They are best cultivated on alkaline media-agar, blood-serum, or blood-agar—at incubator temperature, the colonies appearing as small, transparent, isolated points. The individuals show no capsules in culture, tend to form chains (showing their close relationship to the streptococcus family), and soon lose their virulence.

There is a great variation in pathogenicity between the different types, some being less resistant to drying and exposure than cholera (Germano[12]), while others retain their virulence in a dried state, particularly in secretion, for months. It is especially for this organism that the air infection must be considered, particularly in schools and dormitories (it is the almost constant find among the students in the University of Pennsylvania who develop conjunctivitis), as the organism is so constantly found in the nose and throat, and pneumococcus conjunctivitis is usually associated with rhinitis.

The condition may also arise in an autoinfection, as the diplococcus is a constant parasite in man, either (as in pneumonia,) by increasing the virulence of the organism, or by lowering of the general resistance of the individual, or by local injury to the conjunctival epithelium.

4. *The Gonococcus* (*Neisser*).—This is the cause of gonorrheal conjunctivitis of the adult, and of about 70 per cent. of the cases of ophthalmia neonatorum, the latter being caused also by the Koch-Weeks bacillus, pneumococcus, colon bacillus, influenza bacillus and virulent streptococci and staphylococci, though usually in a less severe form. The organism is biscuit-shaped, occurs usually in pairs between the pus cells, or more often grouped in larger numbers around the nuclei within the cells. It stains readily with anilin dyes, is decolorized by Gram (which differentiates it from the pneumococcus), and is cultivated with some difficulty. The best media are human blood-serum, serum-agar, or a mixture of human blood-serum and bouillon, at temperatures of from 32 to 34 C. The colonies are small, irregular, transparent discs, and the organism rapidly shows involution forms, and usually dies by the ninth day unless reinoculated. It is differentiated from the meningococcus and the pseudogonococcus, described first by Krukenberg[36] by the fact that the latter grow readily on ordinary media. The comparative rarity of these organisms in conjunctivitis makes a confusion with them in the study of a smear probably infrequent, but in case of doubt a culture should be made.

The gonococcus is very slightly resistant to drying or dilution with water, losing its activity in dried secretion after thirty-six hours. It can therefore be transmitted directly, or by soiled articles, or may be carried by flies, as it retains its vitality, according to Welander,[37] as long as the secretion remains moist. It is very contagious but as unilateral cases are not infrequent, and the number of infections of the conjunctiva in adults is small in proportion to the urethral infections, and as Kalt[38] has reported a case in which inoculation of a trachomatous child was unsuccessful, we must consider it less unconditionally contagious than was at one time thought. It may be that the organisms in these cases lose their virulence by dilution or drying in the transfer, or that they are mechanically removed by the tears, or perhaps a certain immunity is established in those who have urethritis.

The gonococcus penetrates rapidly between the cells of the conjunctival epithelium and produces an intense inflammatory reaction. Cases of metastatic infection of the joints have been reported, especially in new-born children.

5. *Diphtheria Bacillus* (*Klebs-Löffler*).—This organism may be present in the normal conjunctiva, as in the normal pharynx, and is the cause of membranous conjunctivitis, both of the milder croupous and the deeper necrotic form. In the latter it is often associated with staphylococci and streptococci. Pseudomembranes can also be formed by the Koch-Weeks bacillus, by pneumococci, gonococci, staphylococci, streptococci, and more rarely by the meningococcus, Friedländer's pneumobacillus and colon bacillus. These are usually mild forms, but severe necrotic cases have also been reported, in the absence of the Klebs-Löffler bacillus.

It is only moderately contagious to the conjunctiva, requiring certain conditions, especially injury or previous conjunctivitis, and the intensity of the reaction is dependent both on the virulence of the variety and on the resistance of the patient's tissues. It is often found in association with impetigo of the face, and it is quite possible for severe pharyngeal diphtheria to develop from a comparatively mild case of diphtheritic conjunctivitis.

The bacillus is a long rod, straight or curved, one or both ends being clubbed, and staining more deeply than the central segments. No spores are formed. It stains with anilin dyes, is positive to Gram, and grows well on ordinary agar and bouillon, but best on Löffler's blood-serum and serum-agar, in the form of flat, grayish colonies. Involution forms are common.

It must be distinguished from the xerosis bacillus, which is morphologically very similar to it, and as the different types vary greatly in cultures, many authorities consider its virulence to animals the only sure method of differentiation. In the majority of cases, however, Neisser's stain (acetic acid methylene blue for from one to three seconds, followed by Bismarck brown from three to five seconds), applied to the organisms grown on

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[35] Gasparini: Ann. d'Ottalm., vol. xxii, No. 6, 1893.

[36] Krukenberg: Klin. Monats. f. Augenhk., vol. xxxvii, p. 271, 1899; also vol. xxxix, p. 604, 1901.

[37] Welander: Wien. klin. Runds., No. 52, 1896.

[38] Kalt: Soc. de Biol. Séance, Dec. 7, 1895: Ref. in Ann. d'Oculist., vol. cxv., p. 161.

Löffler's blood-serum at 35 C., after from ten to twenty-two hours, shows blue polar staining in the diphtheria bacillus, in contrast to the general brown stain on the rest of the organism. The xerosis bacillus does not show this characteristic staining, or else much later. In alkalin bouillon the diphtheria bacillus produces an acid reaction, the xerosis bacillus never.

According to Arnold Knapp,[39] the diphtheria bacillus causes a media containing dextrin to turn red and to coagulate, while saccharose is unchanged; whereas, the xerosis bacillus produces fermentation with acid production in saccharose, while dextrin remains unaltered.

Identical with the xerosis bacillus is probably also Gelpcke's[40] *Bacillus septatus*, which he described as the cause of "Schwellungskatarrh." The diphtheria bacillus is one of the most resistant to drying (up to six months), and can be carried by the dust, provided the air current be sufficiently strong (Germano[12]). It may be readily transmitted by drop infection.

6. *Staphylococci.*—These are found frequently on the normal conjunctiva; they are present alone in virulent form in some of the non-gonorrheal forms of conjunctivitis neonatorum, and in pseudomembranous conjunctivitis, either alone or in association with streptococci and diphtheria bacilli.

According to Gonin,[41] they may be considered as the cause of these conditions if present in large numbers and in a virulent form. Ordinarily they are not pathogenic for the conjunctiva, however, and do not produce epidemics. All attempts at inoculation in the human conjunctiva so far have failed. They probably have no causal relationship with phlyctenular conjunctivitis.

The only variety which can be considered pathogenic is the *S. pyogenes aureus*, which is a spherical coccus, found in clusters in the secretion, which stains deeply by ordinary dyes, and is positive to Gram. It grows at room temperature and in the incubator, on all ordinary media, producing abundant yellowish colonies, and liquefies gelatin. It produces an acid reaction in the various media and coagulates milk. It has great vitality, withstanding drying for months, and may be readily carried by dust, thus infecting the air. Römer[42] succeeded in inoculating rabbit's conjunctiva with it, after irritating the membrane with dust or sand. Poulard[43] has recently described 8 cases of acute staphylococcus conjunctivitis following hordeolum, in which the pre-auricular glands were swollen and tender.

7. *Streptococci.*—As already stated, streptococcus is the cause of pseudomembranous conjunctivitis, either alone or with the diphtheria bacillus, but is relatively most often described in lacrimal conjunctivitis, in association with dacryocystitis (Parinaud's conjunctivitis). In this there is frequently iritis, without involvement of the cornea, swelling and tenderness of the pre-auricular glands, and some fever.

It has been found rarely on the normal conjunctiva; epidemics of streptococcus conjunctivitis have never been reported, although observations of Vossius[44] would indicate that contact infection is possible. In any case it is only very slightly contagious, except in the presence of injury to the conjunctiva.

The organism is slightly smaller than the staphylococcus, and is found in chains of varying length. It stains with the basic anilin dyes, and is positive to Gram. It grows on ordinary culture media, but less vigorously than staphylococcus and forms small transparent colonies, which remain colorless, and do not tend to coalesce. Gelatin is not liquefied. Like staphylococcus, it is very resistant to drying and can readily infect the air.

Bacterium coli commune, Bacillus pyocyaneus, and Friedländer's *Bacillus pneumoniæ* have been occasionally reported on conjunctivitis, but are not of sufficient importance to require detailed mention in the present résumé. The influenza bacillus and Müller's trachoma bacillus have been referred to in connection with the Koch-Weeks bacillus. *Meningococcus intracellularis* has been reported several times, and its differentiation from the gonococcus and pneumococcus has been given above, but our knowledge of the organism is still too uncertain to be positive about its pathogenicity. Raehlmann[45] has reported ultramicroscopic organisms in connection with his studies of trachoma, but these results, with his discoveries of similar ultramicroscopic bacteria in sympathetic ophthalmia,[46] require confirmation. We must still consider the organism of trachoma as undiscovered.[47]

THE PATHOGENIC BACTERIA OF THE EYEBALL.*

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This article is not intended to be exhaustive, but is designed to call attention to what has been done in this field as it affects the eyeball.

MICRO-ORGANISMS AFFECTING THE CORNEA.

The micro-organisms that affect the cornea are:

Bacterium coli commune.
Bacillus Koch-Weeks.
Bacillus Kruger.
Bacillus Klebs-Loeffler.
Bacillus of Petit.
Bacillus of leprosy.
Bacillus Morax-Axenfeld.
Bacillus perfringens.
Bacillus pyocyaneus.
Bacillus ulceris cornea (Zur Nedden).
Bacillus tuberculosis.
Gonococcus.
Pneumococcus.
Staphylococcus.
Streptococcus pyogenes.
Penicillium glaucum.
Aspergillus fumigatus.
Aspergillus flavescens.
Aspergillus glaucus.
Aspergillus nigricans.
Saccharomyces.

Bacillus Coli Communis.—De Bernardinis[1] reports a case of ulcer of the cornea with hypopyon due to this micro-organism. The patient, a male, aged 35, was struck in the eye with a whip three days before he appeared at the clinic. There was a large ulcer of the cornea with hypopyon, which went on to perforation. Exenteration of the globe was performed by Professor da Vincentiis on the sixth day after the accident. A careful bacteriologic study was made and the colon bacillus was found to be the pathogenic agent.

Randolph[2] reports a case of panophthalmitis due to the colon bacillus. The patient, a male, aged 6, was struck in the eye with a piece of wire. He was seen twenty-four hours after the injury. There was a perforating wound extending across the lower part of the cornea, accompanied by intense pericorneal injection.

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[39] Knapp: Trans. Amer. Ophth. Soc., vol. x, No. 2, p. 283.

[40] Gelpcke: "Bacillus septatus," Karlsruhe, 1898.

[41] Gonin: Revue méd. de la Suisse Romande, February and March, 1899.

[42] Römer: Zeits. f. Hyg., vol. xxxii, No. 2.

[43] Poulard: Arch. d'Ophtal. October, 1905.

[44] Vossius: Deuts. Praxis, vol. iii, No. 22, 1901.

[45] Raehlmann: Beitr. z. Augenhk., vol. lxii, No. 1, 1905.

[46] Raehlmann: Deuts. med. Wochft., No. 13, 1904.

[47] The complete bibliography will be found in Axenfeld's articles in Lubarsch and Ostertag's "Ergebn. d. path. Anat.," 1894-1900; in Kolle and Wassermann's "Handbuch der Pathogenischen Mikroörganismen," Jena, 1903, article "Spezielle Bakteriologie des Auges," by Axenfeld, and in Saemisch's chapter "Die Krankheiten der Conjunction," in the Graefe-Saemisch Handbuch der Gesamten Augenheilkunde, Leipzig, 1904, vol. v, part 2, div. 1, chapter 4.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Ann. di ottal., vol. xxxiii, p. 5.

[2] Amer. Jour. Med. Sciences, 1893, p. 440.

The inflammatory condition advanced rapidly and on the fifth day the eye was enucleated. Bacteriologic examination disclosed the presence of the bacterium coli.

In the few cases reported in which panophthalmitis was produced by the colon bacillus the bacilli gained entrance through a wound and the progress of the affection was very rapid.

Koch-Weeks Bacillus.—Ulcer of the cornea due to this micro-organism is extremely rare, but does occur. It is most common in adults. Children are seldom affected. As a rule it accompanies a severe case of conjunctivitis due to this bacillus and is secondary to the conjunctivitis, but the conjunctivitis may be of a moderately severe type. The ulcer may continue to increase in size after the acute stage of the conjunctivitis has subsided. Morax[3] was the first to describe ulcer of the cornea due to this cause. The ulcer develops in from five to seven days after the onset of the acute conjunctivitis. At first there is a small area of infiltration two or three millimeters in diameter, usually near the limbus. The epithelium and superficial layers become necrotic and a superficial ulcer, nearly circular, with sloping edges and a grayish base, develops. The surrounding corneal tissue is slightly infiltrated with small cells. Iritis and hypopyon as complications are very rare. The diagnosis can be made with certainty only by microscopic examination. Scrapings from the ulcer will show the small bacillus when they are properly stained.

Prognosis: Under proper treatment recovery almost invariably results without great injury to the cornea.

Unnamed Bacillus Described by Kruger.—Although it is conceded that the undermined or "serpent" ulcer is produced in the greater number of cases by the pneumococcus, other micro-organisms are also found in some cases which apparently are the causative agents. Kruger[4] describes a straight bacillus with rounded ends, measuring from 0.75 to 1.3 microns in thickness and from 1.75 to 4.5 microns in length, which he obtained from the scrapings in "serpent" ulcer, which caused marked infiltration when injected into the corneal tissue of the rabbit. Serpent ulcer may be produced by the *Staphylococcus pyogenes aureus* and by the streptococcus.[5]

Klebs-Loeffler Bacillus.—The affection of the cornea brought about by this micro-organism is probably always secondary to diphtheritic conjunctivitis, although the question of primary ulcer of the cornea due to the Klebs-Loeffler bacillus has been raised by some observers. It has been shown by experiments[6] that the toxin of the Klebs-Loeffler bacillus is the potent factor in reducing the vitality of the cornea; that the first evidence of a necrotic process is an opalescence or blanching of the cornea, which is followed by a roughness of the surface at some point or over the entire cornea and then a loss of substance. A slight traumatism favors rapid development of the ulcer. It appears that the streptococcus soon finds entrance and is active in the production of the extensive loss of substance. In a case referred to by Petit[7] the Klebs-Loeffler bacillus was recovered from the conjunctival secretions and the streptococcus from the floor of the ulcer. If mixed infection is common we must conclude that the diphtheria antitoxin has a favorable effect on processes in which the streptococcus is present with the Klebs-Loeffler bacillus, as it is found that the corneal lesion, as well as the conjunctival process, is favorably influenced by hypodermic injections of antitoxin. However, if the streptococci predominate the influence of the antitoxin is almost nullified[8] and the lesion of the cornea advances. Not only does the streptococcus appear to thrive in the presence of the Klebs-Loeffler bacillus, but the staphylococcus is also found in company with that micro-organism in diphtheria of the conjunctiva.

Petit[7] has observed and cultivated a bacillus which he terms the *Diplobacille liquefiant*, which bears some resemblance to the diplobacillus of Morax and Axenfeld. It is smaller, however, and when cultivated in coagulated blood serum causes a much greater liquefaction than is produced by the Morax-Axenfeld diplobacillus. The corneal lesion may be superficial; it may also be deep, with undermined edges. Iritis and hypopyon may develop. Petit reports three cases. A characteristic of the ulcer which he emphasizes is the absence of pain and photophobia so long as the ulcer remains superficial. With the development of hypopyon and iritis pain becomes a prominent symptom.

Leprosy Bacillus.—The cornea is frequently invaded by the leprosy bacillus in patients suffering from that disease, the invasion resulting in a sclerosing process in some cases, destruction of the corneal tissue occurring in others. The cornea is always secondarily attacked. There are a number of forms of invasion: (a) Superficial punctate keratitis, characterized by the appearance of small grayish nodules at the margin of the cornea, just beneath the epithelium, accompanied by some infiltration of the adjacent cornea. The nodules spread toward the center. They contain aggregations of lepra bacilli, which are also found in the lymph spaces of the corneal tissue.[9] (b) Deep parenchymatous keratitis, "which is always secondary to anterior uveitis." The infiltration does not tend to clear up and the cornea in the affected part becomes thinner (sclerosed). (c) Leprous nodules (lepromata) develop from the limbus. They do not involve the cornea very deeply and may be confined to the limbus or may cover the entire cornea. They are slightly vascular and may ulcerate at their apices, but this does not often happen. Numerous bacilli are found in the tissues of these nodules and are present in the corneal tissue immediately adjoining. A peculiarity of the invasion by lepra bacilli is the almost entire absence of pain.

Bacillus of Morax-Axenfeld (Diplobacillus).—Ulcer of the cornea from the diplobacilli has been observed by many ophthalmologists. The papers by Paul,[10] Erdmann[11] and Stoewar[12] are among the latest. In northern Germany ulcer of the cornea from this cause is relatively common. Of 342 cases of diplobacillus conjunctivitis observed in the University eye clinic of Rostock thirty were complicated by corneal ulcer of greater or less severity. The percentage of corneal ulcer caused by the diplobacillus as reported by Paul is 30 per cent., Stoewar 34 per cent. It is probable that this percentage will not hold in other parts of the world.

The character of the ulcer caused by the diplobacillus varies greatly. It may be a shallow marginal ulcer, central or nearly central and shallow, or deep and exhibiting a tendency to spread, and may be accompanied by hypopyon and iritis, resembling the so-called serpent ulcer. Of the twenty-six cases reported by Paul, nine presented the characteristics of serpent ulcer. All the cases were associated with diplobacillus conjunctivitis.[13] In only one case was there an associated dacryocystitis. The bacilli were found most plentifully in the tissue at the bottom or near the bottom of the ulcer, in which location they were very numerous.

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[3] "Recherches bacteri ologiques sur l'etiologie des conjunctivities aigue," Thèse de Paris, 1894.

[4] Zeits. f. Augen., vol. ix, p. 192.

[5] Uhthoff and Axenfeld: Graefe's Archiv., vol. xlii, p. 1.

[6] Morax and Elmassien: Ann. de l'Inst. Pasteur, 1892, p. 210.

[7] "Recherches cliniques et bacteriologiques," Paris, 1900, p. 1890.

[8] Gonin: Revue med. de la Suisse Romande, Feb. and March.

[9] Borthen und Lie: "Die Lepra des Auges," Leipsic, 1899.

[10] Trans. Ophth. Sekt. d. 79, Deuts. Naturforscher zu Breslau, 1904.

[11] Erdmann: Klin. Monats., May, 1905.

[12] Stoewar: Klin. Monats., Aug., 1905, p. 142.

Bacillus Perfringens.—J. Chaillons[14] reports cases. In each case the eye was slightly wounded by a particle of metal. The progress of the infection was rapid; panophthalmitis developed in forty-eight hours and both eyes were enucleated. The bacillus was found in the pus about the wound, in the anterior chamber and in the vitreous. The uveal tract was the principal seat of the exudation, but the retina was invaded and foci of exudation, which were in reality partially isolated colonies, appeared in the vitreous chamber. Pure cultures were obtained. The bacillus has not been observed in the eye heretofore, but it has been found in otitis, appendicitis and in pulmonary gangrene.

Bacillus Pyocyaneus.—Hunke[15] cultivated a bacillus from the margins of a "ring abscess" which proved to be the *Bacillus pyocyaneus.* McNab[16] reports a case of infection of the cornea by this bacillus.

Patient.—Female, aged 40.

History.—On Aug. 8, 1903, the left eye became irritated and six days later edema of the lids; edema and injection of palpebral and ocular conjunctiva occurred. The conjunctiva was covered by a greenish-colored pus. Almost the entire cornea was the site of an ulcer with deep infiltrated borders; the floor of the ulcer was yellowish-white and covered with pus and débris of corneal tissue. The anterior chamber was almost full of fibrinous, purulent secretion.

Bacteriologic Examination.—Cultivation from the secretion covering the ulcer gave the *Bacillus xerosis* and the *Bacillus pyocyaneus.*

Operation.—Saemisch operation was performed August 9. The secretion from the anterior chamber, removed under antiseptic precautions, gave cultures of the *Bacillus pyocyaneus.*

Postoperative History.—The bacillus could be cultivated from the secretion from the ulcer until the first of September in spite of treatment. Injections of bouillon cultures into the abdominal wall of a guinea-pig developed abscess. Abscess was found in the spleen on autopsy.

McNab gives a short review of two cases reported by Sattler and one case reported by Biotti. In all, the eyes were lost. A case of keratitis reported by Herbert[17] is also referred to. McNab states that the virulent *Bacillus pyocyaneus* may cause ulcer of the cornea without previous traumatism. The secretion is greenish-yellow, the hypopyon thick and fibrinous. McNab[18] also refers to a case reported by Patterson (Edinburgh) of hypopyon keratitis, the ulcer having the character of the serpent ulcer, from which the *Bacillus pyocyaneus* was cultivated.

Bacillus Ulceris Corneæ.—In 1902 zur Nedden[19] published his investigations concerning the superficial marginal ulcer so frequently seen in elderly individuals. According to his observations there occurs quite regularly in this form of ulcer a straight or slightly curved bacillus which measures 0.6 micron in thickness, 0.9 micron in length and has rounded ends. Some of the bacilli are smaller and at times quite long threads are found. Vacuoles are observed in staining. The bacilli are easily colored by the anilin colors; they do not stain by Gram. The bacillus is cultivated on agar plates, the surfaces of which are coated with human blood.

The ulcer presents two forms which are not absolutely sharply differentiated. The first group presents itself as a shallow ulcer, from one to two millimeters from the limbus, measuring 2x1 millimeters, with sharp borders, with slight infiltration of the adjacent corneal tissue. The infiltration occupies the superficial layers of the cornea, the epithelium over the infiltration being slightly irregular and cloudy. The long axis of the ulcer is parallel to the limbus. The ulcer becomes quiescent and heals without doing further damage. In some cases the ulcer extends along the border of the cornea, and it may even advance toward the center of the cornea, but this course is not common.

The second group comprises those cases in which the ulcers are multiple. The small ulcers develop from one to three millimeters from the limbus. They are of various sizes and may encircle the cornea. Some of the ulcers may remain isolated, while others enlarge and coalesce with neighboring ulcers, forming a long, irregular marginal ulcer. They seldom encroach on the center of the cornea. The infiltration of the adjacent parts of the cornea accompanies the ulceration, as in the first group. The ulcer comes to a standstill and healing takes place. The process is almost always superficial. Inoculation experiments were not very satisfactory. Thirty-three cases were tabulated.

In a second article[20] zur Nedden recounts an observation of four years and gives forty-three illustrations of cases, in some of which hypopyon accompanied the ulceration of the cornea. He has confirmed his earlier observations and has named the micro-organism *Bacillus ulceris corneæ.* The author observed some cases which were complicated with diplobacilli, a number accompanied by phlyctenulæ and a few with other conditions, but some twenty cases were not accompanied by conjunctivitis or any other disease due to a pathogenic micro-organism. These cases he considers primary corneal ulcer due to the *Bacillus ulceris corneæ.* The affection is usually monolateral, but at times both eyes are involved. The prognosis is favorable.

Tubercle Bacillus.—Tuberculous involvement of the cornea may develop from the sclerocorneal margin as an extension from the sclerotic, or it may develop from the posterior surface of the cornea. In the first instance it is characterized by foci of infiltration, which may produce very slight elevations or nodes, or not affect the surface of the cornea. The small areas of dense infiltration are associated with infiltration of adjacent parts of the cornea, not very dense in character. In cases in which the attack is from the surface, the infiltration is in the anterior layers of the cornea. The epithelium over the infiltrated areas is smooth, except over the dense foci or nodes, where it is often rough. Vascularization of the cornea and pericorneal injection occur, varying in degree in the different parts according to the activity of the process. The small, rough, nodular areas on the cornea, the glazed appearance of the surrounding epithelial surface, and the nodular condition of the sclerotic near the cornea in some of its parts form a picture that will enable the observer to differentiate this form of interstitial keratitis from those due to syphilis. The cornea is a poor culture medium for tubercle bacilli; it is very difficult to find them in the tissue. Their presence in the nodes may be determined by inoculating the anterior chamber of the eye of a rabbit.

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[13] Traumatism as the starting-point of the ulcer was established in 69 per cent. of the cases observed by Paul. It is rare to find diplobacillus conjunctivitis in children: because of this it is not surprising to find that 91 per cent. of the cases of diplobacillus corneal ulcer occurred in individuals above the age of 18 years.

[14] Ann. d'ocul., Aug., 1905.

[15] Zeits. f. Augen., vol. x, No. 5, p. 373.

[16] Klin. Monats. f. Augen., Dec. 23, 1903, p. 65.

[17] Ophth. Rev., 1901, p. 345.

[18] Klin. Monats. f. Augen., Dec., 1904, p. 543.

[19] Graefe's Arch., vol. liv, No. 1, p. 1.

[20] Graefe's Arch., vol. lix, No. 2, p. 360.

A form of invasion which appears primarily as a deposit on the posterior surface of the cornea, as in uveitis, is described by K. Stargardt.[21] The corneal tissue becomes infiltrated, the infiltration extending from the deposits. The cornea does not become so densely infiltrated as in the ordinary syphilitic parenchymatous keratitis and eventually clears up entirely. Stargardt gives briefly the histories of eight cases of uveitis which he considers to be tuberculous in origin. They were accompanied by tubercular invasion of the apices of the lungs. All presented changes on the entire posterior surface of the cornea, which occurred as numerous, very small, circular excrescences (fat drops). Some of the cases were accompanied by small nodules in the iris angle, particularly below, and with what appeared to be spots of exudation in the choroid from ¼ to 1 disc diameter in size, the cases closely resembling cyclitis serosa. The peculiarity of these cases is that all the patients recovered under mercurial inunction, which, in my experience, has but little effect on tuberculous affections, although Stargardt states that good results have been observed in tuberculosis of the peritoneum from this form of treatment.

Gonococcus. — Affections of the cornea due to the gonococcus are in the nature of ulcers and familiar to all ophthalmologists. It is not necessary here to describe the ulcer. The onset, which may occur at any time during the progress of the ophthalmia after the first thirty-six hours, is marked by a grayish area with roughening and loss of epithelium. The ulcer is probably always secondary to the conjunctivitis. In the greater number of cases the gonococcus is soon joined by the staphylococcus aureus and the ulcer progresses under the influence of mixed infection.

Pneumococcus.—Sattler,[22] experimenting with the pneumococcus, found that when introduced into corneal wounds it produced corneal ulcer and hypopyon. Casparini[23] some years later reported his valuable experiments and observations of the effect of the pneumococcus on the eye. When introduced into the corneal tissue in pure culture the pneumococcus almost invariably produced corneal ulcer and hypopyon. Introduced into the anterior chamber and into the vitreous humor, panophthalmitis invariably followed. Perles' experiments[24] confirmed the results of Casparini.

The corneal lesion most commonly produced by the pneumococcus is the so-called serpent ulcer. This has been the observation of many investigators—Basso,[25] Uhthoff.[5] Basso examined bacteriologically sixty cases of hypopyon keratitis, finding the pneumococcus in nearly all.

Annular abscess of the cornea may develop from the toxins of the pneumococci when the infection is of the uveal tract, as observed by Morax,[26] who observed double metastatic iridochoroiditis with the pneumococcus, the primary focus being the lung. One eye developed abscess of the cornea and the eye was enucleated. No pneumococci were found in the corneal tissue, but many were present in the aqueous. Morax and Fuchs are both of the opinion that ring abscess of the cornea may develop as a result of the presence of the pneumococcus in the anterior chamber.

The toxins developed by the pneumococcus are held to be responsible for the destruction of tissue (Colombo and Ricchi[27]) and the production of hypopyon.

According to Römer[28] the aggressions of the pneumococci play an important rôle in the development of ulcer of the cornea. These substances enable the pneumococci to develop in tissue and the malignancy of the micro-organism is in direct proportion to the ability of the particular stock to develop these substances in the tissues.

Staphylococcus. — Bacterial affections of the cornea occur most frequently with the *Staphylococcus pyogenes aureus*. The condition of the tissue must be favorable, otherwise the specific pathologic disturbance will not occur. This is proved by the fact that the *Staphylococcus pyogenes aureus* is a frequent inhabitant of the conjunctival sac without producing any disturbance whatever. This is also true of the pneumococcus, the streptococcus and the *Bacillus subtilis*. Given a condition of the cornea favorable to the development of the staphylococcus, it only remains to afford a means of entrance. Maceration of the epithelial cells, as occurs in many cases of conjunctivitis, or a slight traumatism removing or disturbing the epithelium surfaces. The most common manifestation of a staphylococcus infection is the phlyctenule. So far as my experience goes the ulcer from staphylococcus infection is usually circular, or if it originates as a result of traumatism it follows the line of the trauma. After operative traumatism the infection from the staphylococcus is more amenable to treatment than that from the other two most frequent infections, namely, the streptococcus and the pneumococcus. Hypopyon keratitis is not a very frequent accompaniment of staphylococcic infection of the cornea; however, extension of the infection to the interior of the eye and the development of a panophthalmitis may occur.

Of seven cases of ring abscess examined, Fuchs[29] found staphylococci in two.

KERATOMYCOSIS.

The different forms of fungus that are pathognomonic for the cornea are *Penicillium glaucum*, *Aspergillus fumigatus*, *Aspergillus flavescens*, *Aspergillus glaucus* and *Aspergillus nigricans*.

Penicillium Glaucum.—The appearance of this micro-organism is described by Wicherkiewicz.[30] The eye had been struck by a piece of dirt about three weeks previously. In the center of the cornea was a yellowish-white mass, nearly round, about half the diameter of the cornea and having a slightly elevated, uneven surface. The mass was firm and tough. It was removed with a Graefe knife. On examination it proved to contain *Penicillium glaucum*.

Aspergillus Fumigatus.—This affects the cornea more frequently than any other fungus. The characteristic lesion is a nearly circular, well-defined, yellowish-white, opaque area, usually measuring from 2 to 4 mm. in diameter, slightly raised, having a matt or greasy surface, with a leash of blood vessels running in from the limbus. In some of the cases the adjacent cornea is irregularly infiltrated with small cells. Hypopyon may accompany the condition, but is sometimes absent or does not appear until the disease has lasted some time.

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[21] Graefe's Arch., vol. lx, No. 3, p. 469.
[22] Trans. Ophth. Soc., Heidelberg, 1885, p. 8.
[23] Ann. d. Ottal., vol. xxii, p. 131, 1893.
[24] Virchow's Arch., vol. cxl, p. 209.
[25] Internat. Med. Congress, Rome, 1894, vi.
[26] Ann. d'ocul., vol. cxxxii, p. 409.
[27] Ann. di Ottal., No. 12, 1904.
[28] Ophth. Soc., Heidelberg, 1905.
[29] Graefe's Arch., vol. lvi, No. 1, p. 1.
[30] Ophthalmic Year Book, 1904, p. 80.

Aspergillus Nigricans.—This affects the cornea much as does the *Aspergillus fumigatus*, the principal difference being that the infected area is black (Bull).[31]

Saccharomyces.—The yeast plant has been mentioned by two authors, Stoewar and Lundsgaard,[32] as having been found in ulcer of the cornea. The ulcers were superficial. In Lundsgaard's case the ulcer resembled dendritic keratitis; hypopyon formed but eventually subsided. The observations have not been sufficiently numerous to permit of any definite conclusion regarding the pathogenic action of this micro-organism in the production of ulcer of the cornea.

RESISTANCE OF THE TISSUES.

Sclerotic.—The sclerotic possesses great resistance to invasion by micro-organisms. Ulcer of the sclerotic rarely occurs. In cases of panophthalmitis due to metastasis, or when there is no other adequate opening in the fibrous coat, perforation by infiltration and destruction of tissue takes place through the sclerotic, either along the openings for the ciliary vessels or at the equator along the channels for the passage of the venæ vorticosæ.

Tubercle Bacillus: The tubercle bacillus invades the sclera secondarily to tuberculosis of the choroid and ciliary body. Entering along the canals for the passage of nerve trunks or blood vessels, the tuberculous tissue penetrates between the connective-tissue bundles of the sclerotic, produces ectasia of that membrane and finds its way to the exterior of the globe. On section of such a tuberculous mass the fibers of the sclerotic are found separated, but apparently only partly destroyed.

When tubercle bacilli invade the ocular conjunctiva and subconjunctival tissue they may also invade the episcleral tissue. The process is always superficial and does not as a rule extend to the interior of the eye.

Lepra Bacillus: The bacillus of leprosy may invade the sclera as an extension of leprosy from the ocular conjunctiva at the limbus. Nodules occur of the character described as occurring on the cornea. The denseness of the sclera impedes the progress of the bacilli, but they develop along the channels for the passage of the blood vessels and along the interlamellar lymph spaces. Rows of the bacilli are found with little infiltration of leucocytes. Slow destruction of the tissue of the sclerotic takes place.

GENERAL INFECTION OF GLOBE.

General bacterial infection of the globe may take place directly, as by traumatism or by perforating ulcer, or indirectly, as by metastasis, producing a general inflammation of all the structures of the eye except the lens.

Other Micro-organisms: The principal micro-organisms that have produced such a general inflammation by direct infection are: *Staphylococcus pyogenes aureus, Streptococcus pyogenes, pneumococcus, Bacillus subtilis, Aspergillus fumigatus, Bacillus coli communis, Bacillus perfringens.*

Panophthalmitis due to the *Streptococcus pyogenes*, the staphylococcus and the pneumococcus, has been studied by many observers. It is well known that destruction of the globe by these germs may occur through extension from corneal ulcer, introduction through penetrating wounds and by invasion of the eye after operations which pierce the fibrous coat either through cornea or sclera. The destructive process develops much the same in all, except that the severity of the inflammation is apt to be much greater when the streptococcus is the organism concerned than when the other two are responsible.

The *Bacillus subtilis* is rarely the cause of panophthalmitis. Silverschmidt[33] reports two cases:

Case 1.—The patient, a man aged 20, was struck in the eye by a fragment of stone May 31, 1900, at 4 p. m. On the following day he presented himself at the clinic. At this time the panophthalmitis was so far advanced that all hope of saving the eye was abandoned.

Case 2.—The patient, a woman, aged 30, was injured by a piece of iron from a mattock, Sept. 25, 1905. She presented herself at the clinic of Professor Haab, who removed the piece of iron at noon September 26. Panophthalmitis had commenced. A rod of iodoform was introduced into the globe, but the panophthalmitis advanced, and on September 27 exenteration was performed. An extensive bacteriologic examination was made in both cases, with the result of proving the inflammation to be due to the *Bacillus subtilis*.

The microscopic examination of a series of eyes that had been removed for panophthalmitis in Professor Haab's clinic disclosed the presence of a similar bacillus in six. A case reported by Kayser[34] is referred to.

The *Bacterium coli commune* and the *Bacillus perfringens* are reported to have produced panophthalmitis by extension from corneal ulcer. These micro-organisms are seldom met.

A few cases of infection of the vitreous humor and deep tissues of the eyeball with aspergillus fumigatus have been reported. Römer[35] reports the case of a boy who cut his eye with a breadknife, causing a penetrating wound in cornea and sclera about 6 mm. long. The patient was seen at the clinic on the same day and the wound was properly dressed. There was very slight reaction. On the ninth day the wound was healed, but there was some ciliary injection in the vicinity of the wound. Some pain was experienced after this. On the thirteenth day there was hypopyon. On the fourteenth day the eye was enucleated. The globe was opened under antiseptic precautions. In the vitreous chamber near the anterior portion a number of yellowish, purulent foci were found. In smear preparations small, oval, highly refractive bodies were found, resembling spores. Cultures were made, showing a growth of the aspergillus fumigatus. The pathogenesis was established by inoculating the cornea and vitreous of a rabbit.

Leber,[36] Nobbe[37] and Kampberstein[38] report a case each. In all the cases the aspergillus was carried into the eye as the result of a penetrating wound.

METASTATIC INFECTION OF GLOBE.

The micro-organisms that affect various parts of the *globe* by metastasis are: Actinomycosis, pneumococcus, staphylococcus, streptococcus, tubercle bacillus, typhoid bacillus and *Micrococcus intracellularis meningitidis*.

Actinomycosis.—In an article by L. Muller[39] a case is reported purporting to be one of disseminated actinomycosis of the retina:

Patient.—A male, aged 22, entered the hospital with a possible diagnosis of miliary tuberculosis. In the fundus of the right eye a yellowish-white nodule one-fourth of the diameter of the papilla was observed lying near the papilla above and to the nasal side. It was surrounded by a faint pigment ring. Eleven days later the yellowish nodule had increased in size and four more similar nodules had appeared, their diameter being about that af a large papilla. Three smaller but similar nodules had appeared in the retina of the left eye. Eight days later the picture was not materially changed. A diagnosis of tubercular choroiditis was made. The patient died one month after entering the hospital.

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[31] Trans. Twelfth Inter. Med. Cong., Moscow, vol. vi, p. 13.

[32] Klin. Monats. f. Augen., January, 1900, p. 13.

[33] Ann. de l'Inst. Pasteur, April 25, 1903.

[34] Centrlb. f. Bakt., vol. xxxiii, p. 241, 1903.

[35] Klin. Monats. f. Augen., April, 1902, p. 331.

[36] Heidelberger Kongress, 1897.

[37] Graefe's Arch., 1898, vol. xlv, p. 700.

[38] Klin. Monats. f. Augen., February, 1903.

[39] Klin. Monats. f. Augen., March 28, 1903, p. 236.

Postmortem.—This disclosed disseminated actinomycosis. The posterior halves of the globes were obtained, hardened in formalin and examined microscopically. No definite actinomycosis plant was found, but the microscopic structure of the nodules was such that no doubt was left in the minds of the author that the nodules were the result of the metastasis of actinomyces to the retina.

There is no well-authenticated case in literature and in consequence it is only possible to say that the occurrence of metastatic actinomycosis is probable.

Frankel[40] saw around the macula lutea of both eyes five or six whitish, round spots, about one-third disc diameter, which resembled miliary tubercles of the choroid. These spots disappeared in about six weeks. The vision was impaired, the defect in the fields of vision being an irregular scotoma. The defect in vision lasted about a year. Frankel believed that the process was due to minute emboli of micro-organisms, probably the pneumococcus.

Pneumococcus (Micrococcus Lanceolatus).—Metastases of the pneumococcus may occur in cases of nonperforating injury to the eye which reduces the resisting power of the tissues to the influence of micro-organisms that may be circulating in the blood, even when no focus of infection is discoverable. It is well known that this micro-organism is found in the buccal cavity in 20 per cent. of normal individuals, and it is not improbable that a mild degree of pneumococcemia may exist. In a case which I[41] reported three years ago there was an indefinite history of a blow on the eye, without perforation, two days before the loss of vision and commencing inflammation were noticed. Three days later the eye presented the appearance of intense metastatic choroiditis. Evisceration was performed. Examination of the contents of the globe, which were purulent, disclosed a coccus, with capsule, in smear preparations and in cultivation, which proved to be the *Pneumococcus micrococcus lanceolatus.*

Metastatic infection of the globe from this micro-organism is most frequent in cases of pneumonia and in pneumococcic meningitis. On March 9, 1906, I saw a patient, a man, aged 58, who was recovering from double lobar pneumonia, from which he had been suffering for three weeks. Three days previously the left eye became painful, vision was lost, the pain increased, chemosis and swelling of the lids developed, with increased lachrymation. When seen there was a yellow reflex from the interior; anterior chamber and lens fairly clear; pupil a little larger than normal; iris dull and slightly swollen. The diagnosis of metastatic choroiditis, probably from the pneumococcus, was made.

Both eyes are sometimes affected.

Staphylococcus.—Liebrecht[42] reports a case of metastatic choroiditis caused by the staphylococcus:

Patient.—A young man, became ill six days before entering the hospital. His mother said that a furuncle on the forehead was the first manifestation. When seen there was swelling of the left side of the forehead and a small wound from which pus was squeezed. The pus contained staphylococci. There was severe staphylococcemia. The right pupil was dilated. The patient died shortly after entering the hospital.

Autopsy.—The posterior halves of both eyes were removed. Small hemorrhages were present in the retina of each eye. The choroid was studded with small, white circular nodules.

Microscopically, the retinæ were normal except for the hemorrhages. The choroid was normal except at and in the vicinity of the white nodules. These were miniature abscesses. In the middle of each small abscess a mass of staphylococci was found, lying close beneath the lamina elastica. The abscesses were irregularly distributed.

Streptococcus.—A case of streptococcus metastasis is also reported by Liebrecht:[42]

Patient.—A young man became ill six days before entering of the right breast, which was opened and found to contain streptococci. General pyemia developed. On the fourteenth day after the beginning of the illness, the eye became affected, the vision failed, and in twenty-four hours after the first symptoms there were iritis, much chemosis and some exophthalmos—in fact, the picture of beginning panophthalmitis. The symptoms were greater on the following day and the eye was enucleated. On section, pus was found in the vitreous chamber. Streptococci were found in the vitreous chamber, in the retinal tissue and subretinal tissue. The metastasis had undoubtedly taken place in the small vessels in the temporal half of the retina. The patient recovered. There was no streptococcemia.

Metastatic panophthalmitis may occur by the transfer of the staphylococcus or streptococcus through the blood current to the choroid and retina from any part of the body where a pathologic process due to either of these micro-organisms is taking place. I have observed it accompanying ulcer of the vagina, furuncle of the forehead, empyema and abscess of the leg. Acute endocarditis may cause isolated hemorrhages in choroid or retina or may cause a panophthalmitis, the starting point of which may be choroid or retina.

Tubercle Bacillus.—When tubercle bacilli infect the interior of the eye they almost invariably develop in the vascular tunic, namely, choroid, ciliary body and iris. The development is in three forms: First, as miliary tuberculosis, in which small, circular, pale-yellowish spots appear in the tissues; second, diffuse tuberculosis, that of tuberculous inflammation affecting the entire uveal tract to a greater or less extent and being accompanied by disturbing evidences of inflammation, and, third, conglomerate tubercle, which develops as an intraocular tumor, being often difficult to differentiate from sarcoma of the choroid and glioma retinæ.

Miliary tuberculosis of the choroid is the most common form. In general miliary tuberculosis it occurs, according to Bock,[43] in 82.7 per cent. of the cases; others put the percentage much lower. The tubercles vary in size from a pin-point to 2 mm.; they are seldom larger. A tuberculous patch 2 mm. in size is usually made up of a number of nodules. The tubercles may be very few in number or they may be very numerous. They occur most commonly in the vicinity of the disc, but may be scattered over the entire fundus; they are very slightly raised, usually without a pigmented ring, causing no symptoms of inflammation and interfering but little with vision, the condition presenting to some extent the appearance of the exudative stage of disseminated choroiditis. The tubercles spring either from the chorio-capillaris or from the layer of large vessels, the former site being the more common. Since it often happens that a blood vessel is found in the center of a miliary tubercle, it is thought that the infection is through the medium of the blood vessels, but the lymph spaces are also credited with being avenues of extension. The tubercles form quite rapidly, appearing within twenty-four hours; they are, of course, most common and numerous immediately before the death of the patient.

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[40] Arch. d. Ophth., vol. xlviii, p. 456-458.

[41] Ophth. Rec., February, 1903, p. 61.

[42] Klin. Monats. d. Augen., Sept. 3, 1903, p. 127.

[43] Virchow's Arch., vol. xci.

The tubercle may project forward into the retina or posteriorly into the lamina fusca. The tubercle bacilli, according to Parsons,[44] are present in greatest number in the caseous area. (I have found them to be most plentiful at the periphery of the caseous area.) They may be very numerous, but as a rule are not present in large numbers.

Diffuse tuberculosis of the choroid is next in frequency. It develops as a succession of indifferent miliary tubercles, which may extend into and involve the retina and sclera, and the condition may present the appearance of pseudoglioma, or even of plastic choroiditis.

The solitary or conglomerate tubercle is uncommon. Resolution may take place, leaving a cicatrix, but the usual course is progression and perforation.

It sometimes occurs that secondary tuberculous nodules develop in the papilla and retina. Such a case is reported by Stock.[45]

Tubercle of the choroid is secondary to general tuberculosis or tubercular foci in other parts of the body in almost all cases, but cases of solitary or conglomerate tubercle of the choroid have been observed (zur Nedden[46]) in which other foci could not be determined. In spite of this, we are not at present in position to state that tuberculosis of the choroid is ever a primary manifestation.

Typhoid Bacillus.—I am not aware that the typhoid bacillus has been recovered from the globe at any time, but a few cases of metastatic panophthalmitis during typhoid fever have been reported. Gilfillin[47] reports such a case in which the metastasis occurred on the twenty-sixth day of the attack of typhoid in an eye previously blind. Rupture of the globe and the escape of pus were followed by healing, resulting in a deformed globe.

Retinal hemorrhage accompanying typhoid has been observed not infrequently. What rôle, if any, the bacilli have in these disturbances is not known.

The question of the influence of toxins, especially the toxins of the typhoid bacillus, is considered by Gaspanini,[48] who is of the opinion that changes in the vessel walls and exudation and hemorrhage are in many cases due to the presence of the toxins in the blood, the bacilli being absent. In discussing this statement Bietti[49] states that the fact that the bacilli have not been found in these cases does not prove that they were not present at the beginning of the process, as they may have been present and have disappeared, since the examination of the tissue was not made until the process was two or three weeks old.

Metastatic processes may first affect the iris as Michel[50] has shown, a metastatic streptococcus infection having occurred in the circulus arteriosus iridis major, and the same may occur in the ciliary body, as in the case reported by Römer,[51] in which the beginning of the process was due to a pneumococcus embolus in the ciliary body.

Axenfeld was one of the first to point out the fact that in metastatic ophthalmia the retina is often the part first affected. His investigations led him to believe that this was the condition in about one-third of the cases. It may happen, as shown by Axenfeld and Goh[52] that in double-sided metastasis the choroid may be primarily affected in one eye, the retina in the other.

Winterstein[53] found the *Micrococcus intracellularis* in the uveal tract in a case of metastatic ophthalmia.

IRIS.

The principal micro-organisms that affect the iris are: Bacillus of leprosy, bacillus of tuberculosis, gonococcus, pneumococcus, staphylococcus and streptococcus.

Infection of the iris by the staphylococcus, streptococcus or pneumococcus may take place as a result of extension from corneal ulcer, introduction through perforating wounds, by extension from the deeper parts of the eye, as in panophthalmitis, beginning back of the iris, and by metastasis directly affecting the iris. A purulent process is the result of infection by these micro-organisms.

Leprosy Bacillus.—When the leprous bacilli infect the iris it is by extension from the ciliary body. The iris is invaded by the bacilli and by leucocytes and becomes enormously thickened. Isolated nodules are said not to occur. The condition is associated with manifestations of leprosy in other parts of the head.

Gonococcus.—Iritis as an accompaniment and probably a result of gonorrhea, has been observed by many ophthalmologists. The recurrent nature of this form of iritis is well known. Fresh attacks of urethral gonorrhea and gonorrheal rheumatism are followed by recurrence of the iritis. Although the probable causative relation is recognized, no cases, so far as I am aware, have been reported of the recovery of the gonococcus from the aqueous humor or from the iris. It is supposed, as set forth in the article by Cheatham,[54] that the attacks are excited by the ptomains or toxins generated by the gonococcus rather than by the presence of the micro-organism itself.

Tubercle Bacillus.—Tuberculosis of the iris occurs in three distinct forms:

1. Miliary tubercle, characterized by the appearance of a number of small yellowish-white nodules which may appear in any part of the iris, and cause slight thickening and an increase of vascularity of the iris in the part affected, accompanied by a very slight plastic exudation which aids in the development of posterior synechiæ. Vision is impaired and serious injury to the globe may follow, but a very benign course may be run, the tubercles disappearing spontaneously. Children and young adults may present this form of tuberculosis of the iris.

2. Conglomerate tubercle, characterized by the development of a single tubercular mass, usually springing from the major zone of the iris, and projecting into the anterior chamber. Small isolated tubercular masses may also be present. The mass, pale in color, is only slightly vascular at its base and produces but little inflammatory reaction in the iris. The tendency is to increase in size quite rapidly, to fill the anterior chamber, to become disseminated, to perforate and to cause destruction of the globe.

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[44] "Pathology of the Eye," p. 464.

[45] Münch. med. Wochft., June, 1902.

[46] Klin. Monats. f. Augen., Oct. 13, 1903, p. 354.

[47] Medical News, July, 1903, p. 165.

[48] Ann. di Ottal., vol. xxiv, 1895.

[49] Klin. Monats. f. Augen., vol. xli, p. 72.

[50] Zeits. f. Augen., vol. vii, 1902, p. 1.

[51] Klin. Monats. f. Augen., 1902, p. 320.

[52] Arch. f. Augen., vol. xliii, 1897.

[53] Gruvert. Ueber Ret. Optica und Metastatica, Heidelberger Kongress, 1902.

[54] Arch. of Ophth., vol. xxv, No. 4.

3. General diffuse tubercular infection of the iris is a rare manifestation. It is characterized by a general thickening of the iris tissue without definite tubercular masses, and is accompanied by a flocculent exudation which may almost fill the anterior chamber. The condition advances slowly; necrosis takes place after considerable time has elapsed from the onset of the affection.

The diagnosis of tubercular iritis may be made by eliminating syphilis and iritis nodosa by the tuberculin reaction, by the discovery of the tubercle bacillus in the affected tissue, and by the inoculation of the anterior chamber of the eye of the rabbit with bits of infected iris tissue, and, possibly, by exudation taken from the anterior chamber of the affected eye. Tubercular iritis is usually monolateral. The question of the occurrence of tuberculosis primarily in the iris has been discussed *pro* and *con* by many writers. The weight of evidence appears to be in favor of its being primary in some cases, at least.[55]

Other Micro-organisms.—The extension of inflammatory processes primarily affecting the cornea due to the *Bacterium coli commune,* Klebs-Loeffler, Morax-Axenfeld, *Bacillus perfringens, Bacillus pyogenes* and *Bacillus subtilis* may lead to bacterial invasion of the iris, but this forms only a part of the general invasion of the globe.

VITREOUS.

Primary infection of the vitreous with micro-organisms is extremely rare, if it ever occurs. The invasion of the vitreous with inflammatory products and with micro-organisms is secondary to inflammation extending from other tissues of the eye or to their introduction by penetrating wounds.

LENS.

I have demonstrated the presence of the staphylococcus in the tissues of the lens with small-cell infiltration following a penetrating wound of that body, but invasion with micro-organisms in any other way probably does not occur.

RETINA.

The infection of the retina with micro-organisms has been termed exogenous when it occurs from injury or by the extension to bacterial invasion from neighboring tissues or from the vitreous or uveal tract; and endogenous or metastatic when the infection takes place from the blood vessels or lymph channels or the perivascular lymph spaces.

Exogenous Infection.—The retina may be invaded by any of the micro-organisms that grow and produce pathogenic or pyogenic processes in the other tissues of the eyeball. Micro-organisms carried into the eye by penetrating foreign bodies seldom produce an inflammatory process that is confined to the retina.

Tubercle Bacillus.—The invasion of the retina by the tubercle bacillus is almost always secondary to tuberculosis of the optic nerve or of the uveal tract, and is, in the greater number of cases, exogenous, but in some cases reported the development was apparently due to endogenous infection.

Endogenous (Metastatic) Infection.—It is now well-known that metastatic panophthalmitis due to the streptococcus, staphylococcus, Liebrecht,[56] and possibly the pneumococcus may originate by the transfer of the micro-organism from some focus in the body to the retina by means of the blood-current. Infections of less severity undoubtedly occur in cases of bacteriemia. In the retinitis septica of Roth, which now includes a number of conditions, the metastatic transfer of micro-organisms from outside foci to the retina plays a part in some of the cases. Frankel[40] and Goh[57] have reported cases in which the pneumococcus was the micro-organism. In Goh's case there were white spots and hemorrhages in the retina and on microscopic examination the pneumococcus was found in the exudation, which formed the white spots.

Tubercle Bacillus.—The invasion of the retina with the tubercle bacillus from the optic nerve in cases of tubercle of the optic nerve may be by endogenous infection, the bacilli advancing along the lymph channels, but it is probable that the invasion is simply by way of the tissue of the retina in the manner of exogenous infection. Two cases of tuberculosis of the retina apparently primary and due to endogenous infection, have been reported; one by O'Sullivan and Story,[58] a second by Hancock.[59] In both the histologic appearance was one of tubercle, but no tubercle bacilli were demonstrated.

Actinomycosis.—As a metastatic infection of the retina, actinomycosis has been described by L. Muller.[30] Although the elements of the fungus were not found in the nodules that developed, the anatomic findings were such that the correctness of the diagnosis could scarcely be doubted.

Leprosy.—When the bacillus invades the ciliary body and choroid it may also pass into the retina. However, the retina is seldom involved in leprosy and when it is the disturbance is slight. The degree of the invasion is discussed by Borthen and Lie,[9] Frank and Delbanco.[60]

METASTATIC OPTIC NEURITIS.

In the opinion of Parsons,[61] metastatic optic neuritis occurs much more commonly than the recorded cases would lead one to expect. Parsons refers to four reported cases, two by V. Michel,[62] and two by Axenfeld.[63] Michel's first case occurred in a man with epididymitis and endocarditis. The optic papillæ were hyperemic and there were some small venous hemorrhages in the retina. Small foci of infiltration were found in the orbital portion of each optic nerve. No micro-organisms were demonstrated. The second case occurred in a man with pyemia, who had metastatic iridocyclitis. There were three miliary abscesses in the left optic nerve, one in the dura. These abscesses contained micrococci in their centers. Axenfeld's first case was one of pneumococcic metastasis occurring in a child of two months. The second case was that of a child of ten days in which the infection was with streptococci.

Parsons remarks that "it is possible that optic neuritis following infectious diseases is not due to embolism, but to toxins." This would apply to post-diphtheritic papillitis, of which I have seen a number of cases. Recovery is complete in these cases.

Tubercle Bacillus.—The optic nerve may be invaded by tubercle bacilli as an extension from the brain, Sattler,[64] as an extension from the choroid and from the orbit, Spaulding,[65] and by the bacilli in miliary tubercles, undoubtedly metastatic, in connection with miliary tuberculosis.

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[55] Denig: A. f. D., vol. xxxi, 1895.

[56] Klin. Monats. f. Augen.

[57] Arch. f. Ophth., vol. xliii, 1, 1897.

[58] Trans. R. A. of Med. of Ireland, vol. xvii, 1899.

[59] Royal Lond. Ophth. Hosp. Reports, vol. xvi, p. 2, 1905.

[60] Arch. f. Ophth., vol. i, p. 2, 1900.

[61] "Pathology of the Eye," vol. ii, p. 682.

[62] Zeitschr. f. Augen., vol. vii, 1902.

[63] Arch. f. Ophth., vol. xl, p. 3, 1894.

[64] Arch. f. Ophth., vol. xxiv, 3, 1878.

[65] Trans. Amer. Ophth. Soc., 1903, p. 141.

Development in the Nerve Itself without Known Foci Elsewhere.—In Spalding's first case the tubercular mass developed in the optic nerve and projected into the vitreous chamber, filling one-third of it. The growth occurred in a boy of eight years and followed traumatism. The patient remained free from other manifestations of tuberculosis. A. Knapp[66] reports a similar case to that of Spalding. The bacteriologic examination was positive for tubercle bacilli. The patient, a negro child of two years, subsequently developed general tuberculosis.

Leprosy bacilli have been demonstrated in the optic nerve, Borthen and Lie,[9] but observations of this nature are extremely rare.

In the consideration of this subject syphilis has been purposely omitted.

DISCUSSION.

ON PAPERS OF DRS. DERBY, SHUMWAY, WEEKS AND PUSEY.[*]

Dr. Robert L. Randolph, Baltimore, said that while Dr. Weeks disclaims any intention of making his communication an exhaustive one, few more exhaustive articles on the subject will be found in this country. Dr. Randolph said that he knows of no one whose experience in laboratory and clinic better fits him to speak interestingly and with authority. "Bacteria I Have Known" would be an attractive and suggestive title for a contribution from him. For instance, the first organism which Dr. Weeks mentions in his paper is *Bacillus coli communis.* All physicians know that this organism is found in great number in the human feces and is a regular inhabitant of the lower intestine, facts which have contributed not a little to the generally accepted view that it is nonpathogenic, and yet one of the most intense cases of panophthalmitis which Dr. Randolph has seen, and one to which Dr. Weeks referred, was one in which this very organism was obtained in pure culture from the interior of the eye. While it is true that the degree of mechanical insult has much to do with the intensity of traumatic inflammations, no matter what be the organism present, it is worthy of note that the colon bacillus under certain conditions can become as deadly as one of the commonly recognized pathogenic bacteria. It is surprising to see how many cases there are on record in which bacilli have been demonstrated in the interior of the eye and not one of the so-called pus organisms. Panophthalmitis often presents a striking picture of suppuration, and *a priori* we would expect always to find one of the bacteria commonly known as pyogenic. Cases like the one just mentioned have been reported by Haab, de Schweinitz and others, and they show that there are organisms other than the so-called pus organisms which are capable of producing suppuration, and this case especially points to the fact that organisms ordinarily harmless sometimes possess marked pathogenic properties.

In speaking of the metastatic form of suppurative panophthalmitis, Dr. Randolph understood Dr. Weeks to say that he had found either a streptococcus or a staphylococcus in the eye in cases in which the metastasis had occurred from a leg ulcer and from a furuncle on the forehead. Dr. Randolph has seen quite a number of cases of metastatic panophthalmitis, but has always failed to get any growth from cultures made from the interior of the eye, and yet two of these cases were almost as fulminating as some which he has seen in which the infection was an ectogenous one, as after a penetrating wound, and, while negative results in these two cases do not prove conclusively that no organisms had ever been present in these eyes at one time in the history of the inflammation, they might at least be said to suggest that the panophthalmitis was caused by the toxins which had found their way into the eye or that the bacteria present were beyond the power of present-day microscopes to detect. The former explanation is probably the true one in gonorrheal iritis which is seen usually after the knee-joint is attacked. In gonorrheal arthritis the toxins which these organisms liberate may reach the eye and excite inflammation. From the behavior of this organism in the conjunctiva and elsewhere in the body it is inconceivable that the condition which we call gonorrheal iritis is due to the presence of gonococcus in the iris. Those who have experimented on animals will recall what an intense panophthalmitis can be produced by comparatively few organisms far less virulent than the gonococcus when they are shut up inside of the eyeball—that is to say, when they have been injected into the interior of the eye. It would be wrong, Dr. Randolph thinks, to regard gonorrheal iritis as the evidence of gonococci in the iris tissue. As regards the organisms which are so closely identified with inflammations of the outer covering of the eye, for instance the Morax-Axenfeld diplobacillus and the Koch-Weeks bacillus, he has been struck with the great difficulty of getting either of these organisms to grow under artificial conditions. His experience in this connection has been disappointing. The same is true to a less extent of the pneumococcus, which is notorious for the uncertainty of its behavior when transferred to artificial soil. Dr. Randolph emphasized the following matters of personal observation, suggested by passages in Dr. Weeks' paper: Bacteria ordinarily harmless under certain conditions can set up intense reaction. Other than the so-called pyogenic organisms are capable of producing suppuration, as is evidenced by the number of cases in which bacilli have been found in the eye in suppurative panophthalmitis. In metastatic panophthalmitis the absence of bacteria has been noted by others as well as by himself, which suggests that in some of these cases at least the toxins are present in the interior of the eye and are responsible for the panophthalmitis, and as an illustration of an ophthalmia probably caused by toxins might be cited gonorrheal iritis.

Dr. W. C. Posey, Philadelphia, stated that since Morax and Axenfeld, though working independently of one another, first described the diplobacillus which has received their conjoined name, the profession has become quite conversant with the type of conjunctivitis which has been designated as subacute, chronic or angular conjunctivitis. The characteristics of this form of inflammation are often so striking that a bacteriologic examination is unnecessary to detect its proper nature, while the rapid disappearance of the inflammation under applications of zinc renders the diagnosis conclusive. He agreed with Dr. Pusey that in addition to the usual type the diplobacillus is capable of occasioning other ocular conditions, and these are very varied and may assume forms usually thought to be due to other organisms or other inflammatory processes. Gifford, of Omaha, who should take equal rank, almost, with Morax, Axenfeld and Peters in their studies of the diplobacillus, has stated in a recent article in the *Ophthalmic Record*, November, 1905, that there are two forms of conjunctivitis which may be excited by this organism, which without the aid of the microscope might frequently be mistaken for trachoma. One, an acute type, presents rather profuse secretion and marked swelling and roughness of the retrotarsal folds, while in the second or chronic form the eyes are red and watery and half-dry secretions cover the edges of the lids, the retrotarsal folds being moderately rough and red. The tarsi, however, are but slightly affected. This form is chiefly encountered among the poorer classes of Russian Jews, and Gifford believes it to be the product of dirt, neglect and slight eversion or closure of the lower tear points. Not only may the organism occasion varied types of conjunctivitis, but, as originally pointed out by Morax and lately substantiated by many others, inflammations of the cornea may be excited by it, ranging from small round points of infection to a malignant involvement of the corneal tissue in a manner not dissimilar to the process observed in ulcus serpens. In these extreme cases, however, the inflammation is rarely so active as that occasioned by the pneumococcus, and while there may be a progessive border to the ulcer, it is rarely so marked, and the spread of the ulcer is more rapidly controlled. Iritis with synechia and hypopyon are not uncommon, and there have been a few cases recorded in which treatment was not undertaken until the process had obtained marked headway, in which the eye was lost from panophthalmitis. Usually the posterior part of the eye is unaffected. The most common type of ulceration of the cornea excited by the diplobacillus, Dr. Posey said, occurs in the form of a disc-like infiltration of the superficial layers of the central portion of the cornea. It is usually several millimeters in diameter and of a glassy-gray color. Ordinarily the edges of the ulcer are raised, and the neighboring corneal tissue is superficially hazy and stippled, while numerous processes of infiltration project from the ulcer into the deeper tissues. Pericorneal injection is quite marked.

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[66] Arch. of Ophth., vol. xxxii, No. 1, p. 22.

[*] Editor's Note: The paper of Dr. Pusey appeared in The Journal last week. The paper of Dr. George S. Derby, Boston, on "The Bacteriology of the Eyelids," is too long for publication in The Journal, and, by arrangement with Dr. Derby, is omitted. It will be found in full in the Transactions of the Section on Ophthalmology, 1906.

In nearly all the cases with corneal involvement there is a history of long-standing catarrh of the conjunctiva with the excoriations at the angle of the lids, which are so typical of the catarrh of the diplobacillus. A history of traumatism is also obtainable in most instances, indicating the avenue through which the cornea becomes infected. Although eyes have been lost from ulceration excited by this micro-organism, the prognosis in corneal affections excited by it is good. for the ulcers yield readily to treatment and the opacities which remain are nebulous, dense maculæ persisting only in rare instances.

Disease of the lachrymal apparatus is rare, and the mucous membrane of the nasopharynx, though at times implicated, does not seem to possess any great susceptibility to the diplobacillus. The young are rarely affected, adults and middle-aged being the chief sufferers. Dr. Posey said that all forms of inflammation excited by the diplobacillus yield readily to applications of zinc, and agreed with Dr. Pusey that they are comparatively uninfluenced by any of the silver salts or their substitutes. He emphasized the importance of bacteriologic examination in all obscure or doubtful cases of conjunctivitis or keratitis, for while the diagnosis of the subacute type of conjunctivitis, which is the usual manifestation of inflammation excited by the organism, is easy, the differentiation of other types by mere clinical observation is impossible. Dr. Pusey's paper, he said, will do much to second Dr. Gifford in his efforts to diffuse throughout this country information regarding the various types of inflammation which the diplococcus may excite, and this is particularly desirable at this time, as there is evidence from foreign publications that ocular diseases occasioned by this germ are on the increase. The records of Dr. Pusey's 10 cases, he said, are of exceeding value, particularly his report of Case 8 of acute conjunctivitis in a negro, in whom the clinical diagnosis was made of probable gonorrheal ophthalmia, but which the microscope showed to be due to the diplobacillus, inasmuch as the conjunctiva of the negro seems to possess a different susceptibility from the ocular mucous membrane of white patients to the action of germs, as indicated by its behavior when infected by the agents producing trachoma and vernal conjunctivitis. The Morax-Axenfeld bacillus, Dr. Posey said, has been found in Philadelphia in about the same proportion as in European cities. Sweet and Shumway have described ulcers of the cornea which it occasions, and while as yet no record has been made of its exciting the bizarre forms of conjunctivitis described by Gifford, we are familiar with it in its usual manifestations.

Dr. George S. Derby, Boston, said that he does not think that any figures are published with regard to the frequency of infection with the Morax-Axenfeld diplobacillus in this vicinity. In 78 cases of conjunctivitis examined by Dr. H. C. Parker and himself at the Massachusetts Eye and Ear Infirmary the diplobacillus was found seven times in pure culture and four times contaminated. The cases were the so-called subacute blepharo-conjunctivitis. They were not severe cases at all. In a smaller series of cases of corneal ulcer examined last summer the diplobacillus was not found in a single case.

Dr. Edward Jackson, Denver, declared that he would like to say that he agrees with Dr. Derby in what he says in his paper regarding the statement of McNab with reference to the rôle of the diplobacillus in causation of ulcerative blepharitis not being supported. Dr. Jackson has not found any evidence that blepharitis, apart from that which occurs with the usual diplobacillus conjunctivitis, is due to it, or that the diplobacillus is present. Some of the earlier accounts of the diplobacillus conjunctivitis referred to epidemics. The disease persists for months or years, so that in many communities it must be continually present, but it does occur in epidemics. In the spring of 1904 he came across evidence of a very extensive epidemic. Cases were seen from different portions of the state of Colorado. Dr. Jackson gave the distances by rail from Denver; they were somewhat greater than by straight line.

Date	Locality	Direction	Distance
March 14	Denver		
" 19	Georgetown	West	50 miles
" 21	Golden	"	15 "
" 23	Lyons.	Northwest	48 "
April 2	Platteville	Northeast.	35 "
" 4	Aspen	West	401 "
" 23	Trinidad	South	214 "

There were additional cases seen in Denver during that period. Now these places were far removed from one another, and the cases all occurred within a period of six weeks. A striking thing was that in connection with each case there was a history of a local epidemic. In the case of the child from Lyons all the other children in the family were affected, and there were cases in the school. The man from Aspen said that there were at least 200 cases in this town of 3,000 people. Each of these cases represented an epidemic. Furthermore, they came not only from separate places, but represented different climatic conditions. In Aspen they had two or three feet of snow on the ground for many weeks. In other places there had been much wind and dust. Georgetown is in the heart of the mountains, Golden and Lyons at the foot of the mountains and the other places out on the plains. This does not throw much light on the causation of epidemics, but Dr. Jackson thinks it is an interesting observation. He has seen several cases with slight corneal involvement, but only one severe case. That was a few weeks ago. The ulcer was extremely deep, such an ulcer as one would expect to find from a deep corneal abscess that had opened spontaneously. It yielded well to treatment, touching with nitric acid and the use of zinc for the diplobacillus. The diplobacilli were plentiful in the conjunctival secretion, but in the material from the bottom of the ulcer there were more staphylococci than bacilli.

Dr. C. D. Wescott, Chicago, said that with reference to the use of zinc some well-defined cases have been reported which resisted treatment with zinc. Many American patients resist the zinc therapy. The conjunctiva seems irritated by any solution of zinc. He asked some of the members to describe in what manner they have used the treatment, in what percentage solutions. He has found that some patients bear the zinc ointment who will not tolerate the solutions.

Dr. George E. de Schweinitz, Philadelphia, stated that the diplobacillus of conjunctivitis is of considerable frequency in Philadelphia, and it has been found that in a certain number of cases zinc is not entirely an efficient remedy. Dr. Gifford has suggested that the ordinary lotion of zinc, from 1 to 4 grains to the ounce, should be supplemented by touching the lids with a stronger solution, and that has been Dr. de Schweinitz' practice, particularly in cases of long persistence. Applications of silver not only do not improve the condition, but seem to make it worse. Dr. de Schweinitz has seen one case of double panophthalmitis which developed on the ninth day after labor. Cultures from the pus in the anterior of the eye, in the vitreous and in cutaneous abscesses showed pure streptococcus growth. Still more interesting is the fact that the patient recovered, though, of course, blind. It is the only patient with double metastatic panophthalmitis in his experience who has recovered.

Dr. C. W. Hawley, Chicago, said that he has not had much experience, so far as demonstration with the microscope is concerned, but in a number of epidemic cases he has used antipyrin very successfully. He has also used hydrastis in similar cases in which the zinc was not tolerated.

Dr. William M. Sweet, Philadelphia, said that his first experience with the diplobacillus was in 1898, shortly after the appearance of Dr. Gifford's paper. At that time he had under treatment a woman with a mild form of conjunctivitis, associated with a moderate discharge and considerable itching of the lids. Silver, tannin and the usual remedies were employed, but the inflammation persisted. After reading Dr. Gifford's paper he suspected that the stubbornness of the inflammation was due to the presence of the diplobacillus, and he made cover-glass smears of the discharge and found the germs present in large numbers. Under the use of a solution of zinc sulphate the inflammation subsided in a few weeks. For the purpose of determining to what extent the germ was to be found in Philadelphia, he made spreads and cultures of the conjunctival discharge in 31 additional cases of conjunctival and corneal disease seen in the Jefferson and Polyclinic hospitals, and found the diplococcus present in 6 cases. The patients examined included those suffering from phlyctenular disease, hypopyon keratitis, trachoma and simple corneal ulcers. In two of the cases showing the germ there were small ulcers of the cornea.

The results of this study were presented to the Section on Ophthalmology of the College of Physicians of Philadelphia on Dec. 20, 1898, and the abstract of the paper printed in the proceedings of the college, but the original paper was not published, as he intended carrying the investigations further, but failed to do so. At that meeting he exhibited a shoemaker with chronic inflammation of the conjunctiva of both eyes, which had existed for a long time. There was a moderate secretion, the veins in the fornix were prominent and the vessels on the globe were slightly congested and tortuous. Examination of the scanty discharge showed the diplobacillus. For the purpose of determining the effect of the remedies ordinarily employed for chronic conjunctival inflammation the man was given treatment at the dispensary for several weeks with tannin, silver, boroglycerid and weak bichlorid of mercury, and at home a saturated solution of boracic acid. No improvement could be detected, so that a solution of zinc sulphate, 1 grain to the ounce, was ordered, and in about a week the inflammation had subsided sufficiently to relieve the patient of the annoying symptoms of which he had complained. From a study of the well-developed germ there is seen to be a clear space surrounding most of the double rods, indicating some form of envelope, and Dr. Sweet therefore felt at that time, as he does now, that the contention made by Gifford that the germ had a capsule was correct, although denied by Morax, Axenfeld and Peters.

Dr. **Charles H. Williams**, Boston, mentioned a practical point in regard to the use of zinc. It will often be found beneficial to use the sozoiodolate of zinc in the same strength as the solution of sulphate, especially if combined with chloretone (a solution of chloretone 1 grain to the ounce). The chloretone preserves the solution and acts as a sedative to the conjunctiva, so that the applications are less irritating.

Dr. **Nelson M. Black**, Milwaukee, declared that he has noticed that in these cases of diplobacillus conjunctivitis the patients almost invariably complain of symptoms closely allied to those due to refractive errors and report that they have had their glasses changed a number of times without benefit. This shows the importance of a bacteriologic examination of the contents of the conjunctival sac in many refractive cases.

Dr. **E. V. L. Brown**, Chicago, spoke of a case of *Bacillus subtilis* infection following a penetrating wound of the sclera. The foreign body was removed with the magnet and panophthalmitis developed. The eye had to be eviscerated and a pure culture of the *Bacillus subtilis* was obtained. The occurrence of the *Bacillus subtilis* is infrequent, but he thinks it is significant as showing that the intraocular structures are susceptible to such organisms. Roemer has contended that in sympathetic ophthalmia the eye is susceptible to certain organisms that do not affect other parts of the body.

Dr. **Brown Pusey**, Chicago, said that he has some histologic sections which are most instructive. He had these with him and had hoped to show them. The sections are from the famous and unique case of Stock, and he is indebted to him and to Professor Axenfeld for them. If an ophthalmologist sees these sections and the upset condition of the conjunctiva he will realize that it is not remarkable that zinc does not effect a rapid cure. The failures spoken of from this remedy, Dr. Pusey thinks, are due to the fact that a rapid cure is expected and the treatment is not persisted in. In this form of conjunctivitis long and persistent treatment is necessary.

Dr. **Edward A. Shumway**, Philadelphia, said in regard to the capsule to which Dr. Sweet has referred that, while it is known that Gifford contended that it was present, Axenfeld contended that it was not, but in his last article Axenfeld concludes that although it is not demonstrable by ordinary staining methods it is probably present and may be shown by the aid of special staining methods.

Dr. **John E. Weeks**, New York, said that the *Bacillus xerosis* is not considered pathogenic by those who have studied it. Dr. Weeks spoke of a case he followed up, in which the disease occurred in an infant of a few months. The child died and an autopsy was held. The disease presented itself as one of xerosis of the conjunctiva. The membrane was found on the palpebral and ocular conjunctiva. All the solid organs of the body were examined. From the pelvis of the kidney the bacillus was recovered and the characteristic deposit was found there. In the substance of the kidney the micro-organism was also found. From the liver also it was recovered. The bacillus was found in practically all the tissues of this infant. The child died apparently of marasmus, but it seems to Dr. Weeks very peculiar that this general infection should be found unless there is some pathogenic quality possessed by this bacillus. The bacillus has also been recovered from the urine in cases of xerosis conjunctivitis that were not fatal.

In reference to Dr. Shumway's statement that the staphylococcus has no causative relation to phlyctenular conjunctivitis, Dr. Weeks said that some years ago he made a large number of examinations of the nodes or elevations found in phlyctenular conjunctivitis, and he found that by removing the contents of these elevations carefully and aseptically pure staphylococcus cultivation was obtained almost invariably. This also occurs in the little nodules of moist eczema. Some few experiments have shown that small nodules can be produced by the introduction of the staphylococcus into the mucous membrane of the lids and also into the skin of the arm. All physicians know that in order to develop the phlyctenular process a suitable condition of the system must exist, but this suitable condition, it seems to Dr. Weeks, may exist, and in the light of these experiments permit the staphylococcus to be the exciting cause of phlyctenular trouble. It is his opinion, he said, that the phlyctenular process that occurs in connection with acute contagious conjunctivitis is due to the *Staphylococcus pyogenes aureus*, the tissue having been prepared for invasion by the local condition. It has been remarked in connection with the ulcers of the cornea produced by the diplobacillus that the staphylococcus was found. The reason is that these ulcers, originating from the diplobacillus, are infected by other organisms and the destruction of tissue is not due to the action of the diplobacillus alone, but the other micro-organisms as well.

In regard to the *Bacillus subtilis*, cases of such infection have been reported following injury, but none of them have been due to infection, without traumatism. The *Bacillus subtilis* is not infrequently recovered from the normal conjunctiva and Dr. Weeks has reported cases of this kind.

THE RELATION OF SYSTEMIC DISEASES TO THE CONDITIONS OF THE ORAL CAVITY.*

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The importance of the study of the pathology of the oral cavity in connection with the treatment of systemic diseases is obvious, and he who is ignorant of its teachings is not only unjust to his patients, but must be regarded as a hindrance to the progress of his profession.

We often hear the study of micro-organisms referred to as the new or germ theory, and, unfortunately, not only by those who deal in glittering platitudes of which they are ignorant, but often by members of our own profession who make statements which cause us to feel that this most important part of their technical education has been neglected. The great Roman author, Varro, in his writings during the first century before Christ, called the attention of the world to the fact that some indefinable, invisible, living organisms were responsible for certain diseases and especially for those of an epidemic character. During the sixteenth century Leewenhoek was able to observe, through the magnifying lens of the microscope, definite outlines of these micro-organisms, and he gives a classification, the first and most important step in the scientific investigation of disease. The forms which this great scientist discovered at that time do not correspond to the forms which we find to-day. The whole world is glad to believe, however, that this error, if it may be called one, was due to the instrument and not to the man. Every effort that is being made to draw aside the curtains and to reveal the life history of these micro-organisms allows the light of science to shine more brightly and to illume the background whereon is written the name of this Swiss naturalist, Leewenhoek, the first investigator, whose successors are Pasteur, Raynaud, Lannelongue, Vulpian, Moriggia, Marchiafava, Sternberg, Klein, Miller and many others.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

THE MOUTH AS AN INCUBATOR.

We can easily understand if we familiarize ourselves with the fundamental principles of bacteriology that the mouth is an excellent incubator for the development of micro-organisms, principally because it contains heat, moisture and oxygen, the conditions on which they thrive. It is true that many bacteria can not live in the mouth on account of the variations of these conditions, but it is equally true that nearly all the pathogenic or death-producing micro-organisms find in the mouth an environment, which is perfectly suited for their habitation. Miller has isolated more than 100 different specimens from the mouth.

ANTISEPTIC PROPERTIES OF THE SALIVA.

Many are under the impression that the saliva contains antiseptic properties and base their conclusions on the well-known fact that the mouth does not yield very readily to the ravages of infection. According to Miller and other investigators, the antiseptic properties of the saliva are so slight that they should not be considered in dealing with this problem. The reason that infection does not take place more frequently is that the mouth and its component parts have greater power of resistance than other portions of the body. The fact that so many kinds of bacteria do exist in the oral cavity is sufficient to satisfy the average student that the saliva does not contain the antiseptic properties which some are inclined to believe that it does. If this were so, then the bacteria would be destroyed.

MICRO-ORGANISMS FOUND IN THE MOUTH.

In neglected mouths 1,140,000,000 cultivable micro-organisms are found. The accumulation which is found between the teeth, on the shelves made by overhanging fillings, in the cavities of carious teeth, in the pockets made by malposed teeth, etc., is so mixed that it makes a most excellent medium for the growth of these micro-organisms. Even in the average mouth each drop of saliva contains 4,375 micro-organisms, among them being streptococci, staphylococci and diplococci. Flügge has demonstrated by his experiements that any explosive action of the lips, such as the pronunciation of words commencing with D, K, P and T, will expel these virulent bacteria into the air. This is sufficient evidence, or at least should be, to make us pause a moment and ask ourselves whether or not the mouths of the children in our public schools should be subjected to frequent examinations.

It is impossible for me in this brief time to point out the far-reaching influence which these little messengers of disease and death can have whose home is the oral cavity. Not only are the antiseptic properties of the saliva of the individual overestimated, but the gastric juice is also regarded as the destroyer of any germs that may be swallowed. But MacFadyan, Sucksdorf, Miller, Baumgarten and others have demonstrated that the action of the gastric juices does not destroy the bacteria found in the mouth. Sucksdorf found an average of 380,000 cultivable bacteria in one milligram of fresh feces and that 30 per cent. of these bacteria were carried from the mouth to the anus.

According to the authorities, the only time that the gastric juice has the power of destroying bacteria is when digestion is most active, two or three hours after a meal. This, one can readily understand, is the time when these micro-organisms from the oral cavity are least apt to be introduced, as most, if not all, the pathogenic organisms are carried in by the food when it passes through the mouth. Hence, it would be folly to argue that this is not also a great danger.

Of the many specimens of bacteria found in the mouth perhaps the most important are those of pathogenic type, such as diphtheria, typhoid, cholera, septicemia, pneumonia and others whose development and propagation cause in many instances a cessation of life.

Netter found that 10 per cent. of all mouths examined by him contained the *Staphylococcus pyogenes aureus* and *Staphylococcus pyogenes albus* and that the micro-organisms of pneumonia were present in 15 per cent. of healthy mouths. Schriever tells us that 75 per cent. of apical abscesses examined by him contained the micro-organisms of pneumonia, and Vulpian produced septicemia by inoculating animals with the saliva from healthy men.

From the observations and conclusions drawn from the study of diseases in our hospitals it has been proved that these micro-organisms are the principal cause in nearly every disease known to modern medicine. The pathologic manifestations vary, however, and in some instances we may find that the inflammatory process involves only the first or hyperemic stage, and in others we find manifestations of the last, or suppurative stage. In the oral cavity under these conditions we find caries and necrosis of both the osseous and muscular tissues, while in other cases the kidneys, lungs, liver, intestines, and the valves of the heart, through the lymphatic glands become involved, and in other instances and by other avenues the brain becomes involved. Indeed, it is beyond the capacity of the human mind to determine just when these minute forms of life cease to invade, cease to change physiologic to pathologic conditions, health to disease, life to death.

According to credible authority, septicemia and pyemia cause the greatest number of deaths, secondary meningitis holds the second place, having been occasioned by the inflammatory process reaching the covering of the brain (pia mater).

When we consider these statements, which are all based on fact, and when we reflect on the conditions which are so favorable to the transmigration of bacteria, such as the highly vascular tissues, the saliva, the glands, etc., with which the mouth is so abundantly supplied, does it not seem strange that more attention is not given to this part of our economy as an etiologic factor in disease? Science has proved their existence; therefore, it devolves on us to take measures not only to destroy them, but to destroy all conditions which are conducive to their growth.

INFLAMMATIONS DURING THE FIRST DENTITION.

Perhaps the first and most common form of inflammation with which we have to deal is that which presents itself during the first dentition of the child. This is the result of pressure on the tissues caused by the tooth in trying to pass through the gum during the process of eruption. If you pause for one moment you can easily understand the processes which are taking place in the living tissues and which cause so much heat and pain. I have known of careless people who had charge of babies introducing all sorts of unclean substances into the mouths of these little sufferers during this period. It is needless to describe the effect the inflammatory condition has on the nervous system. Suffice to say that all sorts of pathologic reactions in this system, including high temperature, diarrhea, and in many cases convulsions occur. Children have come under my observation suffering from the above described conditions, after having been treated by physicians with internal remedies, which in some instances afforded temporary relief, but in all cases a reaction followed which lessened the child's resisting capacity. A crucial incision through the tissues in the area through which the tooth was trying to pass caused permanent relief. A complete cure of a large number of convulsing children during the period of dentition, and especially during the summer months, causes me to bring this experience before this Section for discussion.

When we consider the number of unclean substances, such as soiled fingers, soiled linen, soiled hard-rubber rings, and unclean soft-rubber nipples which are used on nursing bottles, we have ample reason to marvel that the mortality and sick list among these children are not greater. Along pathologic lines, it seems reasonable to assign many of the cases of inflammatory conditions of mothers' breasts to transmission by the infant.

TRANSMISSION OF DISEASE BY MOUTH.

Now, transmission of disease by the mouth is encouraged to a large degree by the adult, and in the majority of cases it is due to ignorance; for example, in the common practice of moistening promiscuously the lead in pencils, without having previously known whether they were charged with specific bacteria or not. In other instances, infection may take place when the subject may be innocent.

Miller reports an instance where several boys were inoculated with syphilis, after having been tattooed by a syphilitic, who moistened the needle used for the purpose before breaking the skin of the victim.

In one of the Russian provinces all the natives believe that any and all inflammatory conditions of the eye are due to the lodgment of foreign bodies, and the method adopted is to place the tongue between the lids of the eye to remove it. Some have become so skilled in this line, that they make a specialty of treating eyes in this way. Acting in this capacity one woman inoculated 6.5 per cent. of the entire population of the province of Wiatka with syphilis.

BACTERIA OF THE MOUTH.

Netter, Schriever and other scientific investigators have demonstrated that the dental pulp is a source of almost unlimited infection of the vital parts of our system. For instance, as a sequel of this condition we observe necrosis, diseases of the sinuses, infection of the glands of the neck, gastric disturbances and many others which time will not permit me to mention.

Miller found organisms of pyorrhea alveolaris which he called *Micrococci gingivæ pyogenes,* virulent in character. Injections through the skin of mice, caused inflammation of the part followed by an abscess which finally resulted in the death of the animal. Introduction of this organism into the abdomen of the mice causes death from peritonitis within 24 hours, the autopsy showing large numbers in the abdominal cavity.

Bacterium gingivæ pyogenes is another form of micro-organism which is generally found in the mouth of a person affected with pyorrhea, as well as in the substances of a suppurating tooth pulp, and when injected into the abdomen of white mice will cause death in from 10 to 24 hours. The animals' eyes seemed glued together and the spinal column was bent almost like a bow, resembling the conditions of strychnin poisoning. Autopsy showed death from peritonitis.

Bacillus pulpæ pyogenes is still another form of animal life which is found in putrescent pulp, and which when injected into the abdominal cavity of white mice produces death in from 18 to 30 hours.

Another organism found on the superficial layers of carious dentine, called *Bacillus dentatis viridans,* when injected into the skin causes severe inflammation and in one case death from blood poisoning. When injected into the abdomen of white mice death from peritonitis ensued in 60 per cent. of the cases in from 22 hours to 6 days. In these cases, the organisms could not be found in the blood microscopically, but cultures made from the blood of the heart developed the bacteria injected.

I call your attention to the action of the micro-organisms, not to have you believe that they will produce like results in the human system, but that their action is the same, only the great resistance of our systems compared with that of mice prevents death, but the resistance is not sufficiently able to prevent an interference with the functions of the organs, therefore we have diseases of other parts, which we can reasonably attribute to the presence of these organisms in the oral cavity.

DEATHS FOLLOWING INFECTIONS OF THE MOUTH.

During the sixteenth century Vulpius in his writings states that disfiguration and death are the result of toothache, and reports the death of Gosvin Halt, the Amsterdam physician, who had his gum lanced to allow the eruption of a molar tooth. Subsequently the gum became swollen, insomnia and delirium followed, and finally death relieved him of his sufferings. This condition is what we would probably call to-day septicemia, due either to the micro-organisms being introduced into the system from the unclean instruments, or that the instruments made an avenue through which the micro-organisms, already present in the mouth, entered the system.

Zakhavevitsch reports the death of two healthy physicians, one from osteomyelitis, six days after the extraction of a left inferior second molar and another from peritonitis and osteitis. The first stage in the process of each disease was also conclusive evidence that infection was caused by unclean instruments. Banner reports many cases among them being one of especial interest, that of a young student, 24 years old, who made a visit to a physician for the purpose of having a molar tooth extracted. The physician broke the tooth in the attempt and during the next 24 hours, swelling ensued.

Finally the periostium became involved, and necrosis followed. The necrotic area was removed 14 days after; swelling continued, there were chills, great debility, rapid and marked excursions of temperature, pyemia, and finally the right lung became involved with pus, the patient died.

Delester reports several cases in which the inflammatory process spread to the brain and the patient died from menigitis.

The following case reports may be of some interest:

Case 1.—On Dec. 4, 1905, C. N., a girl, aged 7, was referred to me by her physician. She was suffering from neuralgia involving the right side of the head, inability to sleep, loss of appetite, etc.

History.—On Nov. 30, 1905, she came home from school complaining of headache, with slight swelling of the right side of the face. Dr. H. was called and found the child with a temperature of 105° F. and other symptoms which would suggest that she was in the first stages of some one of the exanthematous diseases. He prescribed, and visited the child on the next day, expecting to find his diagnosis verified, but on the contrary the swelling had increased somewhat, with a drop of 2 degrees in the temperature. Examination of the throat revealed nothing to the experienced eye of this physician. He continued to visit the child for the next five days, keeping her as comfortable as possible, but was unable to diminish the temperature more than 1 degree. Temperature remained 102 degrees during this time.

Examination.—When I saw her she had a temperature of 102° F., with the other symptoms previously described. Her mouth seemed to be in a healthy condition, with the exception of two or three badly decayed teeth, scattered about the mouth. The child could not give the exact location of pain. On the superior right maxilla all the teeth were present, including a newly erupted sixth year molar, which was apparently healthy so far as visual and instrumental examination could determine. Anterior to this was the second temporary molar, decayed, although the decay did not involve the pulp. The condition was such as one generally sees in the mouths of children when the decay seemed to have stopped, not unlike the teeth of tobacco chewers. There was no pain associated with the examination of the decayed tooth, not even on pressure. There was, however, slight pain, when percussion was used on the permanent molar.

Treatment.—I finally decided to extract the permanent tooth, to the great disappointment of the parents, who thought that if any tooth should be extracted it should be the decayed one. Examination of the permanent molar showed unmistakable signs that my diagnosis was correct. Abscesses about the size of small peas were found at the ends of the roots. All other parts of the tooth were normal, having no cavity, not even the small fissure cavity that is present in nearly all first permanent molars. The child made a rapid recovery; her temperature became normal within twenty-four hours.

Since physicians are the ones who are generally called to see such cases, I am going to report one of many cases which I hope will show how important are the lower third molars, or what are commonly called the wisdom teeth, as factors in causing disease.

Case 2.—On April 9, 1906, L. M. manifested the following symptoms: Severe neuralgia pains, loss of appetite, sleeplessness caused by the pain, finally swelling of the right side of the face, sore throat, and interference with the motion of the jaw, followed by fever and chills. On the second day a physician was called who evidently decided that the patient had some tonsillar infections. He increased the man's suffering by making an incision through one of the tonsils. After three days the patient discharged this physician, and called in another who found him with the described conditions increased and a temperature of 104. He immediately had the man transferred to a private hospital, where, on examination, he found an inferior third molar badly decayed, which he immediately extracted without breaking, followed by a large amount of pus. The patient experienced relief, and temperature dropped to 102. The physician prescribed mouth washes. This was on Thursday, April 6, and the man's condition remained about the same, face swollen, etc., until 3 o'clock in the morning of April 9, when patient was attacked by chills, followed by a rise in temperature of two degrees. I reached the hospital at 2 p. m.

Examination.—The face was badly swollen, the swelling involving the sublingual and submaxillary glands, neck, temporal region and ear. The patient was unable to open his mouth and was suffering intense pain. The tissues were swollen to such an extent that they were very hard and it was impossible to get fluctuation. An incision had been made near the angle of the inferior maxilla internally before I arrived, but nothing but blood came from the wound. I introduced a probe into the socket from whence the tooth had been extracted, but was unable to get any pus.

Treatment.—I advised immediate operation and the patient was etherized. The mouth was forced open with a mouth prop, then with a periosteal dissector I freed the muscles from the bone extending from the angle to the first molar tooth and down to the inferior border of the bone. The pus, which was deep-seated, now began to evacuate itself, until about four ounces were produced. I then curetted the tissues forming the inside of the cavity, which was as large as a hen's egg, washed it thoroughly with a weak antiseptic solution, and packed the cavity with sterilized gauze. I dressed the wound each day, and at the end of three days referred the patient back to his attending physician, under whose care he made a full recovery.

GLANDULAR SWELLINGS.

Swelling of the lymphatic glands of the neck is one of the diseases which, according to the observations of Odenthal, may be traced directly to conditions of the oral cavity. Odenthal examined 987 children and found carious teeth in 429, in the remaining 558 no decayed teeth were present, and in 275 cases or 49 per cent. there were glandular swellings. Of the 429 children with decayed teeth, glandular swellings were present in 424 cases or 99 per cent.

In his examinations he also established a direct relation between the extent of decay and the area of involved glands. For instance, when decay was very much marked, the glands were much swollen, when decay existed on both sides glandular swelling existed on both sides, also.

INVOLVEMENT OF HEART.

Inflammation of the valves of the heart which generally follows pneumonia, can be traced without question to conditions of the oral cavity. We find the pneumococci present in cultures taken from the affected areas of the heart, after this disease has been present, and we find them in the mouth before and during the period that the person is afflicted. Therefore under these circumstances our conclusions are fair.

Many members of the medical profession including such eminent authorities as Dr. John H. Musser, of Philadelphia, consider mouth sterilization, so far as it can be done, one of the progressive steps in the treatment of pneumonia. Musser's first step in this is to place 15 grains of calomel on the back of the tongue of the patient.

RELATION OF MOUTH INFECTIONS TO PULMONARY TUBERCULOSIS.

Leydon, Jaffe and James Israel demonstrated by their experiments that tuberculosis of the lungs may be traced directly to micro-organisms found in the mouth. Leyden and Jaffe in postmorten examinations of the lungs of an individual affected by putrid bronchitis or gangrene of the lungs showed that the micro-organisms were identical with those found in the mouth. Israel also found a small irregular body in the lung of a patient affected by primary actinomycotic infections, which on examination proved to be a salivary calculus containing bacteria which had been inspired into the lung, causing death.

Miller reports the case of a woman of 50, who was afflicted with a long-standing insufficiency of the aorta, but otherwise in good health and enjoying a vigorous digestion. After a heavy sorrow she began to lose her appetite and complained of cardialgia which set in after every meal. She was put on slight liquid nourishment, and finally was compelled to restrict herself to tea. Repeated course of treatment with Carlsbad water brought but temporary relief. Mouth examination revealed swelling and slight ulceration of the gums; besides this, the tongue was heavily coated and the posterior wall of the pharynx somewhat inflamed. Frequent syringing of the oral cavity and pharynx and also with the iodin-myrrh tincture produced a cure in a few days, but if the patient neglected to cleanse her mouth but a single day, the old trouble would return. Miller has watched the relation between unclean mouths with swollen and inflamed gums and disorders of the stomach for many years.

A case has been reported in which a man of 50 who had always been well, suddenly became troubled by inflation of the stomach and swelling of the liver. A cure was effected by the removal of an artificial upper denture which had not been taken from his mouth, not even to be cleaned, for a period of two years.

While I have treated similar cases, I selected these of authorities, such as the men mentioned in this paper, because of the high regard which both the dental and medical professions have for their careful and scientific investigations, and I am sure these cases will have a greater influence on your future observations than any number of cases which an embryonic member of the dental profession like myself could report.

After listening to these statements which are all based on fact, and remembering that the scientist does not accept a fact until, after having a definite theory, he has taken every means to prove that his theory is wrong, we are bound as professional men to respect his records.

Therefore it is perhaps within my rights as a dentist, to call the attention of the operating surgeon to mouth sterilization by himself, to the abolition of conversation and especially of talking into the wound during a laparotomy, as a measure towards the prevention of sepsis. The surgeon should also order sterilization of the patient's mouth before the anesthetic is given as a preventative measure against the patient drawing polluted saliva or particles of calculus such as I have described into the lungs, thus preventing post-operative pneumonia.

In nearly every pathologic condition there are inflammatory symptoms which may vary from simple hyperemia to complete destruction of the part, therefore, while all conditions of oral pathology do not manifest themselves or terminate as those described, still we must admit that it is rather a question of their development than of their presence.

DISCUSSION.

Dr. Vida Latham, Chicago, said that what Dr. Rotch says about the ear is a good illustration that he sometimes pays little attention, and apparently does not try to reduce the number of bacteria. She hopes that the doctor will not eliminate all bacteria, because we need some special bacteria to take care of the mouth and to build up immunity and resistance to some diseases of the oral apparatus, as well as to aid in processes of digestion and oxidation.

Dr. M. I. Schamberg, Philadelphia, said that Dr. Power's observations have been the same as those of a number of other physicians. Dr. Schamberg stated that the more he hears such papers the more he believes that in dentistry we are often dealing with conditions in the mouth which encourage diseases, which may otherwise run a fatal course. He stated that dentists have a greater mission in the prevention of such fatal diseases than the man who takes the diseases after it has once placed the patient in a moribund state. He declares that he feels proud of the work that the dental profession is doing, especially the Section on Stomatology, in combining with medical men to show the tremendous amount of good dentistry works in the entire human body.

Dr. J. E. Power said that he recognizes the fact that we need more bacteria in the mouth. He referred principally to the disease producing bacteria, and thinks of the two, we can, perhaps, get on better without these bacteria, than the class to which Dr. Latham referred.

THE SURGICAL TREATMENT OF DUODENAL ULCER.*

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The duodenum is unique in its functions. It acts as a vestibule for the small intestine and is a meeting ground for the acid stomach ingesta and the alkaline biliary and pancreatic secretion. The four inches above this point partakes of the character of the stomach and its ills, and is more frequently diseased than any other part of the intestine of equal length, save the rectum. Duodenal ulcer is much more serious than gastric ulcer. The coats are much thinner and the danger of erosion of large blood vessels is much greater and the likelihood of sudden death from perforation make it a very fearful malady.

Its symptoms are not so frank, and, when present, are either construed as gastric or they mimic the manifestations of gall-bladder disease confusingly. It is in the operating room that the real living pathology of the duodenum is being developed, and it was in the operations undertaken for one of the other above diseases that the true cause of the symptoms was disclosed to be duodenal and thus our knowledge is being enriched and the interesting and unsuspected frequency of duodenal ulcer, in comparison with gastric ulcer, demonstrated.

Burwinkel considered the ratio between gastric and duodenal ulcer as 12 to 1. In 1896 there were but 9 reported operations. Out of 231 cases of gastrojejunostomy for ulcer, the Mayos had 119 males and 112 females, of which 158 were gastric, 60 duodenal, 14 duodenal and gastric. The duodenum was, therefore, involved 74 times, or in nearly one-third.

It has the same etiology as gastric ulcer, viz.: injury of the mucosa (75 per cent. occur in the grinding or pyloric end), anemia and hyperchlorhydria. This latter factor is evidenced by the location of the duodenal ulcer nearly always above the entrance of the common duct with the alkaline discharge from liver and pancreas, and also by the occasional appearance of peptic ulcer in the jejunum after gastrojejunostomy where the long loop was used a number of inches from the alkaline influence of the bile and pancreatic outflow. Where the short or no-loop method is used this occurrence is rarely seen.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Ewald produced duodenal ulcer in animals by the administration of HCl, 1 to 2,000. Men have a greater tendency to hyperacidity from high living. Rough food, too, with alcohol and tobacco, increases acidity.

LOCATION.

The ulcer is generally in the first four inches and above the papilla, and is particularly prone to occupy the first two and one-half inches. Mathematically it is ten times more frequent in the first than in the second part. Collin, in 262 collected cases, found 242 in the first portion. They are rare below the entrance of the common duct and cause chronic jaundice or atrophy of the pancreas.

SEX.

It exists in males in the proportion of 2.5 to 1 in females (Mayo and Graham), and Moynihan found 32 males, as against 19 females.

AGE.

It occurs more frequently between the ages of 15 and 25 in the female and from 40 to 50 in males. They have been known to occur immediately after birth. Cutler collected 8 under 7 years and 9 between 7 and 13. Chvostek found one in a baby of 3 months. The average age at death in 127 cases was 38 years. One case was successfully operated on by Wallis, 92 years old.

BURNS.

Formerly considerable mention was seen of the effect of superficial burns in the production of duodenal ulcer within a few days or a fortnight. Holmes and also Collin found this complication in about 12 per cent., respectively, in two groups of cases collected. It appears to be a septic infection, and since the antiseptic management of burns has come into general adoption few ulcers have been reported. Thus, Lockwood collected 138 cases treated more or less antiseptically with only one ulcer.

SYMPTOMS.

It is regrettable that ulcer of the duodenum sometimes exists without any symptoms, until a sudden and perhaps fatal hemorrhage or perforation declares its threatening existence. Morot estimates that 20 per cent. are thus latent. It may persist unrecognized and possibly symptomless during life. In 151 cases examined by Perry and Shaw postmortem, no history of the condition could be obtained in 91. The absence of symptoms is explainable on the ground of the absence of motility of the organ as compared to the stomach (Budd). The food, when it makes its transit through the duodenum, is chymified and there is no grinding there. Latency exists as long as there is no motor insufficiency, when the acidity is not above normal, and in the absence of acute or chronic perforation. Under these conditions there is no belching, vomiting or pain and the ulcer may lie unsuspected until hemorrhage betrays it.

These symptoms, if present, may be pigeon-holed under some inexact and meaningless conception of indigestion or dyspepsia as an entity with our ineffectual efforts at prescription relief. Even when one approaches the case with a just appreciation of the importance of determining the precise pathology of digestive disorders, the problem has just begun. On one hand, the similarity of the manifestation of duodenal and gall-bladder disease confronts the clinician; and, on the other, the likelihood of regarding even the suspected ulcer as gastric prevents the art from being an exact one.

The classical duodenal symptoms of pain, hematemesis and melena, if present, will unerringly lead to an early diagnosis.

PAIN.

Pain is produced by the irritation of the open ulcer by the hyperacid gastric juice and should, therefore, come on near the end of stomach digestion, or in about four hours. It sometimes occurs in two hours and may be delayed six. To put it in another way, it occurs, say, an hour before meals and is relieved by food. It sometimes occurs significantly in the small hours of the morning. It is of a burning character and located in the middle line or along the right costal border. It may only amount to a vague feeling of distress in the epigastrium. In some patients it is cramp-like and increases with intolerable severity. This colicky pain is caused by pyloric spasm.

TIME OF ONSET.

When patients complain of pain that comes on three or four hours after eating, they will frequently say that they have no inconvenience after eating; that it always occurs "just before meals," and they call it hunger pain. They also find that something taken then will relieve the pain. This is due to the fact that the pylorus closes when food is in the stomach and the hyperacid gastric juice no longer gains access to the duodenum. Thus patients will deny having indigestion and boast that they can eat anything; indeed, they do eat freely because the hyperchlorhydria gives increased ability to digest food, and the more that is taken the longer digestion is retarded and the pain delayed.

These patients, therefore, who do not restrict their food do not lose weight in the early stages and appear healthy and well-nourished. As the ulcer continues the pain becomes more constant, food fails to give temporary relief, and drugs also. The diet is then cut down and emaciation results.

As a most satisfying clinical experience Moynihan speaks of having been able to predicate the existence of both gastric and duodenal ulcers on the pain being produced shortly after taking food and causing irritation of the gastric ulcer, then abating owing to the food becoming chymified and finally producing fresh pain late in the process of digestion as the contents of the stomach are passed into the duodenum and in contact with the ulcer. He says:

> The symptoms in duodenal ulcer in many cases are perfectly characteristic and admit of an unhesitating diagnosis. I am compelled to dissent very confidently from the statement so often repeated that it is impossible to distinguish between an ulcer of the stomach and an ulcer of the duodenum. Even in those cases in which both gastric and duodenal ulcers are present, when the difficulty of diagnosis might be expected to be at its highest, a careful scrutiny of the history will generally allow a discrimination to be made between the symptoms due to the one and those due to the other condition. I do not pretend to say that in all cases the diagnosis is easy: on the contrary, in some cases it is impossible, because gastric ulcer and gall-bladder disease may both be complications in the same case. In many cases, however, a diagnosis is possible and in some is unmistakable.

Hematemesis and melena may exist singly or together. Hemorrhage from the bowels is more likely to escape detection than a small amount from the stomach. Hence, the histories of patients are misleading as to the relative frequency. It has been estimated at from 46 per cent. (Leube) to 81 per cent. (Greenough and Joslin). Both of these estimates appear to be too high if used as a basis of diagnosis. The latter per cent. was from a series of known ulcers. It is more to the point to determine, if possible, in what per cent. to expect hemorrhage in cases in process of diagnosis. Graham found 12 histories of hemorrhage in 46 cases that proved to be duodenal, 26 per cent. In 4 other cases blood was discovered in examination of the stomach contents.

In Moynihan's 23 cases, hematemesis and melena occurred in 4; hematemesis in 3; melena in 2, 39 per cent.

The amount of blood lost sometimes proves fatal. The death rate is computed by Perry and Shaw to be 13 per cent., and by the Fenwicks at 36 per cent. Fatal hemorrhage may be attended with no hematemesis, the blood escaping by the bowel.

Melena may cause faintness and marked distension of the colon, showing a deep blue color through the intestinal walls has been observed during operation. While it is usually tarry from being partly digested from its passage through the entire intestinal tract, it has sometimes been observed to be clotted.

Hemorrhage from a duodenal ulcer does not cease spontaneously as easily and quickly as from a gastric ulcer. The pancreatico-duodenal artery may be eroded; the hepatic has been opened and also the portal vein and even the aorta. It is well known that hematemesis of serious amount may occur without any reference to previous digestive disturbance, or the indigestion that may have been present will not seem to be related in any way to the hemorrhage.

Any intestinal hemorrhage not clearly from the rectum or from disease of the heart, kidney or liver, or typhoid fever, should be looked on as suspicious of duodenal ulcer. With reference to hemorrhage Berg has formulated the following indications for operation:

> 1. In the presence of acute, profuse, uncontrollable bleeding, which places the life of the patient in grave jeopardy.
>
> 2. In the presence of frequently repeated bleedings, even if they are not very profuse, that undermine the patient's strength and lead to a chronic anemia.
>
> Operation is not considered advisable when the patient's general condition is bad, the hemoglobin very low (19 to 20 per cent.) and the pulse rate very rapid. In such a case the operative shock, no matter how slight it might be, whether or not it is combined with the added depressing and hemolytic influence of a general anesthetic, may be sufficient to cause the death of the patient. It is far better in such cases to trust to internal remedies and complete rest, induced by morphin, to check the bleeding. When, however, the patient's condition is still good and the hemoglobin count is above 35 to 40 per cent., an immediate operation is strongly advised.

PERFORATION.

Free perforation of a duodenal ulcer is one of the most tragic catastrophies that can happen in the human body. It is sudden, unexpected and perhaps without the slightest premonition. An agonizing, stabbing pain in the epigastrium, followed by shock and collapse, attended with vomiting, subnormal temperature, rapid, thread-like pulse, followed by a rise in temperature, abdominal tenderness, distension and peritonitis, is the classic and ominous picture of a perforative peritonitis.

That is, perforation-peritonitis is all that can be said. Fortunately, if the condition is treated by operation promptly it is not material that it can not be diagnosed with certitude as a duodenal ulcer. It is infrequently considered duodenal in origin, even though operation is deemed necessary. Nineteen out of 51 cases collected by Weir were considered perforative appendicitis. The escaping fluid is directed to the right by the hillock of the transverse meso-colon and flows down the outer side of the ascending colon to the right iliac fossa. There the inflammatory battle is fought, and hence the similarity to appendicitis. It was diagnosed acute peritonitis 13 times, intestinal obstruction 5 times, together with the 19 considered as appendicitis. This gave 37 wrong diagnoses in 51 cases. The practice of operating on all sudden abdominal emergencies early serves to render error in diagnosis unimportant. Without operation practically all perforations of this type are fatal. Operation should be done promptly, certainly in the first 8 hours.

Notwithstanding the incision may be over some other suspected area, the finding of transparent or bile-stained fluid makes the diagnosis. It differs from gastric contents or from perforation elsewhere in the intestinal tract. The perforation is more difficult to close on account of the deep-seated location and immobility of the viscus. Linen purse-string or Lembert suture is the most effective. Gauze drainage should never be allowed to rest on the suture line.

If the perforation is recent, sponging the area is preferable. Many men do not irrigate at all, relying on local cleansing and drainage by large tube over the symphysis. Indeed, Murphy strongly advises against irrigation in generalized peritonitis, claiming that it disseminates the infection, is time-consuming and prolongs the anesthetic; that it is the confinement of pus under tension that is the dangerous feature, and drainage and the upright position (Fowler's position) are the essentials. He has saved 23 out of 24 cases of suppurative peritonitis by this treatment. I have followed this plan in four advanced cases recently with success. One had subnormal temperature and pulse of 140 and appeared well-nigh hopeless.

There is a temptation to irrigate the cavity, and the practice, while not as generally adhered to as formerly, still has ardent champions. (See discussion in London *Lancet* between Mr. Bruce Clark and Messrs. Turner and T. Crisp English. The latter defend it stoutly and have saved 9 out of 12 cases with it. Moynihan saved 5 out of 7—no irrigation.)

English collated 50 cases of operations for perforated duodenal ulcer, with 50 per cent. mortality. This has been reduced greatly in individual series, and is perhaps generally not over 20 per cent. It should and can be brought much lower by prompt operation, speedy suturing, no irrigation, suprapubic drain and Fowler's position. It has been suggested to administer methylene blue before operation to aid in the detection of the perforation. No attempt should be made to excise the ulcer. Whenever the condition of the patient does not forbid, gastroenterostomy should be performed at the time to allow the ulcer to heal. Moynihan was able to do this only in 2 of his 7 cases.

Chronic perforations resulting in localized peritonitis and adhesions are very common in duodenal ulcer on account of its shattered position and close proximity to other organs. This gives rise to sharp attacks, the relics of which persist and give chronic pain and digestive disability. The implication of the gall bladder in the adhesions imparts a gall-bladder syndrome, and these are the cases that are so difficult for exact definition.

The following points by Graham help to differentiate gallstones from duodenal ulcer:

> Pain in cholelithiasis is often sudden, severe, has a wide field of radiation, comes absolutely irregularly, is independent of and not eased by food, nor so often traced to it. No stomach history is given between the short, precise spells. Spasm of the diaphragm is nearly always observed, and vomiting and gas are present only during the attack and the relief through vomiting and gas eructation is not as certain. The vomit is usually scanty, yellow and bitter, and acidity is extremely rare.
>
> In duodenal ulcer the pain comes in decided periods of at-

tack. may be and often is sudden, has a very limited field of radiation. may be irregular as to time of separate attacks, but regular as to the taking of food. It is dependent on food, being early eased, and later pain returns. The history of gas, vomiting and acidity runs parallel to the periods of pain. No spasm of the diaphragm occurs except in some cases of perforation. The vomiting and belching are usually decided in quantity and quality and followed by relief.

There will always remain a certain proportion of cases that will mislead the careful physician. Those gallstones where the stomach symptoms of gas distress, sour belching and dilatation predominate, and pain is but little complained of (and that only of a dull character), will usually be diagnosticated as ulcer; where the duodenal case whose chief symptom is the sudden, sharp, intense pain of perforative but localized peritonitis, and where, with no obstruction and hyperacidity, the other stomach symptoms are in abeyance, will fall to cholelithiasis. Such error in diagnosis does not militate against the clinician, as both conditions are purely surgical and the differentiation in many cases must be made on the operating table.

TREATMENT.

In the acute ulcer or erosion of young anemic females. manifested by slight bleeding usually, the well-known dietetic treatment yields very satisfactory results. In the indurated or chronic ulcer which is prone to perforation in middle life and more frequently in men, medicinal treatment is very disappointing in the permanence of cure. It is to this class of persistent sufferers, where relapses have occurred and where the pain and discomfort interfere with the conduct of life, that operation has been so brilliant. This is especially true in pyloric or duodenal obstruction, even though the ulcer is healed.

Surgery should be kept strictly within the limits of a mechanical appliance. It can not be asked to act in any miraculous or mysterious way. The indication is solely for better drainage of the stomach, and at a point where the food and acidity will not have to pass over and irritate the ulcer. It is the old principle of rest. The operation which accomplishes this best is posterior gastroenterostomy without a loop and the incision in the stomach being from right to left, as recently devised by Mayo. Theoretically, also, it is a good thing absolutely to obstruct the pylorus and thus give the ulcer immunity. This can be done in connection with gastroenterostomy by cutting through the pylorus and closing each end by suture or by surrounding it with a moderately tight construction of silver wire (Fowler). This would stop the food current, but not cut off the circulation. Practically, however, this step is rarely employed by the masters who have perfected this work.

THE HOUR-GLASS DUODENUM.

A PLEA FOR A MORE EXTENDED USE OF PLASTIC SURGERY TO PRESERVE THE DUODENAL ROUTE.*

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Only the most casual reference is made in literature to the deformities of the duodenum, and when the pyloric end of the stomach is the seat of intrinsic obstructive disorders the pylorus is almost invariably referred to as the seat of the obstructing cause.

In these later days of gastric surgery there is evident a growing sense of appreciation of the important rôle played by the duodenal ulcer in causing obstructive disorders of the stomach, and more critical analysis of the distribution of the so-called peptic ulcer tends to demonstrate an increasing ratio of duodenal ulcers. The tardy discovery of this fact is easily explained by the vaguely defined symptom-complex of the duodenal ulcer. During the last eight years I have operated on four cases of the so-called acute abdomen and discovered perforated duodenal ulcers.

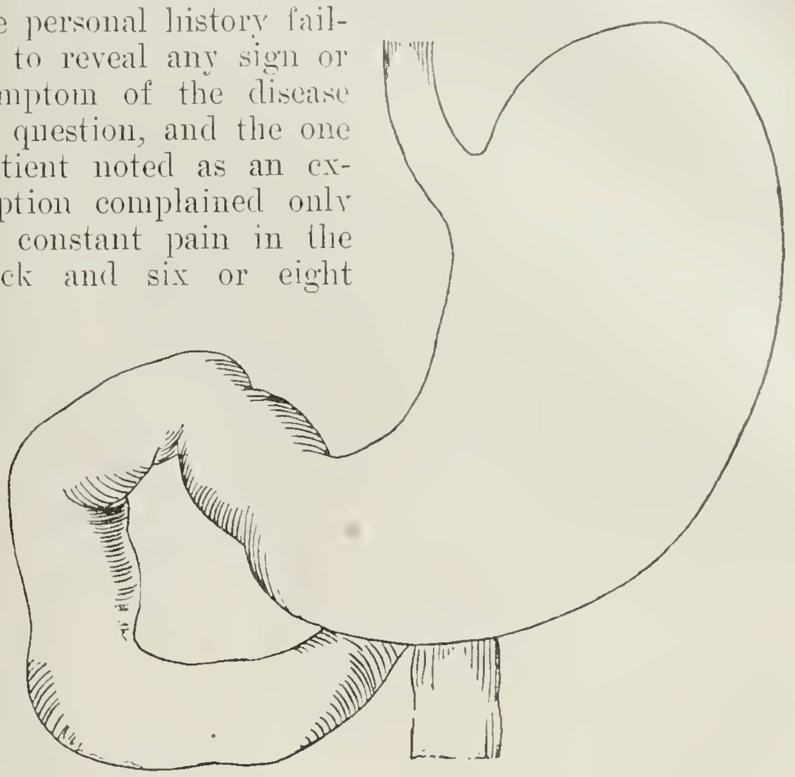
Fig. 1.—Showing normal outlines of stomach and duodenum.

In all these cases but one, the most careful canvass of the personal history failed to reveal any sign or symptom of the disease in question, and the one patient noted as an exception complained only of constant pain in the back and six or eight years previously had one attack of melena. All these patients died. The fact is merely mentioned as an index of a larger range of cases than is commonly supposed to exist, and gives mute testimony to the value of more careful clinical study and its corollary. an earlier resort to surgery.

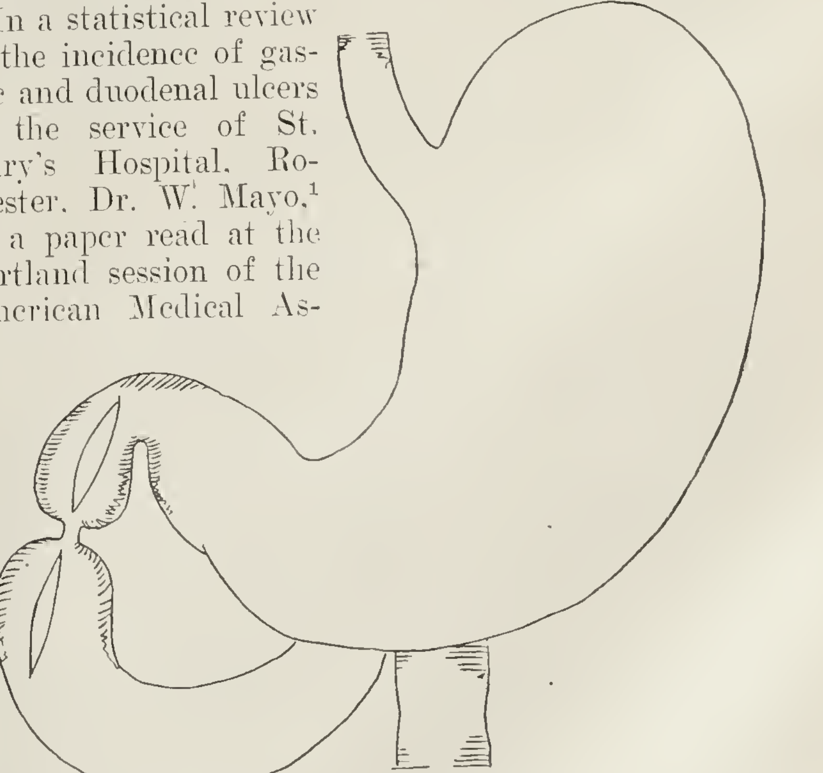
Fig. 2.—Showing feasibility of duodenoduodenostomy to preserve duodenal route.

In a statistical review of the incidence of gastric and duodenal ulcers in the service of St. Mary's Hospital. Rochester. Dr. W. Mayo,[1] in a paper read at the Portland session of the American Medical Association, made the following observations. For convenience I quote his own words:

> We have thought it wise to narrow the limits of the study to the consideration of only the last two and a half years, from Jan. 1, 1903, to July 1, 1905, and also to consider only the cases subjected to gastrojejunostomy, excluding all the ulcers

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] The Journal A. M. A., Oct. 21, 1905.

excised or subjected to Finney's operation, pyloroplasty, etc. This gives us 231 cases, 119 males and 112 females, of which 115 were gastric ulcers, 60 duodenal, and 14 duodenal and gastric. Twenty of the duodenal ulcers extended up to and involved the pylorus. In other words, out of 231 gastric and duodenal ulcers the duodenum was involved 74 times, 58 times in males and only 19 times in females. The percentage of duodenal ulcers being 32.

According to the observations of Perry and Shaw, the most frequent situation of the duodenal ulcer is the upper horizontal segment of the duodenum. Distribution being as follows: 123 in first segment, 16 in the second segment, 2 in the third segment. Oppenheimer's figures are 69 in the first segment, 8 in the second segment, 4 in the third segment. Collin's estimates are as follows: 242 in the first segment, 14 in the second segment, and 6 in the third segment. Collin states that in 162 cases of this group the ulcers were from two to four centimeters from the pylorus, in 74 cases close to it, in 4 they reached into the pylorus, while in 2 half of the ulcer lay in the stomach and half in the pylorus.

Krause observes that when the ulcers were situated in the upper horizontal segment in 38 cases 15 were in the anterior or right wall, 6 in the posterior or left wall, and 8 in the upper and 9 in the lower wall. Oppenheimer gives the relation of the right to the left or anterior to posterior wall as 18 to 16. According to Boas, the ulcers were found more frequently in the inner wall near the papilla.

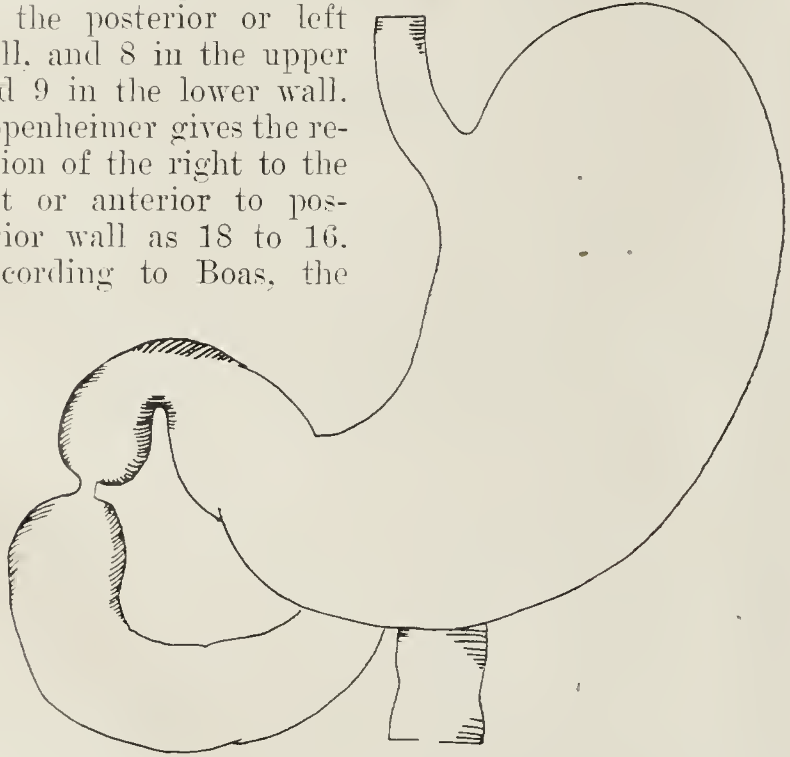

Fig. 3.—Showing one type of hour-glass duodenum due to duodenal ulcer.

Pagenstecher states that the duodenum has only in rare cases a mesentery proper on which it lies free. Both cases of hour-glass contraction, which I shall refer to in this paper, had free, movable mesenteries. In the third segment, fixation to the abdominal wall is more constant, the anterior wall only being free.

Quoting Brunner: "The situation of the duodenal ulcer shows relatively the same relation to the duodenum that the peptic ulcer does to the stomach." In 62 ulcers affecting the upper horizontal portion of the duodenum the anterior wall was affected 38 times, the posterior wall 9 times, and the inferior wall 15 times.

All authorities are agreed that the duodenal ulcers are more prevalent among males than females.

In the contemplation of surgical measures for the relief of intrinsic obstructive disorders of the pylorus and duodenum the teaching of physiology should receive the most thoughtful consideration of the surgeon, and it should be laid down as axiomatic that the duodenal route should be selected in all cases in which it is possible.

A review of the physiologic reasons for the selection of the duodenal route will not offend the senses of an assembly of surgeons who, if true to the traditions of their profession, will always hail with approval the finger posts of physiology and anatomy.

It would appear of most vital consequence to the health and well being of all individuals that the food that enters the stomach should cross the pyloric threshold and traverse the entire length of the duodenum. The course is short, but a quick review of the events that succeed one another in the duodenal cycle of digestion carries with it logic that is almost irresistible.[2]

The following findings are taken from a recent article by Cannon:[2]

> The food enters the stomach and is gathered in the cardia which acts as a reservoir. . . . The gastric peristaltic wave is confined to the pyloric portion which acts as a mill, churning the food and propelling the chyme by jets through the pyloric orifice. . . . The cardia possesses a selective function and retains the proteids long enough to receive their proper treatment by the pepsin ferment and hydrochloric acid, while the carbohydrates are forwarded quickly and without delay into the duodenum, to be treated by their respective ferments.
>
> Free acid in the stomach is the signal for relaxation of the pyloric sphincter. The pylorus opens and the acid chyme passes into the duodenum. . . . The presence of the acid chyme in the duodenum is the signal for the pylorus to close and the pylorus remains closed until the acid chyme is neutralized by the alkaline pancreatic secretion.
>
> The transit of certain foods, and certain foods only, across the duodenum excites the flow of bile. . . . The bile flow excites the pancreatic enzymes and generates the fat-splitting ferment which possesses three-fold strength in the presence of bile. . . . The bile stops the action of the pepsin which is destructive to the action of the pancreatic ferments.
>
> The presence of acid foods in the duodenum closes the pylorus and originates the segmenting movements in the small intestine and especially in the duodenum, which mingles the food with the pancreatic and biliary juices and initiates the work of active absorption.

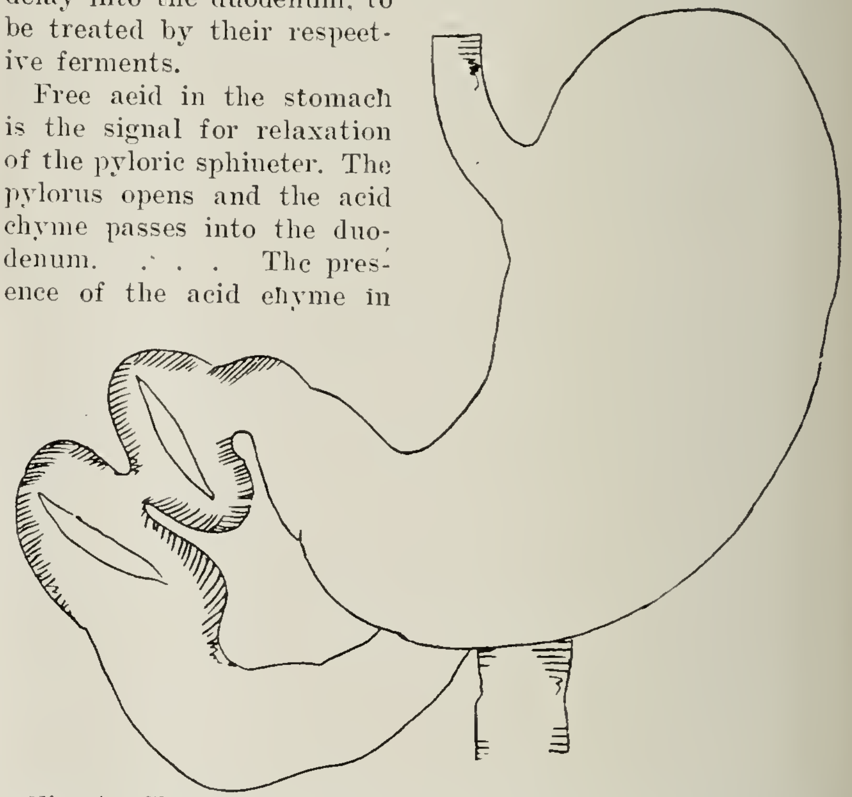

Fig. 4.—Showing another type of hour-glass duodenum with decided duodenal pouch, illustrating proposed plastic operation for its relief; duodenoduodenostomy.

These are the common truths of physiology, established beyond peradventure by the most refined experiments in foreign and domestic laboratories.

The question naturally suggests itself, Does modern surgery in the gastric field obey the behests of modern physiologic dogma, or are they more honored in the breach than the observance? Can the highly organized,

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2. American Jour. of Med. Sciences, April, 1906.

vital and complex functions of the duodenum be safely ignored in any operation in this field? Is the substitution of the jejunal for the duodenal route fraught with mischief or do adjustments take place after gastroenterostomy so that the digestive cycle of the duodenum continues despite the duodenal cut-off? It would appear from the most elementary reasoning that any operative measure that cuts out the duodenum from its special rôle in the digestive act possesses serious drawbacks and disadvantages (Fig. 1).

Personal observation of many cases of gastroenterostomy convinces me that a very considerable number of cases suffer afterward from various disorders and that their sufferings do not commonly diminish with time. It is admitted, of course, that in many instances the last condition of these patients is infinitely better than that which first demanded the measures of relief offered, and that it is very often the only recourse left for the surgeon. They are by no means doomed, but they are often marked and in the deep seams of their faces will often be found the anastomotic line. It is far from my thoughts to diminish the halo of splendor that surrounds the achievements of surgery in this fertile field of work.

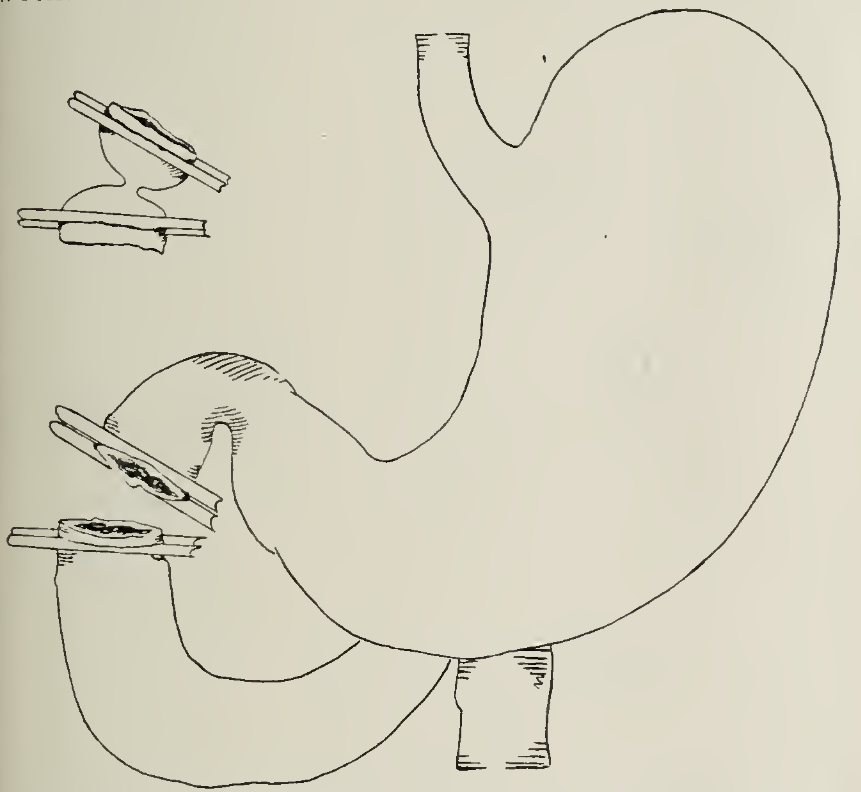

Fig. 5.—Showing feasibility of partial duodenectomy, followed by duodenorrhaphy to preserve duodenal route.

This argument leads me to make a special plea for the expansion of plastic surgery in order to preserve intact the duodenal route for the following reasons: First, the peritoneal investments and the liberal circulation of the parts make it an ideal field for plastic surgery; second, plastic surgery aimed to maintain intact the duodenal route will always furnish the best results; third, plastic surgery in the region of the stomach and duodenum for the relief of stenosis has not yet been sufficiently exploited and has not been accorded its due place in surgery; fourth, the best outlet for drainage of the stomach under all circumstances is furnished by the pylorus and the duodenal route; fifth, plastic surgery permits regional inspection, aids diagnosis and guides the surgeon in the performance of the most conservative work (Fig. 2).

The title of this paper was not selected because it fits the theme, but because the study of two cases in which the hour-glass contraction of the duodenum was first discovered by me suggested it.

Very recently two cases of hour-glass contraction of the duodenum came under my observation in my service in St. Vincent's Hospital, Portland, Oregon. I had never seen a case of this kind before, and I have been unable to find anything in the literature corresponding to it.

Case 1.—This patient I have observed personally for nearly twenty-five years. Dr. Bevan, if a remember rightly, saw the man in consultation with me fifteen years ago.

Patient.—Male, aged 66. He has a long history of acid dyspeptic, digestive pain, and on six or eight occasions severe hematemesis. Diagnosis was made of peptic ulcer. He was passed from hand to hand and was cured by diet and drugs a great many times.

Present Illness.—I met him on the street recently and he presented a picture of extreme marasmus, without cachexia. There was no pain, but every two or three days he evacuated his stomach of gallons of grumous fluid.

Examination.—This revealed gastrectasis, extending to the iliac crest. The outline of the stomach was visible through his attenuated abdominal wall. No tumor.

Operation.—Operation was advised and performed Feb. 28, 1906, at St. Vincent's Hospital. Section revealed a most perfect type of hour-glass contraction, faithfully portrayed in Figure 3. The duodenum was freely movable, free from adhesions and possessed a free mesentery. There was a small pyloric pouch. Pyloric ring was normal and there was no sign of ulcer of the stomach, past or present.

Posterior gastroenterostomy, following method of Mayo, was done. The patient recovered, returned to his home on the eighth day, and was downstairs on the tenth. Results were extremely satisfactory. The remaining signs are so slight as to be insignificant, but enough to make him conscious of the possession of a stomach.

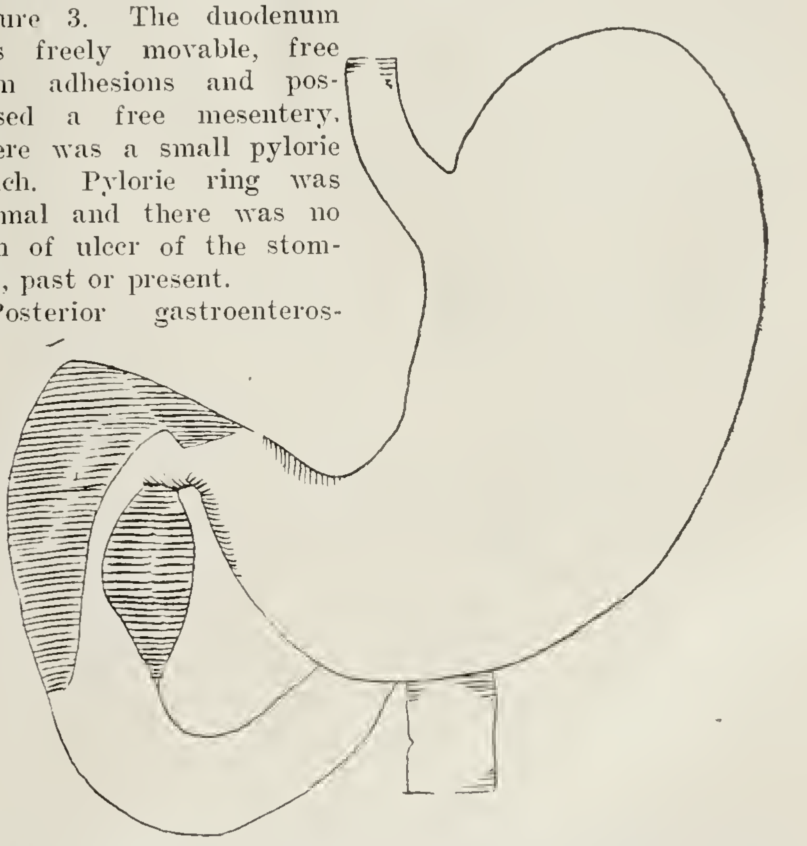

Fig. 6.—Illustrating pyloric, and duodenal thickening (benign), result of chronic duodenal ulcer, relieved completely and permanently by duodenoplasty. Note open pyloric ring.

Case 2.—German, aged 58.

History.—This man complained of gastric misery, vomiting, melena on two occasions and hyperchlorhydria extending over a period of fifteen years. Aspect was anemic, but was not cachectic.

Operation.—Abdominal section revealed duodenal stenosis about one and one-half inches from the pylorus. The pyloric ring was free and patulous. There were a few adhesions about the duodenum. There was hour-glass contraction, with large duodenal pouch on the proximal side (Fig. 4), capable of containing at least one ounce of fluid. For want of proper clamps I had to do free-hand posterior gastroenterostomy. Results were satisfactory, notwithstanding troublesome vomiting, which lasted for three or four days. While greatly relieved, the man still complains of distress in the stomach.

At this stage of my theme I venture to express the thought that the ultimate results would have been better if I had performed plastic operations in both these cases to maintain inviolate the duodenal route (Fig. 5).

Because they possess many characters in common and bear closely on this argument, the following cases are included in this study:

Case 3.—Mary M., aged 76.

History.—This woman gave a long history of gastric pain, sour stomach, vomiting, hematemesis and melena.

Examination.—There was extreme emaciation, great debility, no cachexia. A movable tumor could be felt to the right of the median line. There was extreme gastrectasis.

Operation.—Abdominal section revealed pyloric thickening without adhesions. The pylorus and duodenum were freely movable. The pyloric ring was patent. Most of the thickening was on the distal side of the pylorus. There was stenosis of at least one and a half inches of the duodenum. The thickened portion resembled a segment of cylinder. The anterior surface of the duodenum was soft and pliable (Fig. 6).

For the relief of this case the Heineke-Mikulicz operation was performed. The incision was carried over the anterior surface of the duodenum, beginning beyond the zone of thickening, across the pylorus and into the stomach. The incision was two inches in length and was sutured at right angles to line of incision. The result was faultless. In two or three weeks gastrectasis spontaneously disappeared. The patient survived the operation five years and died of intercurrent disease.

Case 4.—Case of peculiar severity.

Patient.—Male, aged about 70, suffered thirty years from condition of violent gastric pain. There were repeated moderate hemorrhages, and persistent acid and bilious vomiting. Facies betrayed most intense suffering, there was marked emaciation and a cachectic aspect.

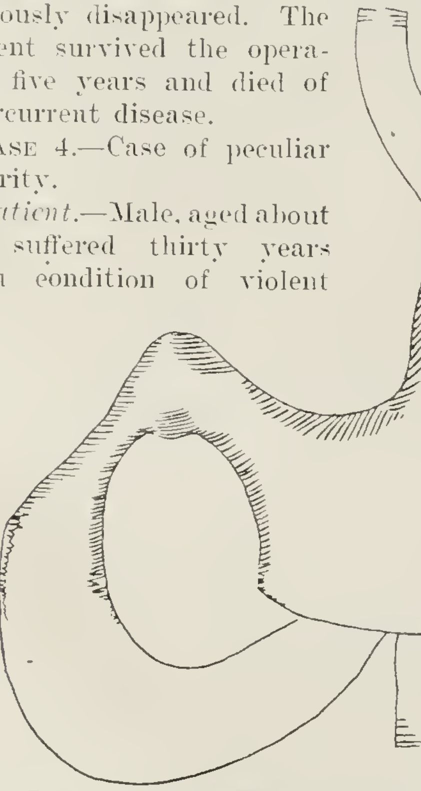

Fig. 7.—Showing extensive stenosis of duodenum, pylorus open, suitable case for duodenectomy and duodenopylorostomy or duodenogastrostomy.

Operation.—Abdominal section. Visceral adhesions were universal. The pylorus and duodenum were fixed. The pyloric part of the stomach was greatly thickened and distorted. The pyloric ring was moderately stenosed. There was a concave depression over the posterior and anterior surface of first part of the duodenum. The duodenal lumen was constricted for one inch or more. The central portion was almost occluded. There was moderate gastrectasis (Fig. 7). A posterior gastroenterostomy was done. Immediate recovery ensued. The patient remained three weeks in hospital and had gained fifteen pounds in weight when he left. After six weeks he suddenly developed persistent bilious regurgitant vomiting and died of exhaustion before he could be brought back to the hospital for relief.

Case 5.—E. G., aged 38, had had a gastric disorder of six years' duration, with hyperchlorhydria and vomiting. There was no record of hematemesis or melena and no pain except in the lumbar region. There was positive gastric insufficiency with moderate gastrectasis.

Operation.—The pylorus was free and movable; there were no adhesions. There was a wedge-shaped retraction of the upper wall of the duodenum. The pyloric ring was patulous. An incision was made over the anterior wall of the duodenum up to but not including the pyloric ring and extending beyond both ends of the constricted part. It was sutured at right angles to line of incision. Recovery ensued; the result was practically perfect.

The operation performed in this case was duodenoplasty, not pyloroplasty (Fig. 8).

CONCLUSION.

The study of these few cases warrants the following inferences:

1. Duodenal ulcers are marked by great chronicity.
2. They result in deformities of the duodenum and stenosis after many years' duration of the ulcer.
3. The most perfect results of operation are found in those cases in which the duodenal route has been preserved by duodenoplasty.
4. Duodenal ulcers result sometimes in hour-glass contractions of the duodenum and kindred deformities.

The study of this very insignificant remnant of cases suggests the use of the following plastic operations for their relief, the main purpose of the operations being to preserve the duodenal route:

1. Resection of scars and coarctations together with the ulcer-forming regions of stomach or duodenum or both as proposed by Rodman; apposing by plastic devices the divided parts, always striving to preserve the duodenal route. (The plastic principles of Billroth, Wolfler and Kocher.)

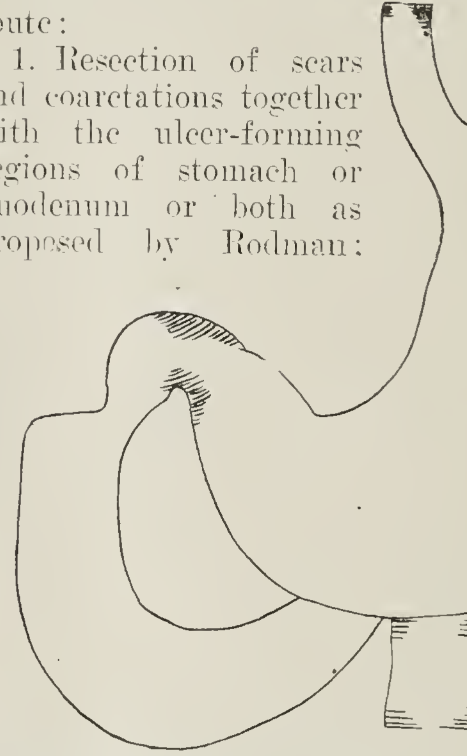

Fig. 8.—Illustrating wedge-shaped retraction of duodenum or saddle-back deformity, susceptible to plastic operation. Pyloric ring open; relieved by duodenoplasty.

2. Pyloroplasty after Heineke and von Mikulicz.
3. Pylorolasty after Finney.
4. Duodenoplasty.
5. In suitable cases partial duodenectomy or partial resection of the duodenum followed by duodenorrhaphy by suture or mechanical device.
6. In hour-glass contraction of the duodenum or kindred deformities duodenoduodenostomy by means of a clamp and suture or by plastic device or the McGraw ligature.
7. In pyloric stenosis involving the pyloric ring, partial pylorectomy followed by duodenogastrostomy by clamp and suture or mechanical device.
8. In stenosis limited to the beginning of the duodenum as in Case 6, partial duodenectomy followed by duodenopylorostomy or duodenogastrostomy.

9. In all cases unsuited to plastic measures above outlined, gastroenterostomy.

10. And, because it is held doubtful that the artificial opening will be permanent in the presence of a patent pylorus, any of the above-mentioned operations or combinations of them preliminary to or part of the operation of gastroenterostomy.

508 Dekum Building.

THE TREATMENT OF BONE CAVITIES.

REPORT OF A CASE OF COMPOUND COMMINUTED FRACTURE OF THE HIP, FOLLOWED BY BONY UNION AND A MOVABLE JOINT.*

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I have had so many inquiries concerning an article on the treatment of bone cavities published in The Journal, May 20, 1905, that it seemed that a brief paper on the same topic might interest the members of this Section.

The obliteration of dead space in the soft tissues is a very simple matter since we have learned to use buried catgut sutures, and the treatment of abscesses of the soft parts by incision and drainage is usually followed by speedy convalescence. The obliteration of dead space in bone, however, has been very unsatisfactory. In fact, it has been so difficult that in the majority of cases we have not tried to fill the cavity, but have treated it as an open wound until Nature furnished an epithelial lining for the whole cavity. The method of Neuber, in which the integument is turned into the bottom of the wound and fastened there, is the most certain and speedy of the older methods, but it is only applicable to very superficial bones, like the tibia, and it leaves a most unsightly scar. Schede's method of healing by blood clot is even more unsatisfactory in bone cavities than in the soft tissues, because even when successful the blood clot is absorbed long before Nature can furnish new bone, and the integument is drawn in, leaving a bad scar. In septic and tuberculous bone cavities, and most bone cavities are such, this method is unsatisfactory, because the clot usually becomes infected, no matter what methods of sterilization have been employed. The prevailing method is to pack the cavity with gauze until it is filled with connective tissue and covered by epithelium, and is about the most tiresome and unsurgical procedure surgeons are guilty of. I have one patient who calls on me occasionally now, on whom I performed a sequestrotomy two years ago and treated after this method. He packs his wound himself, and still has a small point deep in the wound without an epithelial covering. Since that time I have learned how to fill bone cavities, and even those operated on but a short time ago are healed, and the healing process has not been accompanied by the tortures of pulling out and putting in gauze. The treating of tuberculous cavities in bone by packing is eminently unsatisfactory, because it is not only tedious and painful, but very commonly unsuccessful, the granulations becoming infected by the tubercle bacillus.

FAULTY TECHNIC.

While our lack of success in the treatment of bone cavities is, in a measure, due to the physical make-up of the tissue, it is largely due to faulty technic, for the technic of bone surgery has not kept pace with that of surgery of the soft parts. The consequence is that many cases of bone disease have been neglected. It is too common a practice to treat an abscess in the end of a long bone by means of braces and plaster splints until it breaks into the neighboring joint; and this is termed conservatism by those who practice it.

MacNamara's book on "Diseases of the Bones and Joints," published in 1887, is the best book ever written on bone surgery, but it makes no mention of an artificial filling for bone cavities. In 1888, Gerster published his excellent book on "Aseptic and Antiseptic Surgery," in which he advocated the filling of bone cavities by blood clot after Schede, but he made no mention of an artificial filling. Later Senn advocated the use of decalcified bone chips, dusted with iodoform, for the filling of bone cavities. The interspaces between the chips were allowed to fill with blood clot, as in the Schede method. This was the first successful method of artificial filling and was a decided advance, but was too often followed by failure to become popular.

MOORHOF'S BONE WAX.

My experience in the past two years leads me to believe that a new era in bone surgery has dawned and that we can secure so much better results than we have been able to heretofore that bone surgery will become more popular, and that the technic will improve accordingly.

Surgeons have long felt the need of a material with which they could successfully fill bone cavities as dentists fill cavities in teeth, but the filling of a bone cavity which must be covered by soft parts is very different from filling a cavity in a tooth.

With our present knowledge of infection and its results it is easy to understand why all experiments along this line in preantiseptic days were failures.

In 1903, von Mosetig reported a large number of successful results from the use of a new bone plug. Moorhof also reported many successes with it in his clinic at Vienna. In this country it is very commonly known as Moorhof's bone wax. This material consists of twenty parts iodoform, forty parts spermaceti and forty parts of oil of sesame. The ingredients are slowly heated to 100 C. and, when allowed to cool, form a soft solid which remains solid at the temperature of the body. For use it is heated to 50 C., being constantly stirred to keep the iodoform evenly distributed. At this temperature it can be poured into the cavity, where it immediately solidifies. The material does not act as a foreign body, nor does it act as a culture medium. It possesses the inhibitory and medicinal properties of iodoform, without causing iodoform poisoning. Its physical properties are such that it is gradually absorbed and replaced by granulations, and finally by new bone. Moorhof shows many skiagraphs illustrating this process.

The wax, or bone plug, as its inventor terms it, has demonstrated beyond all controversy the feasibility and practicability of an artificial filling for bone cavities.

After the average operation at the present time the surgeon expects to close the wound and to have very little to do in the way of after-treatment, and he is inclined to neglect cases where this agreeable program can not be carried out. With this artificial means of filling dead space in bone, the after-treatment in cases of bone surgery need not be disagreeable or prolonged.

In acute infections of bone there is no place for an artificial filling, because the parts can not be sterilized, but, fortunately, it is not needed when the operation is performed early, as it should be, because there is no great loss of bone substance and Nature promptly makes good the defect after drainage is established. When these acute cases are neglected, or when the process is so acute as to cause speedy necrosis, there comes a time when the necrosed bone must be removed, leaving a bone cavity to be filled.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

TECHNIC.

The preparation of the cavity is the first step. The bloodless method must be employed so that the cavity can be made sterile and dry. When the bone wax is to be used, the opening in the bone need not be larger than is necessary to permit the removal of the sequestrum and the thorough cleansing of the cavity. The periosteum must be carefully preserved, as it makes an important covering for the bone plug. After removing the sequestrum and thoroughly curetting out all débris, the cavity must be washed and dried and thoroughly swabbed with 95 per cent. carbolic acid. After about two minutes the acid should be wiped out and the cavity washed with alcohol, after which it must be thoroughly dried, as moisture will prevent the melted wax from penetrating every crevice in the bone, which is necessary for the success of the treatment. Moorhof has a hot-air blast for drying the cavity, which is a great advantage, but not a necessity. The melted wax is then poured in and as soon as it is hardened the periosteum and other tissues are closed by catgut sutures, a dry gauze dressing is applied and held snugly in place by a roller bandage, after which the rubber bandage is removed. When there is a good periosteal covering no drainage is necessary, but when the soft parts come in contact with the wax it is advisable to provide temporary drainage by means of strands of catgut or small strips of rubber tissue. In most cases, when no drainage is necessary, primary union is secured, but in a few there will be some oozing of serum between the stitches for a few days, after which union takes place. In drained cases union usually takes place soon after the removal of the drain, but occasionally serum and particles of iodoform escape for some time after; but so long as the wound is kept sterile all goes well. Even when the wound becomes infected the infection is superficial and it is in a better condition than if it were being treated by gauze packing.

The first case reported in my former paper was that of a boy who had an ankylosed elbow from a badly united fracture. I opened the joint, trimmed the displaced condyle with a knife and filled the space with the bone wax. The boy now has perfect motion in the joint.

I have found that when the wound is so situated that immediate closure is impossible the wax may still be used to advantage. In one case the patient had a chronic abscess in the lower jaw from an ulcerated tooth. The tooth was extracted, the abscess opened and disinfected and the cavity filled with the bone wax, and, although a portion of the wax was exposed inside the lower lip as large as the end of a lead pencil, the result was perfectly satisfactory. The patient reported three months later with the opening closed. She stated that she thought the wax all came out, but so slowly that by the time it was out the cavity was filled.

In old cases in which there is loss of soft parts so that the wound can not be closed, the cavity can be curetted, disinfected and filled with wax which will sometimes remain under a dry gauze dressing until it is gradually absorbed and replaced by granulations. When the wax comes out, as sometimes happens in these open cases, the cavity can be resterilized and again filled with wax which makes a very much better and more comfortable dressing than gauze packing.

CHRONIC BONE ABSCESS.

Chronic bone abscess which has too often resulted in amputation can be successfully and comfortably treated with the bone wax by evacuating the pus, sterilizing the cavity, filling it with the wax and closing the periosteum and soft parts over it.

I have filled the cavity after excision of the elbow in two cases with most gratifying results.

When a pyogenic infection of bone threatens the integrity of a joint, surgeons promptly operate to save it, but a tuberculous focus in the same locality is very commonly neglected and treated by so-called conservative methods until the joint is invaded. A tuberculous focus in bone near a joint, although not so rapid in its course as a pyogenic infection, is just as great a menace to the soundness of the joint and should be treated in the same manner. The bone should be opened, the focus scraped out, the cavity swabbed with carbolic acid, followed by alcohol, filled with wax, and the periosteum and soft parts closed over it. Treated in this manner, a local tuberculosis is speedily curable. This treatment is not open to the objections of gauze packing. It saves the joint and is followed by speedy convalescence.

My greatest victory with the use of the bone wax was in a compound comminuted fracture of the hip joint in which I secured bony union and a movable joint.

Patient.—E. E., aged 26, was referred to me by Dr. A. Ridgway, Belgrade, Minn., Jan. 17, 1905.

History.—On January 16, while hunting, he was accidentally shot with a shotgun. He was at such close range that the shot acted as a large bullet. It entered from behind, passing through the trochanter and neck of the femur, opening the joint. Dr. Ridgway packed the wound with gauze as a temporary dressing and to control the hemorrhage.

Examination.—When he arrived at the Northwestern Hospital all the usual signs of fracture of the neck of the femur were present, including one and one-half inches shortening. The wound was large and ragged. Gun wads and parts of clothing were found deep in the thigh, where they had been driven directly through the bone.

Treatment.—The shot, fragments of bone and other foreign bodies were removed, the wound cleansed, packed with gauze and the Maxwell dressing for fracture of the neck of the femur applied, that is, the usual weight and pulley were placed at the foot of the bed and a side pull from the upper and inner side of the thigh upward and outward at an angle of about 45 degrees, with a 10-pound weight, which made the joint capsule taut and held the short fragment in place. The wound was treated by gauze packing for two weeks, when the temperature disappeared. The gauze was then removed, the cavity disinfected by 95 per cent. carbolic acid, followed by alcohol, and filled with bone wax.

Result.—At the end of seven weeks the wound was closed, the weights removed and the patient allowed to sit up. At the end of the eighth week he went home, using crutches and bearing some weight on the limb. He began his usual work on the farm on August 1. October 20 a small piece of bone came away, and since then he has had no trouble. He now has good use of the joint and walks without any artificial aid save an inch lift on the heel of his shoe.

AUTHOR'S EXPERIENCE.

In my two years' experience with the bone wax I have demonstrated many times that it is all that has been claimed for it, and have been gradually extending its use to new fields, but with all its advantages it is not perfect. The principal objections to it are that it is expensive and the iodoform settles to the bottom while the oil floats on top in the liquid state. One physician tells me that he paid ten dollars for enough to fill one large cavity. The iodoform is the objectionable ingredient both as to price and consistence, and I question its real value. It is used, of course, for its antiseptic and inhibitory properties, but these are probably due to the iodin set free in the process of absorption. I have been experimenting with a number of different mixtures with a view of eliminating the objectionable features and have met with some very gratifying results. At one time all surgeons used iodoform very freely as an antiseptic and continued to use it for this purpose until bacteriologists taught them that it would be wise to sterilize it before using, as it very commonly contains bacteria.

EXPERIMENTS WITH SUBSTITUTES FOR IODOFORM.

In my experiments I have acted on the belief that iodin is the active agent in the bone wax above described, and that it would be better to use the iodin flakes than the iodoform, because they are soluble and so little is required that the expense is trifling.

At my request Dean Wulling, of the College of Pharmacy of the University of Minnesota, had his assistant, Mr. Beckman, work out the formula. I suggested various ingredients, always with 1 per cent. of iodin as the antiseptic, stipulating that the melting point must be about 110 F. This strength of iodin was adopted because it has proved so eminently satisfactory in the sterilization of catgut. The following is the most satisfactory combination in our experience:

Spermaceti, 8 parts.
Olive oil, 2 parts.
Iodin, 1 per cent.

The spermaceti is melted at a low heat on a water bath and the olive oil added. The heat is withdrawn and the iodin dissolved in the liquid and stirred until it congeals. Heat must not be used after the iodin is added on account of its volatility.

This mass is solid at the body temperature, melts at 108 F., and is antiseptic without being irritating.

I have only recently completed this work and have not had sufficient experience with it to justify any extravagant claims. It is mentioned with the hope that others may take the matter up and, now that the filling of bone cavities by artificial means is proved to be practical, we may discover a perfect material.

THE MEDICAL TREATMENT OF GALLSTONE DISEASE.*

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If one should formulate his conclusions from the reading of current medical literature, he would likely be of the opinion that my paper would be, of necessity, an extremely brief one. However, voluminous as is the surgical literature on gallstones, a careful consideration of the subject leads me to place surgery as adapted only to gallstones of gall-bladder origin, and then only under conditions which demand mechanical relief—obviously a very small part of the subject of gallstone disease which is almost entirely medical. When we consider that postmostem records prove that from 6 to 10 per cent. of all cadavers show the presence of gallstones—three-quarters of these being in persons over 40 years old—and that not more than one person in twenty who carries a gallstone becomes aware of its presence through any symptoms which it may cause, and of those whose symptoms have attracted attention, not all require operation, it is readily seen that the field of surgery is decidedly limited, although of great importance when it is indicated. In other words, the treatment of gallstone disease is practically entirely medical; that of gallstones themselves is generally surgical. If this distinction is kept clearly in mind, more will be expected of the internalist and fewer disappointments laid at the door of the surgeon.

ETIOLOGY.

To present this question intelligently, let me premise that gallstones are either (1) hepatic in source, originating in the bile ducts, because of a slow catarrhal process which results in the secretion of an albuminous substance which, in combination with the bile, precipitates a bilirubin-calcium calculus, or (2) are formed in the gall bladder, because of a catarrhal process of low grade which induces a secretion of cholesterin from the mucous glands and cells in its walls. Of these, the former is by far the most frequent. These facts also explain why, after a cholecystotomy has been performed, gallstones continue to be discharged from the fistula for weeks and even months. It also explains why removal of the gall bladder itself is not followed by a cessation of attacks of gallstone colic.

The recognition of the microbic origin of gallstones dates only to 1886. In 1897, it was clearly shown that the colon bacillus could be responsible, gaining access either (1) by the intestinal canal by way of the common duct, or (2) through the portal vein. Although jaundice as a sequel to enteric fever had been observed as early as 1826, it was not until 1889 that the typhoid bacillus was recognized as a causative factor, entering by way of (1) the portal vein, (2) the hepatic artery or (3) the common duct. That other infections are directly responsible has been my experience, for low-grade cholecystitides have been observed after acute infectious pneumonia, acute rheumatic polyarthritis and chronic tuberculosis. That gallstones do not oftener result may be explained by the fact that acute suppurative inflammation of bile ducts or gall bladder does not result in calculi, but these are due, rather, to attenuated infections.

TREATMENT OF THE MICROBIC CAUSES OF GALLSTONES.

The treatment of microbic causes of gallstones is the treatment of the infection itself and the limitation of the opportunities for entrance of the infectious agent.

Of the mechanical causes: (1) Foreign bodies, if aseptic, are harmless. If they produce stagnation they favor catarrhal processes, and so give opportunity for infection. (2) Stagnation of bile *per se* does not favor gallstone formation, but, since stagnation favors infection, it may lead indirectly to gallstone formation. (3) Chronic venous congestion of the portal system is a most potent cause for gallstone formation, since it is the great underlying cause of the gallstone disease. This may be caused by (*a*) chronic heart disease (especially mitral obstruction), (*b*) chronic pulmonary disease (especially chronic emphysema, chronic interstitial pneumonia), (*c*) intestinal catarrhs, the results of the abuse of alcohol, gluttony, and rarely from excessive use of vigorous purgatives. Much more frequently intestinal catarrhs result from constipation, which not only predisposes to infection, but offers opportunity for autointoxication. Eighty per cent. of all gallstone histories mention this symptom. These causes are obviated by treatment of the primary conditions, and do not call for further comment. (4) Of local mechanical causes not hitherto enumerated, worthy of mention, are (*a*) pregnancy, (*b*) visceroptosis (Glenard's disease), (*c*) overfilled hepatic flexure of the colon, (*d*) displacements of the duodenum, all of which may cause biliary stasis, and, as above mentioned, indirectly, gallstones. The treatment of particular causes must be resorted to. (5) Of extraneous causes, anything which reduces the vitality of the individual is predisposing, as (*a*) anxiety, (*b*) bodily exhaustion from excessive bodily or mental labor, or (*c*) wasting disease.

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Thus far we have reviewed the causes of gallstone disease which call for treatment, which is chiefly prophylactic and practically medical.

RESULTS OF GALLSTONE DISEASE.

Of the results of gallstone disease, some should be cited: (1) Diabetes mellitus; a gallstone impacted in the lower end of the common duct or in the ampulla of Vater may lead to infection, chronic interstitial pancreatitis, and destruction of the islands of Langerhans. (2) Glycosuria: From the same course of events, interference with the functions of the islands of Langerhans may cause glycosuria. (3) Chronic interstitial pancreatitis with amylaceous or lipatic indigestion and malnutrition. (4) A gallstone impacted in the duodenum may allow penetration of bile into the duct of Wirsung with hemorrhagic pancreatitis. (5) Floating calculus in the lower end of the common duct. No record of gallstone disease is complete without mention of what, for lack of a better term, has been called "intermittent hepatic fever." Yet an avoidance of the causes lies in the prophylaxis of gallstones, and, outside of an acute attack, the treatment does not differ from that already postulated. The use of olive oil by the mouth, so frequently recommended for this and other phases of the disease, in those cases in which it is tolerated, in sufficiently large quantities and long periods of time, has utterly failed to produce even relief. Operative procedures during an attack, theoretically so clearly indicated for an impending suppurative cholecystitis, have almost uniformly resulted in death, so far as my observation goes.

DIAGNOSIS.

In connection with a discussion of surgical procedures, it should be borne in mind that the diagnosis must be established by the physician and the surgeon should be held responsible only for the relief of mechanical conditions.

On making a diagnosis, the frequency of gallstones in elderly persons, due to a senile atrophy of the smooth muscular tissue in the walls of the bile ducts and gall bladder, should not be forgotten. Courvoisier's law, i. e., gall bladders containing stones are only enlarged so far as the contained stones increase its size, is important in differentiating cancer here or in surrounding organs.

TREATMENT OF GALLSTONE DISEASE.

It has become apparent that the important feature of the treatment of gallstone disease is the regulation of congestions and inflammations in the portal system and dependent organs and in local antisepsis.

The spa treatment of gallstone disease is the one which appeals to many. Success is based on the fact that the patient's habits of life are regulated and the diet controlled, while the salines diminish congestions and inflammations in the portal area. Of the spas, Neuenahr, Kissengen, Vichy, in Europe, Bedford, Sharon, and Las Vegas, in the United States, are preferred. I am aware that most surgeons who are renowned for their exploits in gallstone surgery suddenly acquire great faith in Carlsbad when they discover that they harbor gallstones in their own persons, but the attractions there are many and varied, and it it difficult to induce patients to attend so steadfastly and seriously to the business of getting well as at other places, although theoretically the waters are preferable.

Within recent years practically as good results can be obtained at home by following the subjoined régime:

1. *Diet.*—This should be mixed, for vegetable food produces a smaller amount of bile acids, and saccharin or fatty foods give rise to intestinal fermentation. The meals should be limited in amount, taken at frequent intervals to ensure constant flow of bile, with plenty of plain or feebly mineralized water before each repast. Alcohol is prohibited.

2. *Exercise.*—This is important, especially in the open air.

3. *Cholagogues.*—With the exception of salicylic acid and certain salts and bile itself, and especially salts of the bile acids, it is doubtful if the drugs usually so designated are more than temporarily effective. As for salicylic acid, there is no doubt as to its cholagogue properties, and that it is excreted in the bile and thus disinfects the biliary passages. I have found no advantage in the use of sodium salicylate in conjunction with sodium bicarbonate or sodium benzoate. My personal choice is salicylic acid, not only as a cholagogue, but because it is also a biliary and an intestinal antiseptic, which the salicylates are not, and this diminishes intestinal catarrh.

The bile acids in intestinal putrefaction are believed to be chemical antiseptics and physiologic cholagogues and fat emulsifiers. In hepatic insufficiency they render the bile less viscid and cause an increase of normal bile acids. In gallstone disease they may be preventive, and by causing a copious outpouring of thin bile may prevent, to some extent, bacterial invasion of the gall bladder and hepatic duct, and at the same time favor drainage of the bile channels. The use of bile acids and their salts is more scientific than the administration of bile itself, because they are the physiologically active principles of it, and any danger from the introduction of poisonous bodies from the bile, which really is an excretion, is thus avoided. Of all the preparations, sodium glycocholate, in from ½ to 3 grain doses so frequently as is necessary, is the best. However, both bile as a whole and its salts are uncertain in action. Like salicylic acid, the acid sodium oleate is excreted by the epithelium of the bile ducts to assist in disinfection.

Some five years ago I became interested in phenolphthalein from reading the reports of von Vamossy and Tunnicliffe, who claimed that it is a safe and prompt laxative. Later Schwartz, Wendhorst and Corby have added their testimony. Since this, although a phenol derivative, does not dissociate in the intestines to any appreciable extent, its antiseptic effects must be prolonged through the entire length of the alimentary tract. If the acid sodium oleate is carefully prepared and the salicylic acid is obtained from natural sources, one and one-half grains of each of these may be combined in a pill with one grain of phenolphthalein and one-fourth of a grain of menthol; this allays nausea, is a carminative, and acts as an intestinal antiseptic and increases peristalsis. This combination, given in doses of from four to eight pills in a full glass of hot water once or twice daily, has been efficient in some thirty-five instances of gallstone disease. The elimination of gallstones of the hepatic variety is generally rapid. That they may be painless is best achieved by the administration of amyl valerate, 15 minims in capsule, two hours before breakfast and after supper.

As an illustration of the treatment of gallstones the following is recorded as representative:

Case 1.—Mrs. T., multipara, suffered from acute pains in the epigastric, hypochondriac and umbilical regions for three years. The pains were at first brief, but later became intense and lasted from five to ten hours, recurring at intervals of several weeks.

Treatment and Result.—December 15, 1905, a diagnosis of bile stasis, resulting in gallstone disease, was made, and her physician ordered 15 grains of sodium glycero-phosphate in a glass of hot water, three times daily before meals. She remained well until March 14, 1906, when several long, severe spasms occurred.

On March 27, after a colic on the previous day, the stool was examined, and a small calculus consisting of cholesterin, was found. April 1 she was put on the pill above mentioned, three, with hot water morning and evening, and amyl valerate, one capsule (15 min.) two hours before breakfast and after supper. At night hot flaxseed poultices were applied. In the first eleven days of this medication eighteen stones and many fragments passed, the spasms being mild and of much shorter duration than previously. She has thus far been perfectly well.

As an illustration of the treatment of gallstone disease the following is recorded:

Case 2.—K. A., aged 54, a retired tobacco merchant, was seen for the first time about midnight, Oct. 17, 1892, suffering from gallstone colic.

History.—There were the usual excessive pain, vomiting, cold perspiration, and heart beat irregular in force and rhythm, with occasional intermissions. One grain of morphin given hypodermatically in two doses, at thirty minutes' interval, gave him a fair degree of comfort, and the pain entirely ceased within two hours from its sudden onset. The next morning there was considerable soreness over the right hypochondriac region, but the gall bladder could not be palpated because of obesity. The following day the calculus was recovered from the stool and was of the mixed bilirubin and cholesterin variety, the nucleus being of cholesterin; it was somewhat larger than a cherry, and had two facets plainly, and several not so plainly marked.

Treatment.—For lack of better, Durande's mixture was given in capsule, 15 m. of ether with 10 m. of turpentine, thrice daily. This was continued until Feb. 23, 1893, when another attack supervened, one-fourth of a grain of morphin being sufficient to relieve the pain, and thirty-six hours later several (five or six) stones, the size of a French pea, nearly all facetted, and of the same physical appearance as the first, were recovered. The Durande mixture was continued for about a month and then omitted altogether. The patient was encouraged to take sufficient exercise, mostly walking in the open air, to reduce his weight to normal, to limit his alcohol to extreme moderation, and to live upon a mixed diet.

Subsequent History.—During the succeeding eight years he remained in good physical condition, and my only attendance was for occasional attacks of catarrhal endobronchitis. On Nov. 19, 1901, he had the third and last attack of colic. This, although not so severe, requiring in all one-fourth of a grain of morphin, lasted for about four hours. The stones passed varied from grains of sand to the size of a split pea, were solid, rough, brownish-black in color. Several were joined together, and were recovered to the number of sixteen or more during the next forty-eight hours. These were not faceted, and were pure bilirubin-calcium calculi. Recognizing that these were of hepatic origin, I turned my attention toward the liver and limited the diet to proteids and increased water, and gave daily doses of sodium phosphate and intestinal antiseptics.

Urinary Findings.—The slight icterus which had existed, had disappeared, when, rather unexpectedly, a urinary examination undertaken November 24, for the purpose of determining how far he was taking care of his diet, showed 3 per cent. of glucose in both that of fasting and digestion. Inasmuch as indican was not increased, and the specific gravity, urea and total solids were normal. no change was made, and the sugar disappeared before Dec. 3.

In January, 1902, he was put on a mixed diet, five miles daily walk for exercise, no beer, and a moderate amount of tobacco. During the following June he was subjected to considerable worry, and five-eighths of 1 per cent. of sugar was found in the urine on the 13th. This was reduced to one-eighth of 1 per cent. by July 10, and had disappeared by July 15. The urea on the latter date was 1.70 per cent. and there was a moderate amount of indican.

Attack of Duodenitis.—He remained well until August, 1903, when, during my absence in Europe, he had a severe attack of catarrhal duodenitis, icterus, and clay-colored stools, for which he was treated by a lodge physician until I saw him again November 26. At that time I found slight corporeal and marked conjunctival icterus, itching, clay-colored stools, marked emaciation—a loss of sixty pounds since the preceding August. The urine contained no sugar, traces of albumin, urea 1.20 per cent., and a few hyaline casts. The liver reached to the level of the umbilicus, the gall bladder was easily felt, and was distended and fluctuating. By palpating under the edge of the liver, which was possible because of his emaciation, the head of the pancreas and considerable of the body could be felt through the empty stomach as above the second lumbar vertebra. It was enlarged, hard and nodular, the outlines could be fairly well traced.

Treatment.—The usual treatment for biliary obstruction resulting from catarrhal duodenitis was at first unsuccessful. Later, vigorous purgation by calomel, followed by sodium phosphate in large doses, the intense fetor of the stools being corrected by intestinal antiseptics, of which bismuth naphtholate, in large doses, was most effective, resulted in the first normal-colored stools December 14. The itching was relieved by daily tub baths, containing sodium bicarbonate and sodium borate. The liver became smaller, extending only to two finger breadths below the costal margin, the gall bladder became less palpable, and the intestinal fermentation ceased. The condition of the pancreas remained unchanged.

Consultation.—Feb. 3, 1904, Professor Satterthwaite confirmed my diagnosis of presumable gall stone in the ampulla of Vater obstructing the duct of Wirsung, and that the duct of Santorinus probably did not connect with the duct of Wirsung. That the islands of Langerhans were not affected was inferred from the absence of sugar in the urine. This, however, showed a trace of albumin, the presence of bile, moderate amount of indican and urea 1.80 per cent.

Later History.—Practically the same conditions existed March 3. On that date I commenced to administer 12 minims of acid sodium oleate, 12 grains of natural salicylic acid, 8 grains of phenolphthalein and 2 grains of menthol, divided into eight pills, four to be taken morning and night in full glass of hot water. On March 12, Dr. Stimson saw the patient with me and confirmed the diagnosis, and from the standpoint of the surgeon, advised a continuance of the treatment. June 17 it was recorded that the liver had returned to its normal size, the gall bladder was no longer palpable, and the head of the pancreas only could be felt as slightly indurated, but not nodular nor distinctly outlined. October 31 a few hyaline casts persisted in the urine, there was no bile, nor excess of indican, the urea was 1.45 per cent. The patient had regained his normal weight and could walk from six to eight miles daily. The pills were reduced to four daily. May 13, 1905, the urine was normal and the patient's condition excellent. The pills had been continued. On April 20, 1906, the patient felt absolutely well, having regained his strength. The pancreas is no longer palpable. The bowels are regular and normal, and no medicine is taken except the four pills. In fact the patient considers himself cured.

In the light of what we have learned during the past fourteen years, we may say that the first two attacks of biliary colic were due to gallstones originating in the gall bladder itself, probably starting from an ascending infection; that the last attack was to be attributed to gallstones arising in the hepatic bile ducts; that the glycosuria was due to a stasis of bile from obstruction at the ampulla of Vater, and that so soon as this was measurably relieved the colic disappeared; that during this period the islands of Langerhans were functionally disturbed, that an interstitial pancreatitis resulted which disappeared as the bile stasis was relieved and eventually cured by treatment, and, finally, that complete cure, i. e. *restitutio ad integrum* has resulted.

CONCLUSION.

The conclusion which we should reach is that gallstone disease is not purely a disease due to a foreign body, but is primarily a hepatic disorder. The removal of these stones has but little to do with the cure of the patient, for when the end result—the removal of the gallstones—has been accomplished by surgery, the patient is but at the commencement of his treatment to remove the cause of the disease, which is entirely within the province of the physician. The congestions and inflammations in the domain of the portal system are the conditions that require treatment and the infectious catarrhs of the bile ducts and gall bladder and faulty bile formation in the liver are those that need correction, and these are purely medical problems.

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CHRONIC NON-TUBERCULAR AFFECTIONS OF THE LUNG.*

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A strict interpretation of the subject embraces the consideration of such an array of conditions as to preclude their profitable discussion within the limits of this paper. A technical construction of what has been assigned would exclude chronic bronchitis and bronchiectasis on the score of their purely bronchial limitation. They almost invariably coexist, however, with emphysema, chronic interstitial pneumonia, pneumonokoniosis and non-tubercular bacterial infections, the clinical manifestations of which it is my purpose to review. No attempt is made to present an exhaustive study of the separate diseases embraced even in this restricted class of chronic pulmonary disorders. In view of the frequent interactive combination of these conditions, a liberal and practical classification is adopted in accordance with the manner of clinical presentation. To this end the thought is directed toward the composite blending of diseased conditions as exhibited in the individual, rather than to distinct affections, which rarely exist independently.

As the chief interest attaching to chronic non-tubercular pulmonary conditions relates to their simulation of consumption, an effort toward clearer differentiation may be of some value. Attention is directed, (1) to a certain group of conditions regarded as more or less indigenous to Colorado and often confused with tuberculosis, (2) imported cases closely resembling consumption.

The indigenous cases are so designated by virtue of the fact that the morbid changes are found to develop as a direct result of local conditions. Certain etiologic factors peculiar to the general locality, serve to characterize a class of cases in many respects decidedly unique. In the very midst of all stages and conditions of imported pulmonary tuberculosis in Denver, are found numerous cases of so-called miner's phthisis, difficult of disassociation from consumption, yet in no sense identical with it. These patients may present all the rational symptoms of tuberculosis, even to the point of frequent pulmonary hemorrhages, exhibit suggestive physical signs and occasionally show the presence of tubercle bacilli. The appearance of bacilli only after long continued observation, does not justify the assumption of tuberculosis as a factor of etiologic importance. A terminal infection is merely engrafted on a soil previously made receptive by virtue of marked pathologic changes, increasing the vulnerability of the tissues. These cases are generally regarded by the laity, and unfortunately, to some extent, by the profession, as a form of consumption, and are so classified in official mortality records. Instances of their occurrence are cited frequently to illustrate the alleged development of indigenous tuberculosis in spite of favorable climatic conditions. The actual morbid processes consist of a more or less severe chronic bronchitis, emphysema, bronchiectasis, varying degrees of pneumonokoniosis, with often a genuine cavity formation resulting from anemic necrosis, and secondary circulatory disturbances. They are found to develop almost exclusively in those sections of the state devoted to the mining industry, in sparsely settled regions on mountain sides where tuberculosis seldom exists. Predisposing causes are found in the prolonged hours underground and the constant breathing of an atmosphere, not only deficient in oxygen, but vitiated by impurities. The limited oxygen becomes more or less devitalized, as the air, not being in motion, is breathed over and over again. In addition to the partial asphyxiation, and the frequent extreme dampness, exciting causes relate to the exhalations from the candles confined within a relatively small air space, and the smoke resulting from the blasting powder, which is difficult of complete removal despite modern efforts toward ventilation. The necessarily constrained position during the greater portion of the day, the frequent wetting of the feet, the alcoholic habits, immoderate exercise at high altitudes and unhygienic surroundings when not at work, constitute important supplemental features. The conditions are quite dissimilar from those obtaining in the production of coal miner's consumption, stone cutter's disease, grinder's or potter's phthisis and the like, in that the sole essential factor is not the irritation produced by the inhalation of fine particles of dust. Chronic catarrhal processes in the bronchial mucous membranes take place, followed by emphysema, resulting from nutritional changes in the pulmonary tissues, and increased intra-alveolar pressure during violent attacks of cough. Moderate fibroid tissue proliferation is superinduced in some cases, but by no means to the extent observed among followers of other occupations responsible for the production of pneumonokoniosis. While the distinguishing feature is the chronic bronchitis and emphysema, bronchiectasis, both of the cylindrical and saccular varieties, frequently supervenes. Its development is due in part to the frequent paroxysmal cough, the weakening of the bronchial wall from the emphysema, and the more or less continuous pressure exerted by stagnating secretions.

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Corresponding to the fibrous tissue proliferation of interstitial pneumonia and resulting contraction from the changes external to the bronchial wall, there develop bronchiectatic cavities. Through the process of ulceration of the mucous membranes these bronchiectases may be transformed into genuine pulmonary cavities. These may also develop by reason of necrotic softening of the tissues more particularly when the pneumonokoniosis is pronounced. In this event they are more likely to increase in size and have greater bearing on the subsequent course, especially if communicating with a bronchial tube. Secondary to the pulmonary changes there ensue marked circulatory disturbances manifested by venous engorgement and enlargement of the right heart.

Symptoms referable to this group of chronic disturbances are of gradual development and relate chiefly to dyspnea, cough and expectoration, followed by loss of weight and strength with gradually increasing cyanosis. The cough is frequent and unattended at first with much expectoration. Later it becomes more distressing and paroxysmal in character, particularly after the formation of bronchiectases or pulmonary cavities. There exists no definite relation between the degree of bronchial irritation and the extent of fibroid change in the lung. The sputum is frequently quite frothy, light and devoid of pigmentation, becoming more purulent with the increasing periodicity of cough. Under these conditions the characteristic separation into distinct layers may be noted. Little of practical value attaches to its bacteriologic examination, save for the occasional presence of tubercle bacilli as a final incidental complication.

The dyspnea, which at first is noticeable only on slight exertion, becomes progressively worse, until the patient is induced to seek relief at lower elevations.

The cyanosis is usually out of proportion to the physical evidences of cardiac and respiratory embarrassment. Impaired appetite and digestive disturbances result in diminished nutrition, increasing weakness and night sweats. There is rarely any elevation of temperature save during temporary acute exacerbations.

Hemorrhages are not infrequent and may vary from slight bloody discolorations of sputum to a sudden fatal loss of blood.

The physical signs on inspection may consist of, (1) varying degrees of dyspnea, (2) capillary dilatation on the chest front, (3) the characteristic changes in the configuration of the thorax, commonly ascribed to emphysema, though rarely to such an extent as to justify the descriptive appellation of "barrel-shaped chest," (4) in some cases either unilateral or bilateral retraction of the apices.

On palpation, percussion and auscultation, (1) signs of partial consolidation, recognized usually at the apices, (2) fine and medium sized moist râles heard in any portion of the chest, though more frequently at the bases and almost always on each side, (3) unilateral dullness with diminished intensity of respiratory sounds and localized changes in pitch, quality and rhythm, with or without moisture, (4) cavity signs in almost any portion of the lung, precisely as in tuberculosis. In my experience there has been found in neither of these condition any invariable predilection as to the site of the cavity involvement.

In comparison with simple chronic bronchitis and emphysema, or with ordinary cases of interstitial pneumonia, the course of the disease is short, rarely lasting over four or five years. This may be accounted for to some extent by the influence of altitude, the usual unwillingness and inability of the patients to avail themselves of change of residence, and their greatly diminished resistance from habits of dissipation. While considerable relief is usually experienced on going to lower elevations, the unfortunate issue is but temporarily delayed, the prognosis being invariably unfavorable.

The essential feature of diagnosis consists in the differentiation from pulmonary tuberculosis. With the aid of systematic sputum examinations, there is no reason to confound the two conditions, despite such confusing clinical manifestations as the presence of pulmonary cavities and hemorrhage. Without recourse to the sputum, as is sometimes the case in mining camps, a provisional diagnosis of its non-tubercular character is made on the history, occupation and absence of fever. The presence of bacilli only in the last stages of the disease, must be regarded as a purely incidental infection devoid of any etiologic importance.

The fact that chronic bronchitis, emphysema, chronic interstitial pneumonia and pneumonokoniosis, with or without cavity formation, constitute a very considerable proportion of all cases of chronic non-tubercular pulmonary affections, and that the grouping of these conditions as described is frequently noted in Colorado, affording opportunity for errors in diagnosis on account of the resemblance to tuberculosis, offers, perhaps, a justification for this manner of presenting one phase of the subject.

In view of Colorado's peculiar position as a health resort, and the pseudotubercular character of many chronic pulmonary disorders, it may add further interest to consider the apparent similarity to consumption of other non-tubercular ailments to be designated as imported cases.

This distinguishing relation which renders possible mistaken diagnosis and treatment, represents more of practical value than obtains from the consideration of all other features. The experience of observers in favorable climates affords conspicuous opportunity to note such inaccuracies among cases sent from abroad.

Of special importance is chronic influenza, capable in some instances of producing all the rational symptoms and physical signs of tuberculosis as has been shown by Dr. Lord, of Boston. While I have conducted no systematic investigations, my clinical experience has been such as to furnish corroborative evidence of his conclusions. Many cases have been observed in the past whose sputum not containing tubercle bacilli, were unfortunately not examined for the Pfeiffer bacillus, but in whom the other evidences of tuberculosis appeared almost incontrovertible. The subsequent amelioration of the rational symptoms with total disappearance of physical signs were entirely disproportionate to the required periods for corresponding improvement in similar cases showing the tubercle bacilli. These cases invariably presented the history of an acute onset with moderate constitutional derangement, considerable bronchitic disturbance, cough somewhat paroxysmal, expectoration distinctly purulent without tubercle bacilli, streptococci, pneumococci or staphylococci. It is fair to assume that such cases exhibiting various degrees of consolidation with accompanying catarrhal conditions, each disappearing completely after persisting for months, may be reasonably regarded as having been instances of chronic influenza, particularly in the light of recent demonstrations of the presence of the influenza bacillus in similar cases.

Case 1.—A striking illustration of the possible influence of this infection was observed two years ago in a child of 10 years. She came under my care about one month after the initial onset of her illness. In addition to general symptoms, including cough, loss of weight, weakness, slight afternoon elevation of temperature, there existed pronounced consolidation of the left apex with fine moist râles in the infected area. During the following six weeks the consolidation gradually extended downward to the fourth rib and lower angle of the scapula, with moist râles throughout, and slight aggravation of her general symptoms with increasing loss of weight. The physical condition remained stationary for the ensuing two or three months, when improvement began to take place. Before the end of a year there was complete disappearance of cough and expectoration, with increased weight and no remaining evidence of the slightest pulmonary involvement. The child has remained absolutely well ever since. An interesting feature of this case is the fact that the progress of the consolidation corresponded to the so-called line of march or extension downward of the physical signs in tuberculosis, on which considerable stress has been laid by some observers.

It has not been my experience that pulmonary tuberculosis has invariably started at the extreme apex on one side and extended downward to the lower portion of the lung prior to the involvement of the opposite side. I have even found definite signs of tubercular infection in any portion of the lung with the apex uninvolved.

Case 2.—Another instance of the possibility of error resulting from the influenza bacillus is seen in the case of a lady who has remained under my observation eight years, exhibiting at first signs of very active and extensive tubercular infection of each lung. There has taken place an astonishing improvement in all respects, including a gain of over fifty pounds in weight, with strength and endurance quite exceptional. For over two years there have been no bacilli found in the sputum, in spite of frequent exhaustive examinations, and no evidence of existing tubercular activity in the lungs, though signs of consolidation still persist. Two months ago there developed a severe influenza infection, attended with distressing paroxysmal cough, copious purulent expectoration, moderate elevation of temperature and impairment of general strength and nutrition. Repeated examinations showed continued absence of tubercle bacilli, yet the physical signs resulting from extensive fibroid change in the lungs with a recent bronchial catarrh suggested clearly an extensive active tubercular process.

Without the laboratory findings a precise conception of the diagnosis and general outlook in cases of influenza infection following arrested tubercular processes would be utterly impossible.

Apart from the influenza bacillus other micro-organisms have been found to exert an apparent influence in the production of symptoms and signs distinctly suggestive of tuberculosis. I have observed several notable instances of the relation of the pneumococcus of Friedlander to these chronic disturbances in the absence of tubercle bacilli.

Case 3.—In 1896 a man from Vermont, recovering from tuberculosis in Colorado, suddenly was summoned home by the telegraphic announcement that his 3-year-old boy was dying of acute pneumonic tuberculosis. He returned to Colorado immediately, bearing in his arms the child, who had been almost comatose the entire distance. The temperature had remained in the neighborhood of 105 and the pulse and respirations were found markedly accelerated. There was moderate cyanosis, stupor and a partially consolidated right lung. The chief point of interest attaches to the delayed resolution, which was not completed for several years. There persisted for fully a year a daily afternoon rise of temperature, continued cough, with signs of consolidation and moist râles without tubercle bacilli. After the lapse of ten years the child is now perfectly well, physical examination of the chest being entirely negative. It is almost impossible to conceive of this pneumonia as having been tubercular, not only because of the absence of bacilli, but also in view of the complete recovery in a child so young. Any attempt to explain the absence of bacilli by an alleged miliary disturbance with pulmonary manifestations is controverted by the fact that the child recovered. Though undoubtedly an instance of pneumococcic infection, the persistence of the symptoms and signs strongly suggested a tubercular process.

I have recently noted the existence of symptoms and signs suggestive of tuberculosis, coincident with the presence in the sputum of the bacillus diplococcus catarrhalis.

Case 4.—A man of 44 years arrived in Colorado in January of the present year, two months after the development of cough and expectoration, with loss of weight and fever. On examination fine moist râles were plainly heard at the right apex above the clavicle, with slight consolidation. Repeated examinations of the sputum were negative, save for the invariable presence of large numbers of the diplococcus catarrhalis. While there may exist in this case no relation between the physical signs and the bacteriologic findings, the thought is suggested that unilateral apical signs accompanying cough and expectoration, if accepted as sufficient evidence of incipient tuberculosis, without sputum examination, would permit the subsequent recording of rather astonishing and highly satisfactory results of management.

Obstruction of a primary bronchus has occasionally resulted in an erroneous diagnosis, and the sending of the patient to a far country for tuberculosis. In the instances I have been permitted to observe, the obstruction has been due to either enlarged mediastinal glands, a dilated and hypertrophied right ventricle, or aneurism. The history, condition of arteries, associated symptoms and physical signs of aneurism are often so definitely characteristic as to preclude even a passing allusion.

Case 5.—I have under my care a lady of 22 years, who came to Colorado in October, 1905, one year after a beginning loss of weight and strength, with following cough and expectoration. She had exhibited an elevation of temperature, with occasional chills and night sweats. Small hemorrhages had been fairly numerous and the diagnosis of tuberculosis was made. There was dullness in the left front from apex nearly to base, with complete absence of breath and voice sounds. A supposed apex beat was visible well within the mammary line, but slightly elevated. In the posterior axilla and in the back crackling râles of a greater intensity than can be described or imagined were disseminated throughout, occurring both in inspiration and expiration and recognized easily with the stethoscope slightly removed from the skin. A careful examination failed to disclose any dullness to the right of the sternum, and it was almost impossible to outline the left boundary of cardiac dullness. The cardiac impulse, however, could be felt nearly to the anterior axillary line, and murmurs of mitral stenosis and regurgitation were audible. Examination of the sputum showed no tubercle bacilli. Diagnosis: bronchial occlusion from a dilated heart. During the ensuing five or six weeks hemorrhages were frequent, with periodic attacks of alarming dyspnea and cyanosis. There are now no symptoms of cardiac embarrassment, despite persisting dilatation. There is less evidence of lung compression in front, and examination of the back is practically negative, all adventitious sounds having disappeared.

Case 6.—In 1899 an instance of bronchial obstruction through compression of mediastinal glands was observed in a boy of 18 from New Hampshire. The first symptoms of his trouble developed fifteen months before arrival, consisting of paroxysmal cough without expectoration, shortness of breath, one or two moderate hemorrhages and loss of ten pounds in weight. With normal percussion resonance there was absence of voice and breath sounds throughout the left lung, without displacement of organs. Absorption took place in about eight months, followed by disappearance of symptoms and signs.

Another class of cases has been observed in which mistaken diagnosis was caused through erroneous interpretation of the significance of recurring pulmonary hemorrhages. Bleeding from the lungs, without the recognition of mitral disease, and incapable of explanation by the existence of other pathologic conditions, and especially when associated with loss of weight and strength, naturally suggests, even without physical signs, a latent or concealed tubercular affection.

Case 7.—Nine years ago a man in middle life was sent to Colorado for supposed tuberculosis. I found him in bed, bleeding moderately from the lungs. The history was that of loss of weight and strength, with frequent hemorrhages during a period of several months. There was considerable pallor, weak and rapid pulse, but no elevation of temperature. Examination of the chest entirely negative. After some delay a diagnosis of purpura hemorrhagica was clearly established, followed by satisfactory improvement under appropriate treatment.

Case 8.—A lady of marked neurotic temperament, the wife of a physician, was sent to Colorado in 1899 on account of very severe pulmonary hemorrhages. Both parents and three brothers and sisters had died of tuberculosis, she being the only survivor. There was moderate dry cough, with expectoration, some loss of weight and marked anemia, but physical examination negative. A few weeks after arrival she experienced a copious hemorrhage from the lungs, followed by a severe recurrence in exactly four weeks. On inquiry I was interested to learn that all her previous hemorrhages took place at a time corresponding to the menstrual period. It further developed that she had shortly before suffered the removal of the ovary and tube of one side, demanded by probable infection resulting from three previous miscarriages. A diagnosis of vicarious menstruation was promptly made and the nature of the condition fully explained. After treatment directed to the control of the neurotic disturbance and the anemia, the patient quickly improved, exhibiting but slight expectoration of blood at the time of the ensuing three periods of menstruation. There has been no subsequent hemorrhage.

The somewhat unusual cases that have been reported are illustrative of the difficulties occasionally encountered in arriving at correct conclusions regarding the extent and nature of chronic intrathoracic affections. The confusing conditions which have been enumerated are by no means frequent in general practice, but their occasional occurrence emphasizes the necessity for continued vigilance and clinical study. The higher usefulness of internal medicine depends on a proper reconciliation of the results of clinical and laboratory investigation. With no wish to exalt the findings of the microscope above the data derived from clinical observation, the fact remains that the internist must avail himself of the opportunities for securing precise information afforded by modern laboratory methods and knowledge. While fully cognizant of its many limitations and deficiencies, I venture to present this paper as a plea for more complete diagnostic technic applied to chronic pulmonary conditions.

SOME AXIOMS CONCERNING OCULAR ROTATIONS.*

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A convex sphere set in a concave hemisphere, the two having a common center, the one fitting in the other as shown in Figure 1, can be rotated on any one of its diameters, and only on a diameter, as an axis. The center of curvature, the point to which all the radii converge, is the center of rotation. The point on the surface at which the force is applied and the direction of the force determine what the plane of rotation shall be and fix the axis of rotation at right angles to this plane. This can be best understood by a study of Figure 1.

A B D represents the concave hemisphere whose center is *c; a d b e* represents the convex sphere whose center is also *c*. If the force is so applied that *a b* shall be the rotation plane, the axis of rotation will be the diameter *d e*; if the force makes *d e* the rotation plane, then the diameter *a b* becomes the axis of rotation. In like manner, if the force makes *m n* the rotation plane, the diameter *h i* becomes the axis of rotation; and if the force makes *h i* the rotation plane, then the diameter *m n* becomes the axis of rotation. The law governing the rotation of a convex sphere lying loose in a concave hemisphere, the two being concentric, is that the force may be so applied as to make the plane of rotation any plane that would divide the sphere into two equal parts; that the axis of any rotation must be a diameter at right angles to the rotation plane, and that the common center of all rotations must be the center of curvature. In such a sphere there is no diameter that must be common to every plane of rotation; hence there is no single plane that must contain the axes of all rotations; but every rotation plane and every axis of rotation must cut the center of rotation which is the center of curvature.

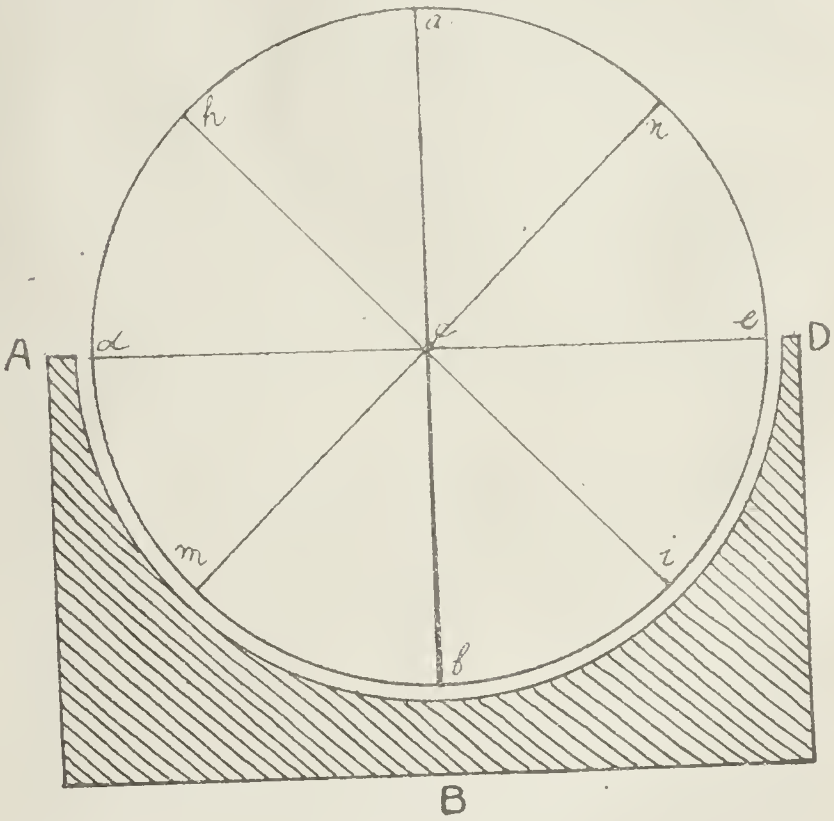

Figure 1.

Figure 2 represents the eye set in its orbit. A B D represents the hemispherical concavity in the bed of fat in which the eye *r d b e* rests. The central point of the macula, *b*, is the point through which all retinal meridians pass; hence it must be the posterior pole; the center of retinal curvature, *c*, is the center of rotation, for through it all diameters pass and only a diameter can be an axis of rotation. The antero-posterior axis—the optic axis—begins at *b*, the center of the macula, passes through *c*, the center of curvature, thence on to *a*, which point, being 180° from *b*, must be the true anterior pole, for through it the completed meridians would cross. The line *b c a* prolonged from *a* would cut the corneal curve, *s r x*, at *r*, and this point, at or near the center of the cornea, may be called the anterior pole of the eye, though the real anterior pole, as shown, lies in the aqueous chamber at *a*. The line, *b c a r*, is not only the antero-posterior axis—the optic axis—but it is also the visual axis. The line *d c e* is the transverse axis of the eye and lies in a plane equally distant from the two poles, *b* and *a*, which is the equatorial plane.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Unlike the loose sphere shown in Figure 1, the eye shown in Figure 2 has a single diameter that must lie in every possible rotation plane, and that line is the visual axis *b c a r*. The purpose of every ocular rotation is that the point of view may be changed, that the visual axis may be rotated so as to bring the macula under another image. That this may be done in the shortest time and with the least expenditure of force, the visual axis is made to move in a plane common to the first and second points of view and the center of rotation. The axis of this rotation must cut the center of rotation and must be at right angles to the rotation plane. The visual axis must lie in every rotation plane, whether the rotation is from the primary to a secondary position, or from one secondary position to another secondary position. Since the visual axis lies in the plane of every possible rotation, all rotation planes must cut the two poles, *b a*. Only meridional planes cut the two poles; hence every plane of rotation of the eye is a meridional plane extended. The only plane cutting the center of rotation at right angles to all the meridional planes is the equatorial plane; hence the equatorial plane contains the axes of all possible rotations.

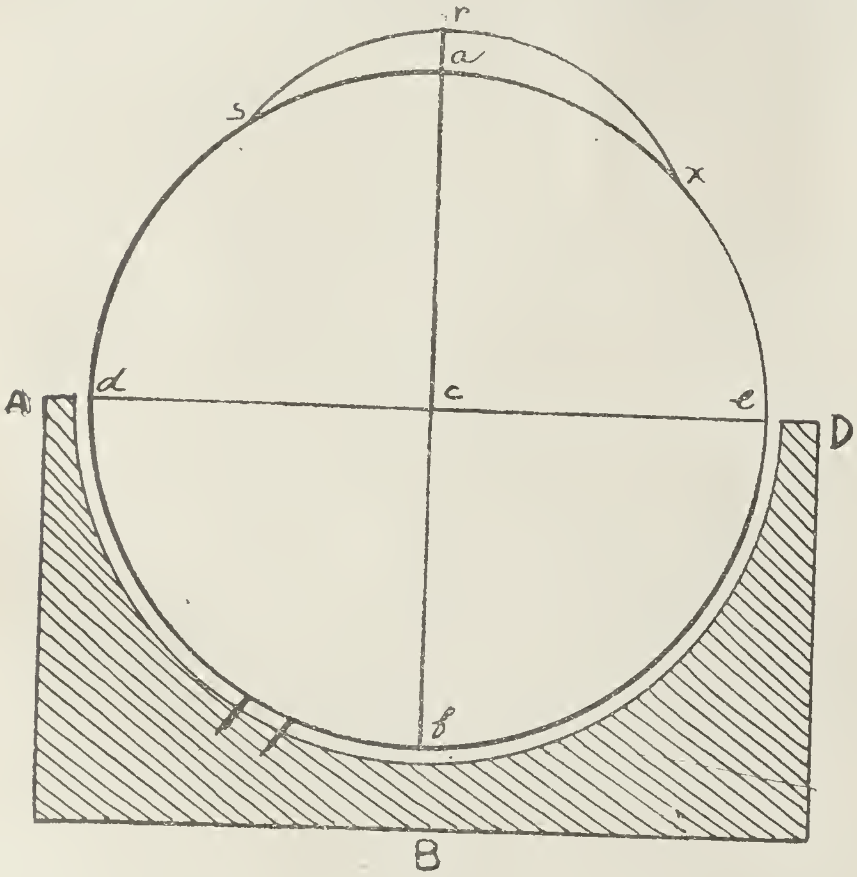

Figure 2.

Every rotation plane of the eye is a fixed plane, for in it lie three fixed points, the center of rotation and the first and second points of view. Every point on any corneo-retinal meridian, other than the one which is the plane of a given rotation, is moved in a plane parallel with the rotation plane; hence ocular rotations must be effected without torsioning. This is true whether the rotation is in one of the four cardinal directions or in any oblique direction.

Under the influence of brain centers the ocular muscles effect all rotations. Their number, their origins and attachments are such as to make every rotation take place in a meridional plane, around an axis lying in the equatorial plane. The ideal eye is rotated in the horizontal plane by only one muscle, either the externus or the internus; in the vertical plane by only two muscles; if upward, by the superior rectus and inferior oblique; if downward, by the inferior rectus and the superior oblique; in any oblique plane by three muscles, two recti and one oblique. If but one muscle is concerned in a given rotation it is because the rotation plane (the extended meridional plane) bisects the muscle from its origin to its insertion. If two or more muscles must act in a given rotation, it is because their combined action would be the same as the action of a single muscle so related to the eye that the rotation plane would bisect it from origin to insertion. With fewer than six muscles rotations of the eye in all directions could not be effected, and a greater number is not needed.

From one to three cortical brain centers are excited in every ocular rotation, and only cortical centers are excited when there is but one eye. Under the control of one or other of four cortical centers the oblique muscles steady the plane of rotation (a meridional plane) so that it shall bear a fixed relationship to the median and horizontal planes of the head. In doing this the obliques keep the vertical axis of the eye parallel, at all times, with the median plane of the head and compel the transverse axis to lie always in the horizontal plane of the head. This action of the obliques is in the interest of correct orientation.

One, or at most two, of the four cortical verting centers, acting on their respective recti muscles, cause the visual axis to move from one point of view to another in the rotation plane made steady by an oblique, under the influence of one of four cortical centers.

In binocular rotations the cortical centers can make the ocular muscles work in harmony only when the muscles constituting any one of the several pairs are equal in tonicity. Unequal tonicity is provided against by the existence of fusion centers which are basal and under the control of the fusion faculty of the mind. Without these centers it would be impossible for some eyes to have binocular single vision. Unequal tonicity of muscles necessitates continuous activity on the part of one or more fusion centers in order to prevent diplopia.

When there is equal tonicity of muscles binocular rotations in the four cardinal directions are effected without excitation of the basal or fusion centers. When there is orthophoria every oblique binocular rotation excites two fusion centers, but only during the continuance of such rotation. To illustrate: Rotation of the two eyes obliquely up and to the right is the result of voluntary discharge of neuricity from the first, the fourth and the eighth conjugate centers which call into action, respectively, the two superior recti, the right externus and the left internus, and the right superior oblique and left inferior oblique. The right superior oblique, in preventing a loss of parallelism between the vertical axis of the eye and the median plane of the head, helps the externus, but hinders the superior rectus; the left inferior oblique, in preventing a loss of parallelism between the vertical axis of its eye and the median plane of the head, helps the superior rectus, but hinders the internus. Harmony in this rotation is made possible only by excitation of the right first and left third basal centers.

In binocular rotations each eye must obey the law of monocular rotations as if the other eye had no existence; that is, one, or at most two, of its recti muscles must move the visual axis from the first to the second point of view in a meridional plane made so steady by the action of an oblique muscle that the vertical axis shall not lose parallelism with the median plane of the head—all of this in the interest of correct orientation. But there is another law that must be obeyed by the two eyes in the interest of binocular single vision. This law is enforced whether the eyes are still or in motion, and may be expressed in these words: The two visual axes must lie in a plane common to the point of view and the two centers of rotation, and they must intersect at the point of view. It is evident that when the eyes are in rotation, up or down or obliquely, this plane is also rotating and that the axis around which it rotates is the line connecting the centers of rotation of the two eyes. In binocular rotations there is an individual rotation plane (a meridional plane) for each eye, along which the visual axis of that eye alone must move from the first to the second point of view, and there is that other plane in which must lie the two visual axes, the two centers of rotation and the two horizontal retinal meridians.

When the head is erect and the two eyes are in their primary positions, this plane, in which the visual axes must lie, becomes the plane of the horopter or monoscopter; and in this position, the eyes being ideal, it coincides with the extended fixed horizontal plane of the head.

When the point of view is directly to the right or left, this plane remains coincident with the fixed horizontal plane of the head and is motionless, while the visual axes are made to move in it to the second point of view.

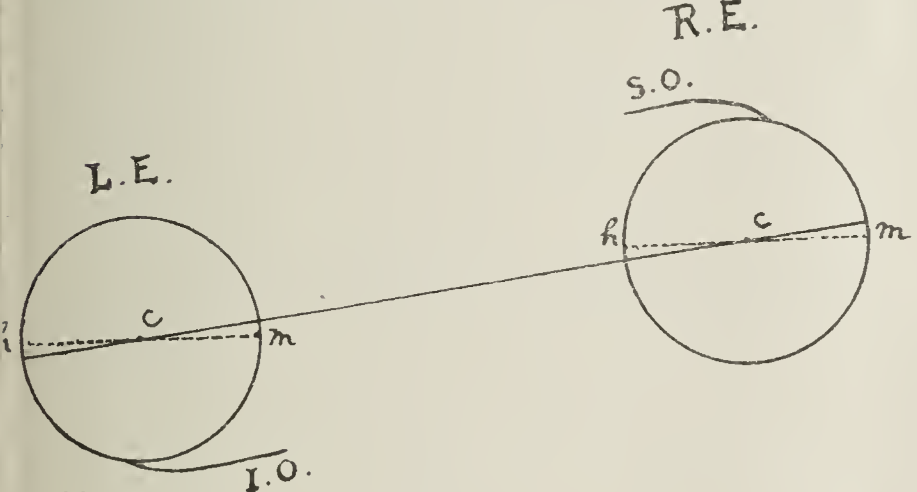

Figure 3.

When the second point of view is directly above or below, this plane is rotated on its only axis, the line connecting the centers of the two eyes, the visual axes remaining stationary in it, provided the first and second points of view are equally distant from the two eyes. The extent of elevation or depression of the second point of view is measured by the angle formed by the intersection of the fixed plane of the head and the rotated horopteric plane, in the axis on which the plane has been rotated. This is true whether the object be directly up or down or at any oblique angle.

In every binocular oblique rotation, above or below the extended fixed horizontal plane of the head, the plane of the horopter must be rotated directly up or down on its only axis until it reaches the second point of view. This is done by the elevator or depressor muscles, as the case may be, but at the same time the lateral recti muscles are making the visual axes move in this plane toward the objective point, reaching this point at the same time that the horopteric plane is brought to it. Each visual axis, while moving in the horopteric plane, has moved along its own rotation plane (meridional plane extended). That no torsion has occurred is evidenced by the fact that, at the completion of the rotation, the second point of view, the centers of the two eyes and the two horizontal retinal meridians all lie in the rotated horopteric plane. The final result of any oblique binocular rotation is the same as if the visual axes had remained still in the horopteric plane while it was being so rotated as to reach the second point of view; then this plane having become still, the visual axes had rotated to that point.

The setting of ideal eyes in ideal orbits is such that the horopteric plane, when at rest in the primary position, coincides with the extended fixed horizontal plane of the head. All orbits are not ideal as to height, one often being lower than the other by a fraction of an inch. It is not possible for the horopteric plane of such eyes to be properly related to the extended fixed horizontal plane of the head. The horopteric plane must include the visual axes, the centers of rotation and the horizontal retinal meridians, but the fixed horizontal plane can not do so if one eye is lower than the other. Figure 3 teaches an evident truth more plainly than simple words could set it forth. The right eye is represented as higher than the left. The line *c c* connecting the two eyes is the only axis around which the horopteric plane can rotate, and lies in that plane. But this plane can be the horopteric plane only on the condition that it must include also the two horizontal retinal meridians and the two visual axes. A glance at Figure 3 shows how the horizontal retinal meridians may be brought into this plane by the action of the eighth conjugate center on the right superior oblique and left inferior oblique. This torsioning makes binocular vision possible, but it makes correct orientation with the two eyes impossible. The figure shows that the inclined plane *c c* can not coincide with the horizontal plane of the head.

It also teaches that, so long as the two eyes are open, the right superior oblique (S O) and the left inferior oblique (I O) must be in a continuous state of contraction, their center, the eighth, being just as continuously active. Rest from this abnormal work can come to either eye only when the other is covered. The left eye covered, as in refraction, allows the eighth center to rest; therefore, the relaxed right superior oblique will let the horizontal retinal meridian leave the plane *c c.* and assume the position *h m.* Likewise, the right eye covered, the eighth center ceases its activity and the relaxed left inferior oblique allows the horizontal meridian to leave the plane *c c* and assume position *h m.* Astigmatic corrections for such eyes will be faulty unless the axes of the cylinders are shifted in harmony with the necessary binocular torsioning. Eyes that are not level are eyes that can never be made strong, although the proper correction of focal errors may help them. Of such eyes it may be said: "One eye is better than two," however free from focal error and muscle imbalance.

Eyes are never torted except in the interest of binocular single vision, and even then it is at the expense of correct orientation. There are but two conditions that cause torsioning: First, when one eye is higher than the other, there must be a torsioning of both eyes in the same direction, as shown in Figure 3; second, in nonparallel oblique astigmatism, there must be torsioning of the two eyes, but in opposite directions. The first kind of torsioning makes an horopteric plane possible; in the second kind of torsioning there is binocular single vision, but there can be no horopteric plane. The correction of astigmatic eyes that are normally set relieves the torsioning and makes the true horopteric plane possible.

All that has been said in this paper pertains to eyes whose muscles have normal tonicity; but it has been shown that there are abnormal conditions of the eyes in which the normal muscles do abnormal work.

Heterophoric eyes can not have binocular single vision and correct orientation unless the weaker muscle of an unbalanced pair shall receive supplemental power from a reserve brain center—the fusion center for that muscle. To relieve the fusion centers of abnormal activity, and so to relate the two eyes that there may be volitional obedience to the laws governing binocular rotations, the ideal thing to do is to give equal tonicity to the opposing muscles of every pair.

In ocular rotation the visual axis, which is the chief line of direction, being a diameter of the eye, takes the position of other diameters in succession until, finally, it reaches the second point of view. The diameter of the eye that pointed to the second point of view, before the rotation began, must have connected that point and its retinal image, hence must have been the visual line, or line of direction, for that retinal point. All lines of direction, or visual lines, cross the visual axis at the center of retinal curvature, and are radii of retinal curvature prolonged.

Error in location of the posterior pole of the eye not only led to error in teaching as to ocular rotations, but it also led to error in teaching as to the law of direction. Lines of direction are not the axial rays of light, but they are radii of retinal curvature prolonged.

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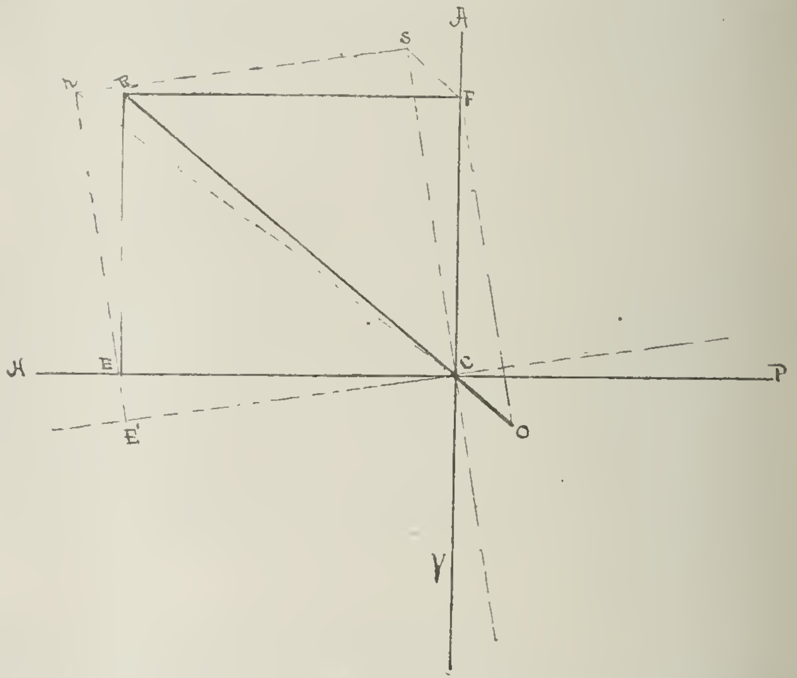
DISCUSSION.

DR. GEORGE H. PRICE, Nashville, confined his remarks to a single feature of rotation, in which there is the combined action of two recti and one oblique, namely, the superior rectus, the external rectus, and the superior oblique. The eye, he said, is so placed in its orbit that only two muscles concerned in its movements, when correctly attached, move the eye in a direct line, namely, the internal rectus and the external rectus, and even this direct line of action only holds absolutely good so long as the eye is rotated directly in or out in the horizontal plane, for whenever the rotation is above or below this plane, in or out, then these muscles tend to rotate the vertical meridian toward or from the median plane of the head. The superior rectus is attached to the globe at an angle of 23° to the visual axis, consequently when this muscle acts alone, the eye being in the primary position, the tendency is both to elevate and to rotate the vertical axis in at its upper extremity, thus producing torsioning. In order to overcome this torsioning, the inferior oblique is brought into action, and by its contra-torting or outward rotating effect maintains the parallelism of the vertical axis with the median plane of the head. The restraining influence to torsion by the inferior oblique grows less and less as the eye is turned outward by the external rectus, and when the eye reaches a position of 23° outward rotation or abduction it is lost, for then the superior rectus muscle is acting in the plane of its attachment, hence is a direct elevator, but so soon as it passes this point, it then begins to turn or to tort the vertical axis out, which increases as the eye turns outward and upward. In addition to the action of the superior rectus, the external rectus, when acting in a plane above the horizontal, also tends to rotate or to tort the vertical axis out by reason of the fact that it no longer acts in its own plane, but being moved upward at its point of attachment to the eye, it depresses the outer extremity of the transverse axis, and consequently aids the superior rectus in causing the outward tilting of the vertical axis. This action of the external rectus under the double impulse to turn the eye out and up is positive, and as soon as the eye, under the stimulus to the superior rectus starts upward, and would rotate inward except for the tonic restraining influence of the inferior oblique, the external rectus immediately begins its positive response to the stimulus of abduction, and at the same time, by reason of its changed position from the horizontal plane to one above, it also depresses the outer extremity of the horizontal axis, which action is also positive, and at once overcomes the tonic action of the inferior oblique (which parallels the vertical axis) and hence causes an out-turning or torting of the vertical axis. In order to overcome this outward torting of the vertical axis, the superior oblique is called into action, and by its positive inward torting effect on the vertical axis, maintains the parallelism of this axis with the median plane of the head. From this we see that the rotation of the eye, except directly inward or outward in the horizontal plane, involves a complex muscular action in order to maintain correct orientation, which if lost by faulty attachment of the muscles to the eye, or failure of the muscles to perform their proper functions, leads to serious complications, resulting in cyclophoria and consequent discomfort to the patient.

In order to demonstrate these actions Dr. Price presented a diagram showing the actions of the superior rectus, the external rectus and the superior oblique, involved in moving the right eye upward and outward at an angle of 45°, from the primary position of looking directly ahead. In this figure C is the anterior pole, A V is the vertical axis, H P the horizontal plane. C F is the resultant of the action of the superior rectus and the inferior oblique, under their normal tonicity, and is consequently maintained parallel with the median plane of the head, when the eye is at rest, or when turned directly upward. C S represents the magnitude and line of direction of the force of the superior rectus, when turning the eye upward and torting it outward in conjunction with the external rectus muscle in rotating the pole C upward and outward 45°. C E represents the magnitude and direction of the force of the external rectus muscle, when rotating the pole C, upward and outward 45°. C O represents the magnitude and direction of the force of the superior oblique, in opposing the combined torting action of the superior rectus and the external rectus in rotating the eye in an upward and outward direction of 45°.



Having established the three forces, their magnitude and direction, it is only necessary to combine these in order to show the magnitude and direction of the resultant of all these forces. Let us now take the forces C S and C O and on these, according to the law of the composition of forces, construct the parallelogram C S F O. Then from the point C draw the diagonal C. F. This diagonal, according to the law above referred to, represents the magnitude and direction of the forces concerned in lifting and torting the eye in its movements, and C F is now parallel with the median plane of the head. In this action of overcoming torsion the horizontal plane, which would be depressed under the influence of the superior and external recti, if not opposed by the superior oblique, has been kept in its proper position, and consequently the out-turning or abducting effect only of the external rectus muscle, represented by C E, remains to be combined with the resultant action of the superior rectus and the superior oblique, which is represented by C F. On C F and C E we construct a parallelogram C E R F, and from the point C we draw the diagonal C R, which is the resultant of the forces C E and C F, but as C F is the resultant of the forces C S and C O, then C R represents the resultant action of the three forces, C S, C O and C E, all acting simultaneously on the point C, and represents the magnitude or extent and direction of the movement of the point C. In other words, the action of the superior and external recti and the superior oblique muscles, simultaneously acting in turning the eye upward and outward at an angle of 45°, would move the anterior pole C along the line C R to the point R, while at the same time the vertical axis is kept parallel with the median plane of the head, cyclophoria is prevented and correct orientation is maintained. Dr. Price said that this action is practically the same as that of one muscle so attached to the eye that its plane of action would lie in the line C R, the resultant of the combined forces acting in this movement of the right eye.

Dr. Mark D. Stevenson, Akron, Ohio, said that if the eyeball were rotated vertically upward or downward 90 degrees along the plane of the vertical meridian, what had been the horizontal meridian in the primary position becomes vertical in coronal section in the secondary position, although the vertical axis bears the same relation to the horizontal in both cases and remains unchanged. If the right eye changes its direction from an object straight in front to one up and to the right in the plane of meridian 135 degrees, it will rotate around an axis perpendicular to this plane and lying in Listing's plane in the direction of meridian 45 degrees. The meridian at 135 degrees, which lies in the same direction as the plane formed by the two objects and the center of rotation, does not change its direction and could not do so as it would require motion about an axis perpendicular to the plane in which the axis of rotation lies, which is impossible. However, he said, the direction of the vertical meridian in this case does and must change. The upper end of it inclines to the right side. If the eyeball were to tort in order to keep the vertical meridian in its original plane, the meridian at 135 degrees along which the visual axis moves between the two objects would be changed, which is not possible as before stated. This can be readily understood, he declared, by drawing cross lines at right angles, one vertical and the other horizontal, on a rubber ball; a knitting needle is placed through the intersection of the two lines to represent the line of fixation or fore and aft axis of the ball, a weight being suspended by a string on the end of this needle so that the string will always be vertical, and then the ball is rotated about another needle placed equatorially through it at axis 45 degrees. A person facing such a ball with the line joining the centers of rotation of his two eyes in the same plane as the meridian along which the fore and aft axes of the observed ball is moved or the meridian at right angles, could move his head in the same direction, up, to the right, etc., always facing the ball, and his eyes would remain in the same plane. But if his eyes were in the same plane as any other meridian in the primary position he would have to turn his head after the rotation of the ball to keep his eyes in the plane of the same meridian. These facts are also easily studied, Dr. Stevens said, by means of linear after images.

Dr. F. H. Verhoeff, Boston, said that a number of Dr. Savage's axioms will not be regarded as self-evident truths by those who have done experimental work in physiologic optics. For instance, one of the axioms is that the eyes undergo torsion only in the interest of binocular single vision. As a matter of fact, it has been repeatedly demonstrated that the eyes undergo torsion in direct opposition to the interest of binocular single vision, as for example in convergence with elevation of the visual plane. Dr. Verhoeff said that seven years ago he showed that the eyes are unable to undergo torsion in the interest of binocular single vision in the same sense that they can overcome lateral deviations. He showed that the experiments that were thought to demonstrate such torsional power were dependent on physical fusion of disparate images, on which the preception of stereoscope relief largely depends. Another of Dr. Savage's axioms, if true, he said, should be of the highest scientific interest. It is that when one eye is higher than the other, in binocular vision both undergo torsion in the direction of the lower eye. Dr. Verhoeff asked Dr. Savage on what evidence this statement is based. On *a priori* grounds Dr. Verhoeff would say that such rotation does not take place. The chief effect of this symmetry in position of the two eyes would be on the positions of the images of an object lying within or beyond the fixation point, of which images one would be higher than the other. If this is remedied at all, it seems to him more likely that it would be accomplished by tilting the head. Still another questionable axiom, he said, is that the correction of astigmatic eyes that are normally set relieves the torsioning and makes the true horopteric plane possible. Aside from the lack of proof that such torsioning ever occurs, cylindrical lenses which correct astigmatism fail to do away with distortion. Owing to the fact that they are placed a considerable distance from the cornea they overcorrect the original distortion and produce distortion of an opposite kind. This, he declared, explains the difficulty always experienced by patients in becoming accustomed to high cylinders.

Dr. Lucien Howe, Buffalo, said that the subject of muscles is apt to become confused, and that the opthalmologists are apt to become a little confused in the discussion of them. He said that physicians forget one very important action that takes place in normal convergence and accommodation, they ordinarily think only, when looking at the near point, of accommodation and convergence, and forget that Landolt brought out twenty years ago that with convergent action the vertical axes tip out. It is the neglect of this that is one of the reasons why physicians are confused as to exophoria and many of the other phorias.

Dr. G. C. Savage, Nashville, said that many years ago, Helmholtz was walking in the woods near Heidelberg with one of his students, who said to him, "I have no trouble with your 'Physiologic Optics,' except the chapter on 'Movements of the Eyes.'" Helmholtz replied that he was not astonished, and told the student to leave that chapter alone, that he intended to rewrite it and make it clearer. This Helmholtz never did. The explanation for his not having written clearly on the subject, Dr. Savage said, is not difficult to find. Helmholtz located the anterior pole in the center of the cornea, and the posterior pole between the macula and the disc. If he had located the poles properly, he would have written a clear chapter on ocular rotations, one easy to be understood. What he did write has been a source of confusion. The center of the macula is unquestionably the posterior pole. This fundamental truth, not known to Helmholtz, makes the whole study of ocular rotations easy.

Dr. Savage made three statements with which he said all ophthalmologists agree: "First, the mind will tolerate imperfect images; second, the mind will tolerate incorrect orientation; but, third, the mind will not tolerate diplopia." After repeated efforts Dr. Savage has formulated a law against diplopia which he believes is as brief, simple and clear as it can be made. It is the law of binocular rest and motion, and is as follows:

> The two eyes, whether at rest or in motion, must be so related to each other that their visual axes and their horizontal retinal meridians shall lie in the extended movable plane of the horopter, and that the visual axes shall intersect at the point of view, otherwise binocular single vision with correct orientation would be impossible. The planing of the visual axes is accomplished by the superior and inferior recti muscles; while the planing of the horizontal retinal meridians is effected by the oblique muscles. These two groups of muscles help each other in planing the visual axes, but oppose each other in planing the horizontal retinal meridians.
>
> When the eyes are in their primary positions the visual axes are converged to the point of view, by the internal recti muscles, but when in motion an internus and an externus move the visual axes in the plane of the horopter toward the second point of view and the interni converge them at this point, the moment the horopteric plane is brought to it.
>
> When eyes endowed with normal muscles are in their primary positions, the horizontal retinal meridians are planed, and the visual axes are planed and converged, by muscle tonicity alone. When in any other position, or when in motion, from two to six of the twelve ocular muscles must be in a state of contraction, under the influence of from one to three of the nine conjugate brain centers.
>
> When two muscles of any pair are unequal in tonicity, whether the eyes are still or in motion, a fusion center must be constantly acting on the weaker muscle. When eyes whose muscles are equal in tonicity are being rotated obliquely, the conjugate or volitional

centers must be aided by one or more of the twelve fusion centers, in the interest of binocular single vision, so far as the recti alone are concerned, and in the interest of both binocular single vision and correct orientation, so far as the obliques are concerned.

Dr. Savage exhibited a surface illustrating binocular single vision which he said is the only one that has ever been made. Dr. Manning Brown, a former student of Dr. Savage, had it made for him. By means of this device, the horopteric surface, binocular rest and motion can be easily understood. In regard to Dr. Stevenson's rubber ball and knitting needle, Dr. Savage said that of course the eye would tort when rotated on an oblique axis, if it were not for the oblique muscles. The oblique muscles have set for them the task of keeping the horizontal retinal meridian in the movable plane of the horopteric circle, whether in monocular or in binocular vision, and faithfully do they accomplish it.

THE TRANSMISSION OF ROCKY MOUNTAIN SPOTTED FEVER BY THE BITE OF THE WOOD-TICK (*DERMACENTOR OCCIDENTALIS*).*

H. T. RICKETTS, M.D.
CHICAGO.

In The Journal, July 7, I reported briefly my success in transmitting Rocky Mountain spotted fever to the guinea-pig and monkey. With these results in hand, it at once became apparent that a means had been provided by which to test the theory of transmission by the wood-tick, a theory which was primarily advanced by Wilson and Chowning. It was my first aim to establish, beyond the opportunity of doubt, the susceptibility of the animals mentioned, and it was only after this susceptibility had been determined by inoculation from two different patients that the study of the tick as an intermediate host for the parasite was taken up.

On June 19 a small female tick was placed at the base of the ear of "Bradley" Guinea-pig 1. This guinea-pig had been inoculated intraperitoneally on June 11 with three cubic cm. of defibrinated blood from the patient, Bradley, and died with characteristic symptoms on June 23. After having fed on the infected guinea-pig for two days, the tick was removed, placed in a ventilated pill-box for two days more, and on June 23 was attached to the base of the ear of a female guinea-pig weighing 300 grams. After an incubation period of three and one-half days, the temperature of the animal rose to 104.2, gradually ascended to 106.4, near which point it remained for seven days, when it gradually returned to normal. The bite of the tick in this instance seemed to be very virulent, the whole ear becoming very much swollen, indurated and cyanotic, and a slough almost one-half inch in diameter, which developed in the vicinity of the bite, eventually separated.

The animal exhibited the following course of fever:

June 23, a.m., 102.3; p.m. 102.2.
June 24, a.m., 101.9.
June 25, a.m., 102.8; p.m., 103.9.
June 26, a.m., 102.4; p.m., 103.6.
June 27, a.m., 102.5; p.m., 104.2.
June 28, a.m., 106 4; p.m., 105.2.
June 29, a.m., 105.6; p.m., 105.8.
June 30, a.m., 104.8; p.m., 106.1.
July 1, a.m., 104.6.
July 2,, a.m., 105.2.
July 3, a.m., 104.7; p.m., 105.
July 4, a.m., 104.7; p.m., 103.1.
July 5, a.m., 103.8; p.m., 103.9.
July 6, a.m., 103.4; p.m., 103.5.
July 7, a.m., 102.5.
Recovery.

Seven days after inoculation, the external genitalia became swollen and congested, and this condition became more marked until the twelfth day, when it began to subside. At no time were distinct hemorrhages in the genitalia or other parts of the skin to be seen. The course of the disease was exactly similar to that seen in a number of other guinea-pigs which ran a severe course, with eventual recovery. The absence of a hemorrhagic condition in the skin, or of a discoverable roseolar eruption, throws no doubt on the success of the transmission, since, as shown by other experiments, a perceptible eruption does not appear invariably in spotted fever as it is produced in the guinea-pig experimentally.

It was not possible to attempt the transmission of the disease from this animal to others, because of the lack of guinea-pigs at the time.

As controls I have two experiments in which uninfected ticks fed on normal guinea-pigs without causing a rise in temperature; furthermore, two guinea-pigs, which lived for two weeks in the box occupied by the infected animal showed no abnormal temperature, a fact which argues against the transmission of the infection by mere association with excretions of infected animals.

The result of this experiment brought very forcibly to my mind the probable part which the tick plays in the infection of man and shows the necessity of repetition of the work with a more abundant material. In view of the result which I had obtained I was not surprised to note the recent report of Dr. King[1] of the U. S. Public Health and Marine-Hospital Service, who, starting with material which I had given him, accomplished transmission in the same manner.

Hasty conclusions as to the question of tick transmission in relation to the infection of man are, by all means, to be avoided until such a time as the experiments can be repeated and the life history of the infection worked out more thoroughly. This phase of the subject, in common with others, is being studied by me, the infection still being maintained in animals for these purposes.

It is hoped that some of these questions may be settled satisfactorily before the advent of the disease next year. At all events the knowledge so far gained may well be taken into account in instituting prophylactic measures against the disease.

Clinical Notes

MIXED MALARIA AND TYPHOID FEVER.

CHILTON THORINGTON, M.D.
MONTGOMERY, ALA.

The relatively small number of reported cases of mixed infection resulting from the simultaneous occurrence of the *Plasmodium malariæ* and *Bacillus typhosus* in the same patient is sufficient pretext for the relation of the following case, which presents many features of unusual interest and which, furthermore, may prove to those skeptical as to the possibility of a double infection, that the same host may, and sometimes does, entertain two guests whose morphologic appearance and biologic habits so widely differ:

Patient.—On June 2, 1905, I was called to see Mrs. A. C. S., Scotch, aged 35. She complained of frequent micturition, accompanied by vesical tenesmus. The marked irritability of the bladder was most troublesome at night, requiring the patient to leave her bed every few minutes. Heat and opium suppositories afforded some relief by inducing sleep.

Course of Disease.—The next morning a chill caused me to be sent for. I was unable at the time to determine whether its occurrence was due to a cystitis or to some oncoming disease. The patient now complained of headache, pain in small of back, nausea, abdominal tenderness, and extreme nervousness. The temperature at this time was 103 by mouth. As a routine practice in all such cases of doubtful nature, I made an examination of the blood and found that it contained malarial organisms in abundance.

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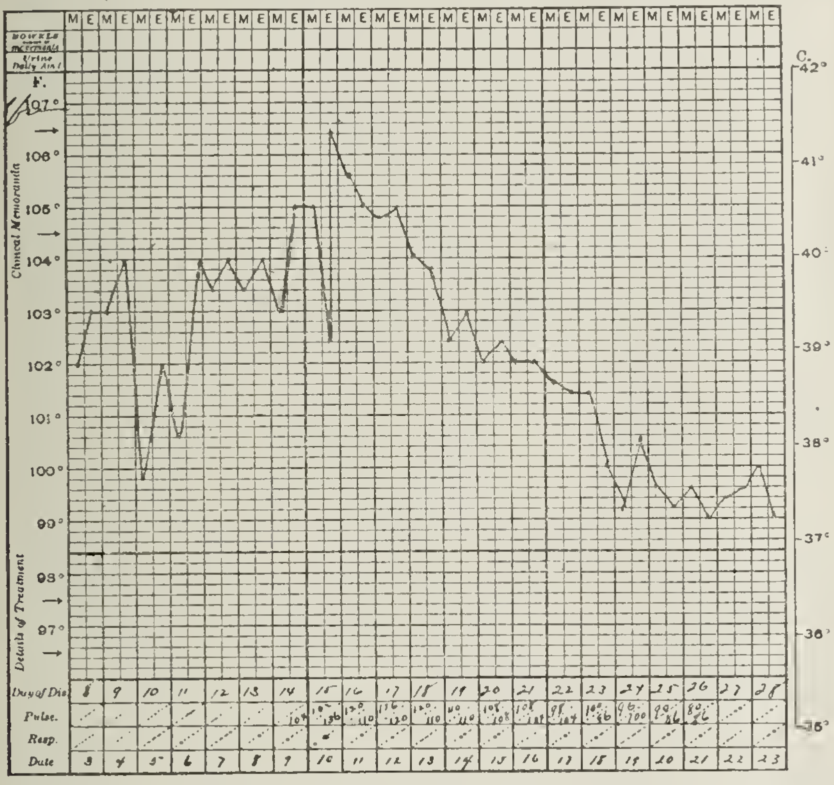
*This work has been done in part under a grant made by the American Medical Association through the Committee on Scientific Research.

[1] Public Health Reports, July 27, 1906.

Calomel and salts were ordered, and quinin in full doses. The temperature promptly dropped to 99.8, and remained thereabout until the afternoon of June 6, when it reached 104. Calomel and salts were again given and quinin in large doses until the patient was thoroughly cinchonized. The temperature remained about the same, with but little variation, for two or three days, mild delirium then set in and the patient seemed to be getting worse.

On the morning of June 10 the temperature in the rectum was 105; skin was flushed and dry, and delirium was becoming violent. There had been constipation, but this now changed to a mild diarrhea.

For the high fever, which was entirely uninfluenced by cold baths, I gave one powder consisting of acetanilid grs. v, quinin grs. iii, caffein citrate grs. ii. About three hours later I was hurriedly called to see the patient and found her in a state of collapse, being cyanosed, comatose, bathed in sweat, with pulse 102, irregular and weak, and temperature 102.4. Respiration was greatly embarrassed. Artificial heat and stimulation brought about rapid and satisfactory reaction. To my surprise within three hours the temperature had climbed to 106.4, and delirium became so violent as to cause the nurse and her husband to use restraint to keep her in bed.



For the first time my attention was attracted by a pronounced macular eruption over the abdominal region, this discovery, with the fact that quinin was doing more harm than good, caused me to suspect a double infection. Antimalarial treatment was immediately abandoned; further blood examination gave positive reaction by Widal's method, and the urine showed presence of 0.2 per cent. albumin, tube casts, and typhoid bacilli in almost pure culture. Menstruation, which had been suppressed for six weeks, now came on freely. Choosing between two evils, cold baths and packs were continued, and now seemed to control the temperature which gradually, though slowly, declined to normal, the menstruation continued three or four days, uninfluenced by the fever or by the cold water. The delirium continued active and at 2 o'clock on the morning of June 14 took a rather unusual course; the patient sat bolt upright in bed and to the surprise of the family, sang, in broadest Scotch, "Annie Laurie."

A slow, but satisfactory recovery was made. Cystitis at times proved troublesome.

In reviewing this report it will be noted that the temperature caused by malarial organism was promptly reduced to that point (99.8, probably occasioned by the typhoid bacilli) by quinin. Further treatment by quinin seemed to do more harm than good. The peculiar type of delirium may have been, in part, due to full doses of quinin, suppressed menses, and typhoid fever. The cystitis was undoubtedly due to the presence of typhoid bacilli.

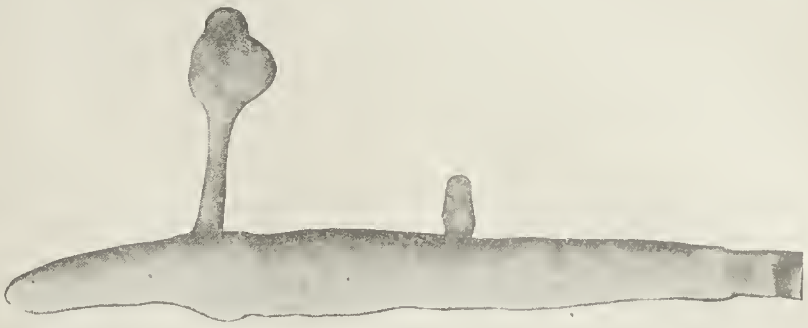
POLYPI OF THE APPENDIX.

GEO. W. PRESSLY, M.D.
CHARLOTTE, N. C.

Kelly, in his exhaustive work on the appendix, reports the first four cases of polypi of the appendix; before this no mention of such cases can be found in the literature. The following case is reported as the fifth of its kind.

Patient.—L. B., male, aged 19, has had four attacks of colic in the past year.

History.—The first two were very light and were speedily relieved with morphin and salines. The third attack lasted for twelve hours and some soreness persisted for two days. The fourth attack was much more severe, the pain lasting for thirty-six hours and the tenderness was troublesome for more than a week.



Appendix everted on blade of artery forceps. Natural size.

Operation.—Two months after the last attack he was operated on and the appendix was found much distended, with liquid feces which was thought to be pus, but on eversion the two polypi shown in the illustration were found, the long pedicle of one allowing it to act as a ball-valve in closing the opening into the bowel. The mucous membrane was much thickened with several eroded pits. The peritoneum was apparently normal. Recovery was uneventful..

St. Peter's Hospital.

A CASE OF ACETANILID POISONING FROM ABSORPTION.*

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PHILADELPHIA.

While acetanilid poisoning and addiction to the drug are, unfortunately, but too common, the following case is of interest, first, because the poison resulted from the local application of the drug; second, because the patient was entirely ignorant of its effects and did not associate the constitutional symptoms with the local condition for which the drug was used; and, finally, because, in spite of its protracted use, the drug had not produced a habit and was withdrawn at once without any difficulty.

Cyanosis, sudden heart weakness and other symptoms of depression have frequently been observed following the application of acetanilid to the skin, particularly after extensive burns, but the first case of chronic poisoning was recently reported in an exhaustive article on the subject by Herrick and Irons,[1] who state that their case is the only one, so far as they have been able to ascertain, "in which chronic acetanilid poisoning resulted from absorption through the skin."

The history of my case is as follows:

Patient.—M. D., female, aged 37, was admitted to my service at the Polyclinic Hospital, June 19, 1905. The only item of interest in the family history is that the mother died of pulmonary tuberculosis. The patient always enjoyed good health until seven years ago, when she had an attack of influenza, since which time she has had recurrent attacks of the disease every winter. She has suffered from varicose veins most of her life. Eleven years ago an ulcer developed on the right leg which grew worse after each succeeding pregnancy. She has had five children and no miscarriage; the youngest child died two years ago.

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* Read before the Philadelphia County Medical Society, May 23, 1906.

[1] The Journal A. M. A., Feb. 3, 1906, p. 351.

The patient states that the present illness began eleven months ago, in July, 1904, with an attack of influenza, which was followed by "indigestion and kidney trouble," from which she continued to suffer for some time. She did not recover her usual health during the fall and winter, and in February, 1905, had another attack of influenza which kept her in bed for two months. Since then she has been up and around the house, with occasional days in bed. She says that she is nervous and worried about small things and complains of pains in the head and dizziness. Recently she has also suffered from pains in the abdomen, breathlessness, nausea, and occasional vomiting. She has lost 70 pounds in the last eleven months. She was sent to the hospital by her attending physician with a diagnosis of some form of severe anemia.

Condition on Admission.—The patient is a large, well-developed woman, moderately emaciated; color markedly cyanotic, conjunctivæ bluish. There was visible pulsation in the carotids and in the episternal notch. The heart sounds were weak, the first sound short and valvular; no murmurs were heard. The percussion note over the lungs was good. Tactile fremitus was present on both sides, but was considerably increased over the upper portion of the right lung, where vocal resonance was also increased. The abdomen was flabby and slightly tender on pressure. A mass was palpable above and to the right of the umbilicus. The spleen and liver were not enlarged. There were no glandular enlargements; the veins of the left leg were prominent and somewhat tortuous. A scar about the junction of the middle and lower thirds indicates the former presence of an ulcer at that point. The right leg was the seat of a large deep ulcer, which was almost annular and occupied the lower third of the leg. The discharge from the ulcerating surface was profuse and offensive. It was learned on inquiry that this ulcer, the existence of which the patient had carefully concealed from her attending physician, had been treated twice a day with acetanilid powder for the last eleven months. The acetanilid was bought at the drug store, half an ounce at a time, without a physician's prescription, the patient having been advised to use it by a friend who extolled its virtues in veterinary practice.

Urine: Examination of the urine on admission was as follows: Dark amber color, acid reaction; specific gravity 1028; no albumin nor sugar; slightly cloudy sediment. Microscopic examination showed phosphates, calcium oxalates, and epithelium.

Blood: The blood was examined by Dr. John M. Swan the day after the patient's admission, with the following result: Dark in color, flows slowly, coagulates quickly. Red blood cells 4,370,000, leucocytes 20,960; ratio 1-220. Hemoglobin, 53 per cent.; color index, 0.56. No difficulty was experienced in obtaining the hemoglobin reading. A differential count of leucocytes showed the following percentages: Polymorphonuclear neutrophiles, 95.2 per cent.; lymphocytes, 2.8; transitionals, 1.6; basophiles, 0.4.

Treatment and Result.—The diagnosis was suspected when the drop of blood was drawn for examination, and was confirmed by the history. The acetanilid was withdrawn at once and completely. The leg ulcer was dressed with an antiseptic dressing until the discharge ceased. The patient was given Blaud's pills and strychnin. One week after admission her appearance was greatly improved; the cyanosis had subsided, the complexion was still pale and sallow; but there was some color in the cheeks and the conjunctivæ were less blue. The tongue was moist, pale and slightly coated. Heart action was regular and the quality of the first sound was greatly improved. A faint systolic puff was heard at the pulmonic area. Pulsation was still visible in the carotids and in the episternal notch; no venous hum was audible.

An Ewald test breakfast was given at this time. The amount of stomach contents withdrawn was 75 c.c. and showed a total acidity of 55, free hydrochloric acid 15. On June 30, eleven days after admission, the blood count was as follows: Erythrocytes, 6,350,000; leucocytes, 9,920; ratio, 1-641. Hemoglobin, 63 per cent.; color index, 0.49 per cent. There were microcytes and macrocytes; no nucleated reds. The differential count showed the following percentages: Polymorphonuclear neutrophiles, 74.2 per cent.; lymphocytes, 13.8; transitionals, 6.2; eosinophiles, 4.6; basophiles, 1.2.

The patient was discharged July 15, 1906, sixteen days after admission, very much improved. During her stay in the hospital the temperature ranged from 97.4 to 99 F., being normal most of the time. I saw the patient a short time ago and learned that her general health had continued to improve after she left the hospital. She has not used acetanilid since.

DISCUSSION.

The diagnosis in this case presented no difficulties, as it was at once made clear by the discovery of the ulcer and the history given by the patient, who had not connected her general symptoms with the local condition, having, in fact, concealed the existence of the leg ulcer from her attending physician, because, she said, she feared he would send her to a hospital. This explains why the diagnosis was not made earlier, as she had been under observation some weeks before she was sent to the hospital. The symptoms in this case were general weakness, loss of flesh, headache, dizziness, some nausea and vomiting, marked cyanosis, dyspnea, weak heart action and general nervousness. The test for paramidophenol in the urine, mentioned by Herrick and Irons as characteristic of chronic acetanilid poisoning, was not made. This test requires no elaborate chemical methods and ought to prove a valuable one in doubtful cases.

Some individuals exhibit great tolerance for the coal-tar products. In the present case the quantity of acetanilid absorbed can only be estimated; the patient probably used about 1½ ounces each week, or a little less than 2 drams a day, applying the powder regularly twice a day. As the ulcerated surface was large, it is probable that a relatively large quantity of the drug was absorbed. A man comes to my clinic who presents a typical example of the acetanilid habit. He says he has taken as much as three 25-cent bottles of bromo-seltzer in a day, or 4½ ounces by weight, and as, according to analysis,[2] each ounce of bromo-seltzer contains nearly 11 (10.99) grains of acetanilid, this patient sometimes takes 50 grains of acetanilid a day. In the case here reported the drug was withdrawn at once without the slightest difficulty. No troublesome nervous symptoms were observed, the patient had no craving whatever for the drug and improvement began on the day the patient was admitted and went on uninterruptedly to recovery. The second patient referred to returns to the use of the drug from time to time, although he has been able to resist it for as long as a week at a time and is gradually improving. As he is not under constant observation, no definite statement can be made about his case.

At first the blood picture was that of a secondary anemia with a low color index. This agrees with the findings in other reported cases. The leucocytosis in the first blood count was 21,000; in Herrick and Irons' case the leucocyte count was 12,000, while Stengel reports a leucocytosis of 19,000 in one of his cases. The increase chiefly affects the polynuclear leucocytes. The blood count made eleven days later showed an absolute increase of hemoglobin, but a lower color index, due to the excessively large number of red blood cells. This feature of polycythemia is also mentioned in a case of acetanilid poisoning reported by Cabot. The influence of the large suppurating surface of the leg ulcer on the condition of the blood must, however, be borne in mind.

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[2] THE JOURNAL A. M. A., Feb. 10, 1906, p. 454.

BROMO-SELTZER AND ORANGEINE.

Acetanilid is concealed in many proprietary and patent preparations that are freely sold to the public without a physician's prescription. One of the commonest offenders, especially among educated people, is bromo-seltzer, as the name is misleading, and it is not generally known that the preparation contains such a relatively large proportion of acetanilid.

Another well-known and pernicious preparation that has several deaths to answer for is orangeine. It is in the form of headache powder and is extensively advertised in the daily papers and in a familiar street-car advertisement showing two faces, intended to represent "before" and "after taking"; one a cerulean blue, the other with the rosy blush of health. If the manufacturers would reverse these two faces and add a skull and crossbones to the advertisement they would give the public a more correct idea of the true nature of their deadly preparation.

INGUINAL HERNIA OF THE BLADDER.

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INDEPENDENCE, IOWA.

Inguinal vesical hernia, or inguinal hernia of the bladder, is necessarily rare, owing to the fact that the fundus of the bladder, under normal conditions, rises above the brim of the pelvis only when the cavity of the bladder is distended with urine. By adhering to other organs the bladder may, however, be dragged out of its normal position, and give rise, in part or entirely, to a ventral hernia, a femoral hernia, an inguinal hernia, a peritoneal hernia or a scrotal hernia.

Henry O. Marcy, in his excellent work on "Hernia"[1] refers to cases of inguinal hernia of the bladder reported by Percival Pott, Cooper, Scarpa, Lawrence, Clement, Horace E. Marine and Arthur F. Norton. In some of these cases the hernia had reached the lower part of the scrotum and had to be squeezed in order to empty it of the urine it contained. Some of the complications observed were decomposition of the urine in the hernial part of the bladder, the formation of calculi in the same cavity, and the rupture of the hernial sac from excessive pressure. In some cases the testicle on the side of the hernia was compressed and atrophied. In the case reported by Norton the opening in the abdominal wall was so large as to allow the cecum, the vermiform appendix, a part of the ascending colon, a part of the small intestines, and the bladder to pass into the greatly distended scrotum. In the case reported by Clement the entire bladder had passed through the inguinal canal into the scrotum and had the appearance of a large hydrocele. In Plummer's[2] paper a case is reported, and reference made to contributions by Curtis, Shepherd and Sonnenberg.

History.—The patient, J. W., aged 60, a farmer, has suffered from an inguinal hernia on the right side for several years. The cause of this hernia could not be ascertained. For a long time he was able to reduce it with no difficulty, but found that the reduction gradually became more and more difficult. His health is otherwise good. He was admitted to the Independence State Hospital for the Insane Oct. 5, 1905, showing at that time symptoms of senile dementia.

Examination.—The physical examination was negative, except that the right knee was enlarged from an attack of rheumatism, the left arm had been broken several years previously about six inches above the wrist, the radial arteries showed arteriosclerosis, the co-ordination in the hands was poor, the pupils were sluggish, the knee reflex was exaggerated, and blind, bleeding piles had been present for several years. The muscular development and muscle tonus were found very good. Nov. 16, 1905, he complained of pain over the hernia. I then tried to reduce it, but found this impossible. The tumor mass which was felt over the inguinal canal was very hard in consistence, smooth, and but slightly movable. It was in size about three inches long, two inches wide and one inch in ventro-dorsal diameter. Pressure on it did not perceptibly diminish its size, nor did coughing cause any impulse in it. It was rather painful when pressed or moved. The patient's bowels moved as usual, but he had occasionally some difficulty in passing his urine. It was deemed best to operate, and Drs. A. G. Shellito and Fred Agnew of Independence, Iowa, were called in for this purpose.

Operation.—An incision three inches long was made over the tumor mass and the inguinal canal was laid open. In the inguinal canal was found a hard, irregular mass of tissue in size a little larger than an egg, and covered by the hernial sac. This sac was cut and with some difficulty peeled off. It was seen that the inguinal canal was considerably dilated and that the internal inguinal ring constricted the extruded mass. This mass was found to be well supplied with muscle fibers and not so smooth as the surface of the intestines usually found in hernias of this place. After enlarging the internal inguinal ring sufficiently to admit one finger, it was found that the extruded mass was continuous with the bladder. The hernial part of the bladder, which was very dark and much congested with blood, was pushed back into the abdominal cavity and the opening closed according to the Bassini method —the fascia of the conjoined tendon was sutured to the lower border of Poupart's ligament under the cord and the external oblique muscle was sutured to the upper border of the ligament over the cord. The bladder was not injured, as was shown by the fact that there was no leakage of urine in the wound. After suturing the skin, the wound was dressed with aseptic gauze, fixed in place by collodion. It was much feared that the dark, constricted area, which was easily outlined on account of its color, might become gangrenous and thus cause a perforation of the bladder, but fortunately this did not occur.

Postoperative History.—The patient came out of the anesthesia in a very good condition and very soon fell into a deep sleep, which lasted until the next morning. During the following days his temperature rose gradually until it reached 102 F., on November 18 and 19, then decreased slowly, there being an evening rise of about 1 degree, until it reached normal on December 1. The variations in the pulse and in the respiration corresponded quite closely to those in temperature; the pulse reaching its greatest rapidity November 18, when it was 110 a minute.

Urine: The examination of the urine on November 18 showed the following: Cloudy; color, yellow; reaction, acid; specific gravity, 1023; a trace of albumin, no sugar, some pus cells, epithelial cells, and uric acid crystals; a few granular and hyalin casts. During the first two weeks it remained cloudy, and contained both pus and epithelial cells, granular and hyalin casts, though in smaller number. The trace of albumin disappeared in a few days.

Subsequent History.—November 18 the patient vomited twice and complained of pain in his left side. On examination his abdomen was found quite markedly tympanitic, and in the afternoon of the same day he passed a large amount of gas and had a small, liquid bowel movement. Though he had been given cascara freely, he was now given an enema, which was followed by a liquid bowel movement. On dressing the wound, November 19, some pus was seen in it, and a few of the stitches were, therefore, removed. He was then for several days given small doses of magnesium sulphate at frequent intervals, and the head of the bed was raised about two feet. The bowel movements became more copious and frequent, and the pain in the side disappeared. A moderately thick, light-yellow secretion came from the wound for about two weeks and gradually disappeared. November 28 he was given a full diet, and recovery from then on was rapid. All signs of her-

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1. New York, 1872.
2. The Journal A. M. A., July 22, 1905.

nia were absent and, as his mental condition had also improved slightly, he was, after a few weeks, taken home on parole. The scar seemed strong, and the probability is that he will not again suffer from a hernia in the same place.

DIAGNOSIS.

Some of the symptoms which have been observed in cases of inguinal hernia of the bladder are:

1. A difficulty in passing the urine.
2. A change in the size of the hernia, depending on the amount of urine in the bladder.
3. A desire to urinate following pressure on the hernia.
4. A catheter may at times be passed through the urethra and into the hernia.
5. Injection of air or water into the empty bladder may cause an enlargement of the hernia.
6. On reduction of such a hernia the accompanying omentum or intestine may quite easily be pushed back into the abdomen, but there frequently remains a small, doughy mass which represents the extruded part of the bladder.
7. In the case here reported the tumor mass was much harder than most ordinary cases of inguinal hernia.
8. In some cases there is fluctuation in the tumor mass.

During the operations for relief of this condition the following facts have been observed by several writers:

1. The difficulty of identifying the structure of the hernia, when seen for the first time. There is consequently danger of cutting into the bladder, mistaking it for other tissue.
2. An unusual amount of fat in the inguinal canal.
3. The large size of the external inguinal opening.
4. The difficulty in separating the true hernial sac from the tumor mass.
5. The recognition of the muscular tissue in the wall of the bladder.
6. The possibility of passing a urethral catheter into the hernia.
7. The frequent difficulty in finding the neck of the true hernial sac.
8. The fact that hernia of the bladder is found nearer the median line than the true hernial sac.
9. The fact that when normal, the wall of the bladder is thick and firm.
10. When the extruded part of the bladder is ruptured or incised, urine frequently flows out, and, in such case, a small catheter can occasionally be passed into the bladder through this artificial opening.
11. The frequency with which intestinal and omental hernias accompany the hernia of the bladder.

Radical operation is the only rational treatment.

A CASE OF BLACK TONGUE.*

HUGO A. KIEFER, M.D.,

LOS ANGELES.

Patient.—J. G., aged 21, a Servian by birth, and a cook by profession, was admitted to the hospital Feb. 6, 1906, suffering from a severe attack of quinsy, which had set in six days previously.

Examination.—On the day of admission, examination showed the entire dorsum of the tongue to be covered by a thick, tough, grayish-white membrane, which was closely adherent. It was possible to remove only small particles, which left no raw surface. The entire surface of the soft palate, the pillars of the fauces, and the tonsils were covered with minute patches of grayish-white membrane easily removable and leaving no erosions. A very large peritonsillar abscess on the left, together with the swelling of the fauces on the right, shut off a view of the oropharynx.

Treatment.—The abscess was incised and evacuated, yielding over one-half ounce of pus not differing in gross appearance from that usually found in such cases.

Course of Disease.—February 7, the entire dorsum of the tongue had turned jet black, as if it had been stained. There was no more of the white membrane anywhere, and the black color was confined to the tongue. Vigorous curretting brought away very minute quantities of the black material. The patient had taken absolutely nothing that could produce such a stain. His general condition was much better than on the day previous, and on reopening the peri-tonsillar abscess only a very small quantity of pus was found. The black color remained on the tongue four days, disappearing gradually.

The general condition of the patient was such as is usually found in cases of quinsy, except that there was a marked suppression of urine.

Date.	Temperature.	Pulse.	Urine, oz.
February 6	102.8	89	1
February 7	98.6	72-70	2
February 8	97.6-99.2	60-64	3
February 9	97.2-97.8	64-74	2
February 10	97.2-98.2	64-68	8
February 11	97	60	not measured.
February 12	97	60	not measured.

It will be noted that the excretion of urine did not increase until the last day of the black growth on the tongue, when it had nearly disappeared. The urine, unfortunately, was lost, except on the tenth, when he passed eight ounces, and the results, which were as follows, showed nothing unusual: Reaction alkaline; sp. gr. 1012; color, amber; no albumin nor sugar. Was the suppression due to the black fungus?

Remarks.—A specimen of the black scrapings from the tongue was submitted to Dr. Stanley P. Black, who succeeded in making a culture on potato and reinoculating on bread crumbs, but it is questionable whether this mold is the one causing the black coloration of the tongue. The culture does not show any mold that approaches the black color found on the tongue.

What was the organism causing it?

Probably *Mucornigra*, one of the zygomycetes. I have frequently seen dark growths of the aspergillus that invades the external auditory canal, but never anything so black as in the case reported.

A CASE OF ANEURISM OPERATED ON BY THE MATAS METHOD.

ISRAEL BROWN, M.D.

NORFOLK, VA.

Patient.—C. I., colored, aged 51, native of North Carolina.

History.—Family history was negative. Personal history showed usual diseases of childhood and gonorrhea 8 years ago. Formerly, patient was a heavy drinker and used tobacco in moderation for a number of years.

In January, 1906, he was taken with pain in right leg extending from knee to ankle, which was treated for some time as rheumatism. Pain was worse at night and unrelieved by posture or pressure. There was a pulsating tumor in the right popliteal space, supposed to have been caused by pressure and irritation produced by wearing high rubber boots. Patient was admitted to St. Vincent's Hospital, May 22, 1906.

Examination.—Heart, lungs, etc., were normal; there was very little hardening of the arteries. The tumor was hard, slightly elastic, and very painful. There was considerable edema of the leg.

Operation.—May 25, 1906, incision was made over tumor about 7 inches long, clots were turned out and interior sac was well cleansed. Groove between ends of artery, about one inch in length, were sutured with Lembert-sutures to preserve lumen of vessel; this layer was reinforced. Openings of other vessels were closed with catgut, tourniquet was loosened, and where vessel leaked reinforcing sutures were used. The sac was obliterated as far as possible, it being rather large. Four deep sutures were then used to enfold sac from bottom and sides coming through skin and tied over pads to complete obliteration of sac. The skin was not turned in but sutured in the ordinary way with silk. There was no infection and the swelling very gradually disappeared.

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* Read before the Eye, Ear, Nose and Throat Section of the Los Angeles County Medical Association, April 9, 1906.

CONGENITAL MALFORMATION OF HEART, WITH MALPOSITION OF CERTAIN VISCERA AND ABSENCE OF SPLEEN.*

G. W. POTTER, M.D.
REDFIELD, S. D.

The case in question was that of an infant which lived but four and one-half hours and was in the service of my colleague, Dr. H. C. Burch.

The mother, Mrs. A. J. O., was a primipara; pregnancy was normal and the child, a female, was born at full term, March 4, 1906. Labor was difficult, instrumental, but was not allowed to be overprolonged. The head was right occipital anterior.

The child at birth was feeble; there was difficulty in establishing respiration, and throughout the four and one-half hours of life the cry was weak and fretful. The attendant's attention was first attracted to the apex beat, which was situated three-fourths of an inch directly below the right nipple.

On the death of the child an autopsy was requested and granted. Our findings were as follows: An infant of nine and one-half pounds and perfectly normal on external examination. When we opened the thorax and abdomen an unexpected and interesting condition presented itself. The heart was placed in a corresponding position in the right side, which would have been normal in the left. It was one and three-quarter inches in length and one and one-quarter inches in diameter at the base. The external appearance was normal, but section showed the left heart defective in that the auricle was made up of a small thin sac about the size of a two-grain capsule. The left ventricle and entire right heart were normal. The pulmonary veins emptied into the left ventricle, there being no opening from the left auricle to or from any other part.

The right lung consisted of three lobes, the lower one being pressed upward by the position of the heart. The lung was normal in size and all portions were crepitant on pressure, showing that it functionated fully during this short life.

The left lung had no lobes and was greatly atrophied, being one inch in length, one-half inch in width in the widest diameter and one-fourth inch thick. A small area at the junction of the bronchi was slightly crepitant, all the other portions being non-crepitant, dark in color and bloody on section.

The left chest cavity was normal in size, and the space which should have been occupied by the heart and a normal lung was filled by the stomach, pancreas, small intestine and the greater part of the large intestine. These structures had apparently gained access to their unusual location by an opening caused by a complete absence of the left half of the diaphragm, excepting a narrow strip anteriorly three-eighths of an inch in width. All these parts were normal in size and appearance. The appendix, also misplaced, was two and three-fourths inches in length and about the diameter of a slate pencil.

Passing to the abdominal cavity, we found the liver and gall bladder normal in size, location and macroscopic appearance. The same was true of the urinary bladder, the uterus, tubes and ovaries. The colon, descending from the left chest cavity, passed diagonally across the abdominal cavity to the right side and reached the rectum to the right of the uterus and posteriorly to the right tube and ovary. Diligent and repeated search failed to reveal a spleen. The kidneys were both normal in appearance and size. They were both found to be floating; the right was resting on the pelvic brim and close to the colon as it descended on the right. The left was less freely movable.

In looking up the literature at hand on this subject I find that J. M. Van Cott, Jr., says that absence of entire organs is common, absence of lungs with absence of diaphragm occurs, and that cases of partial absence of one lung with compensatory hypertrophy of the other lung have been observed. Further, he noted absence of one or more chambers of the heart.

Dittel reported unilateral defect in the diaphragm of an infant that died soon after birth. The stomach, small intestines and part of the large omentum lay in the left pleural cavity. Instances in which the spleen has been found wanting are reported. More frequently the spleen is doubled.

There are several cases of complete transposition of the viscera on record. This was probably first observed by Riolanus[1] in 1650.

Absence of the heart, Gould says, has never been reported, except in monsters. The absence of one ventricle has been recorded. Jurgens, in Berlin, in 1882, reported an autopsy on a child who had lived some days after birth, in which the left ventricle of the heart was found to be completely absent. Many cases of displacement of the heart are reported.

I report this case in the hope that it will be as much interest to the members of the Association as it has been to me.

A PECULIAR CONGENITAL MALFORMATION.*

F. RUSSELL DAME, M.D.
BEDFORD, MASS.

In July, 1905, I attended M. D. in confinement, the labor being in every respect normal. The woman gave birth to a healthy, robust boy, which gave a lusty cry before fully born and seemed to be normal in every way. I cut the cord and laid the child by while the mother was being attended to. In about fifteen minutes from the time of birth I found the child's respiration extremely slow and irregular; after waiting a few minutes I commenced to stimulate respiration, first by sprinkling with water and then by artificial respiration, but in spite of my efforts it shortly ceased to breathe.

At birth the child showed absolutely no malformation or abnormal condition; its first cry and respiration were strong and forceful, and having had a short labor I paid little attention to the child, thinking there could be nothing needed, and it seemed to do well for ten or fifteen minutes.

The case was so unusual that I obtained the parents' consent for an autopsy. On opening the chest cavity I discovered in the left pleural cavity a mass of coils of intestines, which had escaped from the abdomen through the small opening in the posterior portion of the diaphragm.

On further examination I found the stomach, duodenum and the small intestine, also the greater part of the large intestine, except the descending colon, and the rectum, and a small lobe of liver which was adhered to the stomach all above the diaphragm. The esophagus and the aorta passed through the diaphragm through a normal opening, and the esophagus wound up around through the diaphragm to the stomach. The appendix was between four and five inches in length. The liver was of about the normal size for a baby, but its right border posteriorly was curved inward and forward on itself. The left kidney was somewhat large and displaced downward, probably because of lack of other organs in the abdomen, which was practically empty. The left lung was very small and had not been distended; the right lung was distended. The heart was wholly to the right of the sternum. The pericardium was closely adherent to the diaphragm. The auricles of the heart were extremely large and thin-walled. The thymus gland was two and one-half inches long and thick. The mediastinal septum was only partially developed.

It was a question at the autopsy what caused the immediate death of the child, as it seemed that the abnormal position of the organs would not of itself terminate life in so short a time. My supposition was that the opening in the diaphragm did not allow sufficient suction in the chest to draw enough air through one lung properly to aërate the blood.

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*Read before the Aberdeen (S. D.) Dist. Med. Soc., May 15, 1906.

[1] See Gould and Pyle on "Anomalies and Curiosities of Medicine," page 291, 1897 edition.

* By a curious coincidence these two unusual reports, one from Massachusetts and the other from South Dakota, were received by us on the same day.—Editor.

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[*For other information see second page following reading matter.*]

SATURDAY, AUGUST 4, 1906.

CANCER—CAN IT BE CURED?

Dr. Beard's hypothesis of cancer and the trypsin or pancreatic treatment of cancer, which he has evolved on the basis of this hypothesis, were discussed in these columns March 10, 1906. There we pointed out that Beard's hypothesis is a revival, in a modified form, of Cohnheim's familiar hypothesis of the embryonal matrix or residue, inasmuch as Beard asserts that cancer arises in aberrant germ cells, the actual continuity of which as cells from generation to generation, he believes, he has demonstrated in certain fishes. Commonly these cells degenerate, but not always, and cancer may result "from the attempt of an aberrant germ cell to continue its life cycle." Further, that in fishes these aberrant germ cells, which are held to be readily demonstrable, vanish as the activities of the pancreas commence; hence trypsin should cure cancer in man.

We are not aware that aberrant germ cells have been demonstrated in human embryos and, if so, that they here also disappear with the development of the pancreas. Be that as it may. At this time we are more concerned with the effects of the trypsin treatment, more particularly as set forth in a recent popular article[1] by one C. W. Saleeby, M.D., F.R.S. (Edin.), written, so it would seem, under the direct inspiration of its originator.

Says Saleeby: "The giving of the widest and most immediate publicity to these facts seems to be a proceeding from which it would be cruel and cowardly to refrain, even though absolutely dogmatic and final statements can not yet be made. . . . If the cases I have seen be not miraculous in the common sense of the term —that is to say, due to Divine interference with natural law—one has no choice but to speak." Now, what are "these facts:" (1) The apparent interference with the growth of inoculated cancer in two mice by injections of trypsin; in neither animal, however, are the experimental conditions as stated by Saleeby such as to warrant the conclusion that the trypsin cured the cancer completely. (2) "Apparently satisfactory" results from administration of trypsin in man to prevent recurrence of cancer after operative removal. (3) In a case of inoperable cancer in an outlying district in London, the growth being visible and full of vitality, the trypsin treatment, in about four weeks, resulted, "so far as all indications go," in the tumor being killed outright. "The patient is now apparently on the high road to recovery, though some difficulty has yet to be apprehended by reason of the poisonous action of the disintegration products of the growth." Saleeby adds: "So far as my small experience goes, this is certainly the most amazing thing I have ever seen." Furthermore: "Erroneous diagnosis, coincidence, miracle, spontaneous death of the tumors—none of these explanations is adequate in these any more than in the two mice of happy memory." In another case "the patient is apparently making a rapid recovery and it is expected that in a few weeks more no signs of the tumors will be discovered."

Comment seems hardly necessary, because there is no record here of any cure of cancer. The facts in regard to the cases are totally inadequate for an outsider to form any correct opinion of the actual state of affairs, and the manner in which the facts are given show that the reporter is not only highly inexperienced, but also deeply prejudiced. It is evident that this kind of exploitation of the trypsin treatment of cancer should cease. It is not at all creditable to its advocates. If there are facts available bearing on the true merits of this treatment let them be published fully so that their significance may be appreciated. Incomplete, premature, sensational announcements do harm only.

ACUTE EPIDEMIC POLIOMYELITIS.

That acute poliomyelitis, often associated with meningitic and encephalitic symptoms, sometimes occurs in epidemic form is illustrated by several distinct epidemics in this country. The most important is that reported by Caverly[1] from the vicinity of Rutland, Vt., of 119 cases, all occurring during the summer of 1894. Eighteen patients died; 85 of the patients were under 6 years of age. Smaller outbreaks have occurred in New York and in London, Ont. In Gloucester, Mass., 38 cases developed (Painter). So far as known few or no autopsies were made in cases in these outbreaks and no bacteriologic examinations of the central nervous system.

Probably the most extensive epidemic of acute poliomyelitis yet recognized is the Norwegian epidemic of 1905, an epidemic that seems to have begun in 1903 and probably to have reached its height in 1905, although the facts as to 1906 are not yet available. It may be mentioned, too, that in 1899 a distinct but localized epidemic occurred (Bratsberg epidemic). During 1905 a number of scattered outbreaks were observed in various parts of the country, more marked, however, in some parts than in others, and during the first nine months of the year 437 cases, with 67 deaths, were reported[2]—a relatively very large number when one considers the small total population of the country, about two and one-half millions, and the fact also that it is scattered over a large area. Naturally the disease is attracting much attention among Norwegian physicians, but a complete collective report giving the results of the clinical epidemiologic, bacteriologic and pathologic investigations that have been made and still are in progress has not yet appeared. From the various preliminary reports already published, it appears that this is an infectious disease with special predilection for the central nervous system and causing somewhat variable clinical symptoms, according to the particular part affected, the acute poliomyelitic type being, however, the predominating. The disease is evidently easily transmissible by more or less immediate contact, and there is also good reason to believe that it may be transferred by healthy persons, resembling in this respect acute cerebrospinal meningitis. In the majority of the cases, abortive as well as well-defined and typical, there is present angina with redness, swelling and increased secretion; rhinitis and conjunctivitis have not been noted. Consequently the point of entry may well be the throat.

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[1] McClure's Magazine, August, 1906.

[1] Medical Record, 1894, xlvi, 673.

[2] Geirsvold: Norsk mag. f. Lägevidensk., 1905, lxvii.

The somewhat polymorphous clinical picture does not seem to have occasioned any doubt in the minds of the actual observers as to the etiologic entity of the disease to which may be applied with especial force Duclaux's noted saying in regard to many infectious diseases: "It is not the disease, but the microbe which is the specific." In 1901, Looft and Dethloff isolated from the cerebrospinal fluid of two cases of acute poliomyelitis a micrococcus that differs in certain points from the meningococcus of Weichselbaum and from the pneumococcus. From various cases in the present epidemic Geirsvold and others believe that they have obtained the same micrococcus which so far seems to occur almost exclusively in the cerebrospinal fluid, which, by the way, usually is clear or slightly opalescent. In one case it was turbid, due to the enormous number of bacteria present. After from 12 to 14 days the fluid is commonly sterile, although the cocci may be demonstrable in stained preparations. The coccus is described as a Gram-positive, bean-shaped diplococcus, the flat sides being parallel and separated by a narrow line; it grows quite readily on various media and has been found to be quite resistant. Geirsvold has observed similar organisms in the pharyngeal mucus of patients. He, however, does not at all set up the claim that this coccus, the exact relations of which to the types of meningococcus, to *Micrococcus catarrhalis,* and to possible other cocci have not been established definitely, is the cause of epidemic poliomyelitis, and especially because our knowledge of the bacteriology of the cerebrospinal fluid under normal and diseased conditions is as yet incomplete. However, the practically constant finding of Gram-positive, bean-shaped micrococci in the cerebrospinal fluid in these cases can not but be regarded as highly significant, especially since cultures of this organism give rise to paralyses in animals, and in all probability the work now being done will clear up this interesting question and at the same time other co-ordinate questions, e. g., the relation of acute poliomyelitis to meningitis and possibly also to other acute infectious or toxic processes in the nervous system.

In five cases from as many different foci of poliomyelitis Harbitz[3] reports the same general anatomic changes, namely, poliomyelitis with infiltrations in the spinal membranes, but also more or less well-marked changes in the medulla, central ganglia and brain—the process being apparently more diffuse than at first thought, the principal point of attack being the gray matter in the spinal cord. An unequal distribution of the lesions would go far to explain the so-called atypical cases (paralyses of cranial nerves, encephalitis, myelitis, etc.). Further anatomic studies on material from this epidemic, consequently, promise to help us to reach clearer conceptions of the acute infectious-toxic diseases of the central nervous system.

STATE PURE FOOD AND DRUG LEGISLATION NEEDED.

Congress has enacted two laws that are destined to do away with much of the fraud and deception connected with foods and medicines. The federal law regulating slaughtering and meat packing establishments, combined with the federal pure food law, will give a large measure of protection to the people in what they eat and drink. As regards the inspection of packing and slaughtering establishments, Secretary Wilson's first installment of the new regulations shows that this inspection will be systematic and thorough; the preliminary work already under way preparatory to putting in force the provisions of the pure food law next January shows the same thing. But—and this is the point to be considered in every state—these laws apply only to the District of Columbia, to the territories and to interstate and foreign commerce. Each state is left to regulate its own internal affairs. So while foreigners and residents of other states and territories have the assurance of protection against fraudulent, adulterated, unwholesome and misbranded meat products of the Chicago packing houses, the residents of Chicago and Illinois are left unprotected except as they may be protected by the laws of Illinois.

In like manner the public will be protected by the federal pure food and drug law against certain frauds originating outside of but not within their own state. For instance, as this law relates to "patent medicines," the Hartman people can still sell their Peruna in Ohio and humbug the temperance people there; in other states they will have to print on the label the amount of alcohol it contains, and this requirement will have a tendency, at least, to limit the number of preacher's testimonials. Kopp's Baby's Friend can still carry on its mission of killing babies and making money for its owner in Pennsylvania; in other states the morphin it contains will make it unprofitable to push. Orangeine in Illinois, Antikamnia in Missouri and Bromo-Seltzer in Maryland can continue in their respective states, but elsewhere the vendors of these and similar preparations will have to tell the public that acetanilid is the principal ingredient. There is, therefore, nearly as much need for food and "patent medicine" legislation in those states that do not have it as there was before the passage of the pure food bill; in fact, state legislation is almost a necessity now.

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[3] Forh. i det med. Selskab, 1905.

This is recognized, and already preliminary work is being done in many states with the object of securing such legislation. The opposition will, of course, be very much lessened now that there is a federal law. Meanwhile it behooves physicians in every state to give the matter consideration.

It should be realized that the drug clause in the federal pure food law provides protection of the public only against preparations containing poisonous or habit-forming drugs; it does not reach those that, while possibly harmless, are useless—have no effect one way or another—such, for instance, as that typical fraud, liquozone. The legislation needed is that which shall enforce the principle, "Let the label tell." If the people prescribe for themselves, let them know what they are prescribing. Nothing short of this should be thought of.

In many states the druggists, recognizing that local legislation must now be had, are taking an active interest in the matter. There is no reason why physicians and pharmacists should not work together, and in some states they are doing so. In Illinois a committee appointed by the Illinois Pharmaceutical Association is co-operating with a similar committee of physicians, and a tentative bill is already prepared as a result of a conference of these committees. It is more to the interest of the pharmacist to co-operate with the physician in this matter than with the "patent medicine" men's association. But to get this co-operation physicians must take the lead.

THE TRANSMISSION OF ROCKY MOUNTAIN SPOTTED FEVER BY TICKS.

The Study of Rocky Mountain Spotted Fever has received a new impetus with Rickett's discovery that the disease is communicable to monkeys and guinea-pigs by means of inoculation of the blood of patients. In this number of THE JOURNAL Ricketts reports the probable transmission of the disease from one guinea-pig to another by means of a tick which inhabits infected districts. The work of Ricketts has been confirmed by Passed Assistant-Surgeon W. W. King of the Public Health and Marine-Hospital Service. Working along the same line, during the present season, Dr. King has also produced the disease in monkeys and guinea-pigs, and has succeeded in continuing the disease from one animal to another at the Hygienic Laboratory. In a preliminary note Dr. King also reports that he has succeeded in transferring the disease from one guinea-pig to another by means of a tick. This work was undertaken with the object of determining the correctness of Wilson and Chowning's theory of the mode of infection. Dr. King[1] placed one male and three female ticks (*Dermacenter occidentalis*) on a guinea-pig suffering with spotted fever. They remained until removed after the death of the animal, two and one-half days later. Nine days after the removal from the first guinea-pig, the female ticks were placed on a healthy guinea-pig which had never been exposed to spotted fever in any way. One tick was killed by the guinea-pig, but the other two remained until they dropped off after five days. Three days later the guinea-pig began to show symptoms, developing the same clinical picture as those animals inoculated with infectious blood. On the death of the tick-infected pig, another spotted fever in any way. One tick was killed by the blood, and this animal also sickened with the disease. While these experiments may possibly be explained on mechanical grounds, there is no doubt that the tick was the agent of transmission in this case, and it is strong presumptive evidence in favor of this mode of transmission in man. This extremely interesting and important work is the first positive experimental evidence in favor of the tick theory and should lead to further experiments to determine whether the infecting organism must undergo a cycle of development, as in the case with some organisms, notably the *Plasmodium malariæ.*

VICTIMS OF SANITATION.

It is alleged that the West Indian negroes employed on the Panama Canal do not thrive under the sanitary conditions introduced since the American occupation. It is said that they are dying off in large numbers, and this is attributed in the newspaper reports to the unaccustomed exposure due to the free ventilation of the apartments provided for them. It is the custom of the Jamaica negro to sleep in close, unventilated apartments to exclude the night air, and when these conditions are reversed he "catches cold," gets pneumonia and dies. This reasoning may be contested by sanitarians, but it has sufficient plausibility to be acceptable to the average newspaper reader. There is a possibility that the human animal may adapt itself to very insanitary conditions and find itself less resistant to other conditions of exposure when taken from its accustomed environment. The Arctic Esquimaux lives during the winter under conditions that are absolutely opposed to good sanitary principles. He cuts off all the ventilation possible from his igloos and keeps himself comfortable in a temperature largely maintained by his own animal heat. While tuberculosis is common among them, at least in Greenland, according to Nansen it is not at all rapidly fatal, but they quickly succumb when transported to more favorable climes and under the influences of civilization. To some it may appear that the alleged facts in regard to the cause of the high death rate among colored laborers in Panama is not credible, but it is not absolutely unreasonable to presume that an acquired immunity to certain insanitary conditions may exist, while at the same time there may be a special susceptibility to certain germ diseases from which they were, in a measure, protected by the insanitary conditions. The suggestion occurs whether some of the apparently increasing mortality from pneumonia in this country may not be due to the deprival of a similar protection under the more modern conditions of living, at least in certain classes of the population. The question will probably be answered in the negative, but it may be worthy of investigation if only for the sake of securing such an answer.

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[1] United States Public Health Reports, July 27, 1906.

OVER-EATING BY THE POOR.

Much of the disease in the world is commonly attributed to errors in diet, both as regards quantity and quality. It is also usually supposed that the sufferings of poverty are largely connected with insufficient nutriment and much is said about the extravagance of the rich and the hunger of the poor as contributing to the miseries of this life. It is rather interesting, therefore, to hear from philanthropic workers, who may be supposed to know what they are talking about, that a large portion of the illness of poverty-stricken New Yorkers is due to over-eating. There is plenty of malnutrition and undoubtedly some actual starvation in the slums, but this testimony indicates that it is more exceptional than has been generally supposed. In this country we have never had anything like the famine conditions that exist is some parts of the world. We must consider, however, that the evil effects of over-eating referred to may not be due to the constant practice of gorging, but to the occasional excesses, and in this the very poor are as likely to indulge, when occasion offers, as any other class. Without condoning anything that the rich may do in this line, it is probably safe to say that the dietetic extravagances and eccentricities of even the very poor in many of our communities need correction. Most dispensary physicians could probably give some testimony on this point. In fact, the poor probably need instruction as to temperance in diet almost as much as to temperance in stimulants and their necessitated irregularities are only a part of the conditions in this regard which need reform.

TRYPANOSOMA DISEASE.

The recent death of an English Army surgeon from accidental inoculation with the germ of the African sleeping sickness has excited considerable interest, especially in connection with other instances demonstrating that Europeans are not immune to this widely extending African plague. Recent investigations by Dr. F. W. Mott,[1] of the pathologic laboratory of the London County asylums, throw considerable light on the subject of trypanosoma disease in general and are at least suggestive as regards the pathologic processes in that worldwide scourge, syphilis. He examined the microscopic changes in the nervous system of a horse dying from dourine or *mal de coit*, which is caused by a trypanosoma and has many resemblances to syphilis, which we are now coming to believe is due to the *Spirochæta pallida*. Comparative examinations of the tissues of the central nervous system in this disease and in sleeping sickness seem to show that the result of the infection is a chronic lymphadenitis, followed later by chronic interstitial inflammation in the lymphatic structures of the nervous system. In dourine the process starts at the point of primary infection, extends to the inguinal glands and thence, presumably by way of the pelvic lymphatics, passes by the lumbosacral nerves to the posterior spinal ganglia where it sets up intense inflammation resulting in destructive atrophy. The trophic sensory centers are involved, thus accounting for the cutaneous manifestations and a later degeneration of the posterior roots and sclerosis of the posterior columns, especially in the root zones. Other changes noted by Mott giving evidence of chronic irritation were subpial and septal proliferation of the glia tissue. The resemblance of these lesions to those of tabes is noted by him, and the study seems to throw at least a side illumination on the pathology of what have been called the parasyphilitic diseases of the central nervous system. There were reasons in this case to believe that the motor nerves were not affected in the same way as the posterior roots, and hence the theory of the disease as a polyneuritic infection is not supported by Mott's findings.

ORIENTALISM.

No doubt there exist undescribed diseases and symptom-complexes, even apart from pathologic differentiations that must be made with increasing knowledge of etiology and of histologic alterations, as well as the extension of civilization to previously uninvestigated fields. It may be that certain morbid affections at present considered as clinical entities will be found in time to represent a group of diverse disorders. In illustration we need but cite the separation of typhus and typhoid and more recently that of typhoid and paratyphoid. A similar process of differentiation will have to be made with respect to the varied forms of polyarthritis, for one specific form of which alone the designation rheumatic should be reserved. Under the term orientalism, or a change to an Eastern appearance. Dr. H. Work Dodd[1] describes a small group of cases characterized by a number of symptoms in common. In all of the cases there was a history of syphilis, and this fact may be found to be of decisive significance. Some of the symptoms are indicative of involvement of the nervous system, while others are suggestive of an alteration in some elaborating structure or gland having an internal secretion, such as the testicle or the thyroid gland. Among the former are ptosis, external strabismus, general weakness, with impaired motility, slight atrophy of one-half of the tongue, with deflection to that side, deranged co-ordination, diminished painful tactile and thermal sensibility, general nervousness, mental depression, lessened sexual desire and power, drowsiness, enfeebled memory. The entire aspect was distinctly Tartar or Mongolian in type, the complexion sallow, the lips thick, everted, bluish, the nose fleshy and abnormally flexible, the hair deficient, the skin soft, thin, delicate, normally moist and elastic. The nutrition was impaired and there was a marked stoop of the body. The knee-jerks were preserved and the pupils normal in size, though reacting sluggishly, and the fundus oculi presented no change. The thyroid gland could not be felt, and the testicles appeared atrophied. It can scarcely be said that the foregoing description is sufficiently distinctive to justify the belief that it portrays a new and definite clinical entity, but while we can not accept, neither can we reject, and further observation will be required before a final decision can be reached, especially in the direction of the underlying anatomic conditions.

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[1] Nature, July 5, 1906.

[1] Lancet, June 23, 1906, p. 1753.

Medical News

CALIFORNIA.

Personal.—Dr. Howard B. and Amelia L. Gates, San José, have gone to Europe.——Dr. Benjamin Shurtleff, Napa, on July 6, celebrated the fifty-seventh anniversary of his arrival in California.

Lane Lectures.—Dr. John C. McVail, Glasgow, Scotland, will deliver the annual course of Lane medical lectures at Cooper Medical College, August 20 to 25. The course will cover sanitation of cities and homes, the housing of people, sewerage, garbage and water supply.

San Francisco Healthy.—The president of the San Francisco Board of Health reports that the city is more free from contagious diseases than at any time in its history. The people seem to be healthier when living in tents and shanties than when living in houses. The simplicity and plainness of food necessitated by the change probably has something to do with these conditions.

June Vital Statistics.—During the month of June, 2,439 deaths and 817 births were reported. For the previous month 1,712 births and 2,375 deaths were reported. Tuberculosis was the chief cause of death, followed by diseases of the circulatory and nervous systems and by pneumonia. The most fatal epidemic diseases in June were, typhoid fever, measles, whooping cough, diphtheria and influenza.

Fined for Illegal Practice.—Thomas H. Storey, an osteopath of Los Angeles, charged by the State Board of Medical Examiners with practicing medicine without a license, was convicted and fined $500, Aug. 26, 1905, and appealed. On July 20, Judge Smith rendered a judgment confirming the decision of the lower court. Storey must, therefore, pay the fine of $500 or undergo imprisonment in the city jail for five hundred days.

Mandamus Granted.—The appellate court, on June 23, issued a writ of mandamus directed to the State Board of Medical Examiners, and its individual members, making it mandatory on the board to issue a medical license to James T. Arwine, Long Beach, or to show cause why the license should not be issued. Dr. Arwine claims to possess credentials, including a diploma from the Medical Department of the University of the South, Sewanee, Tenn., and states that in 1894 he was granted a license to practice in the District of Columbia, and in the following year in Indiana, and that he served as a surgeon in the army during and after the Spanish-American war.

COLORADO.

June Deaths.—During June 759 deaths were reported, which is equivalent to an annual death rate per 1,000 of 13.8. During the month there were 12 deaths from typhoid fever, 5 from diphtheria, and 4 from scarlet fever.

Communicable Diseases.—There were reported to the State Board of Health during the month of June, 108 cases of scarlet fever, 66 cases of smallpox, 63 cases of typhoid fever, and 36 cases of diphtheria, a decrease of 10 cases of scarlet fever and 4 cases of diphtheria, and an increase of 46 cases of smallpox and 24 cases of typhoid fever as compared with the previous month.

DISTRICT OF COLUMBIA.

Inspection of Potomac Water-Shed.—Dr. Joseph W. Goldberger, U. S. P. H. and M.-H. Service, is making a sanitary inspection of the Potomac water-shed to determine the prevalence of typhoid fever. This inspection is being made in connection with the board of officers appointed by Surgeon-General Wyman, which is now investigating the origin and prevalence of typhoid fever in the district. Previous reports have shown that the Potomac water was badly polluted and that its condition was a constant menace to the health of Washington. The question of prevention is especially complicated as the river and its tributaries receive water from five different states.

Report of the Health Department.—During the week ended July 21, 139 deaths were reported, 78 of the decedents being white and 61 colored. This is equivalent to an annual death rate of 22.1 per 1,000, and shows a slight decrease as compared with the corresponding week of 1905. Among the principal death causes were: Heart disease, 15; consumption, 11; typhoid fever, 6; malignant diseases, 6; and apoplexy, 5.

Typhoid Fever Increases.—Typhoid fever continues to show an increase, both in cases reported and in cases under treatment, as compared with the corresponding week of 1905, and with the previous week. The number of cases under treatment July 14, was 90, and on July 21 the number had increased to 124. During the week ended July 21, 50 new cases were reported.

FLORIDA.

Taken Ill En Route.—Dr. Charles S. Brown, Live Oak, who started for New York City, July 17, was taken ill in Jacksonville and forced to return to his home.

Colored Physicians Meet.—The State Medical Association of Colored Physicians held its meeting at Gainesville, July 17 and 18, at which the following officers were elected: President, Dr. Daniel W. Roberts, St. Augustine; Dr. Robert T. Ayer, Gainesville, vice-president; Dr. J. Harvey Smith, Gainesville, secretary; and Dr. Jacob A. Baker, Jacksonville, treasurer.

IDAHO.

Civil Service Examination.—July 25, a civil service examination was held in the federal building, Boise, to secure eligibles to fill vacancies as trained nurses in the Panama canal service.

Patients Build an Asylum.—The North Idaho Insane Hospital, Orofino, a three-story brick structure, has been built by the patients themselves, who lived in tents during the progress of the work.

Refused License.—Dr. E. L. Perrault, Boise, has filed a complaint against the Idaho State Board of Medical Examiners and has asked for a writ of mandamus, requiring the board to grant him a license to practice in the state.

Personal.—Dr. John C. Dwyer has been appointed health officer of Coeur d'Alene, vice Dr. W. W. Webb, resigned.——Dr. C. W. Craik has returned from Walla Walla, Wash., to Coeur d'Alene, where he will conduct a hospital.

Hospital Notes.—The new hospital at Coeur d'Alene, under the charge of Drs. McGee and Craik, is completed and open to the public.——Dr. Ones F. Page, Sand Point, has assumed charge of the hospital at Cabinet.——A new hospital has recently been established by the physicians of Idaho Falls.

Societies.—The annual meeting of the Idaho State Medical Society will be held at Lewiston October 4 and 5. The preliminary program contains twenty-six papers.——The May meeting of the Northern Idaho Medical Society was held in Coeur d'Alent June 19. It was followed by a visit of half a day to St. Luke's Hospital, Spokane, Wash.——At the annual meeting of the Southern Idaho Medical Association, held in Twin Falls, the following officers were elected.——Dr. Erwin W. Kleinman, Shoshone, president; Dr. W. F. Pike, Twin Falls, vice-president; Dr. John M. Taylor, Boise, secretary; and Drs. George O. A. Kellogg, Nampa, and John W. Gue, Caldwell, trustees.

ILLINOIS.

Personal.—Dr. C. Fred Grimmer, Topeka, will soon leave for Vienna.——Dr. Charles True, Kankakee, is seriously ill with angina pectories.

Phenomenal Kraus.—This medicine man, who has attained considerable notoriety, has had information filed against him in the county court by the Peoria Medical Association, charging him with being an itinerant drug vender and practicing medicine without a license.

Correction.—In The Journal of July 21, page 210, under Illinois news, it was stated in error that pneumonia caused "17.1 per cent. and consumption 1.8 per cent. of the total deaths during this period." The percentage of deaths from consumption should have been 11.8 and not 1.8.

Chicago.

Personal.—Dr. and Mrs. Arthur R. Elliott have gone to Europe to remain until October 1.——Dr. H. Edward Sauer, who was recently operated on for appendicitis, has recovered and has resumed professional work.——Dr. Stephen W. Cox and family sailed from Montreal for Liverpool, August 4.

St. Luke's Hospital Acquires More Property.—St. Luke's Hospital added to its already large holdings on Michigan avenue by a purchase of twenty-five feet, with a depth of 161 feet, immediately south of the present holdings of the hospital, for $40,500, which represents a rate of $1,620 per front foot. This will form a part of the site of the new annex to the hospital.

Merger Completed.—The last formality in the merger of the Chicago Medical College and the Northwestern University was consummated July 24, when the Chicago Medical College, through its president, gave a quitclaim deed to the Northwestern University for all of its property. The intent of the conveyance is that there shall be a complete merger between the college and the university, free of all claims, limitations and obligations existing by virtue of any contracts heretofore entered into between the two institutions.

KANSAS.

Personal.—Drs. Allen and Willis C. Trowbridge, Clay Center, returned from Europe, July 20.

Hospital Talk.—At a recent meeting of the medical profession of Mitchell County the erection of a county hospital in Beloit was discussed. The hospital as proposed will cost about $20,000.

Gift for Hospital.—The family of the late Edward Thompson, Lawrence, Kan., has given $5,000 to the Lawrence Hospital and Training School for the assistance of those in need of surgical operations.

KENTUCKY.

Ill and Injured.—Dr. Joseph W. Renfrew, Sharpsburg, who has been seriously ill with appendicitis, is improving.——Dr. Charles Kearns, Sr., Covington, was seriously injured in a runaway accident July 13, in which he fractured a collarbone and three ribs.

Personal.—Dr. Walter F. Boggess has been appointed professor of medicine and clinical medicine in the Hospital College of Medicine, Louisville, vice Dr. T. Hunt Stucky, resigned.——Dr. A. David Willmoth, Louisville, has been elected a member of the Jefferson County Board of Health.——Dr. A. Harris Kelly, Louisville, coroner of Jefferson County, left for Europe, July 19.

Commencement.—The thirty-eighth annual commencement exercises of the Louisville College of Medicine were held July 14, when diplomas were conferred on a class of fifty-four by the Hon. L. Cooke, president of the board of trustees. The doctorate address was delivered by the Rev. Horace G. Ogden.——The fifty-seventh annual commencement exercises of the Kentucky School of Medicine, Louisville, were held July 12. Dr. William H. Wathen announced the honors, and the diplomas were conferred on a class of forty-eight by the Hon. John H. Leathers.

MARYLAND.

New Graduates Licensed.—The State Board has issued licenses to 77 applicants who passed the June examinations. Many were rejected.

Case of a Leper.—The authorities of Maryland are much exercised over the case of a leper, who came recently to the suburbs of Baltimore. He is an Assyrian suffering from tubercular leprosy and endeavoring to make his way to the leper colony in New York harbor. On reaching the borders of Pennsylvania he was turned back by the authorities of that state. At present he is isolated in a box car of the Baltimore and Ohio raliroad and is being cared for by that company.

Baltimore.

New Building for Hospital.—Two four-story buildings will be added to the Johns Hopkins Hospital for the use of nurses of that institution. They are 40 by 78 feet, of brick and stone.

Convalescent Home Open.—St. Lukeland's Sanitarium, near Catonsville, opened for the season July 10. It is a charity institution and devoted to the care of the convalescent women from the city hospitals.

Typhoid Fever.—Typhoid fever has been discovered among the members of the new fourth class at the United States Naval Academy, Annapolis, and three are confined in the hospital, all of whom were taken ill while on board the practice ship *Severn*.

Secure Detention Hospital.—The mayor has appointed Drs. Edward N. Bush and Henry J. Berkley, and Mr. Henry Brown a commission to inquire into the most practical means of securing a detention hospital in Baltimore, where the supposedly insane may be examined before being committed to an insane hospital. At present, Baltimore is said to be the only large city in the country that has not such an establishment. At present the supposed insane patients are sent to the police station pending their trial and removal to the State Hospital.

Baltimore Personals.—Dr. Thomas L. Richardson has been appointed quarantine physician, vice Dr. Sidney O. Heiskell, deceased.——Dr. John F. Geraghty has been appointed assistant professor of genitourinary diseases at Johns Hopkins University.——Dr. Conrad K. Uhlig has been appointed lecturer in chemistry at the Women's Medical College.——Dr. William B. Wolf sailed for Bremen July 19.——Dr. W. Guy Townsend has been appointed health warden of the Twelfth ward, vice Dr. Thomas L. Richardson, appointed quarantine officer.——Dr. George J. Schonetzer has sailed for Europe.——Dr. L. McLane Tiffany is spending July and August at Gloucester, Mass.——Dr. Vernon F. Kelly has been appointed health warden of the Thirteenth ward to succeed the late Dr. Denard S. Williams.——Dr. Charles Bagley has been appointed superintendent of the Hebrew Hospital.——Drs. Martin J. Cromwell and Nathan Winslow have been appointed visiting physicians to Bay View Insane Asylum.——Dr. W. A. Parvis has gone to Denver on account of his health.——Dr. Lewis M. Allen has been appointed assistant surgeon in the Maryland Naval Brigade.——Dr. Thomas H. Brayshaw gave his annual dinner to the members of the Anne Arundel County Medical Society at his home in Glen Burnie, June 21.

MASSACHUSETTS.

Jury Disagrees.—In the case of the government against Dr. John Sinclair, Boston, charged with having performed an illegal operation, resulting in the death of Miss Annie M. Russell, the jury disagreed.

Fined for Illegal Practice.—J Herbert Neve, an optician of Boston, was prosecuted by the State Board of Registration of Medicine for practicing without registration and fined $100 in the municipal court, July 14.

Convicted for Malpractice.—Mrs. Eliza Bickford, East Boston, charged with performing a criminal operation resulting in the death of Miss Elizabeth Cosgrove, was sentenced July 14 to ten years' imprisonment in the Women's Prison, Sherborn.

Personal.—Dr. Thomas A. Storey has been appointed associate professor in charge of the department of physical instruction and training in the College of the City of New York.——Dr. Timothy J. Reardon has sailed for Bremen on the *Grosser Kurfuerst*.——S. N. D. North, Boston, director of the census, has been appointed to represent the Department of Commerce and Labor on the joint board authorized by act of Congress to formulate regulations for the enforcement of the pure food laws.

MICHIGAN.

Smallpox.—Victor, Clinton County, has reported two cases of smallpox and many of the villagers have been exposed.

Gifts to Hospital.—Edward Spanner, Lansing, has given an operating room and heating plant to the Women's Hospital and has in addition provided for the grading and beautifying of the grounds.

Unlicensed Practitioner Pleads Guilty.—Dr. Frank Calvert, Alpena, charged with practicing medicine without a license and without registration with the county clerk, pleaded guilty when brought before the justice, July 14, paid the costs and was released on the promise not to again offend.

June Deaths.—The total number of deaths reported for June was 2,650, an increase of 256 over June, 1905, but a decrease of 377 as compared with the previous month. This mortality is equivalent to a death rate of 12.5 per 1,000. Tuberculosis claimed 228 and accidents and violence 207 deaths.

Hospital Overcrowded.—The Upper Peninsula Hospital for the Insane, Newberry, is so overcrowded that the completion of the new cottage will not materially improve conditions. There are at present more than 700 patients in the institution, and many of these are occupying cots in corridors and otherwise being cared for in only a temporary manner.

Personal.—Dr. Joseph P. O'Dwyer, Detroit, is critically ill at his home in Detroit.——Dr. Isaac L. Polozker has returned after an extended trip to Europe.——Dr. and Mrs. Ernst A. Wittwer, Auburn, have returned from Europe.——Dr. John W. Foley, Ann Arbor, sailed for Antwerp, July 14.——Dr. David B. Downing has been appointed battalion adjutant of the First

Infantry, M. N. G.——Dr. Robert L. Kennedy, Detroit, has been elected medical superintendent of the Michigan State Sanatorium for Tuberculosis to be located at Howell.

Supreme Court Sustains Decision.—In the case of Kennedy versus the State Board of Registration in Medicine, in which the complainant, a practicing physician at Detroit, was notified to show cause why his certificate as a physician and surgeon should not be revoked, on account of his having inserted in the Detroit newspapers an advertisement containing material of an obscene and offensive nature derogatory to good morals, and in which the complainant instituted a suit complaining that the board was prejudiced and had prejudged his case, and prayed that the board be enjoined from revoking his certificate, the supreme court decided in favor of the defendant, and affirmed the decree dismissing the bill.

MINNESOTA.

Scarlet Fever Spreading.—Scarlet fever is reported to be spreading at Eveleth. There are sixteen cases, but so far no deaths have been reported.

State Board Officers Re-elected.—The State Board of Health has re-elected the following officers: President, Dr. Henry Hutchinson, St. Paul; vice-president, Dr. William H. Rowe, St. James, and secretary and executive officer, Dr. Henry M. Bracken, St. Paul.

Personal.—Dr. Mary E. Towers, Minneapolis, suffered severe contusions in a train wreck near Minot, N. D., July 15.——Dr. Ambrose Hammerel, St. Cloud, has been appointed physician to the state penitentiary, Stillwater, vice Dr. Winslow C. Chambers, resigned.——Dr. and Mrs. Alexander J. Stone have sailed for Japan and China.

MISSOURI.

Personal.—Dr. Robert Luedeking, dean of the Medical Department of Washington University, St. Louis, sailed for Europe July 31.——Dr. Willard Bartlett, St. Louis, is making a good recovery from his recent operation for appendicitis.

Annual Report of Library.—The seventh annual report of the St. Louis Medical Library shows that during the fiscal year 3,315 volumes were added, making the total number of volumes 8,647. An important addition will soon be made, the St. Louis Mercantile Library having agreed to transfer all its medical books, numbering 1,700, to the Medical Library. Considering the rapid growth of the library it seems necessary to add another room for the shelving of books. The library is in prosperous condition and its usefulness is rapidly increasing. At present 137 medical journals are received, of which 42 are foreign.

Proceedings Against Illegal Advertisers and Quacks.—The prosecutions instituted against obscene advertising and illegal practitioners have resulted as follows:

1. For alleged indecent and obscene advertising contrary to the municipal ordinances:

(*a*) *As against the Physicians:* City of St. Louis vs. Nathaniel K. King; Dec. 1, 1905. Judgment for plaintiff and defendant fined $50.00 and costs. Appeal taken to Court of Criminal Corrections, judgment for plaintiff and defendant fined $50.00 and costs. Appeal taken to Supreme Court of State of Missouri.

(*b*) *As against the Newspaper:* City of St. Louis vs. St. Louis *World* Publishing Company; March 9, 1906. Judgment for plaintiff and defendant fined $50.00 and costs. Appeal taken to the Court of Criminal Correction, where the matter is now pending.

2. Midwives advertising as physicians: April, 1906. Pauline Kahm pleads guilty, fined $10.00 and costs. May 29, 1906; Bessie Holler found guilty, fined $25.00 and costs. June 2, 1906; Mary Arthurs pleads guilty, fined $40.00 and costs. July 11, 1906; Mary Murphy found guilty, fined $25.00 and costs.

3. For alleged criminal abortions: May 26, 1906; Dr. E. J. Hogan found guilty. Fined $250 and sentenced to six months in the workhouse. Appeal taken.

NEBRASKA.

Medical Journal for Omaha.—It is reported that a medical journal, supported by the Douglas County Medical Association, will be established in the near future.

Hospital Notes.—The new Wise Memorial Hospital, Omaha, now under construction, is expected to be ready to receive patients in November.——Drs. James R. Kalar and Sara B. Kalar have opened a hospital in Bloomfield.

Can Not Practice in the State.—Dr. David G. Walker, Newman Grove, and Eric Munk, Lindsay, whose certificates were revoked several months ago by the State Board of Health, will not be allowed to practice medicine in Nebraska. The decision of the state board has been sustained by the decision of Judge Frost, of the circuit court.——The license to practice medicine of Dr. J. T. Matthews, Omaha, accused of having performed a criminal operation, was formally revoked July 18.

Personal.—Dr. H. L. Wells, Westpoint, has been appointed coroner of Cuming County, vice Dr. E. H. Morgan, Bancroft, resigned.——Dr. James R. Kalar, Bloomfield, has been appointed local surgeon for the Chicago, St. Paul, Minneapolis & Omaha Railway.——Dr. Gustav Hahn, Omaha, has gone to Europe.——Dr. Ernest A. Creighton, Red Cloud, has been appointed local surgeon of the Burlington System.——Dr. and Mrs. Claude W. Mason, Omaha, left for their new home in Laos, Siam, August 1.

Asylum Affairs.—The governor has requested the resignation of Dr. J. M. Alden, superintendent, and Dr. Frank S. Nicholson, assistant superintendent, of the Hospital for the Insane, Norfolk. Both refused to resign while they were under charges. It is reported that the governor's nominees for these positions are Dr. G. A. Young, Asylum, for superintendent and Dr. H. Douglas Singer, Omaha, for assistant superintendent. On July 12 the governor appeared at the asylum with his appointees and demanded that the superintendent and his assistant turn over the keys of the institution and the state property. This they refused to do, and the matter will probably be carried to the courts.——Dr. Lawrence B. Pilsbury, Lincoln, has been appointed pathologist at the Nebraska Hospital for the Insane, Lincoln.——Dr. John G. Hay, assistant superintendent of the Nebraska Hospital for the Insane, Lincoln, has been appointed superintendent, vice Dr. James L. Greene, resigned.

NEW HAMPSHIRE.

Personal.—At a summer meeting of the Grafton County Medical Society, held at Woodsville recently, a feature of the occasion was the banquet tendered by the members of the society to Dr. William Thayer Smith, dean of the Dartmouth Medical School, Hanover.——Dr. A. S. Wallace, Rochester, recently had a severe cerebral hemorrhage.

Pure Food.—The *Sanitary Bulletin* for July devoted the greater part of its issue to the reports of the food inspection for the quarter ended June 30. The articles inspected included canned meats, catsups and table sauces, canned vegetables and fruits, lemon extract, jellies and preserves, maple syrup and sugar and dried fruits, molasses and relishes, prepared mustard, spices, vinegar, coffee and cocoa. The board reported that adulterated glucose entered into the composition of practically all the cheap candy on sale.

NEW JERSEY.

Physician Acquitted.—Dr. George H. Fletcher, Atlantic City, charged with causing the death of a colored girl by an alleged illegal operation, was acquitted June 7.

Osteopath Acquitted.—Jose C. Howell, an osteopath of Vineland, who has been on trial in the Cumberland County court, charged with the illegal practice of medicine, has been acquitted.

Home for Incurables.—Articles of corporation have been filed for a Home and Hospital for Incurables at Newark. The object of the institution is to care for women suffering from incurable diseases.

Westfield Physicians Organize.—The physicians of Westfield have organized a society with the following officers: Dr. Joseph B. Harrison, president; Dr. Frederick H. Kinch, vice-president, and Dr. George S. Laird, secretary and treasurer.

Eye and Ear Department Created.—It has been announced that a department of ophthalmology and otology will be opened at St. Elizabeth's Hospital, Elizabeth, with Dr. Norton L. Wilson in charge and Dr. Charles H. Schlichter as assistant.

Medical Men Convicted.—Myrsehynt Guinness, colored, president of the Hindoo Pain Destroyer Medicine Company, and Frederick Fletcher, colored, a director of the same, were convicted by a jury in the court of sessions, June 26, on charge of obtaining $300 under false pretenses from Mary E. Brown, of Seabright, who was induced, on representations of the defendants, to invest money in the company.

Personal.—Dr. Frank N. Robinson, Camden, who has been spending several months in California, has returned home.——Dr. John P. Reilly has been appointed chief of the staff of St. Elizabeth's Hospital, Elizabeth, N. J., and Dr. Edward J. Ill, Newark, consulting surgeon. Drs. Frederick H. Pearson and Otto Wagner have been added to the list of visiting physicians and Dr. Milton A. Shangle has been made assistant surgeon.

NEW MEXICO.

Personal.—Dr. Z. T. Martin, formerly of State Hospital for the Insane, No. 1, Fulton, Mo., has located in Roswell.——Dr. Francis T. B. Fest, Las Vegas, has established and equipped a laboratory at his office in that city.

Hospitals Open.—St. Mary's Hospital, Roswell, was thrown open to the public June 10. The main building of the hospital is complete, but wings and a special department for tubercular patients are to be added in the near future.——The new hospital of the El Paso & Southwestern Railroad, Dawson, to provide for the sick and injured of the company's employés north of El Paso, has been completed at a cost of $15,000. It provides accommodation for twenty-five patients.

NEW YORK.

New York City.

Sanitarium Dedicated.—The new building of the Sanitarium for Hebrew Children at Rockaway Park was dedicated July 22. It has accommodation for 400.

Personals.—Dr. and Mrs. William Morris Butler sailed for Genoa on the *Prinzess Irene*, July 28.——Dr. Emile J. Sarlabous sailed on the *Vaderland*, for Dover, July 28.

Ambulance Wrecked.—An ambulance belonging to the J. Hood Wright Hospital was wrecked, July 25, by a collision with an Eighth Avenue car and the surgeon, Dr. Leo Halpin, sustained a scalp wound and was badly bruised.

Floating Hospital Needs.—The Floating Hospital of St. John's Guild has been carrying a thousand mothers and children daily, there being a larger number than usual of very sick babies. In order to ensure the continuance of the work for the remainder of the summer, funds are urgently needed.

Death Rate Decreases.—New York seems to be enjoying a healthy summer. For the two weeks ended July 21, there were only 3,175 deaths occurred as against 3,860 for the corresponding week of last year. The death rate from the beginning of June shows a falling off from last year. This is due largely to a decreased infant mortality.

Will Enlarge Hospital.—Plans have been filed for the further enlargement of Roosevelt Hospital. The two-story amphitheater will be made into a four-story building providing a large lecture hall and dormitories for hospital employés. The proposed improvements will cost $12,000. A new amphitheater is now being erected on another portion of the grounds.

For Sick Tenement Babies.—The Children's Aid Society, through the Sick Children's Mission, has undertaken a timely service for sick tenement children by assigning physicians to the poorest quarters of the city, ready to respond to all applications for medical attendance made at the Sick Children's Mission, and druggists at convenient points have agreed to fill prescriptions at first cost to the mission.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended July 21, 393 cases of tuberculosis, with 182 deaths; 268 cases of measles, with 8 deaths; 206 cases of diphtheria, with 28 deaths; 72 cases of scarlet fever, with 6 deaths; 60 cases of typhoid fever, with 17 deaths; 59 cases of whooping cough, with 7 deaths; 3 cases of cerebrospinal meningitis, with 12 deaths; and 29 cases of varicella; a total of 1,090 cases, with 260 deaths.

Garbage Should be Burned.—The recent burning of the garbage reduction plant on Barron Island and the subsequent noxious condition of the Jersey coast due to dumping garbage at sea, have led to a renewed agitation of the subject of garbage disposal in this city. Dr. Alvah H. Doty, health officer of the port, after having made an exhaustive study of this subject in this country and in Europe, believes that the only perfect satisfactory method of disposal is incineration. He is opposed to the present method of collecting and transporting refuse, which takes so much time that it results in disseminating germs and leaving a trail of noxious odors and disease in its wake. He thinks there should be an incineration plant in each section of the city, and that an educational crusade should be started having in ultimate view the private incineration of refuse, as this is really the only way to do away with this menace to public health.

NORTH DAKOTA.

Personal.—Dr. Henry H. Ruger, Devil's Lake, is critically ill with cerebral hemorrhage.——Dr. August S. Eggers, Grand Forks, left for Norway, July 8.

Convicted of Illegal Practice.—F. M. Van Snyders, manager of a so-called sanatorium in Fargo, was convicted, June 13, for practicing medicine without a state license and was fined $50.

Hospital Notes.—Rugby has agreed to donate $8,000 toward the new Lutheran hospital to be located in that city.——It is practically sure that Grand Forks will have a new hospital, to be conducted by the St. Joseph sisterhood, as $14,500 of the $15,000 required to be pledged has been donated. A site for the hospital has been selected in Riverside Park.——St. John's Hospital, Fargo, has decided to erect a home for nurses in connection with the institution.——Dr. Rolly R. Hogue, Linton, has established a private hospital to accommodate fifteen patients at that place.——The secretary of the Sheyenne Kreds Hospital Association has invited bids for the erection of a hospital at Rugby.

OHIO.

Fire Loss.—In a fire which destroyed the greater part of Peebles, Dr. George F. Thomas lost his residence, valued at $3,000.

Addition to Hospital.—On June 16 ground was broken for the new addition for the Mount Carmel Hospital, Columbus, by the bishop of the diocese. In the addition a new operating room and many rooms for private patients will be included.

Guilty of Abandonment.—At a second trial, July 7, Dr. Henry P. Feaster, Delaware, was found guilty of abandoning a child on the morning of May 18, and was sentenced to imprisonment for three months in the workhouse and to pay a fine of $150 and costs.

State Board Appointments.—Dr. Joseph M. Stephenson, Chillicothe, has been appointed a member of the Ohio State Board of Medical Registration and Examination, to succeed Dr. John K. Scudder, Cincinnati, and Dr. James A. Duncan, Toledo, has been made a member of the board to succeed Dr. Samuel B. McGavran, Cadiz.

Object to Publicity.—At a meeting of the Lorain County Medical Society, held in Elyria, July 10, a resolution was adopted that the society condemn the practice of physicians connecting their names with cases for publication and that a committee of three be appointed to wait on the newspapers of the county and request their co-operation in this matter.

Ill and Injured.—Dr. John W. Birk, Bucyrus, sustained a fracture of the right leg, July 15, while cranking his automobile.——Dr. William G. List, Cincinnati, demonstrator of anatomy at the Medical College of Ohio, was seized with cerebral hemorrhage July 7 and is critically ill.——Dr. Fred C. Lamar, Wilmington, underwent operation for appendicitis at Louisville recently and is making favorable progress toward recovery.

Milk Inspection.—Drs. Otto P. Geier, Alfred Friedlander, and H. A. Woodward have been appointed a committee of milk inspection by the Cincinnati Medical Society. The committee has asked for the appointment of Dr. J. Henry Schroeder as chemist and Dr. Casper F. Hegner as bacteriologist.——William Thorn, a dairyman of Toledo, pleaded guilty July 16 to the charge of selling adulterated milk and was given the minimum fine of $50 and costs.

Convicted for Illegal Practice.—Mrs. Lydia A. Marshall, a "pow-wow" doctor of Canton, was convicted on July 21 and fined $25 and costs on the charge of practicing medicine without a license.——"Phenomenal" Kraus, who had been practicing medicine without a license in Lorain County, was tried at Elyria, found guilty and sentenced to pay a fine of $100 and costs, amounting to $26.60. The fine was paid.——A. F. Brennell, Massillon, was convicted of the unlawful practice of medicine, June 22.——William Bradley, Toledo, 86 years of age, pleaded guilty, July 10, to the practice of medicine without a license and fined $25.00 and costs. Fine was suspended on defendant's promise to cease practicing.

Medical Officers of the National Guard.—Dr. Clarence E. Berkley and Louis E. Cook, Cincinnati, for assignment to the First Infantry; Dr. Louis L. Syman, Springfield, for the Third Infantry; Dr. Robert T. Lawless, Toledo, for the Sixth Infantry; Dr. Flint Cline, Ironton, for the Seventh Infantry; Dr. Lloyd L. Jones, Columbus, for the Ninth Infantry; Drs. John T. Murphy and Albert E. Stage, Columbus, for the Second Signal Corps, and Dr. Louis Robechek, Cleveland, candidate officers for the medical department of the Ohio National Guard, were examined July 12 and were all recommended for commissions as first lieutenants and assistant surgeons.——Maj. Frank W. Hendley, Cincinnati, surgeon, assigned to First Infantry, O. N. G., has resigned and Captain and Assistant Surgeon Joseph A. Hall, has been promoted to fill the vacancy.

Personal.—Dr. William E. Keiley has been elected president, Dr. E. Gustav Zinke vice-president and Julius H. Eichberg secretary of the board of directors of the Cincinnati Hospital.——Josiah Hartzell, Ph.D., Canton, has been elected president and Dr. Darwin G. Farmer, Geneva, vice-president of the State Board of Health.——Dr. George M. Waters, dean and professor of medicine in the Ohio Medical University for several years, sailed from New York on the *New Amsterdam* for Rotterdam, July 4.——Dr. Walter W. Mannhardt, McClure, has been appointed coroner of Henry County, vice Dr. Granville M. Wright, Liberty Center, resigned.——Dr. J. O. Glass, Springfield, sailed for Europe, June 29.——Dr. E. M. Craig has been made instructor in osteology and demonstrator of anatomy in the Miami Medical College, Cincinnati.——Dr. Otto Juettner, Cincinnati, has been made a member of the Anthropological Institute of Great Britain and Ireland.——Dr. and Mrs. Thompson R. Terwilliger, Lima, sailed for Europe, July 15.——Dr. Gustav A. Hermann has resigned from the Hamilton board of health.——Dr. David N. Kinsman, who has been chief of the staff of the Protestant Hospital, Columbus, since its organization, resigned, but will remain with the institution as specialist on nervous diseases. Dr. Will J. Means has been selected to succeed Dr. Kinsman as chief of staff.——Dr. Henry Krone, Jr., Hamilton, has been elected district physician, vice Dr. George M. Cummins, resigned.

PENNSYLVANIA.

State Laboratories' Home.—It is stated that the bacteriologic and chemical laboratories of the State Health Department will be established in the medical laboratories of the Medical Department of the University of Pennsylvania, Philadelphia. It was not possible to secure suitable buildings in Harrisburg and the authorities of the university offered the department the use of the laboratories.

Soldiers' Milk Adulterated.—From investigations carried on by the State Food and Dairy Commissioner relative to the milk supplied the Pennsylvania National Guard in camp at Gettysburg, it was learned that the milk was, to a large degree contaminated with preservative agents. Of the nineteen samples of the milk collected from the different regiments seven were found to contain formaldehyd.

Philadelphia.

Meat Crusade.—The crusade against the insanitary meat dealers in the city continues, and during the past week five additional slaughter houses were ordered closed by the Board of Health. Two meat dealers who failed to comply with the orders issued by the Health Bureau were arrested and held in $600 bail for court.

Health Report.—The total number of deaths reported for the week reached 557. This is an increase of 29 over the number reported last week, and an increase of 80 over the number reported in the corresponding week of last year. The principal causes of death were: Typhoid fever, 13; measles, 4; pertussis, 9; diphtheria, 7; consumption, 56; cancer, 18; apoplexy, 18; heart disease, 39; acute respiratory diseases, 36; enteritis, 118; Bright's disease, 32; suicide, 3; accidents, 18; and marasmus, 13. There were 170 cases of contagious disease reported, with 22 deaths, as compared with 191 cases and 12 deaths reported in the previous week.

Personal.—Dr. Henry D. Heller, quarantine physician to the port of Philadelphia, was thrown from his carriage in Hellertown, Pa., July 27, and painfully injured.——Dr. Walter M. Ziegler returned July 22 from a tour of Europe.——Dr. R. Oliver Kevin has returned from a European trip.——Dr. and Mrs. Ernest Laplace and Dr. and Mrs. J. L. Borsch have gone to Paris. The French Foreign Office announces that the Cross of the Legion of Honor has been bestowed on Dr. Laplace.——Dr. Edward O'Donnell, resident physician at St. Mary's Hospital, was painfully injured July 23, by being thrown from a hospital ambulance.——Dr. Samuel W. Morton, who was operated on for appendicitis in the German Hospital, is improving.——Dr. Aaron Brav was painfully injured in an automobile accident July 24.——Dr. William M. Augney, police surgeon, who was operated on for intestinal trouble, is gradually recovering.

Medical Inspection of Schools.—The report of the medical inspection of pupils of the public schools during the year ended June 30, shows that during that period the inspectors made 54,344 visits to 2,316 schools, and examined 90,569 children. Of this number 8,722 were excluded from school until they had recovered, thus eliminating a possible source of contagion in the school room. In addition, there were 123,021 children examined for defective vision, hearing or other ailments which retard progress in study. Of this number 33,283 were found to be in need of medical attention. To the parents of these, letters were sent recommending that the children be placed at once under the care of a physician, and giving the reasons for such recommendation. The report commends the presence of trained nurses in the schools and claims that much advantage is derived from their services. During the present year a nurse detailed with the approval of the authorities by the Visiting Nurses' Society, served in seven of the city's schools. These schools had a total of 8,037 pupils. During the year 1,525 children suffering from minor skin troubles, parasitic diseases of the skin and scalp, insignificant diseases of eyes or ears, bruises, cuts, etc., were treated by the nurses at the schools under the doctor's directions; 526 children were cared for by the nurse at their homes, where otherwise they would have received no attention, and 139 children were taken by her to the dispensaries, making a total of 2,193 cases in the seven schools.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTION.

Black, E. M., Yancy, Ark.	$1.00

SOCIETY CONTRIBUTIONS.

Stark County Medical Society (Ohio)	$312.19
Scott-Carver County Medical Society (Minn.)	5.00

Rhode Island Medical Society ($209.75, less $9.75 expended for postage and printing) $200.00:

The Society	$100.00	H. C. P.	$ 7.25
Abbott, H. P.	5.00	H. R. B.	20.50
Ballou, C. O.	25.00	O'Leary, C. D.	1.00
Best, O. F.	5.00	Porier, A. J.	5.00
Broad Street physician.	1.00	Roswell, J. T.	1.00
Canfield, W. C.	1.00	Rothwell, W. P.	5.00
Chesboro, E. D.	10.00	Shes, E. F.	1.00
E. G. R.	10.00	Siegal, O. R.	2.00
Fletcher, William	5.00	Stone, Ellen M.	3.00
Hammond, Roland	2.00		

Total	$ 518.19
Previously acknowledged	13,130.00
Grand total	$13,648.19

GENERAL.

Missouri Valley Society Fall Meeting.—The nineteenth annual meeting of the Missouri Valley Medical Society will be held in Council Bluffs, Iowa, September 6 and 7. The program will be limited to twenty-five papers, and the titles must be received by the secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., by August 10, in order to secure a place.

Ohio Valley Meeting.—The eighth annual meeting of the Ohio Valley Medical Association will be held in Louisville, Ky., Nov. 14 and 15, 1906. An interesting program is being arranged. The society has shown a healthy growth since its organization, and the next meeting is expected to surpass any previous one in point of attendance. Dr. J. Clarence Webster will deliver the public address before the association. Dr. J. Garland Sherrell, Louisville, is chairman of the committee of arrangements.

Health Report of the Isthmus for June.—In his report for June, Dr. Gorgas calls attention to the fact that no new cases of yellow fever have occurred since the four reported in May, and states that this should give great confidence in their ability to handle yellow fever should it again develop. Pneumonia still causes the greatest number of deaths. The death rate among the negroes continues larger than among the whites. During the month there was not a single death among the American employés. The death rate among the white employés, Dr. Gorgas states, shows a steady improvement, being smaller in June than ever before, though June is one of the least healthy months on the Isthmus.

FOREIGN.

Institute of Tropical Medicine for Ceylon.—The Ceylon government, recognizing the importance of the study of tropical diseases, has established a pathologic laboratory in Colombo under the direction of Dr. Castellani. A special hospital has also been established in the immediate neighborhood of the laboratory. The hospital contains eighteen beds, and it is expected that it will shortly be enlarged and a ward for Europeans added.

LONDON LETTER.

(From Our Regular Correspondent.)

London, July 14, 1906.

Novel Method of Libeling a Physician.

At the instance of the Medical Defense Union two women, mother and daughter, have been prosecuted for giving false information which constituted a libel on a physician, at Kingston, when registering the birth and subsequently the death of an illegitimate child of the younger woman. A well-known physician in the neighborhood is Mr. Albert Max Sully, and the child was described as Arthur Albert Max Sully, and the mother described herself as Alice Sully, formerly Wray.

In her defense the woman said that she had not accused Mr. Sully of being the child's father, but that the father was a person named Sully, whose whereabouts she did not know. Mr. Sully gave evidence that in 1902 he had refused to attend her any more and that since then he had never spoken to her. He had in that year obtained a signed statement from the women retracting statements that they had made concerning him in the neighborhood. In fining them $10 each, with the alternative of twenty-one days' imprisonment, the chairman of the bench of magistrates spoke of the satisfaction of the magistrates that Mr. Sully had had an opportunity of clearing his character.

The Report of the Metropolitan Asylums Board.

The annual report of the Metropolitan Asylums Board of London, which has just been issued, is very satisfactory. The area served by the board is 121 square miles and the population, estimated in the middle of 1905 468,794. The board possesses 17 infectious hospitals, 5 asylums for imbeciles, a training ship, 15 schools or homes for certain diseases of children, and 8 land ambulances, besides a service of ambulance steamboats. During the year, 27,162 patients were cared for in the fever hospitals and 72 in the smallpox hospitals. The decline in the mortality of the diphtheria cases continues. In 1893, the year before the disease was treated with antitoxin, the death rate was 30.4 per cent. Since the introduction of the treatment the rate has rapidly declined.

Lodging House Keepers and Infectious Diseases.

A woman musician, who brought a claim against a Scarborough lodging house keeper to recover her luggage, which had been detained, was met by an unreasonable counter claim. The plaintiff took rooms for the time she was engaged at a local place of entertainment. Three days afterwards she found that there was measles in the house and left at once, but the landlady refused to give up her luggage and entered a counter claim for payment for the lodgings in lieu of notice. The judge made short work of the case, pointing out that a common misfortune had put an end to the contract.

The Disinfection of Ships.

An important report on this subject has been made to the local government board by Dr. John Wade. When plague, cholera, or yellow fever has broken out on a vessel destruction is required not only of bacteria, but in the case of plague, of rats and their fleas; and in the case of yellow fever, of mosquitoes. Dr. Wade finds that sulphur dioxid is preferable to carbon monoxid or to formaldehyd. Carbon monoxid destroys rats, but fails to destroy mosquitoes and bacteria. Formaldehyd destroys bacteria, but spares rats and mosquitoes. Moreover, formaldehyd has no penetrative power, and for its complete removal the disinfected material must be chemically treated. To determine the most effective method of applying sulphur dioxid a model ship's hold of a capacity of 1,350 cubic feet, or 34 tons, was constructed and filled with a cargo representing an ordinary mixed load from an Indian port—jute, maize, barley, etc. This cargo was packed with great care, avoiding interstitial spaces so as to make the test of penetration as severe as possible. Cages containing rats were placed at the middle and at the top and bottom of the cargo, and flexible metal tubes were distributed throughout and connected to a small laboratory erected on the outside of the hold, so that samples of air could be drawn off from each part of the interior and analyzed. Three methods of generating sulphur dioxid were used and the degree of penetration was determined by analysis of the air in different parts of the hold and by the action on rats and on non-spore-bearing bacteria placed in the center of the cargo. It was found that rats and insects were destroyed in less than two hours by the uniform diffusion of at most 0.5 per cent. of sulphur dioxid. This condition is easily and quickly reached in cabins and empty holds and in the space round the cargo in a loaded hold, but owing to the extensive absorption of the gas, air containing 3 per cent. of it must be circulated around the cargo for from 8 to 12 hours to ensure adequate penetration. Dr. Wade concludes that pathogenic bacteria would be destroyed by this treatment, and that if the hold be closed for a like period afterward, sufficient penetration will take place to ensure disinfection of the interior of the cargo, in which such bacteria are likely to be present. In extreme cases, complete penetration can be secured by repeating the fumigation without opening the hatches. The damage done to the cargo consisted in the destruction of moist foods, such as meat, fruit and vegetables. Wheat in bags was rendered useless for bread-making, but owing to slowness of penetration wheat in bulk was not seriously affected, and barley and maize were practically unaffected. Textile fabrics, metals, and furniture were not affected by the sulphur dioxid, but were liable to injury by the accompanying sulphuric acid.

VIENNA LETTER.

(From Our Regular Correspondent.)

Vienna, July 17, 1906.

Advertising by Medical Practitioners.

A joint action by all medical councils of the empire has been instituted in order to clear the attitude of the medical world toward the question of advertising. As a rule, the physician is not allowed to advertise in this country, and the medical views held here on this subject are as strict as anywhere else. The councils are entitled to fine any one trespassing these regulations for a sum not exceeding $40, but they have not the power in every case to obtain the money, if the offenders choose not to pay, as the law is not always on their side. Moreover, lately, the competition of nature healers and other quacks has grown so keen, especially on the frontier against Germany, that the question had to be reconsidered. Thus the medical councils of Saalsburg and the Tyrol have permitted such of their members as reside on the frontier to use decent advertisements in certain journals. Furthermore, every doctor settling down afresh is allowed to inform the public of this fact, by inserting a simple notice of his name, qualification (specialist) and address three consecutive times in the papers. This new departure is meant as an auxiliary means in the struggle which scientific medical education has to fight out against nonscrupulous attacks from quacks, who try to impress the public with their knowledge. As the law against illegal practice is handled in a very lenient manner, self-protection must be the aim of the profession.

The New Pharmacopeia.

The new edition of the Austrian Pharmacopeia, which would be the eighth, was to be published in July, but by an order of the ministry of the interior, the publication was postponed until next year, because a number of modern remedies had been rejected by the committee appointed for the edition. Now it is not practicable to omit such acknowledged and useful substances as adrenalin or thyroidin because they are partly new, partly definite preparations supplied by factories. The present trend among many pharmacists and chemists is favorable to radical changes in the stock of drugs and preparations used for medical prescriptions, as, especially in the Austrian Pharmacopeia, there are contained obsolete mixtures and remedies. A substitution for these of the latest, well-known, well-tried remedies would add to the usefulness of the book. It is expected that a comparative study of the Austrian, English, French, German and American pharmacopeias will have beneficial results for each one.

Correspondence

Reciprocity and Qualifications as Viewed by the Illinois Board.

Springfield, Ill., July 24, 1906.

To the Editor:—I can really see little occasion for replying to the very extraordinary comunication of Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, which was published in The Journal July 21, under the above caption. As my silence might be misconstrued, however,—not by Dr. Harison, but by other readers of The Journal—I take occasion to comment on his various remarks.

Dr. Harison exhibits unwarranted temper and marked discourtesy in his communication. It might be well if, before undertaking further correspondence concerning a sister medical examining body, if Dr. Harison would cultivate a "judicial temperament" and realize that he "represents a state rather than a base-ball organization."

It must be apparent to every reader of The Journal that Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, concerns himself unnecessarily with the administration of the law regulating the practice of medicine in the State of Illinois. The Illinois State Board of Health alone is clothed with power to enforce the provisions of this law, and to determine the standards necessary to its enforcement, and that board alone is responsible for the proper performance of such duty. For its laches—if of laches it be guilty—that board must account only to the people of the State of Illinois. It is not answerable to Dr. Harison or to any other citizen of Michigan. If the law be enforced so that the State of Illinois is left open to all who possess proper qualifications, neither Dr. Harison nor any other citizen of Michigan has ground for complaint.

The secretary of the Michigan State Board of Registration in Medicine, however, has always been unduly solicitous as to the welfare of the physicians of Illinois, who, by the way, seem eminently qualified to guard their own interests, and who would doubtless be unable to understand the occasion for such solicitude. For fully five years Dr. Harison has unsuccessfully endeavored to foist on the Illinois State Board of Health a form of reciprocity which, if adopted, would nullify the provisions of the medical practice act now in force in the state—a form of reciprocity which would compel the Illinois State Board of Health to license without examination all physicians of Michigan and other states who were licensed in their respective states in 1889, or in previous years, merely on presentation of their diplomas. The organized medical profession of Illinois—as represented in the Illinois State Medical Society, the Illinois State Homeopathic Association, the Illinois State Eclectic Society, and other recognized organizations—is not and has not been in favor of this form of "reciprocity," as was amply demonstrated by the action of these organizations in connection with the bills to regulate the practice of medicine in the state, introduced in the general assemblies of 1889 and 1903. These bills, supported by the organized profession representing all schools of practice, provided for the examination of all applicants.

Dr. Harison, however, still terms his form of reciprocity "the only constitutional and legal method of reciprocity," and in frequent communications to Illinois physicians, has tearfully deplored the fact that Michigan's endeavors to impress the merits of this form of reciprocity on the Illinois board have not been attended with success.

It may be remarked here, in passing, that Illinois reciprocated—as she now reciprocates—in the case of licenses issued after examination, before the Michigan State Board of Registration in Medicine was organized, and that the Illinois State Board of Health was organized to enforce the medical practice law of the state, twenty-two years before the state of Michigan had a medical practice law. At the feet of a Gamaliel Illinois would sit, but she would fain not seek the guidance of an infant prodigy.

As to Dr. Harison's references to the attitude of the Illinois State Board of Health toward the year's practice and supplemental examination requirements of Qualification No. 1 of the American Confederation of Reciprocating Examining and Licensing Medical Boards (I might say, "so-called American," if I were inclined to quibble), it is sufficient to say that neither of these requirements has been approved or enforced by Michigan. If the provision requiring a supplemental examination constitutes a "saving clause," it might be asked why Michigan does not avail herself of this means of salvation. The fact is that Michigan, like Illinois, believes in full and unrestricted reciprocity. Michigan, like Illinois, realizes that the requirements of no two states can be identical, and that reciprocity which requires a licentiate of another state to pass a supplemental examination is reciprocity in name only.

Illinois withdrew from the American Confederation—of which she was never a full member—simply because she would not subscribe to the so-called Qualification No. 1 of the confederation, which does not provide for full reciprocity; and because she could not (and parenthetically, would not), agree to the so-called Qualification No. 2, under the provisions of which the Illinois State Board of Health would be compelled to license without examination all graduates of recognized colleges who obtained licenses in other states—simply for the asking—on the presentation of their diplomas prior to July 1, 1899. As these two qualifications form the basis and foundation of the American Confederation, it would be eminently inconsistent as well as entirely useless for the Illinois State Board of Health to remain a member.

"But what does Illinois offer to the physicians of other states in lieu of Qualification No. 2?" the reader may ask at this juncture. Simply a "square deal." Illinois enforces the provisions of the statutes and subjects each applicant to an examination, but in this examination she takes cognizance of the years of practice of the applicant and gives credit therefor—the longer the practice the greater the credit. A New York physician, who was graduated in 1886, coming to Illinois to practice, is required to pass an examination, in accordance with the provisions of the law. The board, however, avails itself of the "horse sense" which should be an inherent attribute of every medical examining organization, and makes allowance in the examination for the actual experience of the applicant, giving him a credit of five points on the required 75 per cent. for every five years of practice.

The same physician going to Michigan would be subjected to the same examination as is given to the graduate of 1906, and his answers would be graded like those of the recent graduate. Yet Michigan would license, without examination, a physician who was licensed in Wisconsin a few years ago, on the presentation of a diploma. In view of such conditions, it hardly becomes Dr. Harison to talk of consistency.

Dr. Harison quotes from a communication written by me, in which, as he correctly states, I protested against the adoption by the confederation of a certain prerequisite qualification. He takes up nearly a column of space in an endeavor to show the inconsistency of the Illinois State Board of Health in protesting against this prerequisite qualification, and in later subscribing to a "like qualification," and asks me to point out to the readers of The Journal wherein the material distinction lies. I must decline to insult the intelligence of the readers of The Journal. Dr. Harison may see the analogy between a resolution which makes it incumbent on an applicant for reciprocal registration to show proof of membership in a medical society, and to present a certificate of recommendation issued him by a vote of the society (the prerequisite referred to), and a resolution which empowers the applicant to procure letters of recommendation from any one of four different sources, only one of which is a medical society—but I doubt if any other reader of The Journal will.

Dr. Harison also asks me to demonstrate to the readers of The Journal wherein lies the material distinction between the present revised prerequisite of the confederation and the reciprocal resolution of the Illinois State Board of Health, adopted on June 20. I would simply refer the reader to the prerequisite and to the resolution as quoted by Dr. Harison in his communication, with the suggestion that a comparison of the two will make the distinction quite apparent.

Dr. Harison is reminded that the Illinois State Board of Health did *not* withdraw from the confederation "as a protest against the prerequisite" and did not "afterward subscribe to a like qualification." Dr. Harison is gently reminded also that *he* likewise expressed the opinion that "the prerequisite of the American Confederation complained of" (the prerequisite quoted in "Secretary Egan's letter" of Feb. 26, 1906), was not constitutional.

With prodigal expenditure of words and space, Dr. Harison attempts to ascertain by what method the Illinois State Board of Health "measures 'a physician of national reputation.'" Without intending the slightest discourtesy to Dr. Harison, I will say that this is a matter with which the secretary of the Michigan State Board of Registration in Medicine need have no concern. The matter is one which affects particularly, and directly only, the physician who applies for registration under reciprocity in the State of Illinois.

Going further, Dr. Harison accuses the Illinois State Board of Health of usurping the authority of the legislature of the State of Illinois in exempting from examination certain medical officers of the United States Army and Marine and Public Health Service. If this charge is well founded, the Illinois State Board of Health is answerable to the State of Illinois. While again disclaiming any intent of offering discourtesy to Dr. Harison, I will say that this also is a matter with which the secretary of the Michigan State Board of Registration in Medicine has no concern. A satisfactory explanation of this or of the foregoing action of the Illinois State Board of Health, however, is obtainable at any time by any physician or citizen of the State of Illinois.

While the concluding remarks of Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, concerning the Illinois State Board of Health, merit naught but silence, a few comments relative thereto may be interesting, and, perchance, instructive.

Dr. Harison says "the Illinois board has always been held by members of the confederation as a more or less turbulent and wayward sister, subject to occasional disturbed periods . . ." If a refusal to accept a qualification which would obligate the Illinois State Board of Health to license without examination all graduates of recognized medical schools who were licensed in Michigan and other states before July, 1899, without examination; if a refusal to subscribe to an obviously unconstitutional provision; if a refusal to accede to a rule which provided for but partial reciprocity, instead of the full reciprocity advocated and carried out by the Illinois State Board of Health—if these things constitute "turbulent and wayward characteristics," or bear evidence of "disturbed periods," then the Illinois State Board of Health admits the soft impeachment.

But I have no recollection of ever having seen Dr. Harison or any other member of the confederation arise from his seat at a meeting of the confederation and express the opinion that the Illinois State Board of Health was "a more or less turbulent and wayward sister, subject to occasional disturbed periods."

At no meeting of the confederation at which the president or secretary of the Illinois State Board of Health was present has Dr. Harison even taken exception to the attitude or views of the Illinois State Board of Health, notwithstanding that the Illinois board persistently declined to be governed by the provisions of both of the so-called qualifications of the confederation, and notwithstanding that, at one meeting of the confederation, the president, Dr. George W. Webster, gravely moved that Qualification No. 2 be burned.

Dr. Harison's remedy for ills which he perceives in Illinois is worthy of note. He says:

> The treatment advocated by the Illinois State Medical Society of the excision of the medical registration function from the public health department in Illinois, to my mind, is the only method promising a radical cure.

The interest manifested by the secretary of the Michigan State Board of Registration in Medicine in the regulation of medical affairs in Illinois is indeed praiseworthy. The fact that he might more profitably confine his attention to the regulation of medical affairs in his own state; the fact that the medical profession of Illinois will no doubt ignore his gratuitous suggestions as persistently as the Illinois State Medical Society has ignored, during the past five years, his likewise gratuitous recommendations concerning amendments to the present law, will in no manner detract from his earnestness of purpose or dampen his burning ardor. Let his epitaph be: "He done his best."

It is unfortunate, however, that in his earnest endeavor to institute reforms in Illinois, the secretary of the Michigan State Board of Registration in Medicine should indulge in personalities, show lack of ordinary courtesy, and exhibit obvious ignorance of facts.

The Illinois State Medical Society has never advocated "the excision of the medical registration function from the public health department of Illinois." At no time—I speak with certainty as to the past ten years—has the Illinois State Medical Society by action, vote or resolution, even intimated that the regulation of the medical laws of Illinois should not be performed by the State Board of Health.

On several occasions since its organization in 1877, the Illinois State Board of Health has recommended the creation of a State Board of Medical Examiners, which would relieve the State Board of Health of a portion of the duties imposed on it by law. In his first report to the State Board of Health, in 1897 (page 38, Twentieth Annual Report), the present secretary made the following remarks:

> The secretary can not refrain from expressing the opinion, which is in accordance with the views of observers of wide experience, that there is imperative need for the creation of a State Board of Health free to perform sanitary duties alone.

This recommendation of the creation of a State Board of Medical Examiners was reiterated by the secretary in a paper read before the Illinois State Medical Society in 1898, and in each annual report to the governor made by the secretary from 1898 to 1903, this recommendation was repeated.

Following the recommendations of the Illinois State Board of Health, the Illinois State Medical Society, in 1897, 1899 and 1903, made attempts to secure the passage of bills creating a State Board of Medical Examiners. The bills of 1899 and 1903, which received the endorsement of the society at the meetings in the years immediately previous—were prepared by committees of the State Medical Society, of which the secretary of the State Board of Health was a member.

Dr. Harison should remember Artemus Ward's famous saying: "It is better not to know so much than to know so many things that ain't so."

But would the "excision method," if carried out, be a "radical cure" for the "symptoms" which, according to the opinion so courteously expressed by Dr. Harison, "suggest degenerative processes?" I think not.

The Illinois State Medical Society, in 1902 and 1903, unanimously endorsed and approved a bill providing for the examination of all persons desiring to enter into practice in Illinois—this notwithstanding the fact that for two years previous "Michigan endeavored to impress on Illinois the virtue and necessity of recognizing what undoubtedly is the only constitutional and legal method of reciprocity." It is obvious that the State Board of Medical Examiners proposed in this bill would not have subscribed to the so-called Qualification No. 2. It is extremely probable, also, that if the State Board of Medical Examiners had become a member of the confederation, it would have withdrawn as soon as it saw that it could not subscribe to either of the two "qualifications" on which the confederation is founded.

There is but little justification for the assumption that a proposed State Board of Medical Examiners would not have adopted a reciprocity resolution similar to that adopted by the Illinois State Board of Health on June 20, 1906; there is no reason to believe that the proposed State Board of Medical Examiners would not have accepted, in lieu of its own examination, the examination of the United States Army, the Navy and the Public Health and Marine-Hospital Service.

In view of all this, I fear that the "method" so confidently offered by Dr. Harison, would fall far short of accomplishing a "radical cure."

In viewing Dr. Harison's communication calmly and fairly, I cannot resist the conclusion that it was the result of impetuosity caused, perhaps, by the fact that the ideals which he had created, or which had been created by the organization in which he has taken a most active part, with which he confidently expected to solve all of the problems of medical practice and reciprocity for his own and for sister states, have not been accepted or taken with a sufficient degree of seriousness by the Illinois State Board of Health, or by the physicians of Illinois. It is only by assuming that the Illinois State Board of Health, in withdrawing from the American Confederation, in some way trod on Dr. Harison's personal sensibilities that I can account for his choleric outburst.

A few words in conclusion: Dr. Harison may desire to comment further on the attitude and actions of the Illinois State Board of Health, and propound further interrogatories to its secretary concerning the administration of the Illinois medical practice act. If so, Dr. Harison will be accorded an excellent opportunity at the next meeting of the National Confederation of State Medical Examining and Licensing Boards, a national organization which will hold its seventeenth annual meeting in 1907.

It will gratify the president and secretary of the Illinois State Board of Health, if the secretary of the Michigan State Board of Registration in Medicine will appear at this meeting, and in their presence and that of members of examining and licensing organizations throughout the United States, express the opinion (which he has never expressed at a meeting of the American Confederation) that Illinois is a "more or less turbulent and wayward sister"; take Illinois to task on account of the faulty administration of its medical laws and its attitude toward reciprocity (which he has never done at a meeting of the American Confederation), and audibly manifest a yearning for knowledge concerning the Illinois board which he has shown in his recent communication. The Illinois State Board of Health will be represented at this meeting, as she has been represented at meetings during the past sixteen years.

James A. Egan.

The Medical Association of the Southwest.

El Reno, Okla., July 24, 1906.

To the Editor:—In keeping with the expressed wish and plan of the American Medical Association to organize the United States into several districts and to organize in these districts associations which will be allies to the American Medical Association, and because commercially, geographically and socially the several states grouped together here have for years been known as the Southwest, the state associations of Missouri, Kansas, Arkansas, Oklahoma-Indian Territory and Texas were asked at the spring association meetings to appoint five men, who should be called together to consider the advisability of such an organization. Each state responded by appointing the desired number, and on July 16, at Kansas City, a meeting was called. Fourteen members responded, as follows: Drs. Jabez N. Jackson, Frank J. Lutz and Charles Wood Fassett, of Missouri; C. E. Bowers, George M. Gray, M. F. Jarrett and H. L. Alkire, of Kansas; T. E. Holland, J. A. Lightfoot and J. B. Bolton, of Arkansas; J. E. Gilcreest, of Texas; B. F. Fortner, of Indian Territory, and A. L. Blesh and F. H. Clark of Oklahoma. A temporary organization was effected, with Drs. F. J. Lutz, St. Louis, as president; J. T. Wilson, Sherman, Tex.; Marion King, Texarkana, Ark.; P. S. Mitchell, Iola, Kan., and C. S. Bobo, Norman, Okla., vice-presidents, and F. H. Clark, El Reno, Okla., secretary-treasurer.

A lengthy discussion was indulged in by all present as to the desirability of the contemplated move and all present agreed that it was the thing to do.

It was decided to hold the first general meeting of the association at Oklahoma City this fall, the exact date to be determined as soon as possible. A committee, composed of Drs. A. L. Blesh, Oklahoma; Jabez N. Jackson, Missouri; J. A. Lightfoot, Arkansas; C. E. Bowers, Kansas, and J. E. Gilcreest, Texas, was appointed to draft a declaration of principles and a constitution and by-laws; the committee was requested to report the declaration of principles to the convention while in session and the constitution at the first general meeting of the association.

The committee reported the following declaration:

> *To the Medical Profession of the Southwest:*—By virtue of the authority delegated us by our several state associations to consider the advisability of the formation of a medical association of the southwest, and to define its purposes, scope and sphere of action, we, your committee, here, in pursuance of such instructions, this day met and beg leave to present the following conclusions: That the time is now opportune for the formation of a medical association of the southwest and respectfully urge that in consideration of the fact that the territory composed of the states of Missouri, Kansas, Arkansas, Oklahoma, Indian Territory and Texas are engaged in the active practice of the profession of medicine between 15,000 and 20,000 of as bright and intelligent physicians as can be found anywhere, who, because of the natural limitations of the state association on the one hand and the magnitude of the American Association on the other, lack the proper opportunity for the full development of their powers.
>
> We believe that the formation of an association of the states mentioned above will materially aid in developing this latent talent and thus advance the standard of scientific medicine in the whole nation.
>
> We believe that the membership of this association should be limited to those members of the profession who are in good standing in their respective state associations.
>
> We believe that an association of this kind will satisfactorily fill the present existing hiatus between the state association on the one hand and the American Medical Association on the other, occupying a field peculiarly its own, adding increased effectiveness to the work of the one and at the same time training talent to adorn the other.
>
> We would respectfully call the attention of the profession of the great southwest to the fact that this step is in harmony with the idea expressed at the late meeting of the American Medical Association and in its constitution (section vii) of dividing the United States into districts, so as to make its work more effective and more truly representative of the whole body of the profession in the United States.
>
> We would especially call the attention of the profession to the fact that this association is not to be organized in opposition to, but rather in harmony with, all existing regular associations.
>
> We recommend that the name of this association be the Medical Association of the Southwest.
>
> We invite the careful consideration of the medical profession of the states above mentioned to the reasons given, and if they meet with their approval extend a cordial invitation to them to join with us in making this, as it of right should be, one of the strongest working medical bodies in the United States.

After a thorough discussion the declaration was unanimously adopted. A program committee was appointed, consisting of Drs. J. E. Gilcreest, J. D. Bolton, H. L. Alkire and the president and secretary.

Dr. H. C. Todd, Oklahoma City, was appointed chairman of the committee of arrangements, and the program committee was instructed to provide for the program in sections. The committee then adjourned to meet on the evening preceding the first session of the association at Oklahoma City, Okla.

F. H. Clark, Secretary-Treasurer.

The Gelatin Method of Preserving Specimens.

Iowa City, Iowa, July 28, 1906.

To the Editor:—It appears that my article on the gelatin method of preserving specimens, which appeared in The Journal A. M. A., June 30, 1906, has created considerable interest as manifested by the communications of Professor Watters (see The Journal A. M. A., July 14) and Dr. Hall (July 28).

In justice to Professor Watters I would like to say that I do not think that he claims to be the originator of the gelatin method of preserving specimens, but that he simply claims priority in the Petri-dish-glycerin-jelly method of mounting objects. In justice to myself, permit me to say that I did not claim in the original article to be the originator of the glycerin-jelly method of mounting specimens nor the first to conceive the idea of the use of the Petri-dish for that purpose. The idea of inclosing stained microscopic sections of the gross specimen in the preparation, and the special device attached to a hand microscope, making it possible to examine the gross and microscopic preparations at the same time, are not only original with me, but so far as I know, no mention of them has ever appeared in print previous to the publication of my article. These being very desirable modifications or rather additions to the Petri-dish-gelatin method, I considered that it was entirely legitimate to speak of it as "A New Method of Mounting Museum Preparations."

Henry Albert, M.D.

Hay-fever Treatment by Dunbar's Remedies (Pollantin).

Chicago, July 23, 1906.

To the Editor:—As the hay-fever season approaches, physicians are interested in any remedy which promises to give their patients relief. Much has been published during the last three years of the treatment devised by Professor Dunbar, and many physicians have given it an extensive trial, I among the number; but I cannot subscribe to the extravagant statements that have been made in its favor.

Three years ago I tried the serum on several patients, but without effect. Year before last I tried the pollantin powder (the dried serum) in a number of cases, and in only one did I get a report that it had done good.

At the 1905 meetings of the American Laryngological Association and of the Americal Laryngological, Rhinological and Otological Society, the subject of the treatment of hay-fever by these remedies was under discussion. In each of these meetings there were from 30 to 50 laryngologists present. In both instances there were one or two members who spoke with some favor of the use of pollantin, and ascribed the poor results of treatment by pollantin the previous year to the quality of the remedy used, it being stated that for those persons who were affected by the pollen of certain grasses or ragweed a different pollantin should be used from that adapted for those who were affected by the pollen of the golden rod. No one else in either of these meetings appeared to have any confidence in the results to be obtained from these remedies.

I came away from both meetings with the feeling that possibly I had not been careful enough in my direction to patients who were to use the remedy, and that I had probably not had the proper pollantin. Therefore, during last summer, I obtained the different kinds of pollantin, according to the conditions in individual patients.

I cannot, without great labor, search out the various records, as they are scattered alphabetically through thousands of other records, and the only way that I can find them at all is to pick them out by the disease, and even this would be a tedious undertaking. I had one of my assistants spend a day in looking up these cases, and although he found a great many of hay-fever he only found eight in which the pollantin had been used, though I am confident I employed it in 15 or 20 cases last summer.

I have yet to hear of a single one in whom it apparently did any good. In the records that were found I am sure that it did no good, and I feel confident that in the others, had it been beneficial, they would have reported to me.

As an example, I merely cite one. This patient I had make a trip of 800 miles in order to test the remedy carefully. He came to me from the north during the middle of the season, having been practically free from his symptoms in northern Wisconsin; but the next morning after arriving in the city the trouble began. I used pollantin carefully and thoroughly with him for about ten days, and then was obliged to send him away. In answer to my question as to whether he thought it did him any good, he replied he thought it did some good, but I had been watching him closely every day and I failed to see that it gave the slightest relief.

As a result of my experience, in probably 30 to 40 cases all told, I believe that it will not give relief in more than 1 or 2 per cent., and that in these the relief would be temporary and not very great. E. Fletcher Ingals.

[The above report by Dr. Ingals on the use of pollantin is not encouraging. Others may have had better results; if so, we shall be glad to publish them. Professor Dunbar is controlling this serum—in other, words, it is a proprietary medicine. But even so, if it is a good thing, that fact should be known; if it is not, this also should be made known. It does not seem to be human, however, to publish our failures, no matter whether we are responsible for them or not. And yet, when a new remedy is introduced, it seems to us that it is the duty of those experimenting with it to give their results for the benefit of others. In the present instance, the beneficial side will be given due publicity by those whose interest it is to have the substance used. This is the hay-fever season, and if there is anything that is especially valuable in its treatment, by all means let those who have to treat it know about it. But let us have both sides.—Editor.]

Cocain in Tucker Asthma Cure.

Boston, July 20, 1906.

To the Editor:—Having repeatedly found that patients coming to me for medical advice were using the secret remedy for asthma sold by Dr. N. Tucker of Mount Gilead, Ohio, I naturally became desirous of knowing its composition. It is employed locally by means of an atomizer, and those using it have claimed that they experienced undoubted relief from its employment. At my suggestion a man obtained for me some of the remedy and gave it to me in the bottle in which he bought it. It has been examined by Dr. Frank Piper and Dr. Julian W. Baird, both of Boston, and both find that it contains cocain. Dr. Baird, who is dean of the Massachusetts College of Pharmacy and has been teaching chemistry for over twenty years, also made a quantitative examination, demonstrating a little over 7 grains of the hydrochlorate of cocain to each ounce of the remedy.

It seems to me that others besides myself may be very glad to know this fact, in order to give their patients advice concerning the "cure." Further, I should like to inquire whether a secret remedy with so dangerous an ingredient can be legally distributed by means of the United States mails, and if not, whether it would not be well for the American Medical Association officially to call the attention of the Postmaster General to the facts. Herman F. Vickery.

263 Beacon Street.

Book Notices

The Operative Treatment of Fractures. By W. Arbuthnot Lane, M.S., F.R.C.S., Surgeon to Guy's Hospital and Senior Surgeon to the Hospital for Sick Children. Paper. Pp. 144. Price, $1.87. London: The Medical Publishing Company, Limited, 1905.

This book is a statement of and argument for the author's well-known advocacy of operative accurate adjustment and retention of bone fragments. First are considered the changes in the skeleton produced by unusual function, as the habitual carrying of heavy loads. The skeleton is subject likewise to vicious structural change as the result of abnormal transmission of weight due to malunited fractures. Particularly the joints, whether or not near the fracture, may thus suffer. The individual fractures are then taken up. At the end the operative technic is described. Screws, silver wire or staples and silver plates are used; "generally speaking, the screw is by far the most efficient and most powerful means by which the fragments can be retained immovable on one another." These are removed later. The need for the most exacting asepsis is emphasized; only the unhandled ends of long instruments are allowed in the wound. Age is no barrier; indeed, often increases the need for operation to avoid prolonged recumbency. "If due care be taken and reasonable skill be exercised the risk is practically *nil.*" The book is filled with excellent radiographic illustrations.

An Essay on the General Principles of the Treatment of Spinal Curvatures. By Heather Bigg, F.R.C.S., Ed. Cloth. Pp. 240. Price, $2.00. London: J. & A. Churchill, 1905.

This is a plea for the author's method of treating lateral curvature, which is by the use of a brace worn during the day and a jacket at night. The brace consists of a steel pelvic band fixed by gored webbing that laces around and over the hips; from this arise two lateral steels that buoy the trunk by axillary crutches, and two posterior median spring steels that have been tempered in a corrected position; the interspaces of this four-upright frame are filled by lacing-pieces both behind and in front. The night jacket is made of any suitable stiff material (stiffened felt, stiffened leather or plaster-Paris) on a plaster-Paris cast of the trunk that has been shaved off and filled in to a corrected shape. The book is devoted to the consistent effort to support the principles underlying this form of treatment, the principles of "advenience," i. e., adaptation to a straightening force and increase of correctability by up-buoying. Historical and modern methods of treatment are critically considered, and Mr. Roth's posture and exercise treatment warmly opposed. The argument is strongly constructed along theoretical lines, only one case being reported. Whatever the truth of the contention for which the book stands, it is certainly a good example of escape on the one hand from unreasoning dogmatism and on the other from unopinionated narration.

Cause and Prevention of Dental Caries. By J. S. Wallace, M.D., D.Sc., L.D.S., Hon. Dental Surgeon, West End Hospital for Nervous Diseases; and Assistant Dental Surgeon, National Dental Hospital. W. Cloth. Pp. 81. Price, 2s. 6d. net. London: Bailliere, Tindall and Cox, 1906.

In this work, Dr. Sims Wallace claims that "the cause of the prevalence of dental caries is that the natural food-stuffs are to a large extent ridded of their accompanying fibrous parts and prepared and consumed in a manner which renders them liable to lodge and undergo acid fermentation in the mouth."

Crowding of the teeth is a fruitful predisposing cause of caries acknowledged by Dr. Wallace, yet he attributes the crowding "to want of development of the tongue from lack of fibrous material in the food-stuffs. Removal of this fibrous material from the food-stuffs robs the tongue of a certain amount of activity, and so interferes with its development."

The trend of pathology is against the local influence on which so much stress is laid by Dr. Wallace and in favor of developmental elements. Caries is an expression of one senile tendency as opposed to another; of osteomalacia as opposed to calcification. The calcification tendencies of embryogeny are local rather than general. The calcification tendencies of senescence are general, not local. The calcified arteries of old age are a familiar illustration. Furthermore, calcification is an expression of tissue degeneration, sometimes exerted at the expense of dangerous products like those of tuberculosis.

Osteomalacia is an expression at certain periods of normal involution. Structures even in embryogeny which are not needed, disappear by involuntary tendencies. Crowded teeth are notoriously products of constitutional tendencies and deficiencies, and hence cannot be affected by the influence of temporary conditions of the tongue. These last conditions are quite frequently results of constitutional factors underlying conditions of the tongue. The hypothesis of Dr. Wallace, it will be obvious, does not comply with scientific requirements; it does not explain all the facts nor does it exclude all other explanation. The book is one more illustration of the waste of medical research, which results when an incomplete working hypothesis is adopted. A little knowledge of developmental pathology would have prevented all this waste.

Manual on Operative Surgery. By John Fairbairn Binnie, A. M., C.M., Aberdeen. Second edition, revised and enlarged. Pages X plus 665, with 567 illustrations. Philadelphia: P. Blakiston's Son & Co., 1905.

The excellence of this manual on surgery is evidenced by the fact that in nine months after the appearance of the book, a second edition was demanded. The author modestly states that in the second edition he has taken advantage of the hints kindly thrown out by reviewers and friends. Among the additions are a description of the bur operation on the mastoid, an illustrated summary of the recent advances in cerebral localization and a short section on the duodenum and peritoneal tuberculosis. Binnie has, by the revision, improved a work, the first edition of which received well-deserved commendation by reason of its clearness, completeness and conciseness.

Personal Hygiene. Designed for undergraduates. By Alfred A. Woodhull, A.M., M.D., LL.D. (Princ.), Brigadier-General U. S. Army (retired), late Colonel Medical Department U. S. Army. Cloth, 12mo. Pages VII plus 221. Price, $1.00 net. New York: John Wiley & Sons, 1906.

This little book contains the substance of the lectures given by General Woodhull at Princeton University, and presents the important points on personal hygiene in plain and simple language. The first half of the book is devoted to a description of the body and its functions; the latter contains chapters on the development and care of the body, physical culture exercises, fatigue, elimination of waste, "catching cold," swimming, bathing and clothing, and the last three chapters are devoted to the questions of food, tobacco and alcohol.

A Text-Book on Modern Materia Medica and Therapeutics. By A. A. Stevens, A.M., M.D., lecturer on Physical Diagnosis, University of Pennsylvania; Professor of Pathology, Woman's Medical College of Philadelphia. Fourth edition, revised. Cloth, 670 pages. Price, $3.50 net. Philadelphia: W. B. Saunders & Co., 1905.

The fourth edition of this work is revised and adapted in conformity with the eighth decennial revision of the United States Pharmacopeia. There have been extensive additions to the section on radio therapeutics, new articles on scopolamin, ethyl chlorids, theosin, veronal and radium have been prepared and the changes in the names or strengths of the drugs called for by the revised Pharmacopeia have been made.

Heath's Manual of Surgery and Bandaging.—For the use of house surgeons, dressers and junior practitioners, thirteenth edition, revised by Dr. Bilton Pollard, F.R.C.S., surgeon to University College Hospital, etc. Cloth, XIV plus 221 pages. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

The revisor of this work has made alterations and additions required by the progress of the science, and the subject-matter has been brought up to date.

Marriages

Walter S. Given, M.D., to Miss Funk, both of Indianapolis, recently.

Robert H. Herbst, M.D., to Miss Grace Adele Bellows, both of Chicago, July 25.

Port McWhorter, M.D., to Miss Helen Augusta Waters, at Miller, S. D., July 25.

William A. Wilson, M.D., Willard, N. M., to Miss Lorena M. Kortkamp of Hillsboro, Ill., July 10.

Charles Emmons, M.D., Hanoverton, Ohio, to Miss Jennie Hecstand, of Homeworth, Ohio, July 19.

Carl Shellman, M.D., Pitsanuloke, Siam, to Miss Mary Carnahan Guy, at St. Paul, Minn., July 11.

Herbert Taylor Harris, M.D., Dietz, Wyo., to Miss Cornelia Ryder Burton of Collinsville, Ill., June 27.

Elwood Gray, M.D., Otwell, Ind., to Miss Myrtle Lemmon, of Boone Township, Dubois County, Ind., July 16.

Deaths

Shaw F. Neely, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1865; for four terms mayor of Leavenworth, Kan., and during the second term of President Cleveland, United States marshal for the eastern district of Kansas; acting surgeon of the One Hundred and Sixty-fifth Pennsylvania Volunteer Infantry during the Civil War; for several years publisher of the Leavenworth *Evening Standard*, died at his home in Leavenworth, July 20, from angina pectoris, after a short illness.

Eugene F. McQuesten, M.D. Jefferson Medical College, Philadelphia, 1886, one of the best known physicians of Nashua, N. H.; well-known as an alienist and as an expert witness in insanity cases; a member of the American Medical Association and American Association of Railway Surgeons; for many years member and once president of the New Hampshire Medical Society and of the Nashua Medical Society, died at Squirrel Island, Maine, from heart disease, July 19, after an illness of several months, aged 62.

Sophronie Fletcher, M.D. New England Female Medical College, Boston, 1854, said to have been the oldest woman physician in the United States, professor of physiology at Mount Holyoke Seminary more than fifty years ago, died at her home in Cambridge, Mass., July 20, from pneumonia, after an illness of four days, aged 99.

Augustus Niles, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1875, a member of the State Board of Medical Examiners of Pennsylvania since 1894, and a member of the Medical Council of Pennsylvania, died at his home in Wellsboro, July 23, from heart disease, after a long illness, aged 52.

Charles B. McAnally, M.D. New York University, New York City, 1887, a prominent physician of North Carolina, a resident of Madison, and a member of the American Medical Association, died in St. Luke's Hospital, Richmond, Va., July 15, after operation for the removal of renal calculus.

Benjamin F. Clark, M.D. Medical College of Ohio, Cincinnati, 1881, for seventeen years local surgeon of the Baltimore and Ohio railway, assistant police surgeon of Cincinnati, died at his home in that city from pulmonary abscess, July 18, after an illness of three weeks, aged 49.

Pierre Desnoyers Peltier, M.D. University of Buffalo (N. Y.) Medical Department, 1860, assistant surgeon of the One Hundred and Twenty-sixth New York Volunteer Infantry during the Civil War, died at his home in Collinsville, Conn., from angina pectoris, July 21, aged 70.

John H. Love, M.D. Cincinnati College of Medicine and Surgery, 1870, a member of the American Medical Association, formerly coroner of Ventura County, Cal., a prominent physician of Ventura, died at his home in that city, July 23, from cerebral hemorrhage, aged 59.

Carl Frederick Zimmerman, M.D. Medical College of Indiana, Indianapolis, 1889, a member of the Indiana State Medical Society, Vigo County Medical Society and Esculapian Medical Society of the Wabash Valley, died at his home in Terre Haute, Ind., July 17, aged 48.

John Kirkpatrick, M.D. University of Victoria College, Coburg, 1877; College of Physicians and Surgeons of Ontario, 1880; M. R. C. S., England, 1877; who served during the Turko-Russian War as a Red-Cross surgeon, died July 9, at Toronto.

William S. Channing, M.D. Physio-Medical College of Indiana, Indianapolis, 1891, of Pendleton, Ind., a member of the Madison County Medical Society, died in the Presbyterian Hospital, Chicago, June 28, after an illness of nine weeks.

Sarah T. R. Eavenson, M.D. American College of Medicine in Pennsylvania and Eclectic College of Medicine, Philadelphia, 1860, a prominent member of the Society of Friends, Philadelphia, died at Buck Hill Falls, Pa., July 20, aged 82.

Amelie D. F. Von Der Luhe, M.D. New York Medical College and Hospital for Women, New York, 1889, died at her home in Greenport, Long Island, July 21, after an illness of nearly two years, aged 46.

John Donaldson Potter, M.D. University of Wooster, Medical Department, Cleveland, 1871, died suddenly at his home in Mount Oliver, Pittsburg, from heart disease, July 22, aged 60.

Willis C. Glidden, M.D. Chicago Homeopathic Medical College, 1879, died at his home in De Kalb, Ill., July 15, from diabetes, from which he had suffered for several years, aged 56.

Thomas C. Thomas, M.D. Kansas City Hospital College of Medicine, Kansas City, Mo., 1885, died at his home in Peoria, Ill., July 21, after an illness of three years, aged 69.

Neal B. Gay, M.D. Jefferson Medical College, Philadelphia, 1850, said to have been a direct descendant of Pocahontas, died at his home near Fork Union, Va., July 16, aged 79.

Albert H. Taft, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1867, a veteran of the Civil War, died at his home in Winchester, N. H., June 25, aged 69.

Thomas M. Curtis, M.D. Long Island College Hospital, Brooklyn, of Boston, died in Madison, N. H., May 11, from tuberculosis, after an illness of two years, aged 47.

Arthur C. Ridout, M.D. Homeopathic Hospital College, Cleveland, 1894, is reported to have committed suicide by strangulation at his home in Ravenna, Ohio, July 21, aged 45.

Onslow M. Kingsbury, M.D. Medical School of Maine, at Bowdoin College, Brunswick, 1873, of Georgetown, Maine, died at Harmon's Harbor, May 15.

Thomas F. Madill, M.D. Jefferson Medical College, Philadelphia, 1865, died at his home in Wysox, Pa., June 27, from acute laryngitis, aged 78.

James W. Chisholm, M.D. Baltimore Medical College, 1902, was drowned July 23, while bathing at Glace Bay Beach, Cape Breton, aged 31.

James M. Stringham, M.D. Hahnemann Medical College and Hospital, Chicago, 1887, died at his home in Carson City, Mich., July 20.

Albert F. Piper, M.D. New York Homeopathic College and Hospital, 1875, died suddenly at his home in Rockport, Me., June 22.

Ernest Guy Cawley, M.D. Baltimore Medical College, 1900, died at his home in Haverhill, Mass., July 10.

William F. Cornick, M.D. died in Princess Anne County, Va., July 26.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

CANCER—CAN IT BE CURED?

Ohio, July 30, 1906.

To the Editor.—In the August number of *McClure's*, there is an article on "Cancer—Can It Be Cured?" by C. W. Saleeby, M.D., F.R.S., (Edin.). In this article the writer gives an outline of Dr. John Beard's treatment of cancer with trypsin. Can you tell me how it is used, the dosage, etc., and where I may obtain the best trypsin in this country? Any information in regard to this treatment and endorsements in this country I will appreciate.

F. S. B.

Answer.—We are unable to give any further information in regard to the details of the trypsin treatment of cancer than those contained in Dr. Beard's article in the *British Medical Journal*, Jan. 20, 1906, and repeated with many extravagant flourishes in Saleeby's article in *McClure's Magazine* for August and elsewhere. "Those practising physicians who have already ventured to act on the . . . advice to prove all things, are—administering trypsin or pancreatic extract by the mouth, under the skin and where possible by local application." This treatment is yet wholly tentative and so far as we are aware it as yet has received no endorsements from the profession in this or any other country. The hypothetical basis of the treatment seems to us to be wholly inadequate and to offer little hope for any rational therapy of cancer. Nevertheless, the hopelessness of the outlook in cancer no doubt will continue to tempt many to try almost any form of treatment that is suggestive, no matter what the basis. The *British Medical Journal* article was abstracted in The Journal Feb. 17, 1906, p. 544, and commented on editorially March 10, 1906, p. 728 and 729. The first editorial in this issue also takes up the subject.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, United States Army, week ending July 28, 1906:

Lynch, Charles, surgeon, granted two months' leave of absence, to take effect about Aug. 1, 1906.

Shaw, Herbert G., asst.-surgeon, having reported arrival at San Francisco, is ordered to the Army General Hospital, Presidio, of San Francisco.

Heard, George P., asst.-surgeon, relieved from duty at Army General Hospital, Presidio, San Francisco, and ordered to Fort Wingate, N. M., for duty.

Rockhill, Edward P., asst.-surgeon, relieved from duty at Fort Wingate, N. M., and will proceed to San Francisco and take the first available transport sailing from that place for the Philippine Islands, where he will report to the commanding general, Philippines Division, for assignment to duty.

Phalen, James M., asst.-surgeon, granted leave of absence for four months and fifteen days, with permission to go beyond the sea.

Devereaux, J. R., asst.-surgeon, leave of absence extended thirty days.

Bispham, William N., asst.-surgeon, en route with Third Squadron, Fifth Cavalry, from Fort Wingate, N. M., to camp of instruction near Fort D. A. Russell, Wyo., for duty.

McCulloch, C. C., Jr., surgeon en route from Fort Meade, S. O., to camp of instruction near Fort D. A. Russell, Wyo., for duty.

Bloombergh, H. D., asst.-surgeon, left Fort Leavenworth, Kan., with Eighteenth Infantry, for duty at camp of instruction, Fort Riley, Kan.

Raymond, Henry I., surgeon, reports arrival at camp of instruction, Fort Benjamin Harrison, Ind., for duty.

Davis, William T., asst.-surgeon, left Army General Hospital, Washington Barracks, D. C., with Company A, Hospital Corps, en route to camp of instruction, Chickamauga, Ga., for duty.

Pinkston, Omar W., asst.-surgeon, relieved from temporary duty at United States military prison, Fort Leavenworth, Kan., and will report in person to the commanding general, Department of California, for assignment to temporary duty until Nov. 1, 1906, when he will report to medical superintendent of the Army Transport Service, San Francisco, for assignment to duty.

Davis, William B., deputy surgeon general, left headquarters, Department of the Lakes, Chicago, en route to camp of instruction, Fort Benjamin Harrison, Ind., for duty as chief surgeon.

Gilchrist, H. L., asst.-surgeon, reports arrival at Camp Roosevelt, camp of instruction, Mount Gretna, Pa., with Company A, Hospital Corps, for duty.

Reno, William W., asst.-surgeon, left Fort Riley, Kan., with troops on practice march.

Truby, A. E., asst.-surgeon, left Presidio, San Francisco, with Company B, Hospital Corps, en route to camp of instruction, Camp Tacoma, American Lake, Wash., for duty.

Rand, Irving W., asst.-surgeon, left Presidio, San Francisco, with troops, en route to camp of instruction, Camp Tacoma, American Lake, Wash., for duty.

Adair, George W., asst.-surgeon-general, left headquarters Department of Dakota, St. Paul, Minn., en route for duty as chief surgeon, camp of instruction, Islay, Wyo.

Patterson, R. U., asst.-surgeon, left Presidio, San Francisco, with Company B., Hospital Corps, en route to camp of instruction, Camp Tacoma, American Lake, Wash., for duty.

Smart, William M., asst.-surgeon, left Fort Caswell, N. C., en route to camp of instruction, Chickamauga Park, Ga., for duty.

Hoff, John Van R., asst. surgeon-general, left headquarters Department of the Missouri, Omaha, en route for duty as chief surgeon, camp of instruction, Fort Riley, Kan.

Richard, Charles, surgeon, will, in addition to his other duties, take charge of the office of the chief surgeon, Department of the East, and perform the duties of that officer during the absence of Col. Philip F. Harvey, asst.-surgeon-general, on detached duty at Mount Gretna, Pa.

Noble, R. E., asst.-surgeon, left Vancouver Barracks, Wash., on leave of absence for one month, with permission to apply for an extension of one month.

Frick, Euclid B., surgeon, will, in addition to his present duties, take charge of the office of chief surgeon, Department of Dakota, St. Paul, Minn., during the absence of Col. George W. Adair, asst.-surgeon-general, U. S. Army, at camp of instruction near Fort D. A. Russell, Wyo.

Carter, Edward C., surgeon, left Fort Leavenworth, Kan., en route to camp of instruction, Fort Riley, Kan., for duty.

Rhodes, Thomas L., asst.-surgeon, left West Point, N. Y., on leave of absence to Aug. 4, 1906.

The following named assistant surgeons are relieved from duty in the Philippines Division, to take effect at such time as will enable them to comply with this order, and will proceed by the first available transport sailing after the dates set opposite their names, to San Francisco, and on arrival report by telegraph to the military secretary of the army for further orders: Loving, Robert C., first lieutenant, Sept. 30, 1906; Brown, O. G., first lieutenant, Sept. 30, 1906; Whaley, A. M., first lieutenant, Sept. 30, 1906; Lamson, Theodore, first lieutenant, Sept. 30, 1906; Heysinger, James D., first lieutenant, Sept. 30, 1906; Huggins, John B., first lieutenant, Sept. 30, 1906; Harris, J. R., first lieutenant, Oct. 8, 1906.

Borden, William C., surgeon, granted leave of absence for one month and fifteen days on surgeon's certificate of disability.

Brooks, William H., asst.-surgeon, left Fort Washington, Md., en route to camp of instruction, Camp Roosevelt, Mount Gretna, Pa., for duty.

Collins, C. C., asst.-surgeon, left Fort Walla Walla, Wash., en route to Camp Tacoma, camp of instruction, American Lake, Wash., for duty.

Harvey, Philip F., asst.-surgeon-general, reported at Camp Roosevelt, camp of instruction, Mount Gretna, Pa., for duty as chief surgeon.

Hereford, John R., cont.-surgeon, left Fort Moultrie, S. C., for duty at Fort Caswell, N. C.

Shellenberger, James E., cont.-surgeon, left Fort Sam Houston, Tex., for duty with troops en route to and at camp near Austin, Tex.

Leeper, John F., cont.-surgeon, left Fort Duchesne, Utah, with troops for duty at maneuver camp, Islay, Wyo.

Byars, Caspar R., cont.-surgeon, returned to duty at Jefferson Barracks, Mo., from leave of absence.

Felts, Robert L., cont.-surgeon, returned to Fort Sam Houston, Tex., from temporary duty at Camp Mabry, Austin, Tex.

McCown, Thomas B., cont.-surgeon, arrived at San Francisco from Philippine service and ordered to Fort Mott, N. J., for duty.

Warwick, Clarence A., cont.-surgeon, relieved from duty at Fort Mott, N. J., and ordered to his home, Keokuk, Iowa, for annulment of contract; granted leave of absence for one month.

Johnson, Charles W., cont.-surgeon, relieved from duty in the Philippines Division and ordered to San Francisco for further orders.

Ware, William H., dental-surgeon, left Fort Huachuca, Ariz., and arrived at Fort Logan, Colo., for duty.

Brown, Ira C., cont.-surgeon, granted sick leave of absence for two months, at expiration of which ordered to Fort McIntosh, Tex., for duty.

Kennedy, James S., cont.-surgeon, left Fort Omaha for temporary duty at Fort Benjamin Harrison, Ind.

Phelan, Henry du R., cont.-surgeon, ordered to Fort Rosecranz, Cal., for duty.

Smith, Rodney D., cont.-surgeon, granted leave of absence for two months.

Slater, Ernest F., cont.-surgeon, returned from temporary duty at Fort Adams, R. I., to his proper station, Fort Hancock, N. J.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 21, 1906:

Moore, J. M., surgeon, commissioned surgeon, with rank of lieutenant commander, from Jan. 1, 1905.

Urie, J. F., surgeon, detached from the *Pennsylvania,* ordered home, and granted sick leave for three months.

Steele, J. M., medical inspector, detached from the Naval Academy and ordered home to wait orders.

Wright, B. L., surgeon, commissioned surgeon, with rank of lieutenant commander, from May 10, 1906.

Backus, J. W., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from May 4, 1905.

Riggs, R. E., P. A. surgeon, commissioned surgeon, with rank of lieutenant, from Jan. 19, 1906.

Geiger, A. J., P. A. surgeon, commissioned P. A. surgeon, with rank of lieutenant, from May 6, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending July 25, 1906:

Pettus, W. J., asst.-surgeon-general, reassigned to duty in the bureau, Washington, D. C., from July 16, 1906.

White, J. H., surgeon, directed to visit Mississippi River quarantine station for special temporary duty, on completion of which to rejoin station.

Woodward, R. M., surgeon, reassigned to duty at Boston, Mass., from July 16, 1906.

Nydegger, J. A., P. A. surgeon, department letter of June 5, 1906, granting leave of absence for three months from Aug. 11, 1906, amended to read three months from Aug. 10, 1906.

White, M. J., P. A. surgeon, granted extension of leave of absence for one month from Sept. 15, 1906.

Lloyd, B. J., P. A. surgeon, granted leave of absence on account of sickness for one month and ten days from June 11, 1906.

Steger, E. M., asst.-surgeon, leave of absence granted for one month and twenty-three days from May 17, 1906, amended so as to be for one month and eleven days only.

Salmon, T. W., asst.-surgeon, granted leave of absence for one month from July 28, 1906.

Delgado, J. M., acting asst.-surgeon, granted leave of absence for thirty days from June 9, 1906, on account of sickness.

Foster, S. B., acting asst.-surgeon, granted leave of absence for seven days from July 22, 1906.

Gleason, C. M., acting asst.-surgeon, granted leave of absence for fifteen days from Aug. 1, 1906.

Hamilton, H. J., acting asst.-surgeon, granted extension of leave of absence for one day, June 15, 1906.

Seavey, L. T., acting asst.-surgeon, granted leave of absence for twenty two days from Aug. 8, 1906.

Torres, J. F., acting asst.-surgeon, granted leave of absence for fifteen days from July 20, 1906.

Watson, H. J., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 15, 1906.

Macdowell, W. F., pharmacist, granted leave of absence for thirty days from Aug. 6, 1906.

Brown, F. L., pharmacist, relieved from duty at Baltimore, Md., and directed to proceed to Boston for duty and assignment to quarters.

LaGrange, J. V., pharmacist, granted leave of absence for thirty days from Aug. 16, 1906.

Allen, G. C., pharmacist, granted leave of absence for seven days from July 11, 1906, under paragraph 210 of the Regulations.

Van Ness, G. I., Jr., pharmacist, relieved from temporary duty at the purveying depot, Washington, D. C., and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters.

Sterns, C. O., pharmacist, relieved from duty in Boston, Mass., and directed to proceed to Baltimore for duty and assignment to quarters.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general, Public Health and Marine-Hospital Service, during the week ended July 27, 1906:

SMALLPOX—UNITED STATES.

Florida: Columbia County, July 14-21, 1 case; Nassau County, July 14-21, 1 case; Jacksonville, July 14-21, 4 cases.

Georgia: Augusta, July 16 23, 3 cases.

Illinois: Galesburg, July 14-21, 3 cases.

Louisiana: New Orleans, July 14-21, 10 cases.

Oregon: General, June 1-30, 21 cases.

Tennessee: Knoxville, July 14-21, 5 cases; Memphis, July 14-21, 1 case.

Utah: General, June 1-30, 50 cases.

Washington: General, May 1-31, 61 cases; June 1-30, 73 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, June 2 16, 1 case.

Brazil: Rio de Janeiro, June 10-17, 1 case.

Canada: Toronto, July 7-14, 1 case; Winnipeg, July 7-14, 1 case.

China: Hongkong, May 19-June 9, 11 cases, 8 deaths; Shanghai, June 9, present.

France: Marseilles, June 1-30, 1 death; Paris, June 23-30, 5 cases.

Great Britain: Bristol, June 30-July 7, 1 case; Hull, July 7-14, 1 case, 1 death.

India: Bombay, June 19-26, 1 death; Calcutta, June 9-16, 23 deaths; Karachi, June 1-24, 5 cases, 1 death; Rangoon, June 9-16, 5 cases.

Italy: General, June 21-July 5, 38 cases.

Japan: Kobe, June 9-16, 1 case.

Russia: Moscow, June 16-30, 9 cases, 2 deaths; Odessa, June 10-17, 5 cases, 3 deaths; St. Petersburg, June 18-30, 11 cases, 3 deaths.

Spain: Barcelona, June 20-July 10, 12 deaths; Seville, June 1-30, 26 deaths.

YELLOW FEVER.

Honduras: Ceiba, July 23, death present; Pimienta, July 5, 1 case.

Mexico: Vera Cruz, July 24, 1 case (imported from Yucatan).

CHOLERA.

India: Bombay, June 19-26, 39 deaths; Calcutta, June 9-16, 28 deaths; Rangoon, June 9-16, 1 death.

PLAGUE.

China: Hongkong, May 19-June 9, 240 cases, 236 deaths.

Egypt: Alexandria, June 30-July 5, 4 cases, 3 deaths; Guerga Province, July 1, 9 cases, 8 deaths; Port Said, July 2, 1 case, 1 death.

India: General, June 2-9, 3,597 cases, 3,446 deaths; Bombay, June 19-26, 47 deaths; Calcutta, June 9-16, 38 deaths; Karachi, June 18-24, 39 cases, 34 deaths.

Miscellany

To Writers of Scientific Papers.—The *Deutsche med. Wochft.* remarks in a recent issue that many articles sent in for publication of late have been full of mistakes, especially noticeable in dictated typewritten copy. It adds that the editorial staff can not be expected to rewrite the article to correct the numerous errors, and the composing room can not stand the expense of having the corrections made on the proofs. Consequently in future such MS will be returned to their authors for correction, or the expense of having the corrections made by the journal will be charged to the authors. A charge will also be made for extensive alterations in the text when the proof is sent to the author for correction. The *British Medical Journal* quotes this manifesto with approval, saying "it would save much loss of time and needless expense and vexation of spirit to all concerned if authors who confer on us the privilege of publishing their writings would in the first instance send them clothed and in their right mind, instead of swarming with misspellings of names, wrongly numbered illustrations, spaces for dates and figures left blank—as frequently happens, to say nothing of mere repetitions and contradictions, obscurity, etc".

Affairs in Panama.—There are many things of medical interest going on at Panama at the present time, the chief center of activity being the Ancon Hospital with its twenty physicians and its five hundred beds, writes Dr. H. E. Wetherill in *Medical Notes and Queries.* The deaths from pneumonia, which is of the sthenic type, but comes on insidiously, are as many as from malaria, and it would seem that the segregation of the pneumonics would be a useful procedure. How many cases of yellow fever go unreported in Panama is not known. Beriberi is affecting many of the negroes. The junior doctors here are much underpaid; in fact, they receive but little more than the nurses in the wards and have additional expenses, as that of washing. They are not allowed to practice outside of the hospital, which naturally interferes with their becoming thoroughly acquainted with tropical conditions. There is a charge of about 150 pesos for the privilege of practicing in the zone. A medical society has been started and there is promise of new material for discussion. One of the most active workers is Darling, the pathologist, who has recently recovered from an attack of appendicitis. He has discovered a new form of coccidium differing from the Leishmann-Donovan bodies and has invented a new form of syringe for the removal of pericardial fluid. I have found what is probably the lowest hemoglobin percentage on record, it being under 5 per cent. The leucocytic ring of Talqvist seems to be wider with the decrease of hemoglobin and it is no uncommon thing to find 15 per cent. of hemoglobin in the negro laborers. It seems that something might be done to reject all those applying for work, having a hemoglobin count under 50 per cent.; this would probably save the government considerable expense in the long run. Malaria germs have been thrown down in abundance in black-water fever with the torkrit. The tertian parasite is the most common. Trypanosomiasis of ruminants has been found. Uncinariasis, tricocephalus and bilharzia are common—the latter the least common.

Benjamin Franklin's Views as to the Nature of Colds.—The following passage from President Eliot's address on "Benjamin Franklin, as Printer and Philosopher", at the meeting of the American Philosophical Society, April 20, 1906, to commemorate the two hundredth anniversary of the birth of Franklin, is of decided medical interest: "The sagacity of Franklin's scientific inquiries is well established by his notes on colds and their causes. He maintains that influenzas usually classed as colds do not arise, as a rule, from either cold or dampness. He points out that savages and sailors, who are often wet, do not catch cold, and that the disease called a cold is not taken by swimming. He maintained that people who live in the forest, in open barns or with open windows, do not catch cold, and that the disease called a cold is generally caused by impure air, lack of exercise or overeating. He came to the conclusion that influenzas and colds are contagious—a doctrine which, a century and a half later, was proved, through the advance of bacteriologic science, to be sound. The following sentence exhibits remarkable insight, considering the state of medical art at that time: 'I have long been satisfied from observation, that besides the general colds now termed influenzas (which may possibly spread by contagion as well as by a particular quality of air), people often catch cold from one another when shut up together in close rooms and coaches, and when sitting near and conversing so as to breathe each other's transpirations; the disorder being in a certain state.' In the light of present knowledge what a cautious and exact statement!"

Early Contagion of Scarlet Fever.—The *Semaine Médicale* for June 6 reviews a recent article by Boisson which presents evidence to prove that scarlet fever is spread by the secretions in the mouth and throat. His study of a recent epidemic at the Military Medical College at Lyons sustains this view. Fifteen of the pupils were affected, and in 9 the mode of contagion was positively determined. It was traced in 6 to direct intercourse with a scarlet fever patient during the period of invasion, in 2 to one in the eruptive stage, and in only a single instance to a convalescent. He has also observed a case in which a child developed symptoms four days after associating with a scarlet fever child. Three or four days later the father and mother both developed the disease, although they had not been in contact with the primary case. He has become convinced that the sore throat is the specific manifestation and the eruption merely accessory. When contagion occurs from the exfoliated epithelium it is only because the scaly particles are contaminated with the products of the secretions of the nose and throat. Prophylaxis should include disinfection of the mouth and throat. He recommends gargling with a 1 per 1,000 solution of potassium permanganate or a weak solution of iodin.

Ovarian Inflammation in Mumps.—I. V. Troitzky reported in 1901 (as mentioned in these columns at the time, page 1478 of vol. xxxviii) that he had observed ovaritis in 13 out of 33 cases of epidemic mumps in a girls' boarding school. The children were between 9 and 15, and 8 of those affected with ovaritis were already menstruating. When the parotitis was unilateral the ovary on that side was the one affected, and both ovaries were tender when the process was bilateral. He has never found this secondary inflammation in the genital organs of boys so pronounced as in girls, and he advises to keep the child in bed, with local cold applications. He is inclined to regard the parotitis inflammation in and around the ovaries as a serious complication, liable to cause sterility later. His experience since then has confirmed him in this view, as he related in a communication (*Vrach. Gaz.*) to the recent International Medical Congress, stating that if no other cause for sterility can be discovered the possibility of damage of the ovaries from an old parotitic process might be considered.

State Boards of Registration

COMING EXAMINATIONS.

Nevada State Board of Medical Examiners, Carson City, August 6. Secretary, S. L. Lee, Carson City.

Nebraska State Board of Health, State House, Lincoln, August 8-9. Secretary, Geo. H. Brash, Beatrice.

Missouri State Board of Health, St. Louis, August 8-9. Secretary, J. A. B. Adcock, Warrensburg.

California State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco. (Applications must be in August 4.)

Delaware June Report.—Dr. J. H. Wilson, secretary of the Examining Board representing president and fellows of Medical Society of Delaware, reports the written examination held at Dover, June 19-21, 1906. The number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 6, of whom 5 passed and 1 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Baltimore Med. Coll	(1906)	76.5
Jefferson Med. Coll	(1906)	83.6, 89.3
Medico-Chirurgical Coll., Phila	(1905) 83.3 (1906)	84.3

FAILED.

College.	Year. Grad.	Per Cent.
Baltimore Med. Coll	(1903)	69.2

North Dakota July Report.—Dr. H. M. Wheeler, secretary of the North Dakota Medical Examining Board, reports the written examination held at Grand Forks, July 3-5, 1906. The number of subjects examined in was 14; percentage required to pass, 75. The total number of candidates examined was 16, of whom 12 passed and 4 failed. Five reciprocal licenses were granted. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
College of P. & S., Chicago	(1904)	79.
Keokuk Med. Coll	(1898)	80.
University of Maryland	(1878)	81.
Detroit Coll. of Med	(1905)	80.
Hamline University	(1906)	84.
University of Minnesota	(1905) 82.; (1906)	82.
Western Reserve University	(1896)	75.
University of Toronto	(1905) 84., 85.; (1906)	89., 89.

RECIPROCAL LICENSES.

Denver and Gross Coll. of Med., by reciprocity with Wyoming (1905).
College of P. & S., Chicago, by reciprocity with Illinois (1905).
University of Iowa, by reciprocity with Iowa (1905), two.
Detroit College of Med., by reciprocity with Illinois (1901).

FAILED.

College.	Year. Grad.
National Medical University	(1905)*
Milwaukee Med. Coll	(1903)*
University of Toronto	(1906)*

Data for one candidate was mislaid. The candidate fell below 65. in two subjects.

* Percentage less than 75.

The following questions were asked:

MEDICAL JURISPRUDENCE.

1. (*a*) Give six commonly known signs of death. (*b*) Is it possible to determine to an absolute certainty, without postmortem,

whether or not death has in fact occurred, and, if so, how? 2. In matters of civil rights, what is considered a live birth by our laws and what manifestations of life would establish it medicolegally? 3. Give the usual motives which in a general way underlie malingering, and state what general observations would assist you in differentiating between the feigned and the real condition of a suspect. 4. Give a practical and reliable test of human blood stains and state the difference in color of blood of one dying from strangulation from that of one dying from suffocation by illuminating gas, and explain the cause of this difference. 5. Fully describe the symptoms of poisoning by each of the following: Belladonna or its active principle, bichlorid mercury and chronic lead poisoning, and the condition found in bodies after death from each of these poisons.

HISTOLOGY.

1. Give the histology of the spleen. 2. Give the histology of the heart. 3. Give the histology of the epithelia of the kidney, ureter, bladder and urethra. 4. Give the histology of the spinal column. 5. Give the histology of the skin.

PATHOLOGY.

1. What do you mean, medically, by a pathologic condition? 2. What are some of the cardinal indications of inflammation? 3. Give the pathology in cases of death from acute alcoholism. 4. What is the pathology of irritability of the bladder? 5. What is the pathology of hemophilia? 6. How many pathologic varieties are recognized in appendicitis? 7. What pathologic conditions occur in scurvy? 8. (*a*) Describe a process of granulation. (*b*) Define a slough. 9. What are cysts, how formed? Give the varieties of cysts. 10. In diabetes, what pathologic changes occur in the pancreas and liver?

PRACTICE.

1. What is chlorosis? Pathology, etiology, symptoms, diagnosis, prognosis and treatment. 2. Describe Hodgkin's disease and how differentiate between it and green sickness; prognosis and treatment. 3. Definition and nature of exophthalmic goiter; etiology, general symptoms, prognosis, treatment. 4. What is an aneurism? Causes. What can be done for them? 5. Define hematuria; etiology, diagnosis, prognosis, treatment. 6. What is pyuria? Etiology, diagnosis. 7. What is tetanus and how differentiate between it and strychnin poisoning? 8. Tell what you know about anthrax modes of infection. 9. How would you handle an incipient case of tuberculosis? 10. What would be your treatment of an uncomplicated case of parotitis? Name some of the complications and sequelæ.

DISEASES OF WOMEN AND CHILDREN.

1. Differentiate between salpingitis and extrauterine pregnancy. 2. Give some of the immediate and remote results of gonorrhea in women. 3. Describe your method of repairing a lacerated perineum. 4. Give causes of pathologic uterine hemorrhage. 5. Differentiate between a fibroid tumor and pregnancy. 6. Give treatment of dilatation of urethra in female. 7. Differentiate between measles, rotheln and scarlet fever. 8. Describe whooping-cough and give treatment. 9. Give incubation period of scarlet fever, measles, diphtheria and smallpox. 10. Write prescription for acute diarrhea in child 5 years old.

PREVENTIVE MEDICINE.

1. What is the difference between a contagious and an infectious disease? 2. Define the words (*a*) disinfectant, (*b*) antiseptic, (*c*) endemic, (*d*) epidemic. 3. Describe your care of a typhoid case to prevent infection of others. 4. What are the incubation periods of (*a*) smallpox, (*b*) diphtheria, (*c*) measles, (*d*) varicella? 5. Which is the best drinking water for constant use: distilled water, artesian water or water from a shallow well?

ANATOMY.

1. Locate and describe the brachial plexus, naming its branches. 2. Describe the wrist joint. 3. Describe the hip joint and name the ligaments. 4. Give the coverings of an oblique inguinal hernia. 5. What structures are divided in an amputation of the leg at the junction of the upper and middle thirds?

PHYSIOLOGY.

1. Give the function of the lungs and describe the various processes. 2. What changes does starch go through before being absorbed? 3. Describe the different kinds of muscular tissue and mode of action of each. 4. What is the cause of the first and second heart sounds? 5. Locate the centers of hearing, seeing and smelling. 6. How is animal heat produced, preserved and dissipated?

CHEMISTRY AND TOXICOLOGY.

1. What is meant by the term atomic weight? 2. What is specific gravity? 3. Define the terms acid, base and salt as used in chemistry. Illustrate. 4. Give in detail the quantitative test for urea, albumin and sugar in urine. 5. Give the test for indican in urine. What does the presence of a large amount usually indicate? 6. Give symptoms and treatment for poisoning by arsenic, bichlorid of mercury and carbolic acid. 7. Mention four common vegetable poisons. Give treatment for poisoning by the same.

MATERIA MEDICA.

1. Give composition and indications for use of (*a*) Blaud's mass, (*b*) Fowler's solution, (*c*) Dover's powder. 2. With what is ammonia carbonate incompatible? Give its dose. 3. Write a prescription for chronic constipation. 4. Write a prescription for pertussis in a child of 18 months. 5. Give the dosage and indications for the use of codein.

SURGERY.

1. How would you make a diagnosis between scrotal hernia, hydrocele and varicocele? 2. How would you treat a penetrating wound of the abdomen? 3. Give diagnosis and treatment for pyopneumothorax. 4. Give symptoms and treatment for depressed fracture of the skull. 5. Give the usual dislocations of the shoulder and manner of reductions.

EYE AND EAR.

1. Causes, symptoms and treatment of ophthalmia neonatorum. 2. Causes, symptoms and treatment of iritis. 3. Causes, symptoms and treatment of glaucoma. 4. Treatment of blepharitis marginalis. 5. Treatment of acute otitis media. 6. Symptoms and treatment of acute mastoiditis. 7. How do you remove foreign bodies from the ear? 8. How relieve pain in furunculosis of auditory canal?

OBSTETRICS.

1. Describe the mechanism of a case of normal labor. 2. Give the cause of miscarriage and describe the treatment in (*a*) threatened, (*b*) inevitable. 3. Mention four of the principal diseased conditions that may accompany pregnancy, and indicate briefly the treatment of each. 4. Give causes, diagnosis, prognosis and treatment of puerperal eclampsia. 5. Give method of procedure in a transverse presentation.

NERVOUS DISEASES.

1. Give causes, symptoms and treatment of facial paralysis. 2. How would you treat chorea and what complication would you look for? 3. What is meant by reflexes? Name and describe some of them. 4. What is infantile paralysis and how would you make your diagnosis? 5. Give symptoms and diagnosis of tubercular meningitis.

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Acad. of Ophthal. and Otol., St. Clair, Mich., Aug. 30-Sept. 1.
Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7.
Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.

AMERICAN ACADEMY OF MEDICINE.

Thirty-first Annual Meeting, held in Boston, June 2 and 4, 1906.

(*Concluded from page 302.*)

Sanitary Regulation of the School Room with Reference to Vision.

Dr. Casey A. Wood, of Chicago, said that were the ocular apparatus of the average child by nature adapted to the amount and kind of work he is ordinarily called on to do, the consideration of school hygiene would be unnecessary. Continual agitation of the importance of illumination in school rooms has led to the demand in Chicago for better built and better lighted school houses. Where artificial light is unavoidable, the light should resemble as nearly as possible diffuse sunlight, and should shine on the work to be done rather than into the eye of the pupil. While electric light is preferable to gas or kerosene, it is capable of greater harm to the vision and much more likely to produce eyestrain unless judiciously arranged. In the tinting of the walls each school room should be considered by itself: for example, if a room be situated above the ground floor, with a southern exposure, and facing a large space, and particularly with no obstructing building, the color may be light green, dull gray, or deep orange, relieved by lighter ceiling tint of the same color mixture. For the reverse condition a light buff or dull white was suggested.

The size of the letters, style of type, width of printed columns, spacing of words and lines, the color and texture of the paper of books are important factors in the prevention of eyestrain. The use of dull white paper printed with jet black ink, and the substitution of copying pads were advised. The necessity of the pen strokes being thick enough to read without eyestrain was emphasized. In the size of the school room, 25x30 feet was regarded as a probable maximum ground measurement. Allport's methods in the detection of diseased eyes and ears were considered of the most practical value. Dr. Wood favored the single, adjustable school desk, with sliding top. The desk should be adjusted at the beginning and in the middle of each school year. Recitations should not, for the first year, exceed ten minutes in length; the second year, fifteen minutes, which should be gradually increased to the maximum of forty-five minutes in the highest grade. Out of school hours the child under ten years of age should not read or study, but be given constructive manual work, with exercise out of doors. The rules of ocular sanitation are almost, without exception, in accord with other rules of personal hygiene, which is evidence of the dimly recognized truism that opthalmology is not an art or a science apart, but merely one chapter of the whole philosophy of healing.

Training of the Mentally and Morally Defective Child.

Dr. M. P. E. Groszman, of New Jersey, distinguished sharply between the lower grades of mental and moral defectiveness, such as would demand life-long segregation, and that class of children whose defects are less grave in character, and who are, therefore, trainable. Attention was called to defects in the sense organs, nasal troubles, catarrhs, digestive disturbances, adenoid vegetations as frequent sources of mental and moral derangement. A fundamental requirement in the training of defective children in a systematic physical régimen adjusted minutely to the individual case. The secret of training the mentally and morally defective consists merely in understanding the causes and conditions of the individual defects and trying to develop the child within his own limits, stimulating the weak powers for good and crowding out the lower impulses; in other words, a process of elimination and substitution and of concentrating the child's attention on higher motives.

Advantages or Disadvantages of Coeducation After the Age of Twelve Years.

Dr. G. Stanley Hall, of Clark University, suggested the disadvantages of coeducation after the age of 12; first, by the fact that it violates a custom so universal that it seems to express a fundamental human instinct. In all ages of history and in all stages of civilization, with few exceptions, the dawn of puberty is marked by segregation of the sexes, especially for every purpose that can be called educational. In the second place, the arguments against coeducation from custom are re-enforced by many more or less systematic observations of children themselves. In the family the age of 12 finds boys and girls more or less segregated. Sex distinctions should be pushed to their utmost at this age, the feminization of the American school should be checked. Finally, it was pointed out that in the biologic world the female is the agent of selection. She divines, discriminates, and the male acts, does and learns by doing. Here gonochorism or human dimorphism culminates and boys can best be educated by motor methods which, while they are in some respects also a boon to girls, are now opening up for boys a scope, range and power which are but just beginning to be seen. This is the education of the future, and just in proportion as ways are found and made to bring out all its resources, the more distinct will be the matter, methods and ideals of training for the two sexes. While the two circles representing the psychic life of each will always overlap and have some common area, that peculiar to each should and now seems sure for a time to increase.

Dr. William T. Smith, of Dartmouth College, said that the most obvious advantage of coeducation is economy. Another advantage mentioned is that the boys, being in possession of the educational treasures and traditions of the past, the best could not be secured by the girls at present, unless shared with them. The danger to the health of the girls in coeducation is greatly exaggerated. With proper care they more frequently improve in health. In the bearing of coeducation on the mental needs of girls, the girls average better work in the regular college curricula than the boys. The disciplinary course which is good for boys is equally adapted to the girls. Concerning coeducation in its effect on character development, women exert a refining influence on men and association with men in study gives a steadiness and continuity to the work of the women. Nature had ordained that with sex should go a separateness in daily activities. This obtains in business, in scientific, or literary, or civic work, and in the industries. The exceptions to this separateness are the family relations and those social activities whose impulse lies in sex consciousness. Daily competitive association of the sexes in college is not strictly "natural." That college spirit which is a potent factor in the development of young men and women is possible for either in its highest form only in separate colleges.

Dangerous Influences of Overtaxing the Girl's Mind, Particularly at Puberty.

Dr. A. P. Clarke, of Cambridge, mentioned as a potential influence in the overtaxing of the girl's mind her greater conscientiousness in her acquisition of knowledge than that of the boy. He advised against the forcing of girls of mediocre powers in work for which they have no special desire. The conventionalities of society might also react unfavorably. The offering of prizes is not without danger to the young girl. The hope was entertained that by the influences of better hygiene, the selection of plainer diet, by the help of gynecic medical science, the avoidance of unnecessary social demands, the dangerous influences encountered at the age of puberty may be counteracted.

Dr. L. Duncan Bulkley, of New York, stated that the human frame is but a machine, marvelous in its powers of self sustaining and self reproduction. Though infancy and childhood are well guarded, the age of puberty has not been seriously enough considered and guarded. From physiological reasons it would be expected that overtaxing the girl's mind at this time would naturally result in serious consequences. Clinical experience abundantly confirms this. He has seen many girls, often with trivial skin affections, who on close study were found to be in a lamentable state of ill health, all dating from mental or nervous overstrain in schools or colleges. He believes that many with unusual powers of health, or with most careful regulation of the whole manner of life, and with wise direction of the mental strain, can attain high educational conditions, but that far more suffer in their physical state and are permanently harmed than is commonly supposed. A great responsibility rests on the family physician and specialists who chance to see these patients, in early recognizing and properly treating the departures from perfect health which continually occur in girls being educated, and in giving repeated warning regarding the many elements causing derangement to health. Of these he instanced study too soon before or after meals, or before bedtime; insufficient or irregular hours of sleep; erroneous eating and drinking; eating between meals, etc. About the time of menstruation there should be less mental and physical exercise, and more rest.

Dr. Edward Cowles, of Waverly, said that much of the overtaxing was due to the failure of the home and school to coöperate. The solution of the problems would be more certainly attained by keeping in mind the fact that the reproductive processes as a whole and in all their contributing parts are essentially physiological. A physiological process can not of itself be regarded as a cause of disease. Interference with such processes may result in symptoms called pathological. On the mental side one of the notable dangers arises when the young girl is ignorant of the menstrual disorders. Careful and timely instruction should be imparted concerning the menstrual function. He emphasized the importance of the intelligent care of young girls, and of teaching them that there should be a healthy exercise of mind and body for the maintenance of good health, and of warning them of the dangers resulting from overtaxing the mind as well as the body.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Casey A. Wood, Chicago; vice-presidents, Dr. Wm. L. Estes, South Bethlehem, Pa.; Dr. James A. Spalding, Portland, Me.; Dr. Woods Hutchinson, Redlands, Calif.; Dr. Guy Hinsdale, Hot Springs, Va.; secretary, Dr. Charles McIntyre, Easton, Pa.; assistant secretary, Dr. Alex. R. Craig.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Regular Meeting, held June 27, 1906.

The President, Dr. Charles K. Mills, in the Chair.

Medical Aspect of the Smoke Problem.

Dr. J. Madison Taylor set forth the paramount importance of pure air for all to breathe, especially those who live in cities and large towns. All who are ill are made more susceptible to complications and their recuperative powers are impaired by a vitiated atmosphere. There is no reason why city dwellers should have such bad air as they get, except for the ruthless, contemptuous arrogance of corporations, railroads and large manufactories. Laws are made to regulate this: the cost of smoke combustion is little enough, yet there is a widespread disregard of these laws. They should be enforced. Physicians fail to discharge their duties unless they maintain a continuous propaganda, teach the people who should vote to enforce all enactments to limit nuisances. The housetop is a growing means of comfort and health and it is unfit to be so used so long as bituminous coal is used carelessly.

The Smoke Problem and Public Health.

Dr. W. M. L. Coplin stated that the control of the smoke nuisance rests with the department of boiler inspection, representatives of which claim that with proper stoking the pollution of the air by the smoke can be reduced to a minimum. Regarding the influence of the smoke on public health, the statistics are confusing and incomplete. Much experimental work has been done concerning the influence of the smoke on pulmonary structures, with the widest variations in deductions. By some it has been maintained that carbonaceous material in the lung is absolutely without influence on the pulmonary tissues, and by others that it had an immunizing effect to the infection by the tubercle bacillus. Other views have been diametrically opposed to these. One of the difficulties encountered in connection with the smoke nuisance is the deposit of relatively large amounts carrying with them organic materials, which would readily be disposed of under ordinary conditions. In the Philadelphia Hospital the deposit of soot was said to be far in excess of that of any previous year, due to the increased traffic, and to the use of soft coal in the neighborhood. There has been, however, no increase of morbidity or mortality in the wards directly exposed to the smoke over that of the wards relatively free of the soot deposit.

The discouraging aspect and that which must be advanced with hesitancy, lest it be used as an argument against the abatement of the nuisance, Dr. Coplin said, is that there is little evidence to show that the presence of smoke in the air increases especially the morbidity or the mortality of a community. However, as physicians familiar with the functions of the respiratory organs, the profession must conclude that the inhalation of such dust in some degree does interfere with respiratory function. Microscopical examination of sections of lung tissue shows an enormous amount of foreign material which must interfere with the interchange of gases in the lungs.

Relation of a Smoke-Laden Atmosphere to Diseases of the Nose and Throat.

Dr. C. J. Grayson believes that a long argument is not required to show that the nose and throat have very just cause for complaint against the smoke laden atmosphere of the city. Within a few months following the discovery of natural gas in Pittsburg it was said that the decrease of disease of the upper air passages was so great that nose and throat specialists were threatened with the loss of their livelihood.

Relation of Smoke-Laden Atmosphere to Diseases of the Eye.

Dr. L. Webster Fox noted the increased number of patients with external eye disease in the last three years and attributed this increase to the coal dust laden atmosphere caused by the substitution of soft coal for hard. During the last few years there have been recorded more cases of conjunctivitis and pink-eye than ever before in the history of the city. This is due to the gritty dust in the air, cutting the delicate conjunctiva and many times finding lodgment on the cornea, producing ulceration and making a culture spot for infective germs. He also spoke against the over sanding of the city railway tracks, loading of ash carts and the dry sweeping of the streets during business hours. The smoke evil, bad as it is, is a lesser evil than that resulting from the excessive distribution of sand along the trolley tracks. This, composed of minute particles of crystal, is ground to a powder and finds lodgment in the eye, nose and lungs. Inflammation results, leading to various conditions in the eye: to chronic catarrh; and to asthmatic conditions, or even to tuberculosis.

Practicability of Preventing the Smoke Nuisance.

Dr. Henry Leffmann referred to the investigation by mechanical engineers of the prevention of smoke from the burning of soft coal. The literature of fuel-engineering shows that there is no necessity for the emission of appreciable smoke from the stacks of stationary boilers. The appearance of such smoke is due to an oversensitive selfishness or a crass indifference and ignorance of modern progress. By oversensitive selfishness he meant a state of mind in which the desire for money-getting is so strong that the person became suspicious of every plan of improvement. The practicing chemist sees daily such a degree of indifference to the facts of science that he is prepared for evidence of crass ignorance in any field. The only way to enlighten such persons is to compel them by law to remedy the conditions. To prevent smoke from bituminous coal, regulation of the firing is necessary. The coal must be thrown on in small lots and allowed to coke at such a rate that the emitted hydrocarbons can be burned before they are dissociated with the separation of carbon. This slow firing, of course, necessitates either an increase in the number of firemen or the employment of machinery. The latter is preferable and entails little, if any, additional cost. Were the cost argument allowed to play, all sanitary and police regulation would end. The apparatus referred to is adapted to stationary boilers. For locomotives and boats much could be done by proper firing. A radical improvement was suggested by compulsory use of hard coal within city limits. The fuel value of escaping smoke is very small, and this is known to the fuel-user, who is, consequently, indifferent concerning this loss.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Gonorrhea.

In considering the treatment of gonorrhea, Sturgis and Cabot, in their "Manual of Venereal Diseases," state that of all the venereal diseases which require treatment, gonorrhea is the most uncertain and disagreeable. The treatment should consist in promoting the comfort of the patient, insuring the elimination of the gonococcus, and in avoiding complications. During the acute inflammatory stage, when the febrile symptoms are present, when the penis is hot, inflamed and edematous, and when the mucus membrane of the part is congested, associated with a mucopurulent discharge, the first object should be to relieve those symptoms. At this stage of the disease the injection is forbidden and will do harm if employed. To relieve the febrile symptoms the authors recommend aconite as follows:

℞. Tincturæ aconiti radicis............m. i-ii |06-12
Sig.: To be taken at one dose in a little water.

The foregoing is to be repeated every hour for five or six doses.

To relieve the edema and swelling of the penis cold water dressings are recommended. A better method, perhaps, is to wrap the penis up in a solution made up as follows:

℞. Liq. plumbi subacetatis |
Tincturæ opii, āā.......................℥i 30|
Aquæ, q. s. ad.......................℥viii 240|
Sig.: Apply locally on gauze.

With the institution of the foregoing treatment the severe symptoms will soon pass away. However, the desire to pass water frequently will still be present, due, not to an involvement of the neck of the bladder, but from reflex action due to involvement of the first inch of the urethra.

A very good suggestion is offered by the authors in instructing the patient to pass the urine while the penis is immersed under very warm water.

The diet at this stage must be of the lightest, such as milk and gruels, avoiding all stimulating foods and drinks. Injections are recommended at this time, using antiseptic preparations at first, and astringents during the decline of the disease.

As antiseptics, corrosive sublimate, a 1 to 10,000 solution, potassium permanganate, 1 to 5,000, silver nitrate, 1 to 6,000, are recommended as the most efficient during the early treatment of the disease. As the disease goes on to recovery and the gonococci grow less in number, the following combinations are of service:

℞.	Zinci sulphatis	gr. viii-xii		50-.75
	Aquæ	℥iv	120	

Misce. Sig.: To be used as an injection twice daily.

Or,

℞.	Zinci acetatis	gr. viii-xii		50-.75
	Aquæ	℥iv	120	

Misce. Sig.: To be used as an injection three times a day.

Alum, used alone, or in combination with tannin, has been advised in some cases. It may be combined as follows:

℞.	Alum. sulphatis	gr. xx	1	30
	Aquæ	℥iv	120	

M. Sig.: As an injection three times a day.

Or,

℞.	Alum. sulphatis			
	Acidi tannici pulv., āā	gr. x-xv		65-1.00
	Aquæ	℥iv	120	

M. Sig.: Shake well before using and inject three time a day.

The following combination is sometimes of value as an astringent:

℞.	Zinci sulphatis	gr. viii		50
	Plumbi acetatis	gr. xv	1	
	Tincturæ opii			
	Tincturæ catechu co., āā	ʒii	8	
	Aquæ, q. s. ad	℥iv	120	

Misce. Sig.: As an injection three times a day.

In some cases, it may be deemed advisable to give some internal medication. For this purpose the authors advise copaiba, cubebs, or oil of sandalwood. The following combination may be used for this purpose:

℞.	Copaibæ	ʒiii	12
	Oleoresin cubebæ	ʒi	4
	Magnesiæ, pulv., q. s		

Misce. Ft. capsulæ No. lx. Sig.: From three to six capsules three times a day.

Whenever any of the foregoing preparations are given it is better that they be given in capsule on account of the nauseating taste. They should always be given after meals in order to avoid any disturbance of the stomach, and thus to lessen the tendency to nausea, and they should not be given continuously for any length of time, as they may produce pain in the region of the kidneys.

Of all the complications chordee is the one that will cause the most concern and will be the most difficult to relieve. The method which is the most effective and reliable is a hypodermic of morphin and atropin given by the physician from the following solution.

Atropinæ sulphatis	gr. i		06
Aquæ distillatæ	ʒiv	15	
Liq. morphinæ (1-30) q. s. ad	℥i	30	

Misce. Sig.: From five to eight minims, hypodermically, as necessary.

The foregoing may be given in the perineum or in the sides of the thighs at bedtime. Internally, preparations containing camphor, opium, and belladonna afford the best results, as follows:

℞.	Pulv. camphoræ	gr. i	06
	Pulv. opii	gr. ii	12

Ft. Capsule No. vi. Sig.: One at bedtime and another in two hours if desired.

Other combinations of copaiba may be found serviceable, used internally, as follows:

℞.	Resinæ copaibæ	ʒiii	12
	Spiritus etheris nitrosi	ʒv	20
	Mucil. acaciæ	q. s.	
	Aquæ feniculi, q. s. ad	℥viii	240

M. Sig.: One tablespoonful after each meal.

The mixtura copaibæ composita of the National Formulary (Lafayette mixture) is of value in some cases of gonorrhea after the acute stage has passed:

℞.	Copaibæ		
	Tinct. lavendulæ co., āā	℥ii	60
	Liq. potassæ	ʒiv	15
	Spts. etheris nitrosi	℥ii	60
	Syrupi	℥v	150
	Mucil. acaciæ, p. s. ad	Oi	480

M. Sig.: To be well shaken, a tablespoonful after meals, in water.

Aërophagia.

The presence of air in the gastrointestinal tract, according to Billings and Salisbury in the Practical Medical Series, depends on either the production of gas by means of fermentation or the entrance of air from without. In the case of the stomach, contrary to the general opinion, the air enters from without and not from fermentation. In other words, it is swallowed gas. This condition is frequently observed in hysterical individuals. In such cases reliance should be placed on moral means, as remedies which tend to prevent fermentation and the accumulation of gas, and attempts to regulate the diet are useless and may do harm by drawing the patient's attention to the malady. The best remedy in such cases, according to the authors, is sleep and rest, and if need be, the latter may be induced artificially. In non-hysterical cases Stern recommends the introduction of the stomach tube to aid in the expulsion of the air, followed by irrigation of the stomach with from six to eight liters of water, to which has been added chloroform water in proportion of one c.c. to the liter of water. In some cases a teaspoonful of the following may be given for a few days following the irrigation:

℞.	Bismuthi salicylatis	ʒiiiss.	14
	Menthol	gr. xv	1
	Mucil. acaciæ, q. s. ad	℥iii	90

M. Sig.: One teaspoonful to be taken at one dose and repeated every three hours for one or two days.

In case the stomach tube is not used chloroform, turpentine or aromatic spirits of ammonia may be given by the mouth to assist in the expulsion of gas.

In accumulation of gas in the intestine an enema may be serviceable. In cases accompanied by severe pain, some preparation of opium may have to be resorted to. This may be given in the form of suppositories of opium and belladonna. Castor oil has been found to be of service in the experience of Stern in cases of tympany following aërophagia as follows:

℞.	Olei ricini	℥ss	15	
	Pulv. acaciæ	ʒii	8	
	Spts. chloroformi	ʒiiss	10	
	Codeinæ	gr. viii		50
	Tinct. vanillæ	ʒss	2	
	Saccharinæ	gr. viiss		48
	Aquæ, q. s. ad	℥iiiss	105	

M. Sig.: One teaspoonful every hour.

Hyperchlorhydria.

In the same periodical many authorities recommend, in cases of simple hyperchlorydria, the use of alkalies. The majority advise the use of bismuth and several suggest belladonna and atropin as valuable agents in relieving the condition. Bromids may be given in the morning and evening or after meals. For the alkaline effect, weak alkaline waters are recommended. The following combinations may be of value to counteract the excessive amount of hydrochloric acid:

℞.	Sodii bicarb	ʒii	8	
	Sodii salicylatis	gr. xxxv	2	30
	Sodii biboratis	gr. xxv	2	
	Aquæ dist.	℥xxx	900	

M. Sig.: One-quarter of this amount may be taken one hour after meals.

Or,

℞.	Potassii iodidi	gr. lxxv	5
	Sodii bicarb	ʒiiss	10
	Aqua dist.	℥vi	180

M. Sig.: One tablespoonful every three hours.

Or,

℞.	Magnesii oxidi			
	Bismuth subnit., āā	ʒii	8	
	Ext. belladonnæ	gr. iv		25

M. Ft. chart No. xxiv. Sig.: One powder after each meal three times a day for an adult.

Stockton recommends the following combination:

℞.	Cerii oxalatis	ʒi	4
	Bismuthi subcarb	ʒii	8
	Magnesii carb	ʒiv	15

M. Sig.: One-quarter to a whole teaspoonful in a third of a glass of water, two hours after each meal.

When constipation is present with drowsiness, torpor, headache and other evidences of disturbed digestion he recommends the following combination:

℞.	Potassii bicarb	ʒii	8
	Sodii bicarb	ʒiv	15
	Sodii et potass. tartratis	℥i	30

M. Sig.: One teaspoonful dissolved in half a glass of water at 10 a. m., 4 p. m., and 9 p. m.

Medicolegal

Seeing Patients in One State and Sending Medicine from Another—No Vested Right.

The Supreme Court of Missouri, Division No. 2, says that the defendant in the case of State vs. Davis had a room at the hotel in Memphis, Scotland County, Mo., professed to be a physician, and held himself out as such. One Hoover applied to him at the hotel as a physician for treatment. He diagnosed his case in the usual and ordinary way of practicing physicians, and prescribed remedies. His prescription for medicine, however, was in the form of a blank, which was required to be sent to the state of Illinois, and then the defendant would send the bottles of medicine to Hoover by express from Warsaw, Ill. Hoover took the medicine according to the defendant's directions, and according to the directions on the bottle. He paid the defendant at the rate of $5 per month for such treatment. The payments were made to the defendant and the defendant would come to the hotel for the purpose of seeing his patient, Hoover, the first Monday in every month. This, in the court's opinion, was clearly practicing medicine in Missouri as contemplated by the statute. The mere fact that the medicine was sent from Illinois did not in any way alter the construction placed on his acts, that he was a practicing physician in Missouri.

The practice of medicine, as contemplated by the provisions of the statute covering that subject, the court says, may consist only of the examination of a patient, diagnosing the cause of the trouble complained of, or, by one professing to be a physician, seeing the patient at stated intervals, and the indication and prescribing of remedies to be applied, and the acceptance of pay for such services. The mere fact that the remedies indicated and prescribed are sent from another state does not negative the idea that the defendant was practicing medicine or attempting to practice medicine in Missouri. It would not be an uncommon occurrence for a regular practicing physician of Missouri to examine his patients, diagnose the cause of their illness, and then say to them, "The remedies I indicate and prescribe you must obtain from the state of New York." This is not a case where the physician does not come to the state and undertake to secure patients, but simply furnishes blanks, which are sent to him in another state, and he sends the medicine in accordance with the requests; but here we have a person coming to Missouri, holding himself out as a physician, has patients visit him, examines them, advises them as to the nature and cause of their trouble, indicates the remedies to be applied, and accepts pay for such services. The bare statement of the two classes of cases makes manifest the distinction between them. The proof in this cause was amply sufficient to show that the defendant was undertaking to practice his profession in Scotland County, Mo., and, it being conceded that he was not a regularly registered physician in Missouri, and had no license from the State Board of Health to practice medicine, the testimony fully warranted the conclusion reached by the jury in their verdict finding the defendant guilty as charged, of practicing medicine without a license.

Moreover, the court says that it was clearly manifest that the defendant had no vested right to practice medicine in Missouri by virtue of his former practice there in 1857. On returning to the state to practice his profession, his qualifications, fitness, and skill to do so must be judged by the law in force at the time he so returns, and before he will be authorized to engage in the practice of his profession and reap the rewards from such practice, there is no reason why he should not comply with the conditions imposed on him by the law in force at the time he so undertakes to engage in the practice.

It is but common knowledge that the people who have ill health or whose families are troubled with disease are more easily and can be more readily imposed on by persons who represent themselves as physicians, claiming that they can give them permanent relief, than any other class; and it may be added that intelligence is no protection from impositions along that line, for, when a man is sick or his family ill, whether he be intelligent or ignorant, they readily give an attentive ear to any sort of a doctor who claims that he can give them relief, and are at all times ready to purchase and swallow all sorts of nostrums because they are recommended by some one who claims to be a physician. The prime object of the Missouri law on the subject of the practice of medicine is the protection of the people from the impositions herein indicated by persons who are not sufficiently skilled in the profession to authorize them to properly administer medicine, and therefore relieve the afflicted. And, again, the court says that it is apparent that the general assembly of Missouri, in the enactment of the provisions of law regulating the practice of medicine and surgery in Missouri, intended to fix a standard of fitness, skill and qualification which would authorize the practice of that profession. This law does not undertake to deprive any person of a vested right, for there can be no such thing as a vested right in the practice of medicine. It does not undertake to suppress or prohibit the practice of medicine or surgery, nor to prohibit any particular person from practicing as a physician or surgeon, but it simply undertakes to require the necessary and essential qualifications for that purpose.

Affliction with Loathsome Disease Cannot Be Condoned.

The Court of Appeals of Kentucky says that the defendant in the divorce case of Hooe vs. Hooe admitted that at the time of his marriage he had a loathsome disease, but averred that he was unaware of it, and claimed a subsequent condonation by his wife. Thus was presented the question of whether or not his wife had condoned or could condone the offense of which he confessed he was guilty by living with him after knowledge on her part of the fact that he had a loathsome disease. The Kentucky statute declares that "cohabitation as man and wife after a knowledge of adultery or lewdness complained of shall take away the right of divorce therefor." But without determining the question whether or not condonation is limited to these two offenses, the court is disposed to place the opinion in this case on the higher and broader ground that the offense charged in this action is one that the wife cannot condone by cohabiting with her husband, so as to deny her the right to obtain from him a divorce for this cause. Either a husband or wife might be willing and anxious to condone a single act or a series of acts of gross misconduct or cruel treatment, or other specific violation of the marriage obligation; but the affliction of a loathsome disease does not come within this rule. It is a continuing offense—not a distinct or separate grievance that may be forgotten and forgiven in a day or a week, or a species of misconduct that affectionate treatment and gentle behavior might obliterate. There is reason and justice in the doctrine that the injured spouse may, by his or her voluntary acts, committed with a full knowledge of all the facts, condone a vice or crime. The drunkard may, and often does, reform and become a useful and honest citizen, a good husband, and a kind father. A man who commits a crime may repent of his wickedness and lead an upright and valuable life. The husband, who in a moment of inexcusable passion behaves in an unkind and cruel manner toward his wife, may not be guilty of a like offense, and in these and other instances that might be cited, where a reconciliation is effected and the condonation of the injured party is complete, nothing may again occur to disturb the happiness of the home, or interfere with the felicity of the domestic relation, nor will children born of the marriage be afflicted in mind or body by the causes which once disrupted the marital state; but, when either one party or the other has contracted a loathsome disease that may be for all time menacing to the health, dangerous to the life, and distressing to the peace of mind and happiness of the parties, these reasons can have no application, and if, in an effort to avoid a threatened scandal, or prompted by a desire to attempt a reconciliation, or for other motives that the circumstances and surroundings may create, the wife should temporarily return to her husband, and make a fruitless endeavor to resume her duties and station as a wife and mother, she ought not to be thereafter denied the power of asserting her legal rights, if it becomes necessary to apply to the chancellor for redress or protection. It may have been declared to be the law in other jurisdictions that offenses such as this can be condoned, but it has never been so ruled in Kentucky. It was likely that the defendant, when he married, believed that he was well; but his innocence in this respect did not affect the question presented.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

July 21.

1 *Multiple Motor Neuritis, Including Landry's Paralysis and Lead Palsy. W. G. Spiller and W. T. Longcope, Philadelphia.
2 *Diet in Tuberculosis. H. M. King, Liberty, N. Y.
3 *Manifestations of Syphilis Associated with Pulmonary Tuberculosis. J. H. Pryor, Buffalo.
4 *Reflex Symptoms and Referred Pains Caused by Stone in the Kidney. S. S. Bradford, Montclair, N. J.
5 The Ophthalmoscope as an Aid to the General Practitioner. C. P. Franklin, Philadelphia.

1. **Multiple Motor Neuritis, Landry's Paralysis and Lead Palsy.**—Spiller and Longcope state that cases of rapidly developing paralysis of all four limbs are not common. They believe that many cases which are classed as Landry's paralysis are caused by neuritis. It is not justifiable, however, to assume this etiology for all. The writers do not discuss the subject of Landry's paralysis separately, but include it under the heading of multiple motor neuritis. They do not ignore the spinal form of this symptom-complex. They refer to the selective action of poisons for certain parts of the central or peripheral nervous system, and quote Arneth, who says: "We shall hardly err if we ascribe to the poison of Landry's paralysis an exclusive affinity for the central nervous system." The writers then review in detail three cases which might be classed as Landry's paralysis, but which they regard as atypical forms of multiple motor neuritis.

2. **Diet in Tuberculosis.**—King declares that disturbed metabolism is essential to the development of tuberculosis. If in all respects the cell is normally nourished it will be sufficiently resistant to the invasion of the tubercle bacillus. As a rule one is able to trace errors in nutrition antedating by months and often by years the probable period of infection in a given case. The diet question in the case of tuberculous invalids is more than one of calories. It can not be solved merely by arriving at theoretical standard amounts and relations of proteids, fats and carbohydrates. The tastes, habits and peculiarities of the patients and their heredity are important factors. Variety, preparation and the manner of serving foods are all important. Psychotherapy is more important in diet prescriptions, perhaps, than anywhere else. In the study of these cases the food requirements should be determined and met, if possible, and the dangerous error of overfeeding should be avoided.

3. **Syphilis Associated with Pulmonary Tuberculosis.**—Pryor, during the last two years has observed fifteen cases of syphilitic disease associated with pulmonary tuberculosis. He calls attention to a number of conclusions which he has drawn from his observations. Syphilis is a common disease, and physical debility combined with worry and mental distress which may accompany tuberculosis may arouse a latent syphilitic taint. The association of the two conditions may be disguised and the symptoms confused. In such cases the therapeutic test will often be required for the diagnosis of syphilis. Persistent fever above 99 F. in incipient tuberculosis, when the lesion is slight and when proper treatment does not secure improvement should be viewed with suspicion. Improvement in tuberculous cases following antisyphilitic treatment is most marked and at times surprising.

4. **Reflex Symptoms and Referred Pains Caused by Kidney Stone.**—Bradford gives the history of a patient whose principal symptoms were nervous exhaustion and pain and weakness of the lower extremities, movable right kidney, pyuria, retroversion of the uterus and defective circulation of the lower extremities. No improvement had resulted from change, travel, rest and various methods of treatment which she had undergone. The patient was a woman, 32 years old, a librarian. The family history was negative. The mental condition was excellent. A thorough examination was made in order to detect, if possible, evidences of organic trouble. It was found that while clear amber urine flowed from the right ureter, a thick whitish fluid came slowly from the left. An *x*-ray picture of the kidney confirmed the diagnosis of stone. Operation proved this diagnosis to be correct. The patient died on the third day after the operation. The writer suggests that the irritation in the kidneys or pancreas or both caused the so-called referred pain of head and brought about reflexly a spasm of the vasomotor nerves derived from the lumbar and upper sacral segments. This caused contraction of the blood vessels of the lower extremities. The ischemia in the nerve endings caused the deep-seated pain, and in the muscles the weakness.

New York Medical Journal.

July 21.

6 *Electrical Orientation in Spinal Anesthesia. J. L. Corning, New York.
7 *Tendon Transplantation and Grafting for Paralytic Deformities. S. L. McCurdy, Pittsburg.
8 *Is Neuralgia a Functional Disease? A. Gordon, Philadelphia.
9 Cancer of the Rectum. S. G. Gant, New York.
10 High Frequency Oscillating and High Periodicity Pulsating Currents in Medicine. R. Wilson, Montreal.
11 Early Diagnostic Signs of Tabes Dorsalis. C. S. Potts, Philadelphia.
12 Difficulties in Diagnosis of Cardiac Diseases, with Special Reference to Children in the Public Schools. N. Breiter, New York.
13 Morbid Processes in the Right Abdominal and Pelvic Regions of the Female, and their Distinction. J. A. Schmitt, New York.
14 Lumbar Puncture in Diagnosis and Therapeutics. P. W. Monroe, Springfield, Ill.

6. **Electrical Orientation in Spinal Anesthesia.**—In the method described, Corning makes use of the electrical excitation of the sensory filaments of the cauda equina, or of that of the sensory tract in the posterior columns of the spinal cord, as the means of determining the penetration of the membranes. He employs a slender hollow needle, five inches long, provided at the point of attachment of the syringe with an iron screw, by which means the end of an insulated conducting cord may be secured. The other end of this cord is attached to one of the poles from a faradic battery. A wire stylet for the hollow needle is also provided. The shaft of the needle is insulated throughout its entire extent, save only at the point, where about 1/32 of an inch is left bare. A coating of shellac of fine quality employed to achieve this insulation offers but insignificant hindrance to the introduction of the needle. The circuit is completed by placing a sponge on the abdomen, holding it in position by an elastic belt. The current must be strong enough to give rise to a considerable degree of frontal pain when the point of the needle is applied above the supraorbital nerve. Corning has employed the method successfully in two cases.

7. **Tendon Transplantation for Paralytic Deformities.**—McCurdy has not found it necessary to pass a wire through the foot and plaster-of-Paris to secure the tendons to the bones until union has taken place, as was advised by Sherman. He splits the periosteum and separates it from the bone, then tucks the ends of the tendon under this membrane, and thus

secures it with sutures. Three things are very essential, however: absolute asepsis, suturing the tendons under a moderate degree of tension and perfect retention of the member in the corrected position with plaster-of-Paris for from six to eight weeks.

8. **Is Neuralgia a Functional Disease?**—Gordon reports the results of a study based on the pathologic findings in eight cases of neuralgia. In the first four cases, occurring in three patients aged 65, 54 and 58 respectively, the blood vessels were uniformly thickened and presented a very narrow lumen. In the last four cases, occurring in patients aged 43, 34, 36 and 29 respectively, only a few blood vessels showed some thickening of their walls. The nerve bundles situated in the immediate vicinity of the altered blood vessels always showed a distinct degeneration. The degree of alteration of the blood vessels always was in proportion to the degree of nerve degeneration and the number of degenerated nerve bundles. The duration of the disease was found not to have any special bearing on the degree of involvement of the nerves. As the result of his findings Gordon concludes that the occurrence of degeneration of the peripheral nerve is frequent, if not constant, in neuralgia. This nerve degeneration is very probably a primary condition, which as a neuritis assumes an ascending course and involves secondarily the Gasserian ganglion. The blood vessels undoubtedly play a certain rôle in the causation of a degenerative state of the peripheral nerve. Gordon urges that it is highly important to remove surgically a nerve affected with so-called neuralgia as early as possible after a short trial of medical treatment is given.

The Boston Medical and Surgical Journal.

July 19.

15 Medical Department of the Japanese Army. C. Lynch, U.S.A.
16 *Therapeutics Based on Pathologic Physiology. R. C. Cabot, Boston.
17 *Use and Abuse of Pulmonary Gymnastics in Tuberculosis. E. O. Otis, Boston.
18 *Id. H. B. Dunham, Rutland, Vt.

16. **Therapeutics Based on Pathologic Physiology.** — Cabot claims that treatment based on pathologic physiology is not the best type of therapeutics, neither is it the worst. It occupies a position intermediate in value and efficiency between etiologic treatment and symptomatic treatment. It is based on theories of the nature and trend of the body's reaction against the morbific agent. Treatment based on pathologic physiology can be effective only by ascertaining and respecting the physical and psychical peculiarities of each individual and the relations in which he stands to his family, his work, his education, his place of residence and many other aspects of his environment.

17. **Pulmonary Gymnastics in Tuberculosis.**—Otis believes that experience has shown that no harm results from the employment of pulmonary gymnastics in properly selected cases, nor than any appreciable influence is produced on the course of the disease, except that the patients feel better and imagine that deep breathing is beneficial to them. He defines the suitable cases as those which are in the process of arrest, with no acute symptoms and in good or improving general condition, and the incipient cases, with little or no activity and with no marked evidence of general deterioration. The so-called rest cases, the acute or non-quiescent cases, are unsuitable for pulmonary gymnastics. Otis says that it is obvious that pulmonary gymnastics are to be applied with the same discrimination and individual application as any other form of treatment. Indiscriminate use of them can only be followed by the same results as the indiscriminate use of any other remedy.

18. **Id.**—For several years a large number of the patients at the Massachusetts State Sanatorium have practiced a simple deep breathing exercise, lasting about one minute, four times daily. During a period of about three years Dunham measured the lung capacity of each of these patients every sixty days. He thinks that the breathing exercises tended to enlarge the chest capacity. In no case was a patient discharged unimproved who had developed an increase in lung capacity, whereas failing health was always associated with a marked decrease in the number of cubic inches of air the lungs contained. In regard to irritation of the diseased area by respiratory movements, the statistics show that the wearing of a belt in place of suspenders has always been attended by benefit and never by harm, and that the wearing of suspenders and discarding of the belt has, in at least one case, been associated with the onset of the disease.

Of about thirty patients who were told to practice shallow breathing for a period, four were in bed with high fever before the fourth day, and in another set of patients on the same experiment a patient had her first severe cold on the very next day following instructions. In order to make a perfectly fair test of the two modes of respiration, all the patients continued with the same amount of exercise ordinarily prescribed, but during one period were instructed to take deep breaths regularly at stated intervals, and at another period were instructed to practice only shallow breathing. To insure this latter, the patients were made to wear a slight splint in the form of a swathe, so as to immobilize the upper thorax during the period in which the test was made. Almost all the patients who were selected for the experiment had moist râles and tubercle bacilli still present in their sputum, although the general condition was excellent and improvement in symptoms had been satisfactory. During the period of experimenting, two weeks, the conditions of rest and exercise remained the same. It was demonstrated that in many cases of tuberculosis in which moist râles and bacilli in the sputum are still present the breathing exercises can be indulged in without injury. There were no exacerbations during the period of deep breathing. There were several exacerbations during the period of shallow breathing. The patients all preferred the deep to the shallow respirations. They either felt the same or slightly better during the deep breathing period. The average gain in weight was greater during the period of deep breathing.

Lancet-Clinic, Cincinnati.

July 21.

19 Treatment of Chronic Arthritis Resulting from a Distant Local Infection, Especially that of the Mucous Cavities. B. Holmes, Chicago.
20 Ideal Attitude of Physician toward Alcohol, as a Medicine, a Food, and a Beverage. W. E. Shaw, Cincinnati.

New York State Journal of Medicine.

July.

21 Rôle of Pure Cow's Milk in Infant Feeding. A. Jacobi, New York.
22 *Echinococcus Cyst of the Liver. R. S. Fowler, Brooklyn.
23 Clinical Diagnosis of Status Lymphaticus. L. A. Conner, New York.
24 *Postoperative Acute Dilatation of the Stomach. J. C. Macevitt, New York.
25 By What Data, Signs or Symptoms can a Cure of Syphilis be Determined? J. M. Liebermann, New York.
26 History of the Medical Society of the State of New York. (Continued.) J. J. Walsh, New York.

22. **Echinococcus Cyst of Liver.**—Fowler reports 10 cases of echinococcus cyst of the liver observed by him, and considers the differential diagnosis of tumors of the liver in general.

24. **Postoperative Dilatation of the Stomach.**—Macevitt reports the case of a woman, aged 29, who complained principally of pain in the right and left iliac regions, great weakness and nervous depression, with derangement of the stomach and marked dyspeptic symptoms. A diagnosis was made of pyosalpinx. A supravaginal hysterectomy was performed, with removal of the left tube and ovary, the right having been removed two years previously at an operation for ovarian cyst. For three days after the operation there was almost constant vomiting, pain in the wound and over the stomach, with eructation of gas. On the fourth day the temperature rose to 101; there was little vomiting, but much pain all over the abdomen, which was distended, tense and painful to touch. The vomitus became fecal in character; the abdominal distension continued to increase. On reopening the abdomen the stomach was found to be enormously distended, completely filling the abdominal cavity and extending into the pelvis. The stomach was emptied of its gaseous contents by means of a stomach tube. Rectal feeding and gastric lavage were resorted to with gratifying results, the patient being discharged cured on the twenty-second day.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

July 15.

27 Limitations of Surgery in Diseases of the Kidneys. D. S. Fairchild, Des Moines, Iowa.
28 *Indications for Surgical Operations During Pregnancy. A. E. Benjamin, Minneapolis.
29 *The Physician as an Independent Therapeutist and Prescriber. and an Opponent of Quackery in General. W. A. Chamberlin, Owatonna, Minn.
30 The Diseased Faucial Tonsil and its Operative Treatment. W. B. Murray, Minneapolis.

28. **Operations During Pregnancy.**—Benjamin urges that all pregnant women who have had any former abdominal disease, or who have unusual symptoms during the pregnant state, should be examined carefully and their former histories studied for any abdominal or pelvic diseases which might interrupt pregnancy or endanger the life of the mother. He believes that operations, when performed carefully, on a pregnant woman do not necessarily cause the uterus to expel its contents, nor do they, when indicated, result in additional danger to the patient. On the contrary, they may be life-saving by removing a diseased organ before walled-off micro-organisms break through the enveloping membrane and the poison is disseminated throughout the abdomen, or from pressure, pain, etc., uterine contractions expel the fetus.

29. **Physician as Independent Therapeutist.** — Chamberlin claims that there are three classes of physicians on whom manufacturers may depend to a certainty to act as the media for furnishing recommendations and to solicit patronage for their products: 1. Those incompetent to formulate a rational and strictly scientific prescription adapted to the individual case under consideration. 2. That class who are too indolent, or, in common parlance, too lazy to do so. 3. A smaller number who account themselves too busy to bestow a thought on other better and more common-sense methods. He says that the habit of prescribing proprietary preparations, known or unknown, conduces to mental apathy and carelessness on the part of the principal, to inaccuracy regarding constituents and dosage and to uncertainty as to expected results, often imposing an unnecessary burden of expense on the patient, as these medicines are usually furnished to the trade at exorbitant prices.

Virginia Medical Semi-Monthly, Richmond.

July 12.

31 Importance of the Early Recognition of Gallstones. A. E. Reeves, Farnham, Nebraska.
32 Medical Materialism. Insurance Fees, Expert Testimony, etc. J. H. Pierpont, Pensacola, Fla.
33 Case of Hodgkin's Disease. W. H. Atkinson, Washington, D.C.
34 *Case of Tic Douloureux. L. Keller, Ironton, Ohio.
35 Six Cases of Epidemic Jaundice in the Young. E. W. Robertson, Onancock, Va.
36 Principles of Surgery. S. McGuire, Richmond.

34. **Tic Douloureux.**—Keller reports the case of a man who had suffered severely from neuralgia, particularly of the lower jaw on the right side. He had his teeth extracted; the inferior dental nerve was removed; he tried all kinds of remedies and forms of treatment, including the climatic, but he got only very slight temporary relief. During the removal of the inferior dental nerve a branch of the facial was cut, which produced paralysis of the supraorbital muscles of the right side, a condition which still exists. Finally, as a last resort, 25 drops of a 1.5 per cent. solution of osmic acid were injected into and around the nerve at the mental foramen, posterior palatine, and superior and inferior orbital foramina. After the first injection the pain ceased, except in the roof of the mouth. Two weeks later the posterior palatine foramen was injected. One week after this the pain left and it has not returned since. The patient now has atrophy of the muscles of the right side of the face, paralysis of the right supraorbital nerve and profuse secretion of saliva from the right parotid gland, but otherwise enjoys good health.

Pennsylvania Medical Journal, Athens.

July.

37 The Physician, His Rights, Duties, and Liabilities under the Laws of Pennsylvania. W. S. Diehl, Scranton.
38 *Neglected Incomplete Rupture of the Perineum and its Cure. J. C. DaCosta, Philadelphia.
39 Office Treatment of Hemorrhoids. W. M. Beach, Pittsburg.
40 *Thyrotomy Versus Laryngectomy. C. Jackson, Pittsburg.
41 Effect of Tobacco on the Nose, Throat and Ear. L. S. Somers, Philadelphia.
42 The Ophthalmoscope as a Diagnostic Instrument. J. J. Brown, Bloomsburg.
43 Urinalysis. C. F. McDowell, Newcastle.

38. **Neglected Incomplete Rupture of Perineum.**—The cystocele which usually accompanies a neglected incomplete rupture of the perineum Da Costa repairs by making a large oval submucous denudation with a pair of blunt-pointed scissors, the denuded mucous membrane being then removed by scissors bent on the flat. Interrupted stitches of chromicized gut or of silk are used to close the wound, the needle entering the mucous membrane about an eighth of an inch from the edge of the denudation, going directly across under the tissues, picking up the raw surface and emerging on the other side about an eighth of an inch from the edge of the wound. These stitches when tied make a firm dense ridge or band in the median line of the vagina. The perineorrhaphy is then done in the manner described by Da Costa in 1881.

40. **Thyrotomy Versus Laryngectomy.**—Jackson claims that if cancer of the larynx is discovered early the comparatively slight operation of thyrotomy will cure it. If discovered late total or partial laryngectomy will probably prolong life for a variable period, but recurrence is fairly certain and the short extension of existence lacks many pleasures and comforts. The early curable stages of laryngeal cancer are characterized by nothing but the hoarseness, which may disappear and recur. In the curable stage the patient may consult the physician to get something for a cold that he can not shake off, without any idea of the serious condition, thus throwing the physician off his guard. Cough, odor, pain, odynophagia, glandular involvement, external swelling, emaciation, cachexia, etc., are present only after the curable stage is passed. In early thyrotomized cases the prognosis as to cure is better than in chronic laryngitis.

Journal of the Medical Society of New Jersey, Newark.

July.

44 Study of Structure in its Relation to Practical Medicine. J. Tomlinson, Bridgeton, N. J.
45 Oration on Surgery—Medical Society of New Jersey. T. W. Harvey, Orange, N. J.
46 *Proprietaries, Physicians and Proprieties. F. M. Corwin, Bayonne.
47 Causes of Irritative Cough. J. W. Martindale, Camden.
48 Treatment of Pulmonary Tuberculosis. T. W. Corwin, Newark.

46. **Proprietaries, Physicians and Proprieties.** — Corwin attempts to show that each and every time a physician is beguiled into prescribing or recommending some nostrum he is forging for himself the fetters of habits which in time place him entirely at their mercy and leave him enrolled in the army of the supporters of nostrums, humbugs and fakes of all kinds. Corwin believes that there are many meritorious and worthy articles among the proprietaries, articles which no wide-awake, up-to-date physician can afford to be without, but for every one of these meritorious preparations there are a dozen or more which have no valid claim for consideration. Physicians should familiarize themselves with the Pharmacopeia, he says, but should not adhere to it literally, because to do so would be to block the wheels of progress. The Pharmacopeia is supposed to reflect the needs of the medical profession. Corwin suggests in this connection that if the profession took more interest in the Pharmacopeia it might be made more comprehensive, and hence, perhaps, more useful. He places the blame for much of the facility with which physicians are led into the use of nostrums on a deficient education and knowledge of materia medica and pharmacology. He suggests that every physician familiarize himself thoroughly with the properties of thirty or forty useful drugs, and their most palatable and convenient preparations, and that he avail himself of the knowledge possessed by some up-to-date pharmacist. The physician need not fear that he will be exposing his ignorance, because the druggist, in all probability, is familiar with his prescriptions and knows all about the doctor's knowledge of therapeutics. He will consider this an exhibition of confidence in him on the part of the doctor, and it will only serve to elevate the latter in the opinion of the former. A better understanding of each other will be mutually beneficial.

Physicians should ignore altogether the preparations of secret compositions and the alleged synthetics put out by some unknown house, which exists solely for the purpose of making and selling a few specialties. These articles of secret composition are no more worthy of confidence and patronage than are the so-called "patent medicines" which are advertised to the laity as cures for every known ailment. He also urges shunning all proprietaries which, while perhaps in themselves unobjectionable, have been exploited or marketed in such a way as to become well-known to the general public and to be found in the department stores. The surface of the earth has now been raked over so carefully by the searchers for the useful that it is safe to assume that about all the plants and trees and minerals of any known or supposed therapeutic value have been brought to the pharmacologic laboratory and made to yield up their active principles for medicinal use, so that the profession may well look with suspicion an any alleged preparation of a hitherto unknown plant. With synthetics the case is different.

The Post-Graduate, New York.

July.

49 Cases Illustrating Panas' Operation for Strabismus and Diplopia. E. S. Peck, New York.
50 Etiology of Diabetes Mellitus. F. E. Sondern, New York.
51 Surgical Complications of Diabetes. S. Lloyd, New York.
52 Lisbon and its Medical Congress. R. Guiteras, New York.
53 Relation of the Lymphocytes to the White Blood Corpuscles. M. Einhorn, New York.
54 Case of Convergent Strabismus; Panas Operation. D. B. St. John Roosa, New York.

Archives of Otology, New Rochelle, N. Y.

June.

55 Symptoms and Treatment of Sinus and Jugular Thrombosis. B. R. Kennon, Norfolk, Va.
56 Infective Sinus Thrombosis; Varieties of General Infection and Treatment. A. Knapp, New York.
57 Two Cases of Grave Complication of Purulent Ear Disease Operated on. J. S. Barr, Glasgow.
58 Functional Examination of the Hearing with Tuning-Forks in Monolateral Deafness, with Deductions on Bone Conduction and the Function of the Sound-Conducting Apparatus. Bezold, Munich.
59 Incorrect Deductions from Experiments with Tuning-Forks on the Function of the So-called Sound-Conducting Apparatus. G. Zimmermann, Dresden.

Texas Medical News, Austin.

June.

60 Rectal Feeding. T. J. Bennett, Austin.
61 Joint Wounds. H. Hill, Austin.

Annals of Otology, Rhinology and Laryngology, St. Louis, Mo.

June.

62 An unusual Growth of the Mastoid Process, Fibrochondro-osteoma of the Mastoid Antrum. S. M. Smith, Philadelphia.
63 Indication for Operative Interference in Mastoiditis Associated with Acute Suppurative Otitis Media. T. M. Hardie, Chicago.
64 *Case of Primary Syphilitic Infection in the Nose. J. T. Campbell, Chicago.
65 Case of Abscess of the Temporosphenoidal Lobe of Otitic Origin. J. J. Kyle, Indianapolis.
66 Indications and Contraindications for Intralaryngeal Operation in Tuberculosis of the Larynx. C. F. Welty, San Francisco.
67 Mouth-Breathing in Relation to Mental and Moral Hygiene. R. A. Harris, Los Angeles, Cal.
68 An Operation for the Painless and Bloodless Removal of Submerged and Adult Tonsils. F. B. Kellogg, Los Angeles.
69 Section of Temporal Bone; Temporal Bone of Child; Metal Cast of Ear. H. Hastings, Los Angeles.
70 Eustachian Catheterization Through the Mouth. H. A. Kiefer, Los Angeles, Cal.
71 Demonstration of Sequester of the Temporal Bone Obtained During a Mastoid Operation. H. L. Wagner, San Francisco.
72 A New Tonsillotome. E. Pynchon, Chicago.
73 Nasal Obstruction a Cause of Deafness. D. H. Trowbridge, Fresno, Cal.
74 Morphology and Embryology of the Nasal Fossæ of Vertebrates. L. Dieulafe.

64. This paper appeared in The Journal, May 5, 1906, p. 1352.

Medical Standard, Chicago.

July.

75 Notes from Nothnagel's Clinic. G. B. Hassin, Chicago.
76 Gastroduodenal Dilatation (in Splanchnoptosia). B Robinson, Chicago.
77 Citrate of Soda in Infant Feeding. J. W. Vanderslice, Chicago.
78 Practical X-ray Therapy. N. M. Eberhart, Chicago.

Journal of Nervous and Mental Disease, New York.

July.

79 The Position of the Atypical Child. W. H. Groszmann.
80 Neuritic Type of Progressive Muscular Atrophy. A. Church, Chicago.
81 Syringomyelia, with Involvement of Cranial Nerves, probably, A Syringobulbia. A. Church, Chicago.
82 Hereditary Cerebellar Ataxia and General Paresis. H. T. Patrick, Chicago.

Journal of the Arkansas Medical Society, Little Rock.

July 15.

83 *Ainhum. O. M. Bourland, Van Buren.
84 *Ophthalmia Neonatorum. R. H. T. Mann, Texarkana.
85 Abettors and Accomplices of Fraud. W. Breathwit, Draughon.

83-84. See The Journal, May 26, 1906, p. 1641.

Vermont Medical Monthly, Burlington.

July 15.

86 Cerebrospinal Meningitis. G. R. Pisek, New York.
87 Id. W. S. Phillips, Arlington, Vt.
88 Two Cases of Infantile Scurvy. B. D. Colby, Sudbury, Vt.
89 Standard Remedies in the Treatment of Diseases. J. H. Judkins, Northfield, Vt.

St. Louis Courier of Medicine.

July.

90 Relation of Syphilis to Cancer of the Mucous Membrane. W. P. King, Kansas City, Mo.

Medicine, Detroit, Mich.

July.

91 Visual Hallucinations on the Blind Side in Hemianopsia. C. W. Burr, Philadelphia.
92 Ornithodoris Moubata, Murray; A Disease-Bearing African Tick. F. C. Wellman.
93 Jaundice, with Special Reference to its Diagnostic Value. C. E. Hansel, South Bend, Ind.
94 Sterility in Women; Its Causes and Management. E. A. Schumann, Philadelphia.
95 Prognosis of Pulmonary Tuberculosis as Determined by the Morphology of the Tubercle Bacillus in the Sputum. R. C. Rosenberger, Philadelphia.
96 Points on Dietary in Disease. H. B. Hollen, Fond du Lac, Wis.
97 Surgical Aspects of Gastric Dyspepsia. J. B. Deaver, Philadelphia.
98 Hyperesthesia of the Gastric Mucous Membrane and its Treatment. J. D. Steele, Philadelphia.

Medical Herald, St. Joseph, Mo.

July.

99 *Club Foot, with Special Reference to the Postoperative Treatment. M. M. Edmonson, Kansas City.
100 Indirect Effects of Valvular Lesions. W. F. Milroy, Omaha, Neb.
101 Note on the Improper Management of Epileptics. M. R. Hughes, St. Louis.
102 Suprapubic Cystotomy as a Preliminary to, and as a Route for the Performance of a Considerable Number of Prostatectomies. W. T. Elam, St. Joseph.
103 Pathology of Lobar Pneumonia. A. J. Cramp, Milwaukee.
104 Neuroses. W. T. Marrs, Jewett, Ill.

99. See abstract in The Journal, April 7, 1906, p. 1055.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 7

1 *Points in the Surgery of the Lung. W. Macewen.
2 *Borderland of Epilepsy. W. R. Gowers.
3 Neurasthenia; Its Nature and Treatment. D. Drummond.
4 *On Cancer. S. Wilks.
5 *Opsonic Theory and Its Practical Application to Medicine and Surgery. G. W. Ross.
6 *Opsonic Index of Tuberculous Patients Undergoing Sanatorium Treatment. G. A. Grace-Calvert.
7 *Electro-Motive Changes in Heart-Block. G. A. Gibson.

1. **Points in Surgery of Lung.**—In this, the Cavendish lecture, Macewen discusses the physical, physiologic and pathologic phenomena met in dealing with human lungs and their pleuræ.

2. **Borderland of Epilepsy.**—According to Gowers, the affection which constitutes by far the largest number of these borderland cases is vertigo, that variety which is produced by labyrinthine disease. The differential diagnosis of this form of vertigo and epilepsy is discussed in full and illustrative cases are cited.

4. **Cancer.**—Wilks calls attention to the fact that as early as 1857 he pointed out that cancer cells showed no special characters which could differentiate them from all other cells and that his theory of cancer was that if these cells did not do their duty and follow their destination so as to produce natural tissue, but continued to increase in number without developing, they formed a mass or tumor to which the name of cancer was given. He does not favor the germ theory of cancer.

5. **Value of Opsonic Index in Diagnosis.**—Ross has been using opsonic methods in the diagnosis of tuberculosis for the

past nine months in the every-day work of a hospital which has largely to do with pulmonary tuberculosis. The result has been a very satisfactory one. In the diagnosis of the chronic forms of pulmonary tuberculosis from similar and non-tuberculous diseases he has used with success the opsonic reaction in the malignant disease of the lung, chronic bronchitis and emphysema, bronchiectasis and general stability. He believes that in the diagnosis of early phthisis difficulties that now exist will be overcome, and that the estimation of the tuberculo-opsonic index will eventually prove of material assistance in the diagnosis of many of these cases.

6. **Opsonic Index of Sanatorium Patients.**—Calvert reviews the present knowledge of the value of being familiar with the opsonic index of tuberculous patients who are undergoing treatment in the sanatorium.

7. **Electro-motive Changes in Heart-block.**—The patient who furnished Gibson the opportunity of investigating the electromotive heart-block was a man, aged 56, who had suffered from acute pneumonia on two occasions and who had had several attacks of bronchitis. During the last two years he has had attacks of faintness, occurring at varying intervals, and during the same period he has had severe pain in the chest, with a sense of constriction. The arteries were thickened and nodular, but not distinctly tortuous. The rate of the pulse is 36. It is perfectly regular. The pressure is high. A distinct impulse is seen in the sixth intercostal space close to the anterior axillary line. The borders of the heart extend two inches to the right and five inches to the left of mid-sternum. On auscultation there is a loud blowing systolic murmur heard over the whole precordia and propagated for a considerable distance in every direction over the chest. The maximum intensity of this murmur is in the mitral area. No other murmur is audible. The second sound is clear and ringing, especially in the aortic region; it is sometimes reduplicated. There are no pulmonary symptoms, and the physical signs of the chest reveal no abnormality. The renal functions are healthy. As regards the digestive system, there is slight increase in the size of the liver. The nervous system gives no obvious symptoms except the faintness, giddiness and pain already mentioned. The radial pulse yields a tracing, showing a quick ascent and a slow descent; in its features it closely resembles the pulsus bisferiens; it has a few little waves on the line of descent. Simultaneous tracings of the jugular and radial pulses show distinct undulations of the venous pulse between the radial pulsations, and the same may be said of the simultaneous tracing obtained from the apex and the radial artery. In each cycle there is a distinct wave seen in the apex beat intermediate between the principal pulsations.

When examined by means of the fluorescent screen the dissociation of auricular and ventricular movements could be seen clearly. The auricles contracted three or four times, as a rule, for each ventricular systole. Gibson studied the electromotive changes by means of Waller's apparatus. Leading off from the basal region of the precordia to the acid, and from the apical to the mercury, the usual diphasic movements of the capillary column were clearly seen preceding the apex beat, and evidently resulting from ventricular systole. But in the interval between these movements other smaller waves were distinctly seen and can only be attributed to the systole of the auricles. As these latter movements were small, as observed by the direct method with the microscope, it was impossible to be certain of their exact character, but they seemed, like the ventricular, to be diphasic. When thrown on the screen by means of the projection microscope they were obviously diphasic in their character.

The Lancet, London.

July 7.

8 *Myelitis. J. S. R. Russell.
9 *Tuberculosis of the Cecum, Ileocecal Valve and Appendix. C. B. Keetley.
10 *Means of Checking the Spread of Sleeping Sickness. J. L. Todd.
11 *Note on the Action of the Serum of Various Mammals of the Bacillus Pestis. G. Lamb and W. H. C. Forster.
12 *Old and the New in Ocular Therapeutics. A. M. Ramsay.
13 Medical Attendance on the Working Classes. J. H. Keay.
14 *Two Cases in which Gastroenterostomy was Performed in the Course of Operation for Perforated Ulcer. E. Ward.
15 Case of Cyanosis with Polycythemia. J. W. Russell.
16 *Case of Hematomyelia due to Trauma. W. A. Rees.
17 *Motor-Driver's Spine. W. J. Burroughs.
18 Throat Affections. W. H. Kelson.
19 *Lenhartz Treatment of Gastric Ulcer at the Eppendorfer Krankenhaus, Hamburg. J. V. Haberman.

8. **Myelitis.**—In discussing the treatment of this condition Russell says that nothing can compare with mercury, and that mercury rubbed in is to be preferred to mercury given by the mouth. Whether the mercury is rubbed into other parts or not, it should certainly be rubbed along the spinal column.

9. **Tuberculosis of Cecum, Ileocecal Valves and Appendix.**—Keetley believes that general tuberculous peritonitis often arises in tubercle of the cecum or in the mesocecal glands. Whenever laparotomy is performed for that disease the cecum, mesocecum and appendix should be examined carefully for tubercles, and at least in males, the question should be entertained of incising in the iliac region rather than in the median line. He also points out that there might be a fair hope of curing ileocecal and appendiceal tuberculosis without excising the disease, by an ileostomy combined with suitable general treatment. He has seen good results ensue from treating extensive tuberculous ulceration of the rectum with fistulæ by simple scraping combined with an inguinal colotomy, kept open until the tuberculous ulceration had healed thoroughly.

10. **Check of Sleeping Sickness.**—Todd urges the institution of suitable quarantine measures to prevent the further spread of sleeping sickness in the Congo basin, which has been due in great measure to the increase of travel following the opening up of the country. The measures recommended are: (1) The establishment of medical posts of inspection along the trade routes leading from infected to uninfected districts, and (2) the removal of infected persons from posts in infected districts to places already infected. The disease may be detected in its earliest stages, when the patient often is apparently well and makes no complaint, by the existence of enlarged lymphatic glands in the neck. Trypanosomes can easily be found in the juice aspirated from such glands by means of a hypodermic syringe.

11. **Action of Mammalian Serum on Bacillus Pestis.** — The experiments conducted by Lamb and Forster show that normal mammalian serum is devoid of any bacterial action on *Bacillus pestis.*

12. **Ocular Therapeutics.**—Ramsay gives a brief historical review of the progress made in refraction and in the use of mydriatics, antiseptics, anesthetics and analgesics, and serum therapy.

14. **Gastroenterostomy for Perforated Gastric Ulcer.**—In the first case reported by Ward, that of a man, aged 55, who had irregular attacks of severe abdominal pain for thirty years, the operation was commenced six hours after the onset of the last attack. The perforation was close to the pylorus, was about three-eighths of an inch in diameter, of the usual punched-out appearance, with widespread thickening, induration and puckering of the walls of the stomach and duodenum. Four sutures of stout Pagenstecher thread were placed very widely, infolding about three-fourths of an inch on each side of the opening and placing the ulcer at the bottom of a steep gutter. This procedure practically closed the pylorus and a posterior gastroenterostomy was done according to Littlewood's method. The patient has resumed his ordinary activities and is now quite well in every respect.

The second patient, a man, aged 39, suffered from pain in the stomach about two years, when he was suddenly seized with a very violent pain in the abdomen, radiating from the umbilicus. On opening the abdomen there was seen a circular opening about three-eighths of an inch in diameter on the anterior upper surface of the duodenum, well beyond the pylorus and almost inaccessibly recessed under the liver. The opening was closed by Lembert sutures passed very widely. When this was completed it was seen that the infolding of the stiffened tissues had occluded the duodenum, necessitating the gastroenterostomy, which was performed by the anterior method. The patient made a perfect recovery.

16. **Hematomyelia.** — Rees reports a case of hematomyelia caused by a fall from a wagon, the patient striking the back of his head and shoulders on the ground, in which the reflexes

were present on the patient's admission to the hospital, about half an hour after the accident. He ascribes this to the fact that the hemorrhage had not finished extending, as the patient was seen so soon after the accident. On the third day the reflexes were entirely abolished. They reappeared at the end of the first week. No spinal-myosis was noticed in this case.

17. **Motor-driver's Spine.**—Burroughs adds another occupation disease to the already lengthy list. The affection was noted in a strong, healthy looking man, aged 34, who was a motor omnibus driver. After an unusually hard day's work he complained of persistent acute pain, which he referred to the right hip and which became so intensified by pressure that he was unable to lie on that side. He also noticed a dull aching pain across the loin, more pronounced on the right, and he was unable to move the right leg, which he described as being so painful that he could scarcely bear the weight of the bedclothes on him. Burroughs is uncertain whether to ascribe this condition to a constant jarring or to excessive muscular effort required to start the machine. The patient eventually recovered.

19. **Lenhartz' Treatment of Gastric Ulcer.**—The treatment of gastric ulcer employed at the Eppendorfer hospital in Hamburg, Germany, according to Haberman, briefly is as follows: Absolute rest in bed for at least four weeks. All mental excitement is avoided. An ice bag is placed on the stomach and kept there almost continually for two weeks. This prevents gaseous distension, prompts contraction of the stomach walls, thus tending to obviate hemorrhage, and eases the pain when present. On the first day, even where hematemesis has occurred, the patient receives between 200 and 300 c.c. of iced milk, given in spoonfuls, and from two to four beaten eggs within the first twenty-four hours. At the same time bismuth subnitrate is given twice or thrice a day, two grams pro dosi, and continued for ten days. The eggs are beaten up entire (with a little sugar) and the cup containing them is placed in a dish filled with ice, so that they remain cold. Sometimes a little wine is added. This food at once "binds" the supersecreted acid and therefore mitigates the pain rapidly and causes the vomiting, often quite troublesome, to cease. The portion of milk is increased daily by 100 c.c., and at the same time one additional egg is given, so that at the end of the first week the patient is receiving 800 c.c. of milk and from six to eight eggs. Both these foods are now continued in the same amount for another week. For reasons given above, no more than one liter of milk a day is allowed at any time. Besides milk and eggs, some raw chopped meat is given from the fourth to the eighth day, usually on the sixth, 35 grams a day, in small divided doses (easily stirred up with the eggs or given alone); the day after 70 grams, and later possibly more if well digested. The patient is now able to take some rice or "greiesbrei," well cooked, and a few zwieback (softened). In the third week quite a mixed diet is tolerated, the meat being given well cooked or lightly broiled. All heavy foods are, of course, interdicted, as well as vegetables with husks, etc., and those tending to produce flatulence. At the same time the patient is given strict orders to masticate his food thoroughly. The bowels are not to be moved, both in order to avoid any peristaltic irritation and to permit the reabsorption of blood that may have passed into the intestine. In fact, one need pay absolutely no attention to constipation in the first week, even in many cases to the end of the second. After the second week the bowels are moved with small glycerin injections or warm water, and after the third week this is done daily if a movement does not occur spontaneously. After this one tries to control the bowels by means of the food and by getting the patient to go to stool regularly. For the anemia iron is given in the form of a soft preparation of Blaud's pills:

R.	Ferri sulphatis	ʒiiss	10|
	Magnesii	gr. xxx	2|
	Glycerini	gtts. xxx	2|

Misce. et div. in pil No. lx. Sig.: Two pills to be taken two or three times a day.

The majority of patients are cured in forty-eight weeks. In no case has it been manifest that any unfavorable effects are produced by the treatment.

Journal of Tropical Medicine, London.

July 2.

20 Further Report on Measures Taken in 1901 to Abolish Malaria from Klang and Port Swettenham in Selangor, Federated Malay States. E. A. O. Travers, and M. Watson.
21 Anatomy of the Biting Flies of the Genera Stomoxys and Glossina. (To be continued.) G. M. Giles.

Intercolonial Medical Journal of Australasia, Melbourne.

May 20.

22 Intestinal Obstruction due to Reflex Nerve Disturbance. C. P. B. Clubbe.
23 Open Air Treatment of Consumption. A. A. Lendon.
24 *Experience of the New Tuberculin. T. R. Koch, W. H. Brown.
25 *Appendicectomy an Hour after Parturition. J. W. D. Hooper.
26 *Two Interesting Surgical Cases. J. M. Baxter.
27 Case of Symphysiotomy. J. W. D. Hooper.
28 Lymph Lavage in the Treatment of Certain Skin Diseases. H. Lawrence.
29 Food Factor in Disease. A. J. Turner.
30 Case of Congenital Syphilis (Spirochæta Pallida Demonstrated). F. H. Cole, and H. D. Stephens.

24. **Experience with Koch's New Tuberculin.**—Brown reports three cases of tuberculosis of the bladder in which the new tuberculin was used successfully.

25. **Appendicectomy Complicating Pregnancy.**—Hooper reports a case which is rather unusual. At 10 o'clock in the morning the patient was perfectly well. At 2:30 p. m. and again at 3 p. m. she vomited and had considerable pain. Hooper saw her half an hour afterward and found her lying on the bed on her left side, with the right knee drawn up and a very anxious expression on her face. The pulse was 120, full and regular; temperature, 99. There was no albuminuria. The right iliac region was exceedingly tender and the diagnosis of acute appendicitis was made. The following morning there was still tenderness on pressure over the appendix, and there was also some swelling. Temperature and pulse were practically normal. The patient was removed to the hospital for operation, but on the way the labor pains commenced, and at 3:30 p. m. the labor terminated naturally. At 4:15 p. m. an appendicectomy was performed and disclosed an appendix of large size about ready to rupture. The patient recovered.

26. **Interesting Surgical Cases.**—The first case reported by Baxter was one of abscess in the neighborhood of the base of the bladder, which burrowed its way into the groin, simulating an irreducible femoral hernia. The second case was one of appendicitis, the pain being referred to the right kidney, so as to simulate disease of that organ. The appendix pointed toward the right kidney.

Revue de Gynécologic. Pozzi's, Paris.

Last indexed XLVI, page 1653.

31 (X, No. 2.) *Nouvelle Méthode d'hystérectomie abdominale totale. H. Chaput.
32 *La tuberculose du col de l'utérus (cervix). A. Pollosson and H. Violet (Lyons).
33 Sur le traitement chirurgical de l'ulcère calleux pénétrant de l'estomac. R. Leriche (Lyons). Two cases.

31. **Improved Technic for Total Abdominal Hysterectomy.**—Chaput follows Kelly's method of abdominal hysterectomy except in regard to the hemostasis and the closure of the wound left in the pelvis. In a series of 50 cases there has been only one death and this could not be ascribed to the intervention. The operation is as simple, he says, as the radical treatment of a hernia. This is due to his method of walling off the pelvis (*cloisonnement élevé*). After removing the uterus and the adnexa, the flap of peritoneum from bladder and uterus is brought up to the superior strait or inlet of the pelvis and sutured across it, thus forming a floor and separating permanently the small pelvis from the large cavity. Theoretically, it would seem impossible to spread such a small flap over such a large expanse. But in fact the flap is so elastic that it can easily be stretched to fill the space, and it is a simple matter to suture it to the peritoneum of the inlet or superior strait, including the sigmoid loop where it projects into the strait, with care not to leave crevices along the sides of the sigmoid loop. He uses a continuous silk suture with curved needle. Catgut, he says, is absorbed too rapidly. He gives an illustration of an abruptly curved trocar forceps to use in ligating the ligaments, and a broad, flat, curved malleable retractor, to which instruments he attributes some of his success. He never drains through the anterior abdomen, but introduces a drain, 2 cm. in diameter, into the vagina through the abdomen, suturing it to the cut surface of the

vagina. His total technic includes in turn ligature of the upper part of the two broad ligaments, cutting the peritoneal vesico-uterine flap, ligature of the lower part of the right broad ligament, opening the anterior vaginal cul-de-sac and complete detachment of the vagina, ligature of the lower part of the left broad ligament, hemostasis of the posterior vaginal cut surface with an over-and-over catgut suture, holding the parts exposed with his malleable retractor, then introduction of the drain into the vagina, suturing it to the wall of the vagina, and finally the shutting off of small pelvis with the flap of peritoneum sutured across the inlet above. His trocar forceps are used to pierce the broad ligaments, the hole thus made is enlarged by spreading the blades, and a thread is drawn through as the forceps is withdrawn. It is impossible for a ligature to slip, applied in this way, and hemostasis is perfect. If there should be a little oozing at the juncture of the two pedicles into which the ligament is tied off, a few stitches are taken at this point. He confines the patient to liquid diet for the first three days. The evening of the third day he orders an enema. If this brings a good passage he commences the next morning with ordinary light food. If the enema is not followed by stool he repeats it on the succeeding days until the desired result is obtained. He rarely gives a purgative after a laparotomy.

32. **Tuberculosis of Cervix.**—Pollosson has encountered 2 cases of tuberculosis of the cervix, and has collected 55 from the literature. He reviews and gives the details of this total of 57 cases. His conclusions in regard to treatment are all in favor of reasonably conservative measures. When the adnexa are sound he would restrict intervention to vaginal amputation of the cervix, hoping to cure the generally concomitant tuberculous processes in the uterus by local measures after amputation of the cervix. In case of advanced lesions, abdominal total hysterectomy is indicated, as also in case of apparently extinct foci. The traumatism of amputation of the cervix might rearouse the process, and hence an abdominal total hysterectomy is preferable.

Revue de Médecine, Paris.

Last indexed XLVI, page 1891.

34 (XXVI, No. 2.) Nitrogen Metabolism in the Tuberculous—Echanges azotés chez les tub. H. Labbé and G. Vitry.
35 Influence du sel sur le travail (salt and working capacity). C. Féré.
36 *Diagnostic de la tuberculose. Mérieux.
37 *Traitement des paraplégies spasmodiques par des exercices. M. Faure.
38 L'éclampsie puerpérale. De Bruinc P. van Amstel.
39 (No. 3.) *Les anémies des tuberculeux. M. Labbé.
40 *Recherches histologiques sur l'écorce cérébrale des tuberculeux (cortex). Laignel-Lavastine.
41 (No. 4.) Cas d'acromégalie sans hypertrophie du corps pituitaire avec formation Kystique dans la glande. Widal Roy, and Froin.
42 L'angoisse au cours de la paralysie générale. C. Féré.
43 Les représentations obsédantes hallucinatoires et les hallucinations obsédantes (obsessions). S. Souchanoff.
44 Une variété clinique de l'insuffisance mitrale expliquée par certaines dispositions anatomiques du système vasculaire. S. Salaghi.
45 *Origin of Sleep.—Origine du sommeil. Etude des relations entre le sommeil et le fonctionnement de la glande pituitaire. A. Salmon.

36. **Indirect Diagnosis of Tuberculosis.**—Instead of injecting tuberculin into a supposed tuberculous patient, Mérieux reverses the procedure and injects serum from the patient into a tuberculous guinea-pig. The serum acts in the same way as the ordinary reaction to tuberculin, sending the animal's temperature up or down if it is from a tuberculous individual. On the other hand, if the individual is not tuberculous there is no temperature reaction in the guinea-pig after injection of the serum. This indirect test was described in The Journal when it was first published in 1904. Mérieux has now applied it in 94 cases, and in every instance the course of the case confirmed the findings of the test. He calls the serum from the blood or a blister the "reactional tuberculous product" to distinguish it from tuberculin which is elaborated in cultures of the bacilli. These "reactional tuberculous products" injected into a guinea-pig from three to six weeks after it has been infected with tuberculosis cause a thermic reaction between the second and sixth hours, and again usually between the twenty-fourth and thirtieth hours. The temperature varies by one or two Centigrade degrees from the preceding temperature of the animal. It generally rises, but may drop. The second change in the temperature may last for several hours and the animals seem depressed.

37. **Exercises in Treatment of Spasmodic Paraplegia.**—Faure reports excellent results in 40 cases of permanent contracture of the legs from some lesion or irritation of the spinal motor centers, in which he trained the patients in passive and active exercises. His method is by brief periods of exercise, with intervals of rest, continued through months. The exercises were repeated once or twice a day for from one to three months, with an interval of from one to several months of rest. One patient was under treatment thus for four years, but one year was generally the limit. The cure or improvement has been permanent to date in some cases after an interval of from two to four years. Two of his patients are completely restored and can run and jump; 2 can walk normally; 7 can walk with slight traces of their former trouble; 13 can walk, but rather jerky, and 10 can walk with a little effort. Four patients were unable to complete the course and 2 are still obliged to use a cane or crutches, although their condition is much improved. Fifteen had been entirely helpless before treatment was commenced.

39. **Anemia in the Tuberculous.**—Labbé distinguishes several varieties of anemia in the tuberculous. Pallor may exist without anemia, or with slight or pronounced anemia, actual chlorosis. Anemia may be present without pallor. These different conditions require different treatment.

40. **The Cortex in Tuberculosis.**—Lavastine has made a special study of the cortex in tuberculous cadavers. He was impressed with the frequency of liver lesions and believes that poisons resulting from insufficiency of the liver have a considerable share in production of the cellular lesions found in the cortex. It shows the influence of toxins in many respects in nearly every case.

45. **Sleep and the Hypophysis.**—Salmon hazards the suggestion that physiologic sleep may be essentially due to some internal secretion of the pituitary body, a hypothesis which, he thinks, harmonizes perfectly with the conception of the trophic and antitoxic function of the hypophysis in relation to the nerve centers. He presents fifteen arguments to sustain this assumption, eight based on the somnolence observed in acromegaly and other affections in which there is hypertrophy of the hypophysis, and in conditions in which the secretions—including those of the hypophysis—are augmented, as in mild pilocarpin intoxication. Also in all affections liable to induce hyperemia in the hypophysis, as in drunkenness, epilepsy, injuries to the skull, etc. On the other hand insomnia is noted when the hypophysis is destroyed or is undergoing degeneration, also in exophthalmic goiter, in which this gland has sometimes been found exceptionally small and hard, also in old age and in inanition, when the blood pressure is reduced, and in neurasthenia, which is characterized by low vascular tone and general hyposecretion. Sleeplessness is also noted in intoxication from atropin, which has an inhibiting action on the secretions, and, lastly, under the influence of emotions. This assumption explains also the disturbances in sleep in diseases such as diabetes, in which the glands with an internal secretion are all more or less affected. It also throws light on the disturbances in sleep accompanying changes in the sexual organs and in the nose, and in pregnancy, etc.

Berliner klinische Wochenschrift.

46 (XLIII, No. 17.) *Zur Kenntnis des Skorbuts. H. Senator.
47 *Fall von Herz-Neurose und Arteriosklerose nach Trauma. Goldscheider.
48 *Examination of Fresh Blood in General Practice.—Das native Blutpräparat in seiner Bedeutung für den praktischen Arzt. G. Krönig.
49 *Zur Kenntnis der Lysol-Vergiftung (intoxication). J. Wohlgemuth.
50 *Syphilitischen Erkrankungen der Cirkulations-Organe bei acquirierter Lues. C. Bruhns.
51 Beziehungen der Radium-Emanation in der Gasteiner Therme zu deren Heilkraft. L. Wick. (Concluded.)
52 Mountain Climate.—Ueber Höhenklima mit bes. Berücksichtigung der deutschen Alpen Osterreichs. E. Epstein.
53 *Helio-Therapie der Psoriasis. M. Guhr.

46. **Study of Scorbutus.**—Senator reports research on the blood and blood-forming organs in a case of scorbutus ter-

minating fatally in about a month. The patient was a girl of 15, a servant, who for a month had been working in furs. The red blood corpuscles constantly declined in numbers to about a sixth of the normal proportion, and the hemoglobin sank still more rapidly, while the leucocytes constantly increased and the blood picture in general became that of severe simple subacute or chronic posthemorrhagic anemia. No micro-organisms could be cultivated from the blood or blood-forming organs. Nothing specific was found postmortem, the organs showing merely the hemorrhages and anemia, except for hypoplasia in the left lung and the uterus.

47. **Neurosis of Heart and Arteriosclerosis in Consequence of Trauma.**—A previously healthy man of 26 was struck on the head by a falling brick at his work. He was unconscious for a time and later vomited and suffered from headaches, trembling, exhaustion and other neurasthenic symptoms. The pulse was 120 and increased to 144 and 180 during exercise; the hands and feet were cold and clammy and the reflexes exaggerated. He returned a year later with a pulse of 120 when reclining, and the arteries were then found tortuous and the walls indurated; the heart was hypertrophied. The case is described in detail, showing the unmistakable development of hypertrophy of the heart and of arteriosclerosis after an accident. The connecting link was the nervous acceleration of the heart rate at once after the trauma. It was merely nervous at first as there were no signs of organic changes, and the dependence of the pulse on the nervous phenomena was shown by the increasing pulse during the Romberg test.

48. **Examination of Fresh Blood in General Practice.**—Krönig pleads for the more general microscopic examination of fresh blood instead of the tedious technic of staining and mounting dried blood. The drop of blood is drawn directly on the cover-glass and then dropped on the slide, both slightly warmed. A little practice will show the superiority of this simple technic and the instructive findings. With it he was able to detect among other things the histologic changes in the blood corpuscles in cases of poisoning from phenacetin, from potassium chlorid, and from maretin.

49. **Lysol Poisoning.**—Wohlgemuth had occasion to examine the black urine of an insane man of 50 after he had ingested a quantity of lysol. The over-saturation of the body with cresol, the main constituent of the lysol, had induced an enormous production of glycuronic acid, while all the preformed sulphates had vanished from the urine. They were eliminated as ethereal sulphates. All the free sulphuric acid had combined with the cresol.

50. **Syphilitic Affections of Circulatory Organs.**—Bruhns reviews the achievements of the last few years in the domain of syphilitic affections of the vascular system. As they are so insidious in their development they should encourage the physician to continue intermittent treatment of syphilitic patients without waiting for manifest symptoms to develop. Especially during the first three or four years after infection, when even the slightest symptoms call attention to the vascular system, intermittent treatment is imperative, as there is probably some predisposition on the part of these organs. The youthfulness of the patients speaks against arteriosclerosis. The success of mercurial antisyphilitic treatment decides the diagnosis, but for it to be really instructive the physician must not be content with minimal dosage, but must apply an intensive course of treatment, such as 30 to 40 inunctions of 4 gm. or the like, with corresponding iodin preparations. If such a course fails to influence the symptoms then syphilis can be safely excluded.

53. **Sun Baths for Psoriasis.**—Guhr has been very successful with sun baths in the treatment of psoriasis, and as a preventive against its recurrence. The patient lies exposed, the head shaded, for from twenty to fifty minutes. The effect is enhanced by giving the sun bath in an open box to exclude the cold air and to keep in the warmth. The scales drop off and the effect of the sun on the exposed corium is distinctly curative. The patient takes a cold douche afterward and goes for a short walk.

Deutsche Medizinische Wochenschrift, Berlin and Leipsic.

54 (XXXII, No. 23.) Ueber den Nachweis von Spirochæte pallida in tertiär-syphlitischen Produkten Doutrelepont and Gronven.
55 Participation of Diaphragm in Erb's Paralysis.—Mitbeteiligung des Phrenicus bei Duchenne-Erbscher Lähmung. P. Moritz.
56 *Ueber Pneumococcen-Peritonitis. Robbers.
57 *Ueber Antiperistaltik des Magens (of stomach). S. Jonas.
58 *Jodoform-Behandlung der Lepra. Diesing.
59 *Zur Behandlung von Schwarzwasserfieber (black-water fever). Dammermann.
60 Roentgen Pictures in relief.—Herstellung plastisch wirkender Röntgenogramme. Albers-Schönberg.
61 Wire Gauze Electrodes.—Ersatz des Vierzellenbades. O. Galle.
62 (No. 24.) *Zur biologischen Diagnose von Infektions—Krankheiten. C. Bruck.
63 *Beitrag zur Typhusdiagnostik. W. Pöppelmann.
64 Eine Mitteilung ueber Bauchbinden (abdominal bandages). W. Ebstein.
65 Cure of Contractures by Spinal Anesthesia.—Heilung hysterischer Kontrakturen durch Lumballähmung. Wilms.
66 Zur Technik und Indikations Stellung der Spinal-Analgesie. Pochhammer.
67 Die Herstellung von Dauerpräparaten aus Harnsedimenten (durable preparations of urine sediments). E. Wolff.
68 Cost of Building Hospitals.—Ueber die Baukosten von Krankenhäusern. H. Schmieden and J. Boethke.
69 Tuberculosis and Insurance. Zur Tuberculose-Bekämpfung durch die Landes-Versicherungsanstalten. G. Heimann (Berlin).

56. **Pneumococcus Peritonitis.**—Robbers describes 3 cases, all terminating in recovery after evacuation and drainage of the abscess. Two of the patients were women and one a girl of 6. A tendency to spontaneous healing has never been observed in an adult with pneumococcus peritonitis. If the pneumococcus infection is diagnosed early, either by the clinical signs or by the discovery of pneumococci in the blood, it might be well to inject antipneumococcus serum. In children pneumococcus peritonitis displays a marked tendency to spontaneous cure, but active surgical intervention should always be considered and not delayed until the patient is much debilitated by fever and lack of nourishment.

57. **Antiperistalsis in the Stomach.**—Jonas states that antiperistaltic movements were observed in the stomach in 6 cases at Holzknecht's Roentgen Institute at Vienna. The skiagrams are reproduced. In 5 cases there was unmistakable stenosis of the pylorus, and the pyloric region was altered in the other case. The subject is discussed from various standpoints.

58. **Iodoform Treatment of Leprosy.**—Diesing has previously reported excellent results from treatment of leprosy with subcutaneous injections of iodoform in 2 cases, and now adds 3 more to the list. The iodoform was well tolerated by the patients and the treatment was continued for from six to twelve weeks. He uses a 30 per cent. iodoform olive oil emulsion, injecting from 2 to 8 c.c. at various points. After two weeks of treatment the nodules begin to subside. These experiences show, he claims, that the maximal dose of the Pharmacopeia can be increased in some cases by 150 per cent. without injury, and that these large doses of iodoform can be long continued without symptoms of intoxication. He believes that this intensive treatment with iodoform should be given a trial in tuberculous joint and other affections.

59. **Treatment of Blackwater Fever.**—Dammermann had occasion to treat a number of cases of blackwater fever during a residence of three or four years in southwest Africa, and has become convinced that the fatal termination is due to intoxication from retained urine, the uriniferous tubules becoming choked. To relieve or to prevent this, milk should be given copiously and diuresis be stimulated by a tablespoonful of a 2 per cent. solution of potassium acetate every hour or so. If milk cannot be obtained or is not tolerated, water should be given in its place, or large enemas of physiologic salt solution. Malarial patients who have blackwater fever after taking quinin should substitute the quinin with a decoction of folia Combreti Raimbauthii, 24 gm. to 1,500 gm., sipped during the day. His experience has shown that this drug deserves wider use in malaria, and he urges the German authorities to import it in larger quantities from the African colonies. It is a native remedy and proved life-saving in some of his cases.

62. **Biologic Diagnosis of Infectious Diseases.**—Bruck remarks that the specific diagnosis of infectious diseases by agglutination, by the determination of staphylo-antilysins, and

of bacterial substances in the blood serum, is based on the determination of specific antibodies generated during the infectious disease in question. These methods require that the diseased organism must be capable of producing antibodies, and that the organism must have been under the influence of the infection long enough for the antibodies to have been produced in sufficient amounts. Wassermann and Bruck have now perfected a method which fills the gap between the direct and the indirect technic. It is based on the presence of even the minutest amounts of the substance of dissolved bacteria in the body fluids. These substances proceeding from the bacteria are found in the body fluids before there is any production of antibodies, and consequently enable the disease to be diagnosed before the stage at which agglutination, etc., are possible. This specific biologic test is the inhibition of hemolysis. They have been able to detect the presence of the specific substance of tubercle bacilli in the blood serum by this means, even in the very earliest onset of acute generalized miliary tuberculosis, in dubious pleuritic effusions, and in 2 cases of epidemic cerebrospinal meningitis with the aid of a prepared meningococcus immune serum.

63. Simple Test for Typhoid Bacilli in Blood.—Pöppelmann spreads the fresh drawn blood on from one to three object glasses so that it covers one-half the glass. When dry they are placed upright in a small glass vessel or pomade box so that the film of blood projects into the staining fluid. He uses the R. May-Grünwald stain and technic which does not require the heating of the blood. After from two to six minutes in the stain the object glass is transferred for a minute to a vessel containing distilled water, and is then rapidly dried by standing upright in a warm place or between filtering paper. The typhoid bacilli stain blue and the red corpuscles orange. Better results were obtained with blood drawn in the morning than when the fever was at its height. If no typhoid bacilli can be discovered, the presumption is strong against typhoid fever, as his findings were constantly positive in all cases in which the course proved the disease to have been typhoid. The detection of diphtheria bacilli and of typhoid bacilli with these smear preparations is extremely simple, and is accurate enough for the general practitioner. He has found by this means gonococci in the purulent secretion of children's vaginas in many cases in which the idea of gonorrhea had not occurred to any one. It is important also to determine the causal germs in puerperal infection, as the discovery of putrefaction bacilli indicates curettement and a favorable prognosis in comparison with streptococci.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed XLVI, page 1404.

70 (LXXXI. Nos. 2-4.) *Ueber die auf der giessener Klinik erzielten Erfolge bei der Radikal-Operation des Mastdarm Carcinoms (of rectum). K. Richter.
71 Ueber Atresia ani vesicalis. F. Lotsch.
72 *Zur Kenntnis der Harnröhren-Steine (urethral stones). H. Finsterer.
73 Firearm Wounds in Peace.—122 Fälle von Schussverletzungen aus der Berner chir. Klinik, 1872-1904. J. Halter.
74 *Ueber Blasensteine (bladder stones). C. Goebel.
75 *Murphy Button in Gastrointestinal Surgery.—Anwendung des Murphyknopfes in der Magen-Darm-Chirurgie von 1896-1905. L. Gelpke.
76 *Zur plastischen Deckung der Haut-Defekte nach Brust-Drüsen-Exstirpation (of mamma). E. Payr.
77 *Importance of Trauma for Origin and Growth of Tumors, especially of Cancer of the Stomach.—Bedeutung des Trauma für das Entstehen und Wachsthum der Geschwülste, speziell des Magencarcinoms, mit diesbezüglichen Fällen. E. Menne.

70. Remote Results of Radical Operation of Rectal Cancer.—Richter reviews the 64 cases of carcinoma of the rectum operated on by Poppert. The Hochenegg preliminary resection of the sacrum was done in all but one case. Four patients succumbed, one to postoperative pneumonia, one to iodoform intoxication, one in collapse five days later, and in the fourth case the tumor was found inoperable. Recurrence is known in 38 per cent. of the cases, while 20 patients are still living without recurrence, 8 of them more than three years since amputation and 9 more than three years since resection. One patient is still in good health fifteen years after the operation, 2 over thirteen years, 6 over seven years, 2 over six years, 4 over four years and 3 over three years. Another patient had recurrence after extirpation of the rectum in 1886 and has had two later operations performed. The last was fifteen years ago and the patient lived free from recurrence to this year, when he succumbed to apoplexy. Only 3 of the patients are incontinent, but 6 are only relatively continent after amputation and 2 after resection. Complete continence is known in 9 after resection.

72. Urethral Calculi.—Finsterer remarks that he was able to find records of only 14 instances of calculus formation in the female urethra, while more than 200 cases in the male have been published. In a series of 76 cases in males the age was under 20 in 10, under 30 in 7, under 40 in 8, under 50 in 15 and between 50 and 80 in 14. The prognosis is generally favorable, although Rörig has recently published a case in which a very large stone in the prostatic urethra caused fatal injury of the rectum. Attempts to crush the calculus in the urethra are dangerous. The stones were multiple in a number of the cases.

74. Urinary Calculi in Egypt.—Goebel states that lower Egypt is a hotbed of lithiasis, especially of urinary calculi. Lithiasis is comparatively rare in upper Egypt. The difference between these two provinces in respect to lithiasis coincides with the difference in the prevalence of bilharzia affections, for which lower Egypt is likewise a hotbed. Goebel is inclined to attribute etiologic importance to the bilharzia in respect to lithiasis. The desquamation of epithelium in the bilharzia bladder is very profuse. He remarks that it might be interesting to classify the countries in which lithiasis is prevalent by the predominant ages of the persons affected; in some countries the subjects are mostly children, in others middle-aged and in others elderly persons. Statistics from Italy, Russia, India and Turkey mention a great preponderance of children. In Germany and Austria the great majority of persons affected were over 50 in Stein and Löbstein's statistics. Goebel describes his experiences with 75 cases in Egypt.

75. Murphy Button.—Gelpke has used this button in 54 operations on the digestive tract. His experience has taught him not to use it in operations on the large intestine, in case of chronic obstruction of the small intestine or in a gastroenterostomy for innocent stenosis of the pylorus. Under other conditions it has proved its usefulness abundantly. The edges of the button should be well rounded and the spring should work unhampered. The necks should be amply long and the lumina should be as large as possible. The hooks on the male part should not be soldered, as otherwise they are injured by boiling. He relates certain minor details in the technic, among them his practice, after posterior gastroenterostomy, of tying a silk thread around the afferent intestine just above the button, half closing its lumen. Bile and pancreatic juice pass along unhindered, but the thread prevents the button from dropping into the afferent loop.

76. Plastic Operation After Removal of Breast.—If the defect after excision of the mamma is very extensive, Payr transplants the sound mamma in its place, taking it up with the base to the flap extending above the manubrium. The cosmetic result is especially good, as he shows by illustrations. In case of a moderate defect, with not far advanced disease and plump outlines, he takes a sickle-shaped flap on the median side of the defect, the base extending upward. It is possible to push along this flap in such a way that the wad of skin protruding in the center simulates a nipple.

77. Trauma and Cancer of the Stomach.—Menne discusses the importance of trauma in the etiology of cancer of the stomach, giving the particulars of 10 cases in which a medical certificate incriminated trauma as a causal factor. The trauma may start the cancerous growth or it may transform an embryonal predisposition or "Anlage" into an active process.

Münchener Medizinische Wochenschrift.

78 (LIII. No. 17.) *Ueber Galopp-Rhythmus des Herzens. F. Müller.
79 *Ueber die Wirkung des Alkohols auf die Ausscheidung der Azeton-Körper (elimination of acetone bodies). O. Neubauer.
80 *Ueber den Färbeindex der roten Blutkörperchen ("stain index" of red corpuscles). E. Meyer and A. Heineke.
81 Ueber punktierte Erythrozyten. E. Meyer and D. Speroni.

82 Das Verhalten der weissen Blutzellen während des Asthma-Anfalles (behavior of white cells in asthma.) A. Heineke and E. Deutschmann.
83 Ueber des Verhalten der Typhus-Agglutinine im mütter-lichen und fötalen Organismus. C. Stänbli.
84 Zur Kenntnis der Pseudobulbarparalyse. H. v. Hoesslin and T. Selling.
85 Main de prédicateur bei multipler Sklerose ("preacher's hand"). T. Selling.
86 Ueber Neuromyelitis optica. Kerschensteiner.
87 Influence of Temperature on Elimination of Sugar.—Ueber den Einfluss der Temperatur auf die Zuckerausscheidung. W. Brasch.
88 *Zur klinischen Diagnose der Lungen-Abszess. H. Rieder.
89 *Graphische Darstellung des Perkussions-Schalles. R. May and L. Lindemann.
90 Electro-Physiology of Heart.—Ueber die direkte Ableitung der Aktionsströme des menschlichen Herzens vom Oesophagus, und ueber das Elektrokardiogramm des Fötus. M. Cremer.
91 *Tuberkulosebehandlung in Volksheilstätte (sanatorium treatment). Penzoldt.
92 *First Heart Sound.—Der erste Herzton. R. Geigel.
93 Ueber die einfachte Gallenröhre als Anreicherungsmittel und die Bakteriologie des Blutes bei Typhus sowie Paratyphus (bile as culture medium). H. Kayser.
94 Zur Ausgestaltung der Orthodiagraphie. F. M. Groedel.

78. **Gallop Rhythm.**—Müller concludes this postgraduate lecture with the remark that the prognostic significance of gallop rhythm is not so grave as some are inclined to believe. In case of goiter, of cardiac neuroses and even in typhoid fever the phenomenon does not indicate danger. Even in a slowly progressing contracted kidney, as also in many heart affections, such as those in alcoholics, for instance, he has observed that patients remain in comparatively good condition for many years after the appearance of the gallop rhythm. However, it repays study and is frequently an indication for energetic treatment, especially for digitalis.

79. **Action of Alcohol on Elimination of Acetone Bodies.**—Neubauer concludes the reports of his tests with the statement that they justify the recommendation of moderate amounts of wine in combating severe diabetic acidosis in cases which present no special contraindications (nephritis, for example).

80. **"Stain Index" of Red Corpuscles.**—Meyer and Heineke think that the behavior of the "stain index" is a valuable criterion in regard to the vitality of the elements of the blood and of the blood-forming organs. The "stain index" shows a remarkable analogy between the blood findings in the fetus and in severe anemia. It is also able to determine whether the anemia is inducing vigorous reactive blood formation of the embryonal type or whether the aplastic type is present. The particulars of a few cases of leukemia are reported and the suggestion made that the stain index of the red corpuscles might afford valuable information in other affections besides pernicious anemia and leukemia.

88. **Abscesses in Lungs.**—Rieder's patients presented irregular fever without any chills, with uncertain percussion and auscultation findings. The sputum contained no elastic fibers nor albumin nor characteristic crystals, although it was unusually abundant. Signs of a cavity in the lungs could not be definitely determined, merely tympanitic resonance and scanty râles, with occasionally transient bronchial breathing, although the focus was quite extensive. The presumptive diagnosis of an abscess was confirmed by the Roentgen findings, which are reproduced. Treatment was expectant and symptomatic, merely expectorants and disinfecting inhalations, trusting to Nature for spontaneous opening of the abscess into the air passages and for evacuation of the pus in the sputum, which duly occurred. These experiences emphasize the value of radioscopy for diagnosis of abscess in the lungs. They also suggest that metapneumonic and primary abscesses in the lungs are of more frequent occurrence than hitherto supposed, clearing up many dubious diagnoses in the past. The anatomists accept cicatricial formations in the lungs as necessarily of tuberculous origin, but the Roentgen rays may prove this conclusion to be too sweeping.

89. **Graphic Representation of the Percussion Findings.**—May and Lindemann present some cuts showing actual photographs of percussion findings. The object is percussed about 10 cm. from a very delicate membrane, a soap bubble, made by dipping a metal ring in a strong solution of soap. The vibrations of the membrane under the influence of the percussion sounds are registered on a revolving sensitized film.

91. **Sanatorium Treatment of the Tuberculous.**—Penzoldt discusses various points in which still better results might be obtained from sanatorium treatment. The choice of persons to be admitted to the sanatoriums is a very important point, and he thinks that the co-operation of the hospitals would aid materially in this respect. Persons convalescing from pleurisy should be transferred to the sanatoriums unless a tuberculous soil can be positively excluded.

92. **The First Heart Sound.**—Geigel has been making a study of the first heart sound in normal persons. His hearing is exceptionally good and he announces that there are always two diastolic heart sounds, generated at the aortic and pulmonic valves, and only two systolic sounds at the ventricles, four in all. Besides these there is always a systolic vascular sound to be heard somewhere in the heart area, following the first sound. What is heard at the aorta is generally the first heart sound with the following aortic sound or brief aortic murmur. When the first sound is heard pure, whether at the aorta or the apex, it is only necessary to auscult between and a place will always be found where the double phenomenon is audible. From this point the first part disappears or becomes lighter toward the aorta, while the same occurs with the second part toward the apex.

Virchow's Archiv, Berlin.

Last indexed XLVI, page 1656.

95 (CLXXXIV, No. 2.). Ueber Plasma-Cellen in dem entzündlichen Infiltrate eines Krebs-Tumors des Magens (gastric cancer). B. P. Sormani.
96 Multiple Primär-Tumoren. P. Frangenheim (Altona).
97 Zur Myelom-Frage. O. Lubarsch (Zwickau).
98 Zur Histologie der sogenannten "akuten-Leukämie." D. Veszpremi.
99 Alkoholismus und Leber-Cirrhose (of liver). F. Klopstock.
100 Ueber des meningeale Cholesteatom im Anschluss an einen Fall von Cholesteatom des 3. Ventrikels. F. Scholz.
101 Valvular Hematomas on Heart of the Newly-Born.—Ueber die sogennanten Klappen-Hämatome am Herzen der Neugeborenen. Fahr.
102 Bacteriologic Study of the Blood in the Cadaver.—Ueber bakteriologische Blutuntersuchungen an der Leiche. M. Otten.

NEW PATENTS.

Recent patents of interest to physicians and pharmacists:

824087. Tooth brush. Solon E. Babcock, Plateau City, Colo.
824463. Tablet counting and filling machine. John W. and A. M. Ayers, New York.
824612. Apparatus for reducing dislocated joints. Ralph W. Bartlett, North Brookfield, Mass.
824686. Injecting-needle. Charles T. Daniel, Owensboro, Ky.
824471. Nebulizer. Anton C. Eggers, New York.
824539. Making an internal remedy. Richard Griese, Berlin, Germany.
824357. Aeth-oxy-phenyl-comphoryl imid and making same. Arnold H. C. Heitmann and E. C. Clemmensen, Detroit.
824371. Hypodermic-syringe case. Henry C. Michie, Jr., Charlottesville, Va.
824450. Stethoscope. Theodor W. Tallqvist, Helsingfors, Russia.
824838. Indicating bottle. Earl Atkinson, New York.
824900. Eye-testing instrument. Willard A. Bates, Princeton, Me.
824846. Invalid-bed. Nelson Clement, Chicago.
825121. Means for tieing blood vessels. Albertus W. Frentzen and J. Shoemaker, Leyden, Netherlands.
825122. Catamenial sack. Carrie M. Greenwald, New York.
825224. Ligature holder. John E. Lee, Conshohocken, Pa.
824993. Ear-drum. Asbury O. Leonard, Detroit.
824738. Medicine bottle. Louis Perotti, Newark, N. J.
825165. Abdominal support or binder. Mattie A. Watson, Chicago.
825291. Adhesive plaster and making same. Perry S. Bauer, Chicago.
825798. Thermometer. Millard F. Becton, Jersey City, N. J.
825598. Fruit-syruping machine. Lozelle Graham, San Jose, Cal.
825465. Litter carrier. Anton F. Jansen, Effingham, Ill.
825732. Emulsifier. Carl A. Janson, Chicago.
825659. Suspensory controlling device for artificial limbs. Thomas W. Klopp, Peoria, Ill.
825761. Vaginal irrigating device. Vicente Salcedo, Apaseo, Mexico.
825953. Extracting potassium chlorid from seaweed. David M. Balch, Coronado, Cal.
826091. Syringe. Albert B. Dorman, Winthrop, Mass.
826029. Rarefied-air apparatus for the treatment of pulmonary tuberculosis. James E. Harper, Assumption, Ill.
826166. Magnesium compound of pinene haloids and making same. Albert Hesse, Berlin, Germany.
826165. Making borneol. Albert Hesse, Berlin, Germany.
826172. Syringe. Charles J. Kintner, New York.
826515. Appliance for straightening big toe. Lemuel W. Litch, Lynn, Mass.
826047. Artificial eye. Emilius Muller, London, England.
826188. Syringe. Albert W. Nicholls, Chicago.
826377. Sanitary appliance. Raphael A. Sonn, Atlanta, Ga.
825946. Transportable fire-escape with removable stretcher. Jean A. Van Eesbeeck, Brussels, Belgium.
826073. Cushion for hernia-trusses. Wilhelm Wagner, Kreuznach, Germany.

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Address

THE PEDIATRIC OUTLOOK.

CHAIRMAN'S ADDRESS IN THE SECTION ON DISEASES OF CHILDREN, AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, 1906.

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PHILADELPHIA.

In view of the full and interesting program of scientific business, your chairman's address will be brief. An attempt to outline recent progress in pediatrics would be, in a measure, but a repetition of the excellent digests offered to us by our many periodicals and year-books. A few remarks on the outlook for broadening the pediatric horizon, however, seem most timely.

The progress of our specialty in the last two decades has been stupendous. With the increasing number of physicians who are devoting their attention to the study of diseases of children, the multiplicity of special works and relative periodical literature and the extra facilities for special study, I can hardly realize that in my student days pediatrics was hopelessly entangled and practically lost in the chair of obstetrics. Then a special chair or clinic on diseases of children was practically unknown. Following in the wake of other specialties, pediatrics has gradually attained proper maturity and is second to no branch in energy, enthusiasm and progress, not only in the annual literary output, but in the teaching in the clinic and laboratory.

Slowly but surely the barriers against our professional progress have been overcome, and our fellow workers are sighing for other worlds to conquer. Diphtheria is now viewed with serenity since the acquisition to our armamentarium of antitoxin and antiseptics. Investigations into the cause, nature, means of dissemination and treatment of the exanthemata and other infectious diseases have done much toward confining their ravages and controlling their evil effects. In fact, in most intelligent communities any appreciable number of cases of measles or scarlet fever is viewed with reproach as the result of faulty domiciliary, school or public hygiene. Twenty years ago such cases and epidemics were looked on as unavoidable calamities.

Formerly a great factor in the increase of infant mortality was artificial feeding, and of those babies whose lives were spared many became scorbutic or rachitic defective, eventually entering the submerged half, helping to lower the average of national physique and intellect. To-day we possess a substantial and growing knowledge of food modification, percentage feeding and accurate adjustment of food to the individual child. This, with the increased appreciation among the laity of the laws of personal and domestic hygiene, enables us not only to save the lives of many children formerly helplessly lost, but in addition to guide them safely through childhood and youth to the ideal type of manhood and womanhood that follows proper nutrition and environment.

The mayor of Huddersfield, England, proposes offering prizes for yearling babies as an incentive for mothers to keep their infants alive. Without further effort such a scheme for the betterment of the nation will be of little value. We must not regard the mere maintenance of life as a boon accomplishment, but rather life with health. Satisfaction with the preservation of life alone leads to the physical deterioration that is rapidly increasing in England. The lower average in the stature and weight of army and navy recruits is, in a great measure, due to defective nutrition and insanitary environment in childhood. These conditions are the natural result of demagogic rule, ignorance, poverty, neglect and general physical, mental and moral degeneracy.

The elementary work in pediatrics has been well done. All honor to the sterling efforts of the pioneers, many of whom, I am proud to say, are active members of this section. We have given to the world positive factors for social betterment, but as we proceed and the importance of our work is fully realized our field greatly broadens, and at every step we find ourselves shoulder to shoulder with the workers in general sociology. And here, I think, I am justified in saying that there is no more vital touch to national life and spirit than that given by the citizen who has elected for his lifework the welfare of the child.

One of our future problems is the prosecution of a campaign of education for maternity. A troublesome obstacle that the pediatrist encounters to-day is the general ignorance and helplessness of the young mother. She may be skilled in letters, arts and sciences as a college graduate, but know little or nothing regarding the essential hygiene of early life. Trifling ills and errors long neglected may have serious consequences—even death. Instruction in the details of the baby's care and proper guidance in the study of home modification of milk is often the main function of the medical attendant, and a maternal mind previously prepared in hygienic instruction is a great help.

Municipal control of the problems concerning the health of the community leave much to be desired. Careless medical inspection in houses, schools and public institutions leads to a false sense of security. Reports of contagious diseases and quarantine measures are often enveloped in a tissue of falsehood. A veneering of noisy effort is made to stand for real work. So long as politics as a distinct profession remains on so low a plane in our cities, so long will crime and graft crush out young life and retard the advance of true hygiene. It is most appropriate that the voice of the pediatrist be heard in no uncertain tones in all discussions pertaining to public health. The establishment and enforcement of health protective laws for children will result in an uplifting of the health standards of the whole community. A single instance is the insistence on a clean—not sterilized or pasteurized—but simply *clean* milk supply such as the health officer of Rochester, N. Y., demands.

Again, what enormous economic possibilities lie in the proper education and development of defectives! Heretofore our work for the betterment of child life has been largely to improve nutrition and environment. May we not logically extend our efforts toward regulating matrimony in a measure? We can not take literally the advice of Dr. Holmes to begin the education of the child with the grandparents, but we can use our efforts to prevent unsuitable marriages. Surely the province of pediatrics may properly include inquiry into the fitness of prospective parents for propagation of healthy offspring. We may not be ready for the practical adoption of the main features of the new science of eugenics, but at least we should have a judicial comprehension of its possibilities.

In a recent number of the *Nineteenth Century and After* Mr. Havelock Ellis argues strongly for placing matrimony on a scientific basis. In editorial comment on his remarks the *Philadelphia Ledger* says: "We are living in a scientific age, and a few earnest spirits, with ill success thus far, are endeavoring to save matrimony from the caprice, the sudden impulse, the mere chance venture, which are fraught with evil for the coming generation. The new movement is to be known as eugenics, or the science and art of being well born and of bringing the human race 'a step nearer toward perfection.'"

"Mr. Ellis is confident that eugenics, instead of being merely a 'beautiful scientific fad,' is beginning to present itself as 'the goal to which we are inevitably tending.' The University of London has appointed a competent investigator to the research scholarship of natural eugenics, endowed by Francis Galton, whose duty it will be to examine the history of the families and classes. This Mr. Ellis believes will make possible 'the attainment of eugenic ideals.' Eugenic registration and certification of personal facts, 'biologic and mental, normal and morbid,' are suggested as a guide to marital eligibility. The possession of such a certificate, Mr. Ellis thinks, would be a patent of nobility. 'The man or woman who held it would be one of Nature's aristocrats, to whom the future of the race might be safely left without further question.'

"Love laughs at locksmiths. The exponent of eugenics admits that it will also laugh at science, but he holds that matrimony is not wholly a matter of chance. Even the course of true love has its metes and bounds. Mr. Ellis informs us that investigations show there are certain definite matrimonial tendencies, that like are attracted rather than unlike, and that 'while some kinds of people tend to be married with special frequency, other kinds tend to be left unmarried,' a sufficiently scientific explanation of bachelorhood and spinsterhood. It is the province of eugenics to bring a selected class of the marrying kind together, and 'the eugenic ideal will have few serious quarrels with normal and well constituted lovers.' This may be a realized ideal, but the eugenically certified lovers will be comparatively few, and this brings us to the pressing question of race suicide, which has no terrors for Mr. Ellis. A falling birth rate 'is a great fundamental law of civilization,' and, recognizing this, the new ideal should begin 'to flash before men's eyes' the concept of quality rather than quantity.

"Eugenics fits beautifully with the tendencies of civilization, but it is far from being practicable at present. Matchmaking is a little too methodical when a eugenically certified lover is expected to search for a eugenically certified mate. Mr. Ellis is hopeful, however, and contends that human eugenics need not be a cold-blooded selection of partners by some 'outside scientific authority,' and that there will still be room for the free play of love. The argument for the betterment of the race through the eugenic selection of parents is forceful enough, yet somehow one lays aside the contribution feeling that humanity is not prepared for the departure. Indeed, Mr. Ellis confesses rather despairingly at the close that it is a matter 'of accepting an ideal and of exerting our personal and social influence in the direction of the ideal.'"

Original Articles

SOME UNHEEDED PRINCIPLES INVOLVED IN THE DIETETIC MANAGEMENT OF INFANTS DURING HOT WEATHER.*

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NEW YORK.

Before the management of infants during the heated term can be placed on a scientific basis the principles on which such management should be based must be ascertained. The normal processes and requirements of the infant during warm weather should be clearly understood and also how these processes may be deranged and the requirements met under different conditions.

Specially prepared foods, special percentage mixtures, sterilization and pasteurization have been offered as the solution for summer digestive disturbances. Recently a specific organism has been held accountable and a specific serum has been suggested as a possible curative agent, but still the problem confronts us.

The real progress that has been made in the treatment of summer cases has not been the result of specific medication or of specific feeding, but has come from close attention to diet and care. Kerley has shown clinically what can be done in reducing infant mortality by careful management and has done pioneer work in a new territory which has not yet been surveyed and mapped. Park and Holt[1] have reported as the result of their investigations that care was fully of as much importance as food in the reduction of sickness and death among infants in summer, or, to use their own words: "It was practically the unanimous opinion that the most important factor in securing good results is intelligent care." In speaking of the poorer results obtained in feeding in summer than in winter they say: "There seem to be many factors, but a consideration of the facts accumulated indicate that heat is the primary factor and that bacteria and their products are a secondary one, except when the contamination is extreme or pathogenic organisms are present." Therefore it will repay us to know the physical and biologic principles on which the care and feeding of infants during hot weather are founded. If these can be determined and decided on any one can apply them and a campaign of education will help solve the problem.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Park, W. H., and Holt, L. E.: "Report on the Results with Different Kinds of Pure and Impure Milk in Infant Feeding in Tenement Houses and Institutions of New York City: A Clinical and Bacteriologic Study," Archives of Pediatrics, December, 1903.

As is well known, the food during all seasons, summer and winter, is composed of fats, carbohydrates, proteids, mineral salts and water, and no matter what form the food may have it must contain all these elements if it is to sustain life continuously. But there is another very important, although intangible, ingredient embodied in the fat, carbohydrates and proteids, and that is energy, which plays an essential part in the life processes.

Physiologic study has taught us that the waste products of food are excreted as feces, the oxidation products as carbondioxid and water from the lungs, and that the end-products of proteid metabolism are eliminated as urea, etc., by the kidneys. As physicians we have learned to pay close attention to these excretions, for we know what profound disturbances result from their retention, but we have not yet clinically recognized the fact that all the utilized energy of the food is transformed into heat and as such must be eliminated. Heat is an excretion of the body as truly as urea is, and it has been calculated that if no heat were to be excreted for twenty-four hours the body would be at a pasteurizing temperature. All the urea might be retained for some hours without serious discomfort, but retention of the heat of the body for a brief period produces great distress and depression, as any one can determine by wrapping up in a thick woolen blanket on a warm, sultry day. The blanket itself is not hot, but, being a non-conductor, it prevents the body heat from escaping. A few hours of heat retention might result in death, so the importance of the excretion of heat will be appreciated.

A certain amount of heat is needed to maintain the normal body temperature, but all above this quantity can not be utilized and must be excreted. In the winter and spring months the air is so cool that there is no difficulty in the heat passing off; in fact, it passes off too rapidly and heat-retaining clothing is needed, but in the summer months the excretion of heat is not always an easy matter, and the production of heat should be reduced as much as possible, for, to quote Park and Holt again, "the depressing effects of great atmospheric heat, i. e., a temperature in the neighborhood of 90 F. or over, were very marked in all infants, no matter what their food."

HOW BODY HEAT IS PRODUCED.

The energy expended in transforming food during the digestive processes and in its metabolism is liberated as heat. The more difficult of digestion the food is, the more heat is produced, and for this reason light and easily digested food is enjoyed in summer and a repugnance is felt for hearty meals. All the energy needed to keep the heart going and in moving the arms, legs, etc., passes off as heat. Therefore to keep down the production of heat, light, easily digested food and a minimum of body activity are essential.

It has been taught that a food should be judged by the amount of heat it can produce, or, in other words, the number of calories it contains. As has been shown above, only a small part of the heat produced from the food is needed to maintain body temperature in the summer time, and as the body can not utilize heat as such it is clearly fallacious to attempt to fix any standard for the number of calories a diet should invariably contain, or to judge a food by the amount of heat it will produce. Food is valuable only in proportion to the amount of energy the body can realize from it after deducting the amount expended in its digestion and assimilation.

According to Rubner, 31 per cent. of the energy of proteids is consumed in their digestion and assimilation and liberated as heat; 12.7 per cent. of the fat and 5.8 per cent. of sugar, while Armsby[2] states: "The consumption of a small amount of easily digestible carbohydrates, for example, would result in a relatively small heat production, while a large quantity of proteids would greatly increase the loss of energy in this way. At low temperatures this additional heat production may be an advantage, enabling the well-fed organism to withstand cold better. At high temperatures, on the other hand, this additional heat may become oppressive or even dangerous by adding to the amount of which the organism must dispose. A large consumption of difficultly digestible food renders the man or animal less able to endure hot weather, and presumably more liable to those disorders resulting from overheating. Furthermore, proteid foods being those which cause the greatest production of heat, their amount in the dietary should be reduced to the minimum necessary for maintenance if it is desired to limit heat production, their place as a source of energy being supplied by the carbohydrates and fats. In brief, then, the food value of a nutrient as a source of energy to the organism is not measured by the total energy which it can liberate as heat in the body, but by the part of this energy which is available to the organism for physiologic uses. The remainder of the 'fuel value' simply serves to increase the generation of heat in the body, a result which may be advantageous or the reverse, according to the surrounding conditions."

In a few words, nearly one-third of the proteids of the food is used in preparing the other two-thirds for the body, and when proteids are used to supply energy they produce about five times as much heat as the quantity of carbohydrates needed to produce the same amount of energy would liberate.

HOW HEAT IS EXCRETED.

There are three ways in which body heat is excreted: (1) By conduction, due to contact with colder substances; (2) by radiation, as when the heat passes off into the air; (3) by evaporation of perspiration, by which the sensible heat is rendered insensible or changed into latent heat, as is well explained in the text-books on physics. In the winter and in the cool months of spring and fall, when there is quite a difference between body temperature and air temperature, radiation will carry off the surplus body heat as fast as it is produced, but as the weather becomes warmer the difference between the temperature of the air and that of the body lessens, and sometimes there is not only no difference between them, but the air temperature is higher than body temperature. In such cases heat excretion by radiation is slow or even impossible, and body temperature would rise above the normal unless some method of getting rid of the heat besides radiation were at hand. To meet this condition Nature has provided that when radiation is insufficient sweating comes into play and evaporation of perspiration is a most efficient remover of body heat.

Again, we remember that when water passes into the state of vapor it absorbs a large amount of heat without raising its temperature. Thus it takes as much heat to change one pound of water at 212 F. into steam at 212 F. as it would take to raise about five pounds of water from the freezing point to 212 F. In other words, about 1,000 degrees Fahrenheit of heat are rendered insensible when boiling water changes into vapor.

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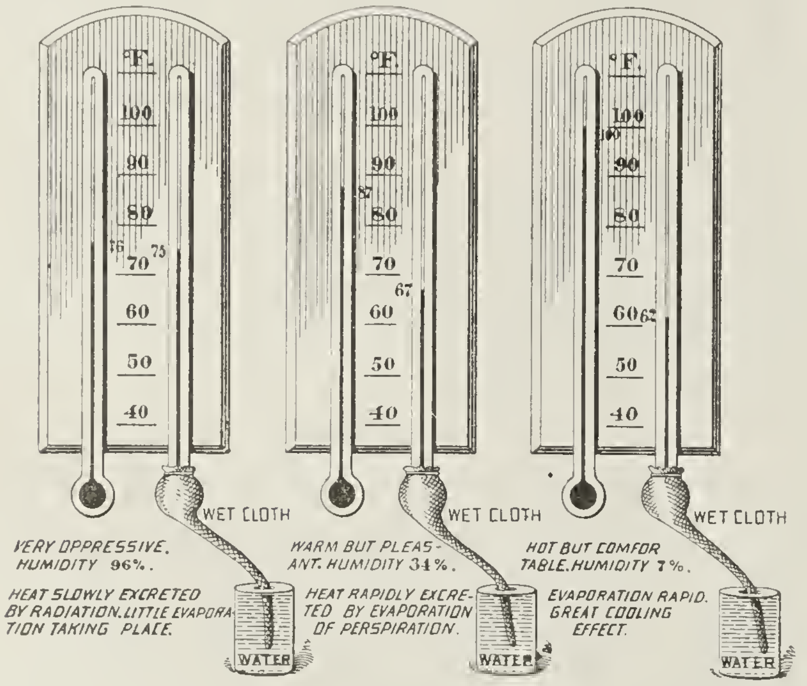
[2] Armsby, Henry Prentiss: "Heat and Food Values," Archives of Pediatrics, February, 1905.

Evaporation of water and absorption of heat take place at all temperatures above freezing point, but the amount of heat which is absorbed depends largely on atmospheric conditions and not alone on the warmth of the air.

For every degree of temperature a maximum amount of evaporation of water can take place, which is reached when the air contains all the water vapor it can retain. The humidity then would be 100 per cent. When this point of saturation is reached, no more evaporation can take place, and consequently no more heat can be rendered insensible, and all know how nearly intolerable living is on warm days with high humidity. The discomfort is due to heat retention.

For determining relative humidity or the degree of saturation of the air with water vapor, two thermometers are used, one of which has its bulb covered with a muslin cloth that dips into water and acts like a wick. The bulb is thus covered with a damp cloth, which is exposed to the air, so that the water can evaporate. As the water evaporates it absorbs heat and reduces temperature and the mercury drops in the thermometer. When the air is dry and warm, evaporation takes place rapidly, and consequently there is rapid absorption of heat, and a very great difference between the height of the mercury in the dry thermometer and in the wet bulb thermometer is produced; but if the air is damp and humid, evaporation is slow and little or no heat is absorbed or rendered insensible, and the two thermometers read nearly alike. From the difference in readings between the two thermometers the relative humidity of the air may be determined from exhaustive tables that have been prepared. The thermometers should be fanned before reading, as the air near them will be nearly saturated with moisture unless it is kept in motion. Evaporation is also very much retarded by salts in solution and by the presence of fat or oil, which has an important bearing on the evaporation of perspiration which deposits salt and fat. A relatively low summer temperature with high humidity is more trying than a much higher temperature with low humidity, because not enough heat excretion can take place with high humidity and moderate temperature, while with low humidity and high temperature the excretion of heat is extremely rapid, paradoxical as this may seem.


°F.
100
90
80
70
60
50
40
76
75
WET CLOTH
VERY OPPRESSIVE. HUMIDITY 96%.
HEAT SLOWLY EXCRETED BY RADIATION. LITTLE EVAPORATION TAKING PLACE.
WATER
°F.
100
90
80
70
60
50
40
87
67
WET CLOTH
WARM BUT PLEASANT. HUMIDITY 34%.
HEAT RAPIDLY EXCRETED BY EVAPORATION OF PERSPIRATION.
WATER
°F.
100
90
80
70
60
50
40
100
62
WET CLOTH
HOT BUT COMFORTABLE. HUMIDITY 7%.
EVAPORATION RAPID. GREAT COOLING EFFECT.
WATER

The above illustrations will make this clear.

One morning in the middle of May, 1905, the air was oppressive and it seemed very warm and exertion was discomforting. The air temperature was 76 F. and the wet bulb thermometer stood at 75 F. The humidity was 96 per cent. and little evaporation was taking place, as the air was nearly saturated. During the day the temperature of the air rose eleven degrees, or to 87 F., but the afternoon was delightful and bracing, and no inconvenience was experienced in moving about briskly. While the air registered 87 F., the wet bulb thermometer stood at 67 F., or twenty degrees lower. The humidity had dropped from 96 per cent. to 34 per cent. and the absorption of heat was very rapid, so no discomfort was felt. At night this process may be reversed, for as the air cools its capacity for holding water vapor decreases and the relative humidity increases as the temperature falls. Hence one may become warmer as the air becomes cooler if the humidity increases.

That high temperature alone does not necessarily cause suffering or even inconvenience may be judged from the report of Prof. Francis E. Lloyd[3] of a visit to the Desert Botanical Laboratory at Tucson, Ariz., in which, speaking of the heat, he says: "About this factor much misapprehension is abroad. To be sure, the mercury stands high and a registration of from 100 to 105 F is not at all unusual; occasionally it is even higher, and doubtless if one did not forget to look at the instrument still higher temperature could be discovered. Fortunately, this is just what one does. There is so little discomfort attendant on the heat that it is usually quite disregarded, a condition, happily, due to the low relative humidity, which on many occasions during six weeks in July and August of this year ran down as low as 7 per cent." With only 7 per cent. humidity and the temperature of the air at 100 F. the wet bulb thermometer would register only 68 F., a difference of thirty-two degrees due to the rapid evaporation of the water.

From the foregoing it will be plain that the temperature of the air is not a safe guide to follow in judging summer conditions, and that in one locality the climate might be salubrious with a temperature of 90 F., owing to the low humidity, while in another place the mercury might be standing only at 85 F. and yet the heat be intolerable on account of the high humidity. In the locality of high temperature there might be very little digestive disturbance due to heat and in the place where the temperature was lower a great many cases might be found. In the one instance the body heat could be excreted easily and in the other with difficulty, owing to the difference in humidity. Much heartier food could be taken soon after an attack of digestive disturbance in the hot, dryer locality than in the cooler and more humid situation. It is undoubtedly due to such differences of conditions that observers in different parts of the country report so differently as to what is the best method to employ in managing the diet after an attack of summer diarrhea. Some have stated that a diet of light carbohydrates and a small amount of proteid in the form of gruel should be given, cautiously adding milk as improvement sets in, and that it might be necessary to continue this light diet, which is one that produces the minimum amount of heat, for some time, or even all through the summer; others have reported that they had no difficulty at all in getting the infants back on milk mixtures after the infected food had been removed. In all probability both sets of observations are correct, but

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3. Popular Science Monthly, February, 1905.

as the conditions of climate were probably different there is no justice in comparing them or in quoting one against the other.

One thing will be suggested to all who note what a chilling effect moist clothing has when exposed to the air so that evaporation can take place, and that is the importance of having light, loose woolen garments next to the infant's skin and especially over the abdomen. Wool is a poor conductor of heat and allows the heat to be excreted gradually, while cotton allows it to pass off rapidly. Imagine the effect on an infant having on cotton clothing wet with perspiration if it was suddenly taken out where the wind was blowing even moderately on a hot, dry day, when the temperature stood as high as 100 F., higher than the body temperature. That cotton clothing would be cooled down to 62 F.; there would be a vasomotor contraction of the capillaries; the blood would be sent rushing to the distended cells of the lining of the intestines; an increased secretion of mucus would result and a diarrhea would set in. This might take place also in a humid locality when a breeze struck the wet child, for even on humid days a breeze will increase the evaporation and somewhat reduce the temperature.

The diarrhea will probably quickly respond to treatment if there is no food infection, which there is not likely to be if the infant has been well nourished and has not become depressed. But if the conditions are high heat and also high humidity, it is more than likely that there will be a food infection, for heat will not be excreted sufficiently and heat retention produces great depression and retardation of digestion. The infant has need for very little, if any, food on warm days when the humidity is great. The child is having all that it can do to excrete the heat generated by the processes of living and will be overburdened if it is called on to eliminate the additional heat liberated as a result of the digestion of food, which is considerable. Under such depressing conditions there will be a retardation of the digestive process and the undigested food will probably commence to decompose and a poisoning process be set up.

Sterilization or pasteurization of the food will not overcome this condition, for the intestine is not free of bacteria and they will attack sterile food. Care must be used in selecting food that will not allow the production of poisons, and such food should be given until normal feeding can be brought about.

If a piece of meat and a solution of sugar are placed in a warm room the meat will become putrid and the sugar solution will sour. Both of these changes are brought about by bacteria, and both the sugar solution and the meat are exposed to the same conditions. The putrid meat would be poisonous, while the sour sugar solution would be harmless. If the meat has been placed in a solution of sugar it would not have become putrid, although the sugar solution would have soured. This is a homely illustration of what has been proved in the laboratory: that products of bacterial decomposition of proteids are poisonous and that carbohydrates in the food protect the proteids from attack by bacteria. The bacteria that thrive best on carbohydrates crowd out of existence bacteria that feed on proteids, and their products are mostly harmless. It is useless to expect to find a specific form of bacterial infection or to follow only one plan in dealing with the bacterial problem. It is practically impossible to keep the infant's surroundings sterile, as the floors and other things on which dust settles are a handy means of infecting him, and the types of organism that are present in the air vary with the humidity. In dry weather bacteria predominate; in humid weather, yeast organisms.

The only feasible way to handle the matter is to select the food so as to let a set of harmless bacteria develop and kill off the harmful kinds. This is the principle that is being adopted now in destroying various insect pests. Find the natural enemy and put it to work.

From a consideration of these facts it is evident that a universally satisfactory food or set of rules for feeding are not likely to be produced, because conditions vary so much, and physicians should direct their efforts to studying conditions that call for different kinds of foods and the principles involved in care of infants according to relative humidity.

SUMMARY.

1. In warm weather keep a light woolen garment over the abdomen to prevent sudden chilling of the skin and consequent retention of heat by suppression of perspiration.

2. Bathe the infant twice daily to remove fat and salts left by the evaporated sweat. These retard the evaporation of perspiration and thus partially prevent heat excretion.

3. Give plenty of cool boiled water to drink, so as to replace water lost as perspiration.

4. Pasteurize food of all well infants to retard decomposition.

5. If the weather is close or muggy, or the humidity is high, dilute the food to one-half with boiled water. In very humid weather with high temperature stop milk altogether and feed gruels until the humid condition is passed.

6. On warm, humid nights do not give milk feedings, because the humidity is higher at night than in the daytime, although the temperature may be lower. Feed gruels or whey, which produce little heat.

7. For diarrhea give castor oil or calomel to eliminate decomposing food. Stop all milk feedings temporarily. If the air is hot but dry, milk feedings may be resumed soon. If there is high humidity, feed gruels or whey to reduce heat production and also to starve out putrefactive bacteria, and very cautiously get back to milk feedings.

8. Provide a circulation of air, as stagnant air soon becomes saturated with water vapor and no more perspiration can evaporate and absorb heat.

DISCUSSION.

DR. R. W. HASTINGS, Brookline, Mass., with reference to having cool dry air for the children, said that in the Boston Floating Hospital for children there is a plant costing about $10,000 the object of which is to freeze the moisture out of the air and then to warm the air to the necessary degree for the ward; that is, to bring into the ward an atmosphere of 70° with a humidity of 50. To get lower humidity than that is possible, but would cost a great deal of money. The babies in that hospital are benefited, not only by the care they get but by being put into an atmosphere that is dry and cool; and a mortality has been maintained of 10 or 15 per cent. lower than that reported by Dr. Holt. So far as Dr. Hastings knows, no other hospital in the world has such an "atmospheric plant."

DR. THOMAS MORGAN ROTCH, Boston, does not agree entirely with the extent to which Dr. Pisek carries his remarks. As a rule babies are no taken off of breast milk because of humidity, and he thinks that a sudden change in food, even if there is a change of temperature, would often be quite disastrous if the baby is doing well on the milk it is getting.

Dr. Arthur W. Fairbanks, Boston, said that he has several times transferred sick children on his service on the Boston Floating Hospital from the ordinary ward to the wards whose atmosphere was cool and freed from excessive moisture and was seen marked improvement follow the change. The improvement to be sure has sometimes been only temporary, but frequently it has been permanent. His experience very decidedly substantiates Dr. Pisek's views in regard to the influence of temperature and the degree of humidity on the occurrence and course of disease in young children.

Dr. G. R. Pisek, New York, said that this paper in a measure may answer some of the questions asked of Dr. Northrop concerning his out-of-door treatment—whether the good effects are due to the oxygen or to the cold air? In winter, the humidity is less and the circulation of air greater. We can absorb just so much oxygen and it does not make much difference whether we give compressed air or forced oxygen to children; but the out-of-door-air plus the cold or the lowered humidity is perhaps that which gives the good results in the winter as against the summer. In the use of the salines in fever, spoken of by Dr. J. Madison Taylor, the fever may be reduced by the evaporation of perspiration induced and the results show the good effects of the salines. Dr. Pisek said that he is glad to know about the cooling plant of the Boston Floating Hospital. He thinks that this is just the thing needed in solving the problem of taking care of sick children in summer. Relative to Dr. Rotch's remarks about taking the children off of milk feeding, he said that he has noticed that they do not nurse so long in the hot summer days and that giving them sterile water before nursing has seemed to benefit.

INDICATIONS FOR SURGICAL INTERVENTION IN INFECTIONS OF THE BILIARY TRACT.*

JOHN B. DEAVER, M.D.,
PHILADELPHIA.

Prolonged experience with diseases of the biliary tract has convinced clinicians of the truth of the statement made by Terrier that the origin of all such diseases is in some form of bacterial infection. The exhaustive studies of Naunyn, showing the invariably infectious origin of gallstones, have led the way to appreciation of the second important truth, that the calculi are merely an incident of the disease, and are by no means universally present in diseases of the gall bladder and the bile ducts. The statistics of my own cases[1] correspond in this respect very closely with those of other surgeons. Of 216 patients, 34, or 15.8 per cent., had no gallstones.

In conjunction with this fact it should ever be borne in mind that many, possibly a majority of the attacks of biliary colic are not due to the acutal passage of gallstones, but rather to a spasm of the gall bladder caused by acute cholecystitis in the presence of ducts constricted by inflammatory swelling. Kehr has spoken very positively on this point, and has even gone so far as to produce biliary colic experimentally in his patients, after operation, by injecting their gall bladders through the cholecystostomy wound and finding that acute over-distension of the gall bladder causes precisely those symptoms which have been known for generations as characteristic of biliary colic. I have repeatedly seen this occur when washing out the gall bladder through the cholecystostomy sinus. It is noteworthy that of 161 of my own patients who had colicky pains, no less than 24, or 14.9 per cent. had no gallstones; and of 45 patients who had non-colicky pains, 10 or 22.3 per cent. had no calculi—in other words, of 206 patients with pain, 34, or 16.5 per cent. had no calculi.

Although gallstones are excessively prevalent (Kehr says every tenth adult body exhibits them) yet they do not, fortunately, in every case produce symptoms. If this were not the case, "every theater, every church, every concert-hall," as has been well said, "would resound with lamentations" from patients suffering with this disease. And hence even the most enthusiastic surgeons must recognize that every patient does not require operation. Kocher[2] very pointedly says that gallstones do not "belong" to the surgeon. As he remarks: "They belong in the first place to the patient, and if he prefers to retain them and to drink Carlsbad waters as well, he is quite within his rights to adopt this method, a line of treatment which, as is well known, is followed even by many surgeons when they themselves have gallstones." In the same way Kocher continues: "If a patient prefers to wait in suffering and pain for a stone to work its way down *per vias naturales*, he is but enjoying his personal privileges. But at the present day the surgeon is certainly justified in telling a patient with gallstones that by an operation he can be quickly and safely cured of his trouble and be saved from eventual danger more rapidly and more easily than by any other treatment."

It is, then, one of the most important functions of the surgeon to decide which patient shall and which shall not be urged to seek relief by operation, and while there are certain indications which are universally recognized as pointing one way or the other, there still remain enough disputed points to provoke interest and instructive discussion.

I am in favor of removing gallstones in every case in which they are known to be present, provided, of course, that there are no contraindications which would render any operation injudicious. But when operation is done in the early stages of the disease, when inflammatory changes are merely catarrhal in character and the stones are confined to the gall bladder, the operation is so free from risk and the results are so satisfactory that it appears to me to be courting disaster to postpone surgical intervention in the hope that the symptoms will subside and never again recur. Dr. Kelly's statistics show that among my 216 patients, 138, or 63 per cent., had had previous attacks of jaundice; and, as jaundice is an unusual rather than a customary accompaniment of biliary infection, it is evident that there must have been more than one attack of biliary infection in the vast majority of patients, though I regret that I have no figures to offer on this point.

When I state that I consider the presence of gallstones an indication for operation, other things being equal, I do not mean to include in this category the large number of cases of non-calculous cholecystitis which are constantly seen by the physician. When a patient is seen with a frank attack of acute cholecystitis which does not subside under judicious medical treatment pursued for from thirty-six to forty-eight hours, I think that then the safest course is to do a cholecystotomy at once; this is especially true if the attack is not the first, and it is to my mind nearly imperative if we believe from the history that calculi also are present. But when the cholecystitis is mild in character and yields promptly to medical treatment, and the patient is having his first attack, then I think operation may well be postponed until further symptoms arise. Calculi are probably absent in such mild cases in early attacks, and although it can not be denied that gallstones may form in the course of a comparatively few hours, yet such patients seem to me particularly suited for the so-called Carlsbad cure. Patients in the poorer classes, of course, can not go to Carlsbad for the cure, and many others may be unwilling to go further than Saratoga, the Virginia Hot Springs or the Bedford Springs of Pennsylvania, the Carlsbad of America; but even those who can not leave home can drink the waters and can regulate their diet and their bowels so as materially to improve their general health.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] I take this opportunity to express my indebtedness to Dr. A. O. J. Kelly, pathologist to the German Hospital, for permission to use the statistics and other material presented by him in the Mütter Lecture of the College of Physicians of Philadelphia, for 1906, which is based on the records of 216 patients with infections of the biliary tract operated on by me at the German Hospital.

[2] "Text-book of Operative Surgery," London, 1903, p. 225.

When the attacks of cholecystitis are repeated, and especially when discomfort persists in the intervals, operation is demanded to obtain a cure. The frequency with which mild but recurrent attacks of cholecystitis give rise to pericystic and pyloric adhesions is not duly appreciated by the profession. Many a patient who has suffered once or twice from mild attacks of catarrhal jaundice, so-called, without evident implication of the gall bladder, will be persistently troubled by periods of anorexia, of flatulence or of actual nausea; and in time gastric or duodenal ulcer will appear, often enough, I doubt not, engrafted on a stomach whose motility has been seriously hampered by adhesions originating in disease of the bile passages. Only recently I removed the greater portion of the stomach from a woman whose gastric cancer was engrafted on a chronic ulcer, this being only one of other cases of the kind occurring in my experience, and from the perigastric adhesions and from the presence of a gall bladder completely filled with gallstones, in addition to a large stone in the common duct, the inference was clear that the bile ducts and the gall bladder were in her the starting place of the whole series of lesions in the upper abdomen. The gall bladder and the common duct were opened, the calculi removed and the gall bladder and common duct drained by a stab in the right semi-lunar line, permitting complete closure of the wound through which the operation had been done. Recovery and freedom from digestive disturbances followed.

In the later stages of gall-bladder disease operation is almost invariably demanded, but so long as the serious lesions are confined to the gall bladder the mortality due to the operation is small. In hydrops of the gall bladder, cholecystectomy is required, since obliteration of the cystic duct renders the gall bladder not only useless, but a continued menace from the liability of reinfection or even of rupture. Empyema requires cholecystectomy only when of long standing, with the result that the cystic walls are irreparably diseased. If the empyema be acute, drainage of the gall bladder suffices, and in cases of doubt cholecystostomy is to be preferred to the more serious operation. Gangrene of the gall bladder naturally requires its excision, and the same is often true of perforation, since this latter condition occurs most frequently when the gall bladder walls are extensively diseased.

When we come to a consideration of patients in whom gallstones are believed to exist we have to do with a much more serious disease. If the calculi can be removed by operation before they have had a chance to wander from their natural habitat—the gall bladder—the patient is to be considered greatly favored. The operation then is no more serious than that for non-calculous cholecystitis. But when a stone descends into the cystic duct, and still more when it is blocked in the common duct, or if by chance one lies in the hepatic duct, then must the patient be considered in serious danger. The mortality of operations from these conditions is markedly higher than that of operations for disease confined to the gall bladder; but as the disease under the former circumstances is, without operation, very much more fatal than is the operation itself, no conscientious surgeon can hesitate to recommend the latter form of treatment.

In spite of the very positive evidence which is now available of the futility of the attempt to dissolve biliary calculi by internal medication, there are still some who employ olive oil with this object in view. As Dr. Kelly in his lecture well says: "We now know that the thousands of gallstones said to have been passed by the bowel after the administration of olive oil and similar preparations are merely masses resembling gallstones in outward appearance and due to the basely deceptive powers of the olive oil acquired in its passage through the intestinal tract." And it is to be remembered that not only are the stones commonly multiple, but many of them are so large that their passage through the ducts is a physical impossibility; and although in long-standing cases of cholelithiasis large calculi are occasionally discharged into the bowel by way of cholecysto-enteric fistulæ or into the stomach by way of a cholecysto-gastric fistula, yet any physician who would anticipate with pleasure such a solution of the difficulty would be more fit for medieval days of alchemy than for those of modern medicine or surgery. Even when such a calculus has passed into the intestines it may still be provocative of intense mischief, and by causing intestinal obstruction may necessitate a far more serious operation than would have been the prompt removal of the calculi from the gall bladder and drainage of the infected area. Dr. A. C. Wood,[3] of Philadelphia, only about a year ago collected twenty-two operations for intestinal obstruction by gallstones, and at least five (Michon. Gordon and Wright, Smith, Milward, Powell) other such operations have been recorded since that time. Korte[4] observed fifteen such cases among about 500 patients operated on by him. My experience embraces two cases of obstruction of the small bowel by gallstones. Moreover, even were all the calculi to be safely passed through the intestine by medical means, the infection of the gall bladder would in most cases not only persist, but would soon cause the formation of other calculi, and the last state of that patient would be as bad as his first.

The underlying condition in all cases of cholelithiasis is the infection, and until physicians can combat that as successfully as surgery does, the less they have to do with acute complications of gallstone disease the better. As Dr. Kelly points out in his Mütter lecture, "the favorable results of medicinal treatment in the vast majority of instances by no means indicate the cure of the disease, but merely the restoration of latency"—and, although this is "by no means an undesirable achievement," it is far from the *summum bonum,* which can only be attained by operative means. I can not refrain from calling your attention to the fact, however, that cholelithiasis can remain latent until Nature places the patient asleep in the everlasting rest of the grave.

The greater safety of operations during the latent stage of disease in the upper abdomen is as noticeable in cases of calculi impacted in the bile ducts as it is in those done during the intervals of gastric hemorrhage, and hence it is that when acute impactation of a calculus occurs in the common duct surgeons by almost unanimous consent prefer to postpone operation until the event of the attack is assured. If the calculus, as sometimes happens, successfully passes into the duodenum, immediate operation is unnecessary, and in the majority of instances the calculus, if not thus disposed of, rests at ease in the common duct, causing intermittent obstruction and making its presence known by a fairly well-recognized group of symptoms. In this stage of the disease the offending stone can be removed with the least danger to the patient and the greatest satisfaction to the surgeon. The operation, which often involves tedious dissection and may consume considerable time, can then be done with deliberation and thoroughness—matters that are not always characteristic of operations on patients who are acutely ill.

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[3] Amer. Med., 1905, vol. i, p. 779.

[4] Beitr. z. Chir. d Gallenwege u. d. Leber, Berlin, 1905, p. 200.

In chronic impaction of a stone in the common duct the surgeon should not delay operation long. The varying size of the liver should be attentively watched and surgical intervention should never, if it can be avoided, be postponed until atrophic cirrhosis has set in. It is well known that such patients stand any operation much more badly than do those in whom the liver is enlarged.

Without entering in detail into the technic of operations for removal of stones from the common duct, I desire to protest against the indiscriminate resort to cholecystectomy in cases in which the gall bladder is not irretrievably diseased, but in which the surgeon may consider it a useless appendage. When a calculus is removed from the common duct I think retention and drainage of the gall bladder a very valuable adjunct to the after-treatment. When prolonged drainage is desirable—and in these patients it frequently is—the gall bladder can be stitched to the parietal peritoneum or even to the sheath of the rectus muscle, and thus a biliary fistula will be maintained long enough to drain the smaller hepatic ducts and to restore the patient to health. When the gall bladder is removed, apart from the increased immediate danger of infection and hemorrhage, drainage of the liver can not be so thorough as it is when the gall bladder is attached to the abdominal wall, and serves as a drainage tract in addition to that provided by a tube in the common duct at the site of the choledochotomy. When the infection has traveled beyond the gall bladder and involved the hepatic ducts, or if the cystic duct is very much infiltrated, it is my practice not to content myself alone with drainage of the gall bladder, but to drain the common duct as well. Exposure and drainage of the common duct (in the majority of instances) I do not consider a difficult or dangerous procedure, yet it should be only judiciously done. Thorough operation alone can suffice to accomplish a cure; therefore incision, digital and instrumental examination to determine that the ducts are clear of any possible obstruction is required in not a few cases. Makeshift operations have no place in dealing with affections of the biliary apparatus.

In spite of his wishes, the surgeon is occasionally forced to operate on patients with acute impaction of a stone in the common duct. Perhaps, instead of the term impaction, the expression absolute obstruction would be better, since the condition may have persisted for some days, and hence be no longer technically acute. When a patient presents the history and usual symptoms suggestive of acute impaction in the common duct, and has in addition evidences of progressing infection, such as persistent jaundice, intermittent fever and sweats, the only chance of salvation frequently lies in immediate operation. And yet the mortality of such operations is appallingly high. The acute hepatic infection, evidenced by enlarged, tender liver, by the jaundice and the fever, is a serious condition in itself, and the danger of hemorrhage in these patients adds to the seriousness of the case. Even with energetic stimulation and the routine adminstration of calcium chlorid (gr. 10 every four hours) for a day or so before operation, and the continued administration of this drug in larger doses by the rectum after the operation, many a patient dies from uncontrollable capillary oozing before the period when death from sepsis is to be feared. I question if calcium chlorid does any good, as the patients I have lost all had the benefit of this drug. I may remark, however, that the fatalities from hemorrhage occurring in my hands have not been the jaundice of gallstones, but the jaundice of advanced pancreatic disease, particularly carcinoma, too often the result of gallstone disease.

Not only do dangers such as these threaten in the biliary tract, but the pancreas may also be involved. There is good reason to believe that acute pancreatitis is often caused by impaction of a calculus in the diverticulum of Vater, by which means the infected bile is dammed back into the pancreatic ducts, and when a calculus is impacted only a little higher, so as to occlude the duct of Wirsung by pressure only, and thus merely hinder the outlet of the pancreatic secretion without forcing the bile up the pancreatic duct, we often have chronic pancreatitis as a result. The reason that calculi so impacted do not oftener cause disease of the pancreas is because in two-thirds of cases there is an accessory pancreatic duct (duct of Santorini), and in 10 per cent. of patients the common bile duct and the duct of Wirsung empty into the duodenum by separate orifices. In the cases these anatomic factors are not present, operation, serious as it is, is urgently demanded not alone by the cholangitis, but by pancreatic involvement as well.

The well-to-do patients suffering from chronic impaction of a calculus in the common duct may be able and willing to take the risk, which should be explained to them, of postponing operation until the Carlsbad cure has been tried. But the patients who can not afford such luxuries can not afford to lose any time waiting for a cure by any other means, and should be operated on at once. By taking the Carlsbad cure once every year certain persons will succeed in restoring a certain degree of latency to the cholangitic symptoms; but if these symptoms recur in spite of such treatment, further palliation will be practically useless.

As to the frequency with which calculi are found in various parts of the biliary apparatus, the figures appended to this article, taken from Dr. Kelly's statistics of my patients, may prove of interest.

Out of 182 patients with calculi there were 153 (or 84 per cent.) who had stones in the gall bladder, of whom 52 had stones elsewhere as well; there were 31 (or 17 per cent.) who had stones in the common duct, of whom 12 had stones nowhere else; there were 17 (or 9.3 per cent.) who had stones in the cystic duct, of whom 11 had stones nowhere else, and there were only 9 (or 4.89 per cent.) who had stones in the hepatic duct, and all of these patients had stones in the common duct and in the gall bladder as well.

Finally, there are several matters of interest in regard to typhoid cholecystitis. Among the 216 patients whose cases Dr. Kelly had studied, there were seven (all women) from whose gall bladders the typhoid bacillus was isolated. "In four no history of previous typhoid nor of concurrent typhoid fever (in the commonly accepted sense) could be obtained." When the symptoms of acute cholecystitis occur during the course of typhoid fever the question of operative interference naturally arises, but in most cases I think it is wise to treat these patients medically unless very positive evidence exists that the cholecystitic process has gone on to suppuration or to some more serious complication.

Not infrequently an enlarged and tender gall bladder can be detected during typhoid fever without there being any subjective signs of cholecystitis. And as it is extremely probable that the typhoid bacilli invade the biliary tract in nearly every case of typhoid fever, the only wonder is that this disease has not heretofore assumed more importance as a predisposing cause of cholecystitis and gallstone formation. I do not know what proportion of patients with infections of the biliary tract give a history of previous attacks of typhoid fever, nor whether the incidence of gallstone disease is greater among such individuals than among the populace at large, but it certainly seems that it will be important for us in the future to inquire into these matters. Patients who have given evident symptoms of biliary involvement during typhoid fever should, if possible, be operated on by cholecystostomy after their recovery if any symptoms persist. Not only may serious future disease be thus prevented in the patients themselves, but the dissemination of typhoid infection from their intestinal tracts will be more effectually prevented. Drainage to accomplish good in infection of the biliary tract must be instituted early and be prolonged. It is in this class of cases in particular that I insist on and carry out tubage, not only of the gall bladder, but of the common duct as well. The mortality after the use of tube in the common duct is no greater in my hands than is that of the gall bladder.

I append the statistics as compiled by Dr. Kelly of the 216 cases referred to as operated on in the German Hospital:

DR. KELLY'S STATISTICS.

Of 216 patients:
182 (84.2%) had gallstones, and
34 (15.8%) had no gallstones.

Of 182 patients that had gallstones:
101 (55.5%) had stones in gall bladder alone;
23 (12.5%) had stones in gall bladder and cystic duct;
19 (10.5%) had stones in gall bladder and common duct;
12 (6.6%) had stones in common duct alone;
11 (6.0%) had stones in cystic duct alone;
5 (2.8%) had stones in gall bladder, cystic, hepatic and common ducts;
4 (2.2%) had stones in gall bladder, hepatic and common ducts;
1 (0.6%) had stones in gall bladder, cystic and common ducts;
2 (1.1%) had stones in adhesions (not otherwise specified);
4 (2.2%) had stones in regions not definitely specified.

Of 216 patients:
58 had no stones in gall bladder, and of these
23 had stones in the ducts;
41 had stones in common duct, and of these
12 had stones nowhere else;
9 had stones in hepatic ducts (as well as elsewhere).

Of 216 patients:
123 (56.9%) had adhesions about gall bladder;
22 (10.1%) had no adhesions, and of
71 (33.0%) there is no note in the case histories of presence or absence of adhesions.

THE PAINS.

Of 216 patients:
161 (74.5%) had colicky pains;
45 (20.8%) had non-colicky pains;
7 (3.3%) had pain not accurately described; and
3 (1.4%) had no pain whatever (one was markedly jaundiced, and the other two had fever, 100 and 104.6 respectively).

Of 161 patients that had colicky pains:
137 (85.1%) had gallstones, and
24 (14.9%) had no gallstones.

Of 45 patients that had non-colicky pains:
35 (77.7%) had gallstones, and
10 (22.3%) had no gallstones.

Of 3 patients that had no pains whatever, 2 had gallstones
15 patients never had colicky pains nor jaundice, and of these,
12 had gallstones, and
3 had no gallstones.

THE JAUNDICE.

Of 216 patients:
138 (63.0%) had jaundice at some time or other;
74 (34.2%) never had jaundice; and of
4 (1.9%) there is no statement as to occurrence of jaundice.
54 (14.0%) had jaundice at operation and previous attack;
13 (6.0%) had jaundice at operation and no previous attacks;
67 (31.0%) had previous attacks of jaundice, but no jaundice at operation;
4 (1.9%) had jaundice at operation, but there is no note as to whether or not there were previous attacks;
71 (32.8%) had jaundice at operation;
141 (65.3%) had no jaundice at operation:
121 (56.0%) had attacks of jaundice prior to the time of operation.;
116 (53.7%) had jaundice and gallstones;
21 (10.0%) had jaundice, but no gallstones;
60 (27.2%) had gallstones, but no jaundice;
11 (5.0%) had no gallstones and no jaundice; and in
8 (3.6%) there is no statement as to the association of jaundice and gallstones:
12 (5.5%) had jaundice and colicky pains, but no gallstones.

Of 60 patients that had no gallstones. but no jaundice:
44 (73.3%) had colicky pains:
12 (20.0%) had non-colicky pains; and in
4 (6.7%) the character of pain is not accurately described.

Of 11 patients that had no jaundice and no gallstones:
8 (72.7%) had non-colicky pains, and
3 (27.3%) had colicky pains.

Of 34 patients that had no gallstones:
12 (35.3%) had no jaundice at operation, but did have previous attacks:
11 (32.4%) never had jaundice;
9 (26.5%) had jaundice at operation and previous attacks;
1 (2.9%) had jaundice at operation, but no previous attacks;
1 (2.9%) there is no statement as to occurrence of jaundice.

THE SIZE OF THE GALL BLADDER.

Of 216 patients, in:
88 (40.7%) gall bladder was enlarged;
9 (4.1%) gall bladder was normal in size;
32 (15.0%) gall bladder was small and atrophic; and in
87 (40.2%) size of gall bladder is not mentioned in case histories.

Of 88 patients in whom gall bladder was enlarged:
74 (84.0%) had gallstones, and
14 (16.0%) had no gallstones;
49 (55.6%) had jaundice;
36 (41.0%) had no jaundice; and in
3 (3.4%) the presence or absence of jaundice is not mentioned.

Of 9 patients in whom gall bladder was normal in size:
7 (77.7%) had gallstones, and
2 (33.3%) had no gallstones;
7 (77.7%) had jaundice, and
2 (33.3%) had no jaundice.

Of 32 patients in whom gall bladder was small and atrophic:
30 (93.7%) had gallstones, and
2 (6.3%) had no gallstones;
25 (78.1%) had jaundice, and
7 (21.9%) had no jaundice.

Of 87 patients in whom size of gall bladder is not mentioned:
71 (81.6%) had gallstones;
16 (18.4%) had no gallstones;
57 (65.4%) had jaundice;
29 (33.4%) had no jaundice, and in
1 (1.1%) presence or absence of jaundice is not mentioned.

CAPILLARITY IN INTESTINAL SUTURES.*

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The histology of intestinal repair has been most comprehensively studied and described by many investigators, such as Warren,[1] Senn,[2] Murphy[3] and many others. The strength of the union has been determined by its resistance to hydrostatic pressure, in the observations of

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] J. Collins Warren: "The Process of Repair After Resection of the Intestine and Intestinal Suture," Trans. Amer. Surg. Assoc., May 12, 1887.

[2] N. Senn: "Intestinal Surgery"; Annals of Surgery, June, 1888.

[3] J. B. Murphy: "Intestinal Approximation. Pathologic Histology of Reunion," Chicago Clin. Rev., June, 1894.

Chlumsky[4] and of Horsley.[5] The capillary action of the suture material has been spoken of by many writers, but no experimental data have been noted in available literature.

The subject of capillarity in intestinal suturing is worthy of consideration and study, for the reason that the fear of infecting the peritoneal cavity by capillarity has been the cause of attempts to include but a part of the intestinal wall in the bight of the stitch and, in consequence, the introduction of stitches that have yielded and so proved to be insecure.

Capillarity in this connection is generally understood to mean the seepage, creeping or extending of a fluid along the suture material beyond the portion that is in the lumen and in direct contact with the fluid. The portion of the suture in direct contact absorbs the fluid; but if it is carried beyond the line of contact or of submersion it is brought there by capillary action. In the intestinal stitch that portion of the suture in the lumen is in direct contact with the mucosa or the intestinal contents, and the presence of such material in it is due to the absorptive powers of the suture material. But if intestinal contents are found in the portions of the suture other than that which is in the lumen it has been taken there by one or two ways: either by absorption while being drawn through the lumen or by capillary action.

The portion of the suture material that has passed through the gut wall into the lumen and out again has been in direct contact with the mucosa, and the intestinal contents that may be found in it arrived there, not by capillarity, but by absorption while it was in the lumen of the gut. Such a condition is present in at least part of each perforating intestinal suture.

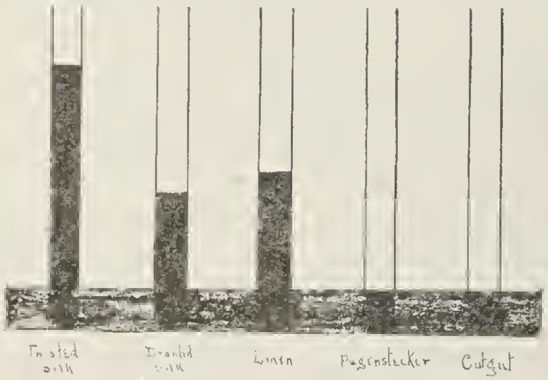

Fig. 1.—Dry materials.

By capillarity is implied a continuous action, a progressive flow, from that portion of the suture within the lumen and in contact with the mucous surface to that part on the serosa. This action is supposed to be constantly bringing to the serosa fresh material from the lumen, and it is this seepage, this continual replenishment of the objectionable matter, that has been feared in intestinal suturing.

In the consideration of this subject and in an effort to arrive at a more definite understanding as to the capillary properties of the different intestinal suture materials usually employed in the various methods, the following experiments were made:

Experiment 1.—The dry materials, ordinarily employed in gastrointestinal surgery, were tied around a frame, and this was placed upright in a saturated aqueous solution of methyl blue, in such a manner that about an inch of the suture materials were submerged. The capillary powers of the threads were then noted, by observing the distance that the color was carried, above the surface of the liquid.

The colored fluid was found to have risen highest in the twisted silk; linen, braided silk, and Pagenstecher thread in the order named. Catgut, especially that prepared by the Bartlett process, had practically no capillary action. (Fig. 1.)

That portion of the suture material which was surrounded and in contact with the liquid, was colored a dark blue in each instance, showing that the absorption, by direct contact with the solution, was practically the same. Keen and Rosenberger[6] have investigated the absorptive powers of the Pagenstecher thread and compared it with twisted and braided silk. They made no mention of the capillary properties of these materials, but did find that the increase in weight from the absorption of fluid was 41 per cent. in the Pagenstecher, 42.9 per cent. in the braided, and 22.2 per cent. in the twisted silk. In Pagenstecher's[7] original article capillarity is not considered.

Experiment 2.—This was similar to the first, except that the sutures, the catguts being omitted, were first boiled, then tied around the frame, and placed in the colored solution while still wet, in the same condition as when they are used clinically. From this experiment it was noted that the sutures have a greater degree of capillarity when wet than when dry (Fig 2). The result was the same after boiling in plain water, or in the usual 10 per cent. solution of sodium carbonate.

The extent of the capillarity will be found to be dependent on various conditions other than the presence or absence of moisture. For example:

Experiment 3.—Tensity: (Fig. 3, A.) thread 1 is taut and 2 is lax, the capillarity is more marked in the one that is loose.

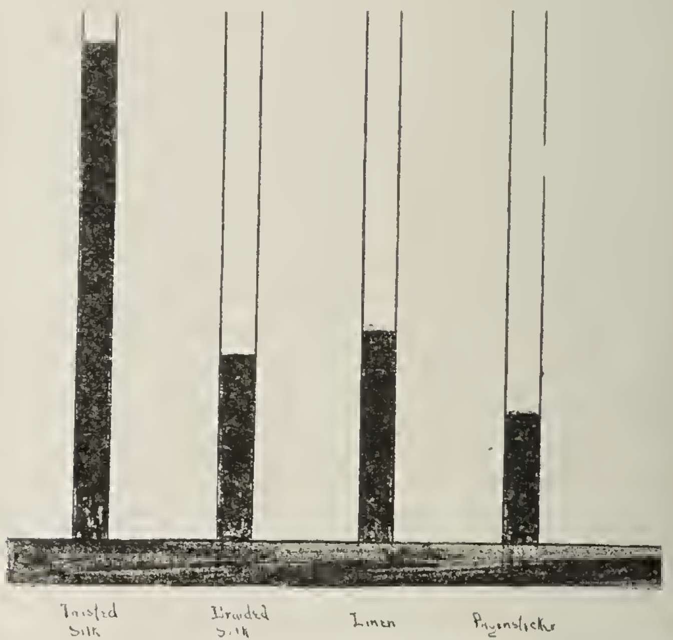

Fig. 2.—Wet materials.

Experiment 4.—The influence of the knot (Fig. 3, B.). In thread 1 the knot receives no consideration, thread 2 has the end tied in a square knot, and there is a knot in the continuity of thread 3, from which it is evident that the knot exerts an inhibitory influence on capillarity.

Experiment 5.—The size of the thread (Fig. 3, C.). Thread 1 is of large coarse twisted silk, thread 2 is small fine twisted silk. There is a greater degree of capillarity in the larger thread.

Experiment 6.—Contact: Figure 3, D., shows the greater capillarity when thread 1 is in contact with a flat surface and thread 2 is not.

The different degrees of capillary action in twisted and braided silk and other usual suture materials have been shown in the preceding diagrams.

Experiment 7.—In an attempt to approach more closely to the clinical conditions sutures were boiled, after which some were passed through the serous and muscular coats of a dog's intestine and others through the same coats of a pathologic human appendix, immediately after its removal, not entering the lumen in either case. The sutures were then tied around the frame and placed in the colored solution. The result was not different from that attained after simple boiling.

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[4] V. Chlumsky: "Experimentelle Untersuchungen uber die verschiedenen Methoden der Darmvereinigung," Beit. zur klin. Chir., Dec., 1889, vol. xxv, iii.

[5] J. S. Horsley: "A Contribution to the Study of Intestinal Suture," Annals of Surgery, November, 1903.

[6] Keen and Rosenberger: "The Surgical Use of Celluloid Thread," Phil. Med. Jour., March 10, 1900.

[7] Pagenstecher: "Celluloidzwirn, ein neues Naht und unterbindungsmaterial," Deut. med. Wochft., April 6, 1899.

Experiment 8.—In this instance sutures were made to enter into the lumen of the animal's intestine and others into that of the appendix; they were made to pass along the lumen and then were brought out through the wall. The result showed a striking dimunition in the capillary action (Fig. 4).

Experiment 9.—In order to eliminate the factor of the drying or evaporation of moisture from the threads beyond the colored fluid, intestinal contents were placed in a shallow receptacle, in the center of which a drop of concentrated solution of methyl blue was added. Diffusion between these liquids was very slow and limited. Twisted silk, as it had been shown to be the most capillary, was placed so that part of the silk was in the blue fluid and the distal or peripheral portion in the intestinal contents. The blue color did not travel along the suture material, there was an absence of capillarity (Fig. 5, A). In a control, no intestinal contents being used, the capillarity was very marked (Fig. 5, B).

The animal experiments were made on dogs and cats at the Denver and Rio Grande R. R. Hospital, with the assistance of Drs. Slopanskey and Titus.

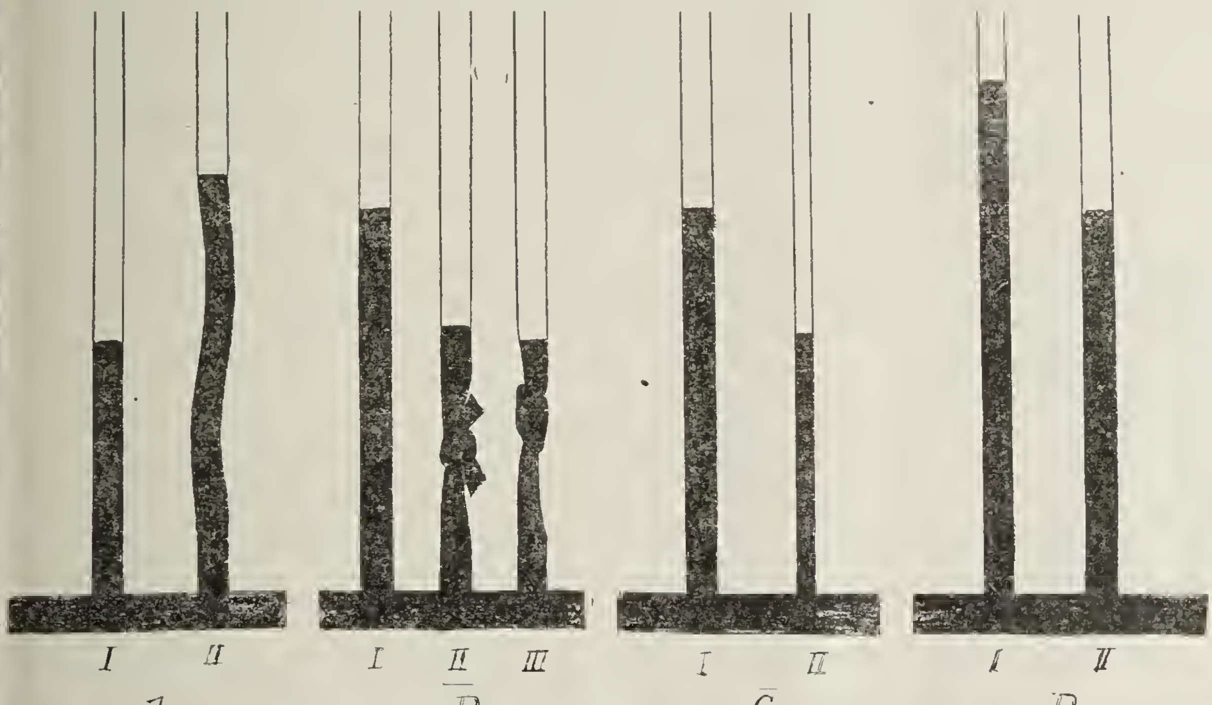

Fig. 3.—Showing: A, difference in taut and lax threads; B, influence of the knot; C, capillarity of finely and coarsely twisted silk; D, capillarity when the thread is in contact with a flat surface and when it is not.

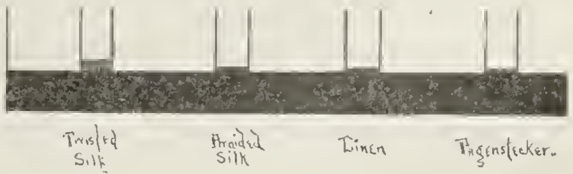

Fig. 4.—Diminution in capillary action in the intestinal contents.

Experiment 10.—The animal was anesthetized, the abdomen opened, and a loop of small bowel brought into the wound. Rubber constrictors were placed around the gut about 4 inches apart. In the center of this loop a suture of boiled twisted silk was inserted, from the serosa through all layers of the wall into the lumen, then for about an inch along the lumen parallel to the long axis of the bowel, and finally passed through the wall to terminate on the serosa. The two ends were left half an inch long and were not tied. A solution of methyl blue was then injected into the lumen, between the constrictors; sufficient fluid was injected to enable its presence to be demonstrated, but not sufficient to distend the gut (Fig. 6.).

The ends of the suture, on the serosa, were watched for fifteen minutes and there was no appearance of color in either end. Subsequent opening of the bowel showed that portion of the suture in the lumen to be stained a deep blue. Figure 6 shows the suture that was inserted in Experiment 10. It may, for convenience, be divided into parts 1, 2 and 3. Part 1 has passed through the wall into the lumen and out through the wall again. Part 2 has passed into the lumen and remains there. Part 3 has not entered the bowel lumen. Part 2 was in direct contact with the blue in the lumen and absorbed the color. Parts 1 and 3 did not receive any of the coloring, by capillarity or otherwise. Part 1 had passed through the bowel wall and the lumen and been in contact with the mucosa and the intestinal contents, which apparently had acted as a preventive to capillarity. Part 3 had been in contact with neither the mucosa nor the intestinal contents, yet, in the absence of capillarity it was similar to Part 1. A possible explanation is that the mucous contact, at the point where Parts 2 and 3 join, where the suture passes through the gut wall, was sufficient to prevent the outward extension of capillary action, and so to account for the absence of the blue color in the suture external to the point of contact with the mucosa.

Experiment 11.—This was similar to No. 10, with the exception that, after the injection of the methyl blue and the closure of the puncture wound, the loop with the constrictors was replaced within the peritoneal cavity and left there for 15 minutes. After this time it was carefully removed and examined, but there was no color in the ends of the thread on the serosa. On opening the gut, part two of the suture within the lumen was found deeply stained.

Experiment 12.—This differed from No. 11 in that the gut, with the suture in its wall, the colored solution in its lumen, and the constrictors, was left in the peritoneal cavity for 45 minutes. The result was the same as in No. 11.

Experiments 13 and 14.—These were similar to No. 12, except that braided silk was used in one and Pagenstecher thread in the other. The results were identical with those in Nos. 11 and 12.

Experiment 15.—A twisted silk suture was placed in a loop of bowel, as in the previous experiments, but instead of using rubber constrictors, because of a possible alteration from the clinical conditions, the bowel was compressed by the fingers of an assistant and the solution was then injected. After keeping the colored solution in contact with Part 2 of the suture for a few minutes the digital compression was relieved and the loop of bowel, with the suture and colored fluid, was replaced within the peritoneal cavity and allowed to remain there for 35 minutes. After this time it was removed; there was no evidence of blue in Parts 1 or 3 of the stitch. On opening the gut Part 2 on the mucosa was found to be a deep blue in color.

Experiment 16.—This was the same as No. 15, with the exception that the two ends of the suture on the serosa were tied. The result was not different from that obtained in the other experiments.

Experiment 17.—This was undertaken with the object of determining the difference, if any, as regards capillarity, between the bacteria of the intestinal lumen and the colored solution that had been injected in the previous experiments.

Under strict aseptic technic the skin and superficial fascia of abdomen were incised and reflected, the aponeurosis and muscles were seared with the actual cautery, and the abdomen was opened. A part of the large bowel was brought into the wound, and an eight-inch forceps was introduced into the rectum by an assistant, the tip of which was made to present in the bowel at the abdominal wound. A threaded needle was inserted through the intestinal wall from the serosa, into the lumen, where it was grasped by the forceps and drawn down for a few inches. The forceps was removed, allowing the needle and thread to remain in the cavity of the large bowel. The serous end of the thread was cut about half an inch from where it entered the intestine. The viscera were replaced within the abdomen and the wound closed with temporary sutures. The animal was kept under the anesthetic for an hour, the abdomen was then reopened, the intestine with the perforating suture was carefully brought into the wound, the suture cut off close to the intestine, and dropped into a tube of culture media. The result was negative (Fig. 7.).

As a control, after the previous described steps were taken, a suture was passed into the lumen and out again. A piece of the suture material that had passed through the lumen was dropped into a similar tube of culture media. The result was positive.

EXPERIMENT 18.—This was similar to No. 17, with the exception that the animal was kept under the anesthetic for 2 hours after the insertion and before the removal of the stitch. The result was negative.

In the experiments, the time allowed for the capillarity to manifest itself did not exceed two hours, because of the clinical fact that within this time the serous plastic exudate will have been thrown out between the apposed serous surfaces, and after that time the suture material has been excluded from the general peritoneal cavity.

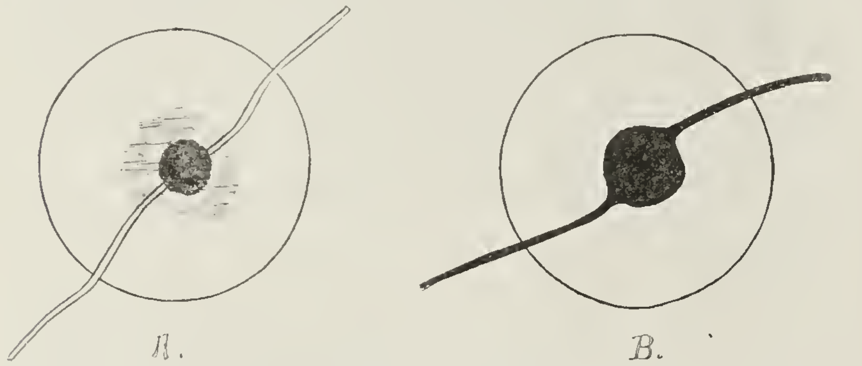

Fig. 5.—A, Lack of capillarity in intestinal contents; B, marked capillarity without intestinal contents.

From the preceding it would seem that the danger of peritoneal infection by capillarity in intestinal suturing has been greatly exaggerated and that it has little substantial basis. This is also emphasized by recent clinical experience in which intentional or unintentional perforating sutures have been used with practically uniform success.

That the fear of capillarity is decreasing is shown by the many modern methods of enterorrhaphy and anastomosis in which through-and-through sutures have been employed. Such as the methods of Bishop,[8] Vesein,[9] Maunsell,[10] M. E. Connell,[11] Wiggin,[12] Cheatle, Hartigan,[14] Horsley[5] and others and the method which I[15] had the honor of demonstrating before this Section in 1901 at the St. Paul session (one and one-half years after its original publication[16]). This decrease of fear is also seen in recent text-books by authors at home and abroad in which sutures of this variety are described and approved.

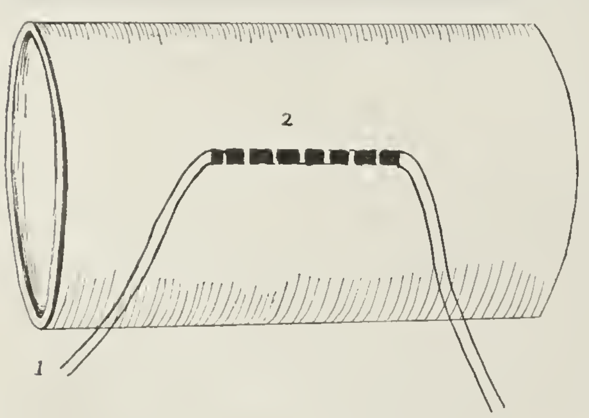

Fig. 6.—Suture in intestine.

In the two-row methods of suturing the Czerny suture has been improved so that it is now made to include the entire thickness of the wall instead of but part of it. Albert,[17] the first so to modify it, placed the knots on the serosa, and Mikulicz[4] later located the knot within the lumen.

In the mechanical contrivances and aids in gastro-intestinal surgery, the through-and-through suture has had its place. Threads were passed directly from the lumen through the openings in the gut walls by M. E. Connell in the original "plate operation." Senn subsequently placed needles on these threads and passed them through the intestinal wall. The puckering string of the Murphy button perforates all layers of the viscera, and the "elastic ligature" passes through all coats into the lumen and out again.

In the face of the above short review of the history, clinical experience and experiments, it would seem that capillarity should no longer be considered as an objection to the through-and-through stitch. By employing a square or right-angled, instead of a round or whip, stitch (Fig. 7), the extent of the suture material on the serosa may be reduced to a minimum, and that little may be separated from the general peritoneal cavity by serous apposition.

Because of its bulk, the knot will be isolated in this manner with more difficulty than is the rest of the suture. But success has followed the leaving of the knot of deliberate through-and-through stitches on the serosa without further attention. It has been left that way in a necessarily large percentage of stitches that attempt to penetrate but not to perforate the submucosa, as is well shown in the recent report of Eggers and Maury.[18]

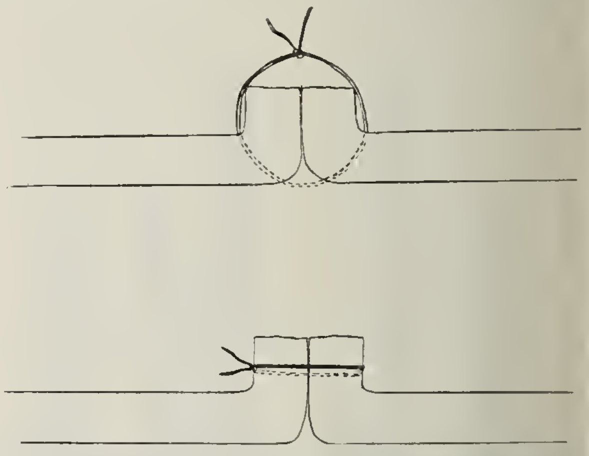

Fig. 7.—Showing suture inserted in bowel.

It may be covered by a sero-muscular stitch, i. e., one not attempting to include part of the submucous layer. Or best, from a theoretic standpoint, the practicability of which has been demonstrated, the knot may be placed outside of the peritoneal cavity, within the lumen.

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[8] E. S. Bishop: "Enterorrhaphy," Med. Chron., Sept., 1885.

[9] Vesein: "La Suture Intestinale," Bul. Soc. de Chir., 1871.

[10] H. W. Maunsell: "A New Method of Intestinal Surgery," Amer. Jour. Med. Science, March, 1892.

[11] M. E. Connell: "Intestinal Anastomosis," THE JOURNAL A. M. A., July 29, 1893; Med. Rec., Sept. 17, 1892.

[12] F. H. Wiggin: Med. Rec., Nov. 19, 1898.

[13] G. L. Cheatle: "A Method of Uniting the Divided Intestine," Lancet, 1897, vol. i and vol. ii.

[14] J. W. Hartigan: "A New Method of Intestinal Anastomosis," New York Med. Jour., July 17, 1897.

[15] F. G. Connell: "The Knot Within the Lumen in Intestinal Surgery," THE JOURNAL A. M. A., Oct. 12, 1901.

[16] F. G. Connell: "Intestinal Sutures," Phil. Med. Monthly, Jan. 1899.

[17] Albert: Wien. med. Press, 1881.

[18] Eggers and Maury: "What Becomes of Lembert Stitches Placed in the Gut?" Surg., Gyn. and Obst., May, 1906.

Dangers of Unregulated Gymnastics.—A system of gymnastic exercises without apparatus was promulgated a few years ago by J. P. Mueller. His latest book, entitled "My System," was mentioned recently in THE JOURNAL, on page 626. Our German and Swiss exchanges have lately contained several communications from physicians relating serious damage from the use of these exercises by persons predisposed to or already affected with unsuspected organic affections. They warn against this "Muelleromania," as they call it, urging the necessity for medical individualization of strenuous exercising for persons past the prime of life or debilitated from any cause. One physician says that he has known several examples of heart disease unmistakably acquired by this means.

THE DIFFERENTIAL DIAGNOSIS AND PROGNOSIS OF TUMORS OF THE UVEAL TRACT.*

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The literature of tumors of the eye covers many hundreds of cases and thousands on thousands of printed pages. The delegation of this subject to me by the officers of the Section on Ophthalmology of the American Medical Association appalled me by its vastness, and I, therefore, selected only one portion, which is, perhaps, its most important phase, that of the differential diagnosis and prognosis of tumors of the uveal tract, dealing with this subject mostly from the clinical standpoint. A companion essay on "The Microscopic Findings of the So-called Leucosarcoma" is offered to the Section by Dr. E. V. L. Brown, of Chicago. The most important monograph on this subject is by Felix LaGrange,[1] which comprises two massive volumes, 1,739 pages in all, and to this work I am indebted for much of the information which follows:

From the richness of its circulation, its complex structure, its superficial situation and its embryology, the eye is greatly exposed to new growths. It is composed of both ectodermic and mesodermic elements, the proliferation or implantation of which gives rise to diverse forms of tumors. I follow LaGrange and classify the tumors developing in the iris, the ciliary body and the choroid under the following heads:

1. Cysts.
2. Angioma.
3. Myoma.
4. Sarcoma.
5. Metastatic Tumors (Sarcoma and Carcinoma).

I. CYSTS.

From their situation we may designate all tumors of the uveal tract malignant as regards the integrity of vision and of the eye itself. Therefore, even the so-called benign tumors, such as cysts, which in other localities would give rise but to deformity or more or less disturbance of function, are dangerous growths to the eye. These forms of tumors are practically limited to the iris. Alt[2] says: "No doubt epithelial new formations occur primarily in the eyeball, springing from the two epithelial layers of the ciliary body or iris, and seem to be benign."

Differential Diagnosis.—The diagnosis is generally easy. In the beginning they may be confused with sarcoma, syphilis and tuberculosis of the iris.

Sarcoma develops rapidly; it is plainly seen and presents a dark aspect, very different from the color of the cysts which are, as a rule, gray, yellow, blue, or rarely green. Leucosarcoma of the iris, which is extremely rare, is white, presents a surface rich in blood vessels and somewhat mammillated. Cysts of the iris usually arise after traumatism, whereas sarcoma does not.

Gummata of the iris are generally to be seen in both eyes, preferably selecting the internal or superior segment of the iris. They are yellowish and under specific treatment are absorbed, leaving an atrophic area. They generally arise in the so-called tertiary form of syphilis.

Tubercles of the iris are of a clear yellowish color, occasionally white. They are vascular, round, multiple, grow quickly and progress rapidly to suppuration in the anterior chamber and perforation of the cornea. While tubercle bacilli are not always found, yet the growths are generally consecutive to general tuberculosis. The rapid course of the affection, the aspect of the growths, the absence of traumatism, should clear the diagnosis. The differential diagnosis of tuberculous tumors of the iris, ciliary body and choroid is helped by hypodermic injection of tuberculin. There is a general reaction in at least 85 per cent. and some local reaction in about 50 per cent. of the cases.[3]

Lepra-tubercles occur in the iris as well as the conjunctiva, but other evidences of leprosy as well as severe iritis are always present.

Angiomata of the iris and pigmented nevi should not be confused on account of their aspect.

Dermoid tumors look like pearly growths. They are, however, of congenital origin.

Cysticercus of the iris should be recognized by the caudal vesicle and the head.

The presence of cystic tumor of the iris being determined, we should recognize whether it be a simple cyst, a pearly tumor or a dermoid. Simple cysts are transparent and translucent. Pearly tumors are milk white and look like a little pearl. They are usually round, sometimes bosselated, and frequently ultimate in simple cysts. These cysts of the iris frequently pass from the anterior chamber and apparently combine with other structures of the eye.

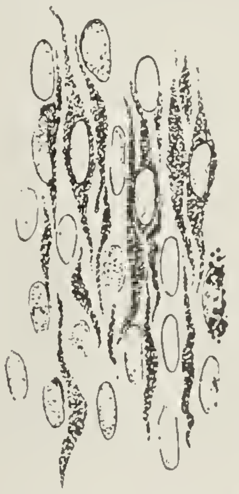

Fig. 1.—Fusiform cells with chromatophores in various stages from the cortex of a melanosarcoma (Schieck).

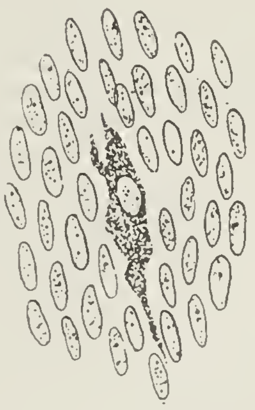

Fig. 2.—Chromatophore in a leucosarcoma (Schieck).

Prognosis.—The prognosis of cysts of the iris is usually grave, as they predispose this structure to iritis and iridochoroiditis. One case of sympathetic ophthalmia has been reported by Rothmund and Critchett.[1] Cysts of the ciliary body and choroid may follow traumatisms, operative or otherwise.

II. ANGIOMATA.

Only 19 cases of angiomata of the uveal tract have been reported, and the diagnosis of these is disputed by Schieck, who claims that all these cases (certainly 12 of them) are examples of melanosarcoma. These have all been in the choroid and have led to destruction of the eye and, in some cases, life. One of these was my own, described later, which was an angiosarcoma of a metastatic type. The ophthalmoscopic examination in the early stage usually shows a brown tumor, the character of which is discovered after enucleation.

III. MYOMA.

Myoma of the uveal tract has been rarely described in literature, the first case being by d'Iwanoff-Wecker in

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] LaGrange: "Traite des Tumeurs de L'Oeil, de L'Orbite et des Annexes." Paris, 1901.

[2] Am. Jour. Ophth., April, 1902.

[3] C. H. Bull: Medical Record, Dec. 9, 1905.

1867. The others are by Salomon, Mules, Deutschmann, Lange, and Guaita.[1] We would expect muscular tumors to be developed in the iris, ciliary body and the choroid on account of the muscle fibers in these structures. Guaita is the only one who has thoroughly described a case and given microscopic illustrations. If we accept his observations, it is certainly conclusive that muscular tumors may arise in these structures.

IV. SARCOMA.

We now come to the most important portion of this subject, sarcoma of the uveal tract, of which there are many varieties and which have been described by writers under a number of subdivisions. For diagnostic and prognostic purposes we can not accept the statement of Schieck that these are all melanosarcomas. For convenience of description, we put them under two general groups: (1) Melanosarcoma, in which the chromatophores are so thick that the tumor appears blackish or brownish to macroscopic examination and in which pigment cells are plentiful under the microscope; (2) leucosarcoma, in which the tumor is white and chromatophores are with difficulty found under the microscope. (Figs. 1 and 2.) A further subdivision of these forms may be made as follows:

a. According to the form of the cells:
    Round (encephaloid).
    Fusiform (fibro).
    Giant (myeloplax).
b. From the origin of the epithelium and the grouping of the cells:
    Hemangiosarcoma.
    Lymphangiosarcoma.
    Alveolar.
    Tubercular.
c. According to the vessels:
    Cavernous.
    Telangiectatic.

The diverse degenerative forms, myxosarcoma, cholesterinsarcoma and the combined forms of osteosarcoma, chondrosarcoma and tubercular sarcoma, would give still further varieties. The differentiation of its forms is of importance, the pigmented tumor being much more malignant than that without or with few chromatophores.

LaGrange[4] says: "As regards the origin of the pigment, microchemical reactions do not permit us to distinguish hematogenous pigment from that arising in the cells themselves. The hematogenous pigment is found particularly near the vessels, the autochthonous scattered through the tumor. The pigment arises chiefly from the normal cells of the choroid, although the blood also plays a considerable rôle. Tumors with hematogenous pigment appear to be less malignant than the others."

Tashiro[5] sums up the result of his work as follows:

"1. The polymorphous cells composing melanosarcoma are of the same origin. The differences in shape depend partly on the irregularities in the shape of the chromatophores from which the cells spring, partly on the rapid production of cells which have not reached their full development, and partly from the hypertrophy and breaking down of the cells. 2. The unpigmented cells in a melanosarcoma are quite similar elements. In the case of these cells the proliferation is too rapid to allow the formation of pigment. 3. The pigment cells produce their pigment in a metabolic manner by the protoplasm being gradually transformed into melanin. The hemoglobin is here only an oxygen carrier. 4. The retinal epithelium takes no part in the structure of melanosarcoma, but it may proliferate harmlessly in cases of sarcoma of the choroid. 5. Melanosarcoma is composed of a specific variety of cells which arise from chromatophores, a sort of connective tissue, and are characterized by their irregular shape and the production of melanin. Just as carcinoma arising from goblet cells becomes carcinoma mucosum, a special variety, so melanosarcoma is a special variety. Ribbert suggests the name chromatophoroma for the true cases in order to distinguish them from sarcomas that are accidentally pigmented."

Franz Schieck's recent book[6] seeks to prove by a complete anatomo-pathologic report of 24 of the author's own cases of uveal tumors and a review of all fully reported cases in the literature of leucosarcomas and angiosarcomas that all sarcomas of the uveal tract are more or less pigmented and should be classed as melanosarcomas. From the microscopic standpoint we agree with Schieck, for, even in the white sarcomas, chromatophores are to be found (Figs. 1 and 2). We must, however, side with LaGrange (whose descriptions and differentiations the former author attacks) that there is a difference in the prognosis, as regards sight and life, to be made from the macroscopic as well as the microscopic characters of these growths. Those containing embryonal tissue mostly are probably more malignant and subject to recurrence, and especially those that are so deeply pigmented as to be deemed melanotic on macroscopic examination.

Schieck states that from the critical examination of the many cases of melanosarcoma which have been "wrongly described" under other names he finds no evidence that other than pigmented sarcomatous growths arise in the uvea, and he considers that all such should be described as melanosarcoma.

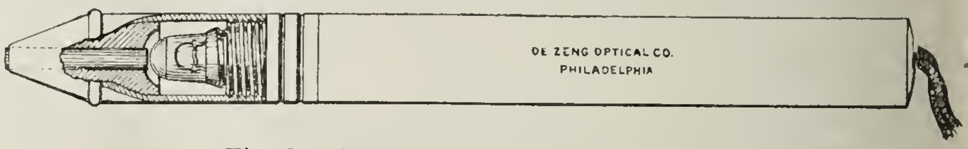

Fig. 3.—Ocular transilluminator (author's model).

Aids to Differential Diagnosis.—The differential diagnosis of intraocular tumors is materially helped by the following methods and instruments of precision: 1. The magnifying glass or loupe, particularly the binocular form. 2. The condensing lens for oblique illumination. 3. The ophthalmoscope. 4. Transilluminating apparatus. 5. Exploratory puncture.

Tumors of the iris and ciliary body can be seen by the external methods; those of the interior of the eye, in their first and second stages, occasionally by oblique illumination, usually by the ophthalmoscope, and the diagnosis confirmed by transillumination.[7] I will not dwell on the three former methods, but the latter, a modern innovation, is certainly not in general use, although it is most valuable. This consists of sending a beam of light through the eye, in a dark room, by such instruments as have been devised by Rochon-Duvigneaud, Sachs and Leber and the modification of the former made by the author.

My model consists of a tube containing a small electric light, in the end of which is a covered glass rod, free at one end, permitting light to pass through. The end of the rod is placed against the lids or sclerotic, in the latter case the eye being anesthetized by cocain, when, if there be any obstruction of size in the eyeball, a shadow will show similar to that in transillumination of the face for the determination of disease within the maxillary antrum and other accessory cavities.

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[4] Arch. d'Ophth., vol. xxi, No. 4, p. 177.

[5] Inaug. Dissert., Halle, 1902.

[6] "Das Melanosarkom als Einzige Sarkomform des Uvealtraktus," Wiesbaden, 1906.

[7] When the tumor is posterior to the equator, of course transillumination is not of pronounced value.

Exploratory puncture has been tried by Schulz[8] and Hirschberg,[9] but is dangerous and liable to cause metastasis. The diagnosis of tumor of the eye is self-evident after perforation of the globe or involvement of contiguous structures.

Sarcoma of the Iris.—The diagnosis of sarcoma of the iris does not usually present any difficulty. It may be confused with pigmented nevi or melanoma, which are not usually progressive, but which are held by some authors to be the starting points of melanosarcoma. Fehr,[10] fifteen months before the diagnosis was made of a melanosarcoma of the choroid extending into the ciliary body, found deposits of pigment on the iris and Descemet's membrane. After the enucleation, preceded at the wish of the patient by a puncture, there was recurrence in the conjunctiva, notwithstanding the careful removal of the punctured spot. The author concludes that pigment deposits in eyes which have not been injured, inflamed or degenerated should excite suspicion of tumor. Hirschberg[11] says congenital pigment nevi of the cutis, as life advances, tend to be converted into melanotic tumors, and gives three cases of circumscribed pigment spots of the iris which became melanotic sarcomata.

Cysts of the iris are usually round and of a bluish transparent aspect. Gummata of the iris and tuberculous tumors are usually accompanied by iritis, the pupil is not mobile, the inflammation causes synechiæ, which, with the deposits on the membrane of Descemet, the course of the case, the rapid effect of constitutional treatment, should clear the diagnosis.

Occasional cases of iridic gumma, on first examination, present a striking likeness to primary sarcoma of the iris, as I myself have found, most notable in one case at least. This was in an unmarried female, age 21, whose appearance, history and environment seemed to negative the existence of syphilis. A reddish brown tumor of 3 mm. diameter was observed about the middle of the iris in one eye. Dilatation of the pupil showed only one synechia, and this at the site of the tumor. The eye was said to have been sore for about one year and at first had been inflamed. A tentative diagnosis of either sarcoma or gumma was made; the latter was substantiated by the rapid disappearance of the growth under mercurial inunctions, pilocarpin sweats and iodid of potash. A history of exposure was afterward obtained.

Wood and Pusey[12] report 96 cases of primary sarcoma of the iris. Enucleation was done in 57 cases. Eliminating 16 cases, which must be excluded from consideration for various reasons, there remain 41 cases in which the histologic examination of the enucleated globe showed involvement of other parts than the iris. Iridectomy was done in 27 cases; in 3 the results were bad; in 18 the notes form interesting reading; in some of them the continued growth of the tumor was only too evident. In estimating the results it is necessary to remember that the growth of these tumors is usually exceedingly slow, warning one not to be too certain of a cure until a long time—more than three years—has elapsed after the removal. In 5 cases observed for more than three years there were no recurrences. In one case in which there was apparently no return, the eyeball was enucleated eleven years after the iridectomy; it showed inflammation of the ciliary body and remainder of the iris with tumor cells; sixteen years after the iridectomy the patient died from general sarcoma.

Sarcoma of the Ciliary Body.—The diagnosis is relatively easy, although it might be confused with gumma, tubercle, or even with glaucoma attended by protrusion of the ciliary region, but these are attended by evident inflammation, which is not at first the case with sarcoma. In the case of ciliary sarcoma there is at first no special inflammation nor increase of tension, although as the tumor grows these conditions obtain. Subconjunctival cysticercus about the ciliary region should be recognized by its color, translucence of its vesicle and its movements.

Sarcoma of the Choroid.—This is the most important part of our subject and the most common place of origin. The growth may arise in any part of the choroid, in the ora serrata, the equator, the macular region, and about the papilla. It is usually of a mountain shape, but may have a constriction or neck or may be a flat growth. The most common place of origin is in the ora serrata and here the ciliary body speedily becomes implicated. For purposes of diagnosis and clinical history it may be described under four stages:

1. First Period: The patient comes on account of disturbance of vision. We find lowered visual acuity and scotoma or absence of the visual field corresponding to place of origin of the tumor, which is to be seen in the eye by the ophthalmoscope, sometimes by oblique illumination, and, if the tumor be within the anterior portion of the choroid and ciliary body, a typical shadow will be obtained on transillumination.

At times these tumors may be anomalously placed and thus be at first overlooked, as they may resemble intraocular blood clots.[14] Parsons reports 31 cases of diffuse sarcoma from the literature.[15]

We first observe detachment of the retina, which is an early sign, but with which it must not be confused. Sarcoma is usually of a round form and the retina is stretched more or less tightly over its surface, the retinal vessels being present, but, in addition to these, there are also the true vessels of the tumor which render the protrusion much more vascular than in the case of simple retinal detachment. The tumor is always darker, even in the case of the feebly pigmented growths, because the pigment layer of the retina covers the tumor (Figs. 6 and 7 and fundus pictures Figs. 8 and 9).

In simple retinal detachment the folds of the retina are much more numerous and may change in position from time to time or while under observation. There is certainly subretinal fluid in connection with sarcoma, but in the latter case the detached retina does not vibrate, for the fluid is a jelly-like exudate, an albuminous coagulum, while in the former it is usually more of the consistence of blood serum.

The diagnosis is readily established by the method of transillumination in connection with the ophthalmoscope, the history and course of the case. Retinal detachment, except in the case of myopia, and sometimes even here, generally follows some accident. In sarcoma the patient can rarely actually designate a previous traumatism.

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[8] Klin. Monatsbl. f. Augenheilk., vol. xxxviii, p. 315.
[9] Berl. klin. Wochft., Nos. 4 and 5, 1904.
[10] Centbl. f. prak. Aug., vol. xxvi, p. 129.
[11] THE JOURNAL A. M. A., Nov. 25, 1905.
[12] Arch. of Ophth., July, 1902.
[14] Parsons: Brit. Med. Jour., vol. xix, 1904.
[15] Arch. of Ophth., vol. xxxiii, p. 2, 1904.

Tubercles of the choroid are recognizable under the ophthalmoscope as whitish nodules, occupy a considerable space, and are accompanied by inflammatory reaction, which is absent in the first stage of sarcoma.

Cysticercus under the retina may at first be confounded with beginning sarcoma, but this affection is extremely rare in America, being more common where raw or poorly cooked meat is customarily eaten, as in Germany. The movements of the animal, the opaqueness of the retina over it, and the inflammatory reaction, are usually sufficient to determine the diagnosis.

Glioma and pseudoglioma of the retina are somewhat more difficult of diagnosis. Glioma usually appears in infancy, its glaring amaurotic cat's eye, presence of its peculiar vessels, and the fact that it is composed of retinal tissue and not merely covered by the retina, are in the early stages to be readily determined by the ophthalmoscope. Its rapid course in comparison to the comparatively slow growth of sarcoma is another useful point for diagnosis. Pseudoglioma, or suppurative choroiditis, it to be determined by the minus tension and inflammatory symptoms, absent in the early stages of sarcoma.

2. Second Period: Sarcoma is apt to be confounded in its second stage with two affections: Absolute glaucoma and suppurative choroiditis.

Absolute glaucoma with cataract presents an appearance very like to sarcoma; many eyes have been removed and many errors in diagnosis made even by the most accomplished and experienced ophthalmologists, among whom may be quoted Graefe, Jacobi, Knapp and Hasket Derby[1] and many others of less experience, including myself. Certainly the symptoms are much the same, viz.: the pain and the tension of the eyeball. These vary in glaucoma, while in intraocular growths the symptoms are progressive, the eyeball becoming so tense and hard that finally amelioration results from bursting of the globe. Both symptoms are the results of concomitant glaucoma occurring from the enlargement of the tumor and encroachment on the contents of the eyeball.

Chronic suppurative choroiditis is very rarely accompanied by hypertension. It has, however, followed a primary growth within the eye and resulted in secondary atrophy of the eyeball.[16] Terrien and Coutela[17] refer to the fact that sarcoma may arise in an atrophied eyeball, but believe that the germ of sarcoma must preexist, perhaps in the form of pigmented nevus of the iris.

3. Third Period: Here the diagnosis of choroidal sarcoma should not present any difficulty, for the eyeball has ruptured and the growth is fully apparent.

However, an epibulbar tumor may so encroach on the eyeball as to gain entrance and, if seen at this time, may simulate a growth of intraocular origin. The diagnosis should be made from its history and its course.

4. Fourth Period: Where the tumor growths become generalized we may not always be able to determine the origin, whether from the surrounding structures or from the inner parts of the eye. However, at this time the diagnosis, prognosis and treatment may practically be limited to naming the disease, stating that it is fatal, and preparing for a lethal ending.

Leucosarcoma of the Iris.—As before noted, I have deemed it advisable for purposes of diagnosis and prognosis to make a distinction between the feebly pigmented variety, leucosarcoma, and the melanotic form.

The diagnosis of non-melanotic sarcoma may be confused with cysts or pearly tumors. These, however, are hyaline, transparent, usually of a bluish color, and without vessels. Gummata of the iris are yellow, multiple, implanted about the ciliary circle, and accompanied by other manifestations of the diathesis. Tubercles are multiple, composed of disseminated little tumors, which should not be confounded with the one mass of leucosarcoma. They develop very rapidly and arise in young subjects who present tuberculous antecedents. Lymphomata resemble tubercles. Leprous growths are accompanied by other characteristic symptoms and are usually localized at the sclerocorneal limbus. Cysticercus should be recognized by the animalcule. The melanotic tumors of the iris have been described.

Leucosarcoma of the Ciliary Body.—This may be confused with the other malignant tumors, carcinoma and melanotic sarcoma. The diagnosis can not be made in the primary stage, but may in the secondary from the appearance of the growth. There are only five cases described in literature.[18] It is primary and can not be differentiated *in situ* from melanosarcoma. Tubercular pseudo tumors develop in the ciliary body, but are accompanied by general symptoms.

Leucosarcoma of the Choroid.—This may be confused with glioma of the retina and simple detachment. In glioma there is the characteristic localization of the growth, which almost generally arises about the optic nerve, the absence of the retinal vessels, its characteristic appearance and rapid growth into the vitreous.

The diagnosis between leucosarcoma and detachment of the retina is not so difficult if transillumination be used.

PROGNOSIS OF TUMORS OF THE UVEAL TRACT.

The prognosis of tumors of the uveal tract depends on their nature. Intraocular tumors may always be deemed malignant to the function and to the viability of the organ itself; they demand excision; in the majority of cases enucleation of the eye and in a considerable minority exenteration of the orbit and subsequent *x*-ray treatment. There is a certain amount of difference between melanosarcoma and leucosarcoma as regards the prognosis. Certainly the statistics of melanosarcoma of the uveal tract show that it is more dangerous to life than leucosarcoma. I have been unable to differentiate the various cases in the many reports that have been made on this subject, as many are duplicates.

Fuchs[19] reported 13 cases of melanotic tumors of the iris, 20 of the ciliary body and 196 of the choroid. Of 10 iris cases, 6 were operated on with success—one by iridectomy and 5 by enucleation. Of 11 cases of the ciliary body, 6 with success; 115 of the 196 tumors of the choroid with success, 75 terminated in death, and 15 recoveries out of 40 of the others during the first six months; of the 75 mortal cases, 37 recurred in the orbit. Badoin[1] reviews 130 additional cases in which there were 29 recoveries.

The microscopic diagnosis is of importance, because embryonal cells without pigment are much less apt to form recurring growths than those having fusiform elements with pigmentary migration and proliferation. In 76 cases examined by Fuchs[19] 46 had embryonal cells and 31 fusiform cells; in 33 cases there were 18 recoveries and 15 deaths. In melanotic tumors Fuchs[19] and LaGrange state that metastasis occurs in 19 per cent., in leucosarcoma 7 per cent. In melanosarcoma there is recurrence in 14 per cent.; in leucosarcoma only 3 per cent. Statistics seem to show that in leucosarcoma about 25 per cent. have been operated on with definite result after three years. In melanosarcoma the percentage is about half of the former. Hirschberg[20] believes that patients who remain healthy after four years may be considered permanently cured, but he has noted an exception in 2 cases of metastasis of the liver nine years after enucleation of the eyeball. Goldzieher[21] reports a similar case.

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[16] Schultz: Arch. f. Augenheilk., vol. xlii, p. 56; also Key: Hygeia, February, 1900, and Terrien: Arch. d'Ophth., vol. xxix.

[17] Arch. d'Ophth., November, 1905.

[18] Moissonnier: Arch. d' Ophth., March, 1905.

[19] "Das Sarcom des Uvealtractus," Wien, 1882.

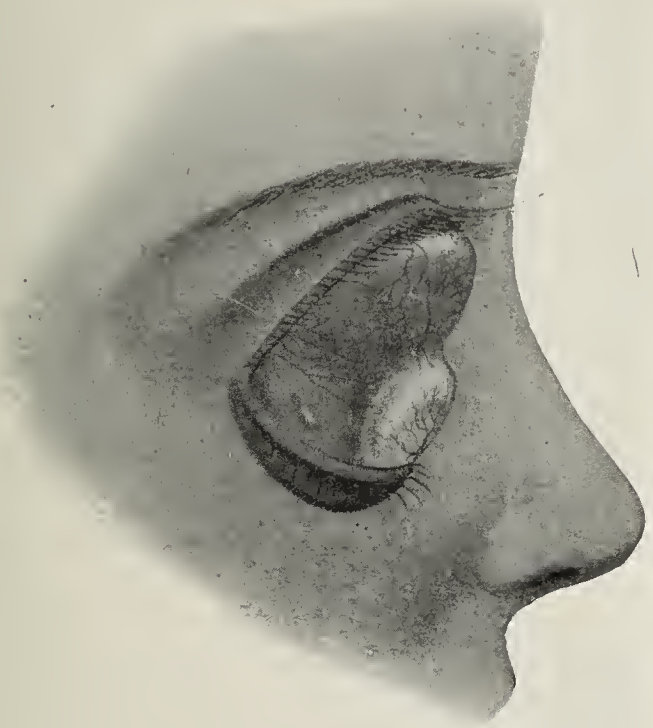
Fig. 4.—Extensive ectasia of ciliary region presenting external appearance similar to my case shown in Figure 5 (Vossius).

The most important recent contribution to the question of recurrence *in loco* and metastasis after enucleation for choroidal sarcoma is by Hirschberg. He records the statistics of 68 cases of sarcoma of the uveal tract seen between the year 1872 and 1903; of these, 63 were in the choroid; 66 enucleations were performed. There were no deaths from the primary operation. Local recurrence was observed only once, in which perforation had occurred before enucleation. In 2 out of 6 cases in which puncture of the eyeball for diagnosis was made previous to operation, there was a recurrence in the position of the conjunctival puncture, so that he advises against this procedure. Death occurred from metastasis in 16 cases—in 12 of these within two years. Of 41 cases that could be properly followed, one died from local recurrence, 2.5 per cent.; 17 from metastasis, 41.5 per cent., and 23 remained healthy, 56 per cent. This is the best record of success thus far published. Of 47 cases in which anatomic examination was recorded, 35 were melanotic, 9 slightly pigmented, and 2 leucosarcomatous.

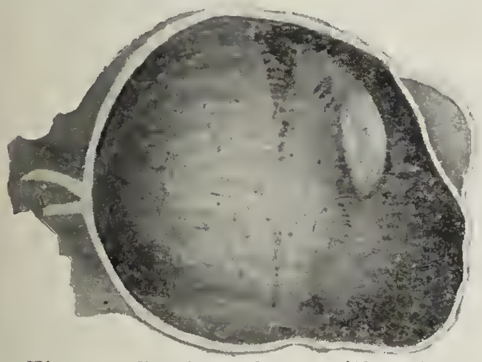
Fig. 5.—Section of eye with extensive ciliary ectasiæ simulating intraocular growth, attended with hypertension, enucleated under suspicion of tumor (author's case).

V. METASTATIC TUMORS.

Metastatic tumors of the uveal tract are rare; the majority have been primary, their origin being in the choroid or orbit, secondarily involving the brain and other structures of the head and of the abdomen. There are only five published observations of primary metastatic sarcoma of this region, by Pflueger, Schweiss-Roth,[1] Wiener, Michel, and Würdemann.

In Wiener's case[22] there were multiple sarcomata scattered over the body (Hodgkin's disease?). The growth was said to have originated in the mediastinum. Michel[23] reports one case of Hodgkin's disease which was also considered primary in the mediastinum. I believe, however, that it is the consensus of opinion that these growths must have been primary in the eye or orbit. Certainly that is the history of my own case[24], which was an angiosarcoma with but little pigmentation, apparently originating in the orbit, but the section showing that it involved the eye and choroid, so that a positive determination as to place of origin could not be made. Large secondary growths appeared in the bones of the skull and many in the abdomen, the largest in the latter arising in the tissue back of the kidney, weighing 1,660 gm. All of these cases were fatal.

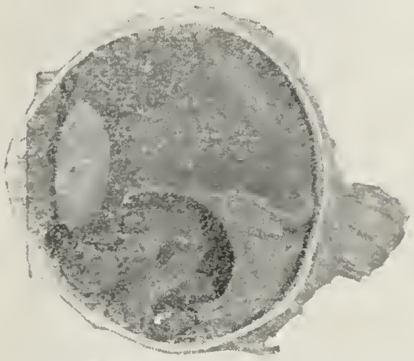
Fig. 6.—Primary melanotic sarcoma of choroid (author's case).

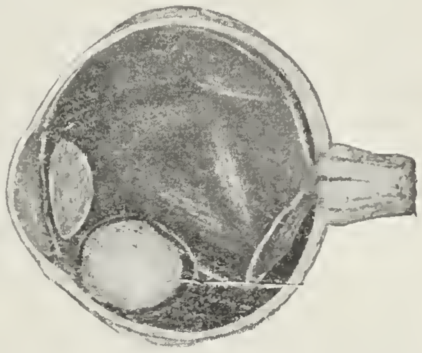
Fig. 7.—Primary leucosarcoma of choroid (author's case.)

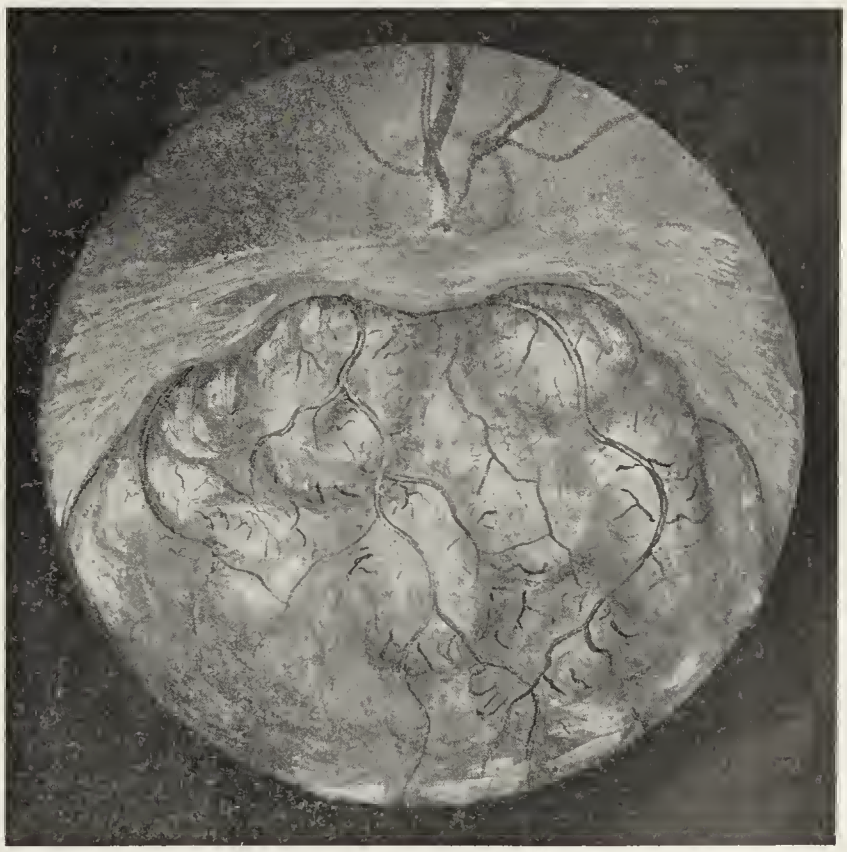
Fig. 8.—Ophthalmoscopic appearance of melanosarcoma of the choroid (author's case, Annals Ophth. vol. xi, p. 439.)

Metastatic carcinoma of the iris has not been reported.

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[20] Berl. klin. Wochenschr., Nos. 4 and 5, 1905.
[21] Centbl. f. Augenheilk., p. 135, 1904.
[22] The Journal A. M. A., Nov. 8, 1902.
[23] Zeitft. f. Augenheilk., vol. xiv, 1905.
[24] Am. Jour. Med. Scien., June, 1899.

Uhthoff[25] reports one case of carcinoma of the *ciliary body,* originating in the intestine, commencing as an acute iritis with formation of tumor.

Metastatic carcinoma of the choroid is an affection of which only 46 observations have been recorded; one-third of these were bilateral[26]. Oatman[27] says that in every case the growth began in the posterior portion of the choroid, and that two to eight weeks elapsed from the first symptom until the vision is lost. Duration of life averages 6½ months; Marbe says one year. The primary growth may be in the abdominal cavity[28]; the lung[29]; the ovary.[30] Here, however, I would briefly report one case of primary carcinoma of the lids which secondarily involved the eyeball, orbit, and contiguous regions, in which most radical surgical intervention and subsequent *x*-ray treatment resulted in complete recovery (Fig. 18).

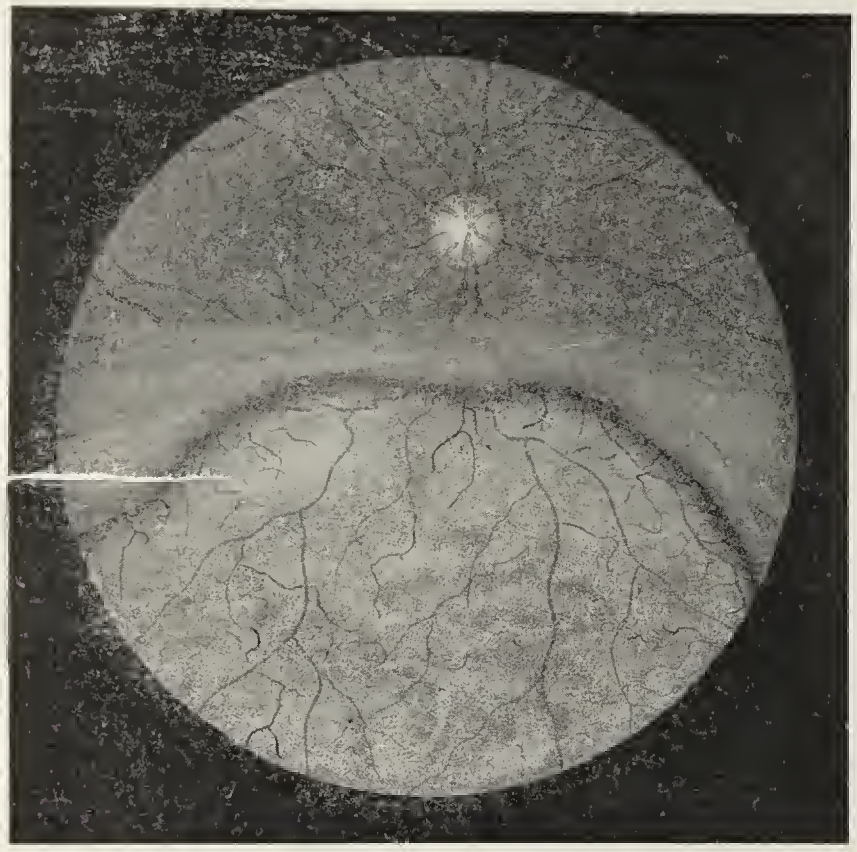

Fig. 9.—Ophthalmoscopic appearance of leucosarcoma of the choroid (author's case).

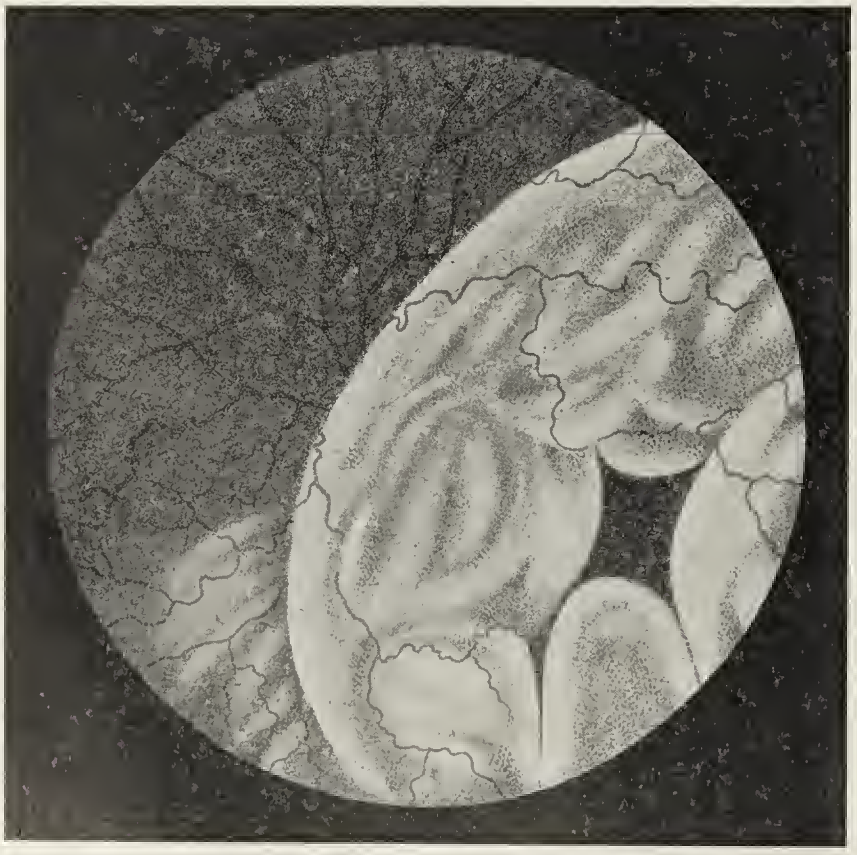

Fig. 10—Partial detachment of the retina (Haab).

The differential diagnosis is to be made between sarcoma, glioma, angiosarcoma, angiocavernous sarcoma, tuberculosis, hyalitis, and exudative metastatic choroiditis.

Sarcoma of the choroid is unilateral; only three cases of bilateral sarcoma have been reported. The determination of malignant tumor in both eyes shows that it is most probably carcinoma. The site of carcinoma is characteristic. Sarcoma develops indifferently, while carcinoma has a predilection for the posterior pole, especially the optic nerve or the macular region. Carcinoma has a diffuse flattened form; the retinal pigment is absorbed. The course of carcinoma is very quick, developing within a year, while sarcoma may take many months or years.

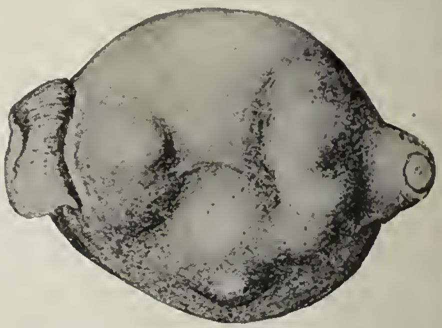

Fig. 11.—Second stage of intraocular sarcoma in which the tumor fills the eyeball (author's case).

In glioma of the retina the latest age is 9 years. Carcinoma is of late adult life.

In angiosarcoma determination is to be made after enucleation or postmortem.

Tuberculosis of the choroid has been dwelt on.

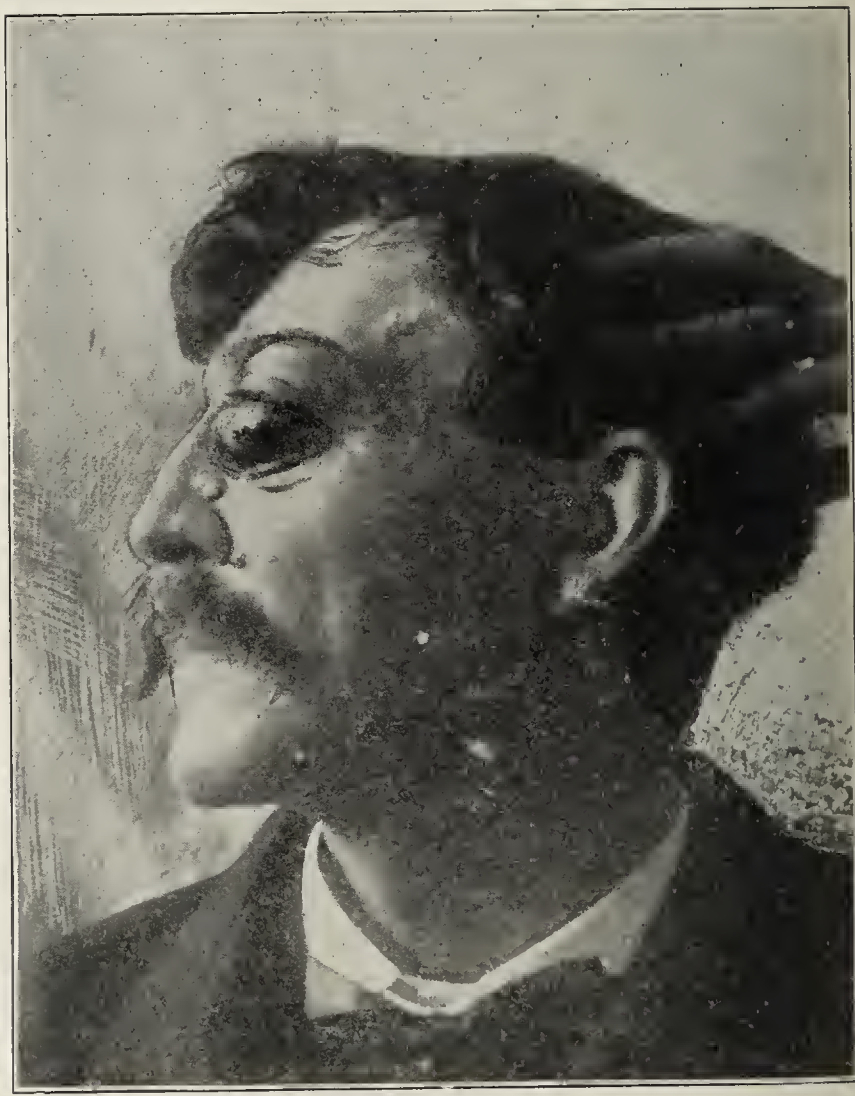

Fig. 12.—Sarcoma of choroid, third stage. Exenteration of orbit; death from cerebral complication eight months later (author's case).

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[25] Die Ophth. Klinik., No. 22, 1904.

[26] Marbe: Deutsche med. Wochft., No. 27, 1905.

[27] Manhattan Eye and Ear Hosp. Rep., 1904.

[28] Oatman, Marbe, Uhthoff: Klin. Monatsbl f. Augenheilk., November, 1904.

[29] Rowan: Trans. Ophth. Soc. Un. King, xix, p. 103.

[30] Holden: Arch. Ophth., xxxiii, p. 322.

Hyalitis or suppurative choroiditis has likewise been described and both are accompanied by minus tension and inflammatory symptoms.

TREATMENT.

Although it is not the province of this article to discuss treatment, yet a brief résumé may be apropos. Where positive diagnosis of benign tumor of the iris may be made and the growth threatens loss of function, iridectomy should be done. Enucleation with a long section of the optic nerve should be made in the early stages of sarcomatous growths, and the case should remain under observation for at least four years, when, if recurrence takes place in the orbit, exenteration should be performed. If the case be seen in the second or even in the third stages, exenteration of the orbit, with subsequent *x*-ray exposures for many months, should be made. I have four cases now living in which the latter procedures were done, three to six years from present writing, in which the patients are alive with no recurrence of the growths.

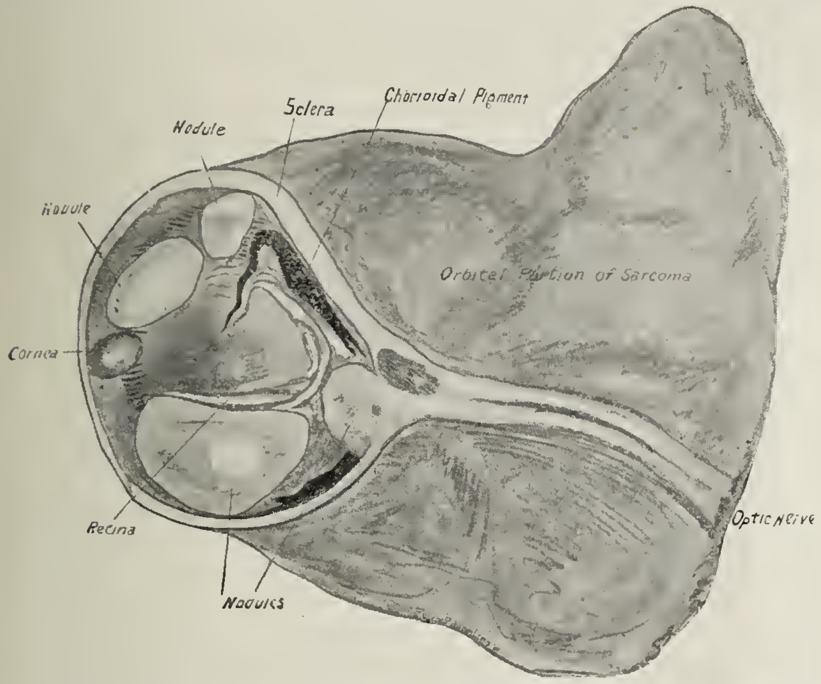

Fig. 13.—Section of tumor including globe. Specimen from patient, Figure 12 (author's case).

In the various forms of sarcoma we may hope to preserve life, but not the eye. There is more hope in the non-pigmented than in the pigmented form. In carcinoma I know of only one case, my own, in which life has been saved. Young subjects certainly present a far less somber prognosis than the aged.

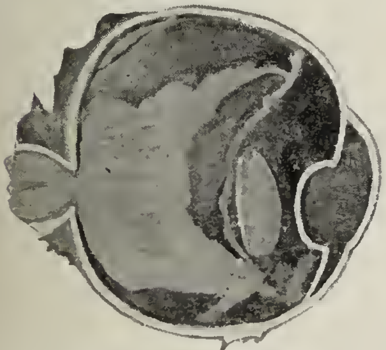

Fig. 14.—Glioma of the retina (author's case).

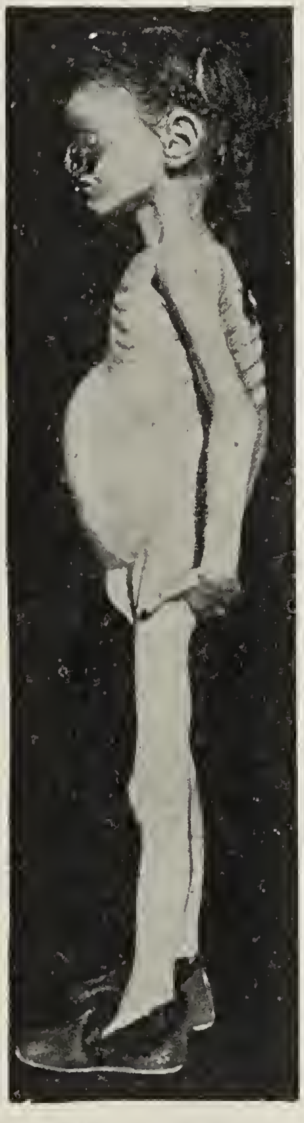

Fig. 16. — Metastatic angiosarcoma, final stage, three days before death (author's case).

DISCUSSION.

Dr. Charles Stedman Bull, New York, said that for clinical study he prefers the classification of Fuchs: (1) The stage of quiescent, unirritating growth of the tumor; (2) the stage of secondary glaucoma or of irido-cyclitis; (3) the stage of perforation. Sarcomata of the uveal tract should be divided into two classes: melanosarcoma, with a great number of pigment cells shown by the microscope, and leucosarcoma, light colored, with few pigment cells. It is not possible to tell how much of the pigment is derived from the blood, but the greater part is undoubtedly of cellular origin. Hematogenous pigment will probably be found along the blood vessels, while that produced by the normal cells of the choroid is found scattered all through the tumor. He said that transillumination in examination of tumors of the ciliary body and of the

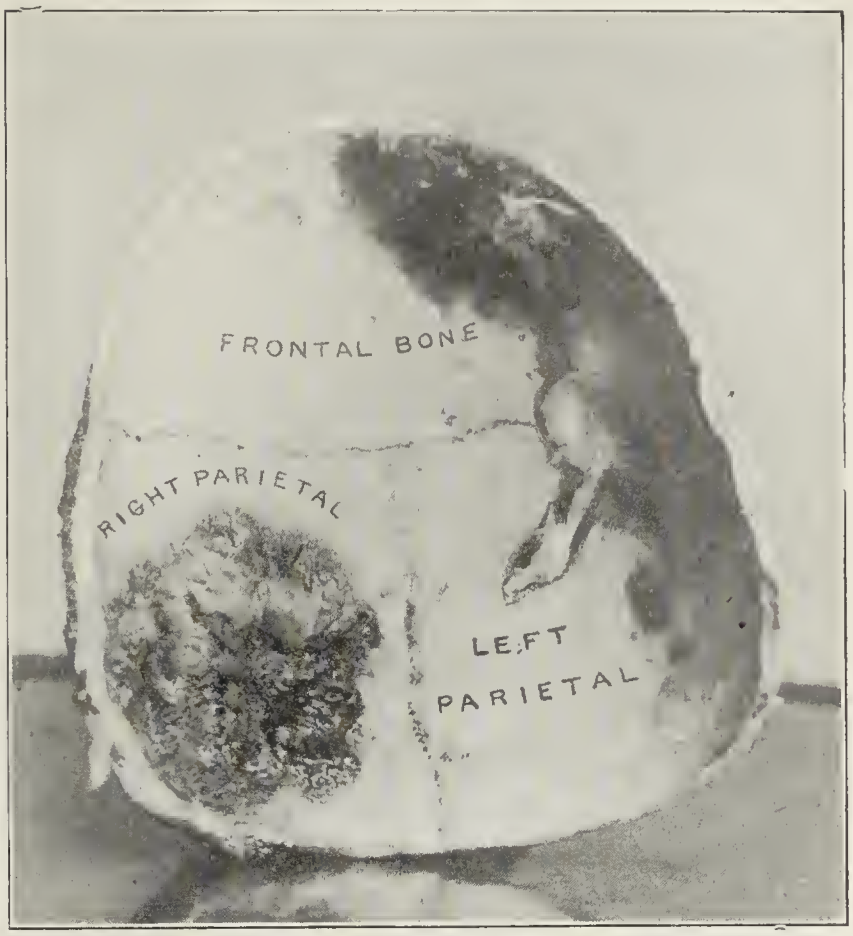

Fig. 15.—Metastatic angiosarcoma, final stage, showing implication of cranial bones (author's case).

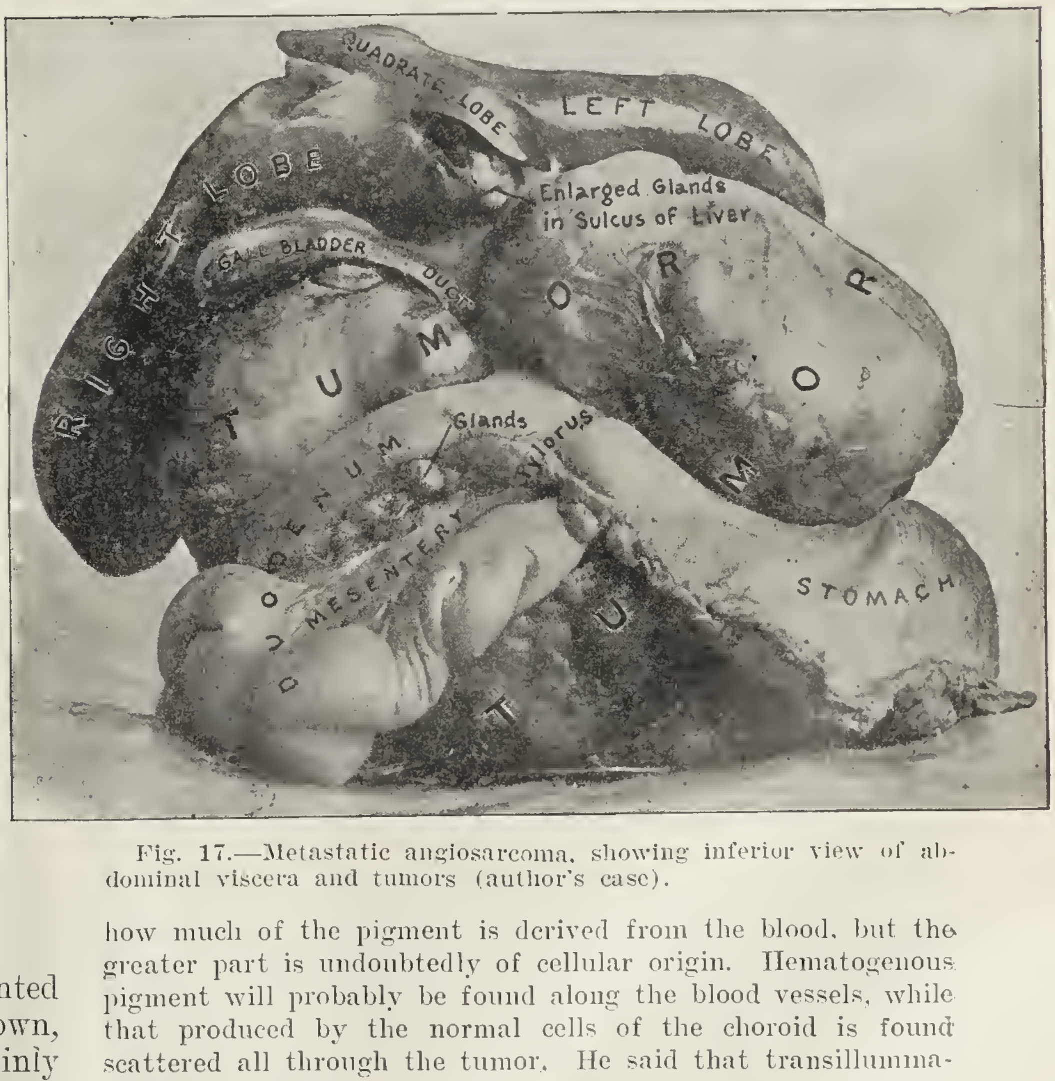

Fig. 17.—Metastatic angiosarcoma, showing inferior view of abdominal viscera and tumors (author's case).

anterior parts of the fundus is often of considerable value, and that Dr. Würdemann's model seems better adapted for this purpose than the instrument of the Rochon-Duvigneaud type, previously used, because of its smaller size and easier application. Exploratory puncture of these tumors of the uveal tract, Dr. Bull said, involves the danger of metastasis from the site of the puncture. In two cases he punctured the sclera to give exit to the subretinal effusion and to confirm the diagnosis, and the conjunctiva became infected and an extraocular growth appeared after the eye was enucleated. In primary sarcoma of the iris, iridectomy is possibly to be preferred, he thinks, to removal of the eye. He agreed with Dr. Würdemann that the growth of these tumors is always slow and a cure not certain until a period of three or even four years has elapsed after the iridectomy. The occasional anomalous position of sarcomata of the choroid no doubt accounts for their presence having sometimes been overlooked until a much later period of development. Detachment of the retina accompanying choroidal sarcoma looks different from detachment without tumor. Lack of vibration and the absence of folds in the retina in cases of tumor indicate that the subretinal effusion is gelatinous and not fluid. Secondary detachment of the retina in these cases is probably hindered and even prevented by the intimate attachment of the tumor to the retina, due in part to the development of the pigment epithelium. Dr. Bull said that he has rarely seen any sign of inflammation accompanying tubercles of the choroid until toward the close of the patient's life. The conglomerate tubercle of the choroid occurs in large masses and is unilateral and closely resembles the choroidal sarcoma. Glioma is essentially a disease of infancy or early childhood and is distinguished from sarcoma by its much more rapid growth. Differential diagnosis between true absolute glaucoma with cataract and a similar condition induced and accompanied by a choroidal sarcoma is difficult. Pain and tension in pure glaucoma vary in degree from time to time, while in sarcoma the symptoms steadily progress till the globe ruptures. Leucosarcoma of the iris, he said, may sometimes be confounded with a gumma, both occurring, as a rule, as isolated, slowly growing tumors. Here one must be guided by the previous history. Glioma of the retina is differentiated from leucosarcoma of the choroid by the localization of the tumor, the absence of the retinal vessels and the rapid growth. All intraocular tumors, even cysts, endanger vision and demand surgical interference. Bull believes that in the prognosis as to life we should differentiate between pigmented and unpigmented varieties, for the statistics of melanosarcoma show that it is more dangerous to life than the leucosarcoma. Prognosis is often greatly aided by the microscopic examination of the specimen after excision, as it is now generally accepted that a growth composed largely of embryonal cells without pigmentary deposit is less apt to recur than one composed of fusiform cells with pigmentary proliferation, and also less likely to lead to metastasis. Briefly summarized, the prognosis of tumors of the uveal tract may be stated as follows: In gumma of the iris or ciliary body a modified favorable prognosis can be given, provided thorough antisyphilitic treatment is faithfully carried out; but it should not be forgotten that in case of gumma of the ciliary body it frequently happens that in spite of the treatment, or because of it, rapid atrophy of the eyeball ensues, ending in essential phthisis bulbi. In angiomata of the uveal tract the prognosis is unfavorable, inasmuch as in most of the cases reported the growths have been sarcomatous. In tubercle of the uveal tract a distinction must be made between solitary and multiple growths in the iris and isolated tubercles in the choroid. In all cases of multiple growths in the iris or ciliary body the prognosis is bad, and if there be no demonstrable foci of disease elsewhere in the body the eye should at once be enucleated. When the case is one of single or multiple tubercles of the choroid grouped around the posterior pole, while the prognosis is distinctly unfavorable, enucleation is not to be advised, as tuberculous deposits will always be found elsewhere in the body, and, moreover, these choroidal tubercles are generally bilateral and may generally be regarded as precursors by a short time of a fatal termination. In sarcoma and carcinoma of the entire uveal tract the prognosis is positively bad and enucleation should be advised as soon as the diagnosis has been made. A few cases are reported of sarcoma of the iris in the form of a single isolated nodule, in which an iridectomy has apparently cured the patient. Bull knows of one such case, seen in consultation, in which the growth was removed by iridectomy nearly four years ago, and in which, up to date, there has been no return of the growth.

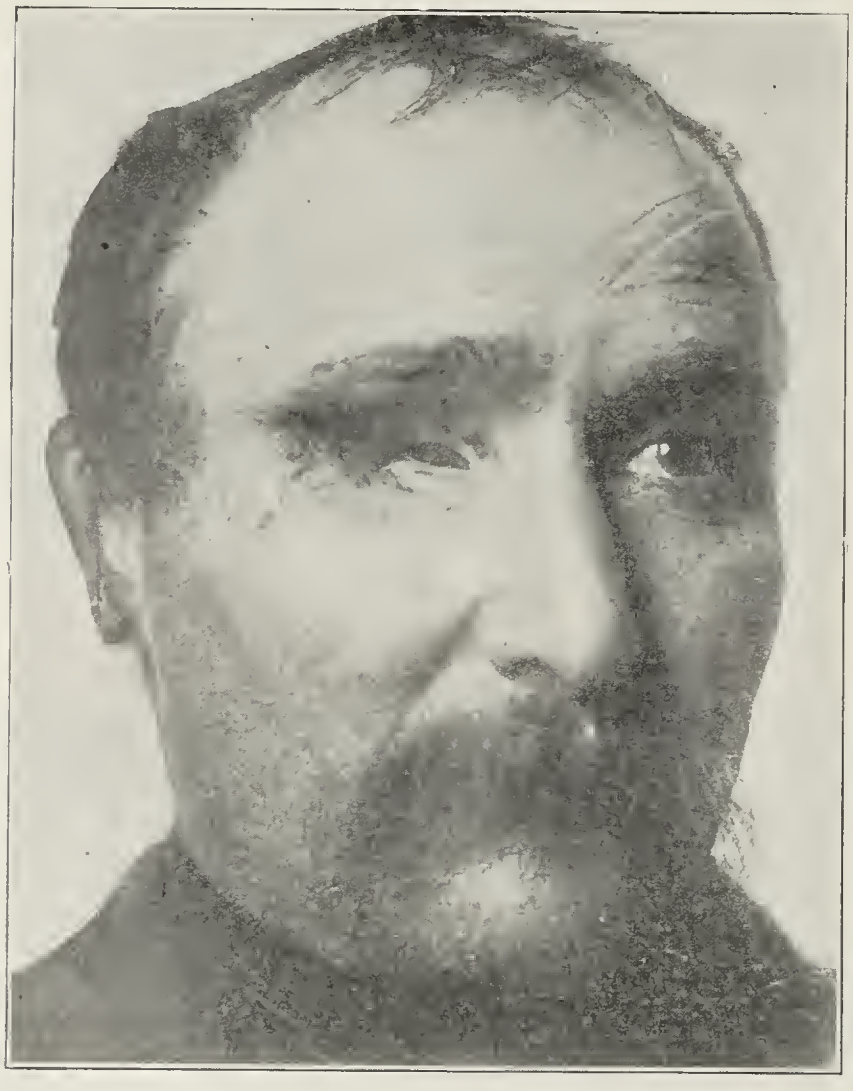
Fig. 18.—Results of operation and Roentgen ray treatment after four years. Carcinoma of eye and contiguous regions (author's case). Patient had several operations and cancer paste in year previous to radical operation of exenteration of orbit, removal of portions of frontal and malar bones. X-ray used several times a week for nearly two years afterward.

Dr. E. S. Thomson, New York, said that he read a paper about a year ago on the use of the Sachs lamp and was surprised to find how few had used transillumination to the extent its usefulness would justify. He has used Sachs' lamp a great deal. To any one who has seen the decided shadow obtained in cases of intraocular tumor its value is at once apparent. In many cases in which the lens is opaque, or in which the detachment is rather atypical, we are absolutely dependent, Dr. Thomson said, on transillumination. The Sachs lamp, while it does its work well, has the objection that it gets very hot. Although the tube applied to the eye does not get hot, the bulb does. That is all the more an aggravation because the angle at which the light enters the eye is of the greatest importance, and the least rotation of the lamp makes a difference in the appearance of the image. In that connection Dr. Thomson stated that Dr. Würdemann's lamp seems to him to meet every requirement. It is light, does not get hot, can be managed at any angle and is brilliant. It is also much more easy to apply to the eye than the Sachs lamp. He said that transillumination has a much wider application than simply in diagnosing tumors.

Dr. Edward Shumway, Philadelphia, said that ophthalmologists owe Dr. Würdemann thanks for getting out this little lamp. The larger one is used in Philadelphia and is found inconvenient because of its getting hot. Dr. Shumway asked Dr. Würdemann whether he has noticed that the ciliary body casts a shadow. In one case of detachment of the retina it seemed that the ciliary body cast a decided shadow in the examination, and for that reason it was doubtful whether or not there was a small growth. Dr. Thomson said he wished to place himself on record with Dr. Bull and Dr. Würdemann against the theory of Schieck that all the sarcomata of the choroid are developed from chromatophores. He thinks that in Ribbert's first paper he claimed only that melanosarcomas were developed from the chromatophores, just as the malignant sarcomas of the skin are developed from the pigmented nevi. He did not claim that there were no other sarcomas of the choroid. Schieck, however, advances this idea and carries it further, claiming that all sarcomas of the choroid are developed from chromatophores, throwing out all the endotheliomata, etc. The fact that some pigment was found in the tissue would indicate to him that it was developed from chromatophores. That, however, is not necessarily so. If one examines a metastatic carcinoma in the choroid, or the secondary nodules of glioma, he will find always a definite amount of pigment, and the mere fact that pigment is present does not exclude the possibility that there are other growths in the choroid besides those developed from the chromatophores. Schieck says also that the alveolar sarcomata take their alveolar form when they break through the lamina vitrea. The most typical cases of these are the low, flat forms, which do not break through the lamina vitrea, and therefore this theory does not hold. Dr. Thomson, therefore, believes that we should not adopt the theory, but should consider that the growths are not only macroscopically but microscopically leucosarcomas, and that there are growths in the choroid that develop from other cells than the chromatophores.

Dr. Charles H. Williams, Boston, said that in regard to this transilluminator and the difference in the amount of heat, two points must be borne in mind: one is the question of intrinsic brightness and the other of the amount of light. If one takes an ordinary incandescent lamp the filament has the same intrinsic brightness if one takes a quarter-inch of it in length, whether 16- or 32-candlepower. What one obtains in Dr. Würdemann's lamp is simply a short section of this filament, which is just as bright as if there were ten times the amount of filament, and, of course, one does not get the heat. Dr. Williams said that this is very well shown in the little photometer he showed the first day of the meeting. The filament is cut off at 17 stellar magnitudes in any part of its length, but with a 32-candlepower lamp we get a longer filament. and consequently a greater amount of light, than with a 16-candlepower lamp.

Dr. O. F. Wadsworth, Boston, stated his belief that the estimates given by Dr. Würdemann in cases of sarcoma of the choroid are altogether too favorable. In Dr. Wadsworth's experience most of the patients whom he has been able to follow many years have died. The period of freedom from recurrence generally given as sufficient to assure a permanent cure is too short. Thirty-eight years ago he saw an eye in which the whole vitreous chamber was filled by melanotic sarcoma, yet it was only six years later that the patient's liver, studded with melanotic nodules, was shown at a medical society. One of Dr. Wadsworth's cases with a small sarcoma of the choroid presented a recurrence in the orbit eleven years after enucleation. On the other hand, a patient whose case was reported in the Transactions of the American Ophthalmological Society in 1874 was alive and well twenty-seven years after enucleation and thirty-two years after failing vision had been noticed. Dr. Würdemann states that metastatic carcinoma of the iris has not been reported. That is Dr. Wadsworth's belief, but he has seen such a case. Last June he saw in consultation a woman, aged 70 years, a patient of Dr. F. I. Proctor. Two weeks previously she had discovered something on the iris of the left eye. There was no congestion. On the iris was a swelling extending from the upper edge of the pupil two-thirds of the distance to the ciliary attachment, measuring 3 mm. in its longest horizontal diameter. This swelling bulged slightly but abruptly forward all around; its surface was mostly of the color and texture of the rest of the iris, but near the pupillary edge a small whitish mass projected prominently from its surface. There were also several very small whitish elevations. When the pupil was dilated and the eye turned upward with the ophthalmoscopic mirror it could be seen that the posterior surface projected moderately backward over an area corresponding to the swelling in front. This rear surface was smooth, mostly black, but with two or three whitish patches on it. The fundus was normal. Vision with + 2 = 20/15. The right eye had been wounded by scissors thirty or forty years before and counted fingers at one foot only. It was learned that four years previously a small growth had been removed from the right breast, with cleaning out of the axilla, by Dr. Abbe, of New York, who, according to the patient's daughter, had stated at the time that he thought it non-malignant. This information, as will be seen, was not correct. A month later vision still 20/15, fundus normal. The growth measured a little more than 4 mm. horizontally; was more prominent; its anterior surface, mostly sessile, was generally whitish, with a slight tinge of red, as if from superficial blood vessels; only at its inner edge was the surface smooth and approximately of the color of the iris; the posterior surface appeared not much changed. Considering the rapid growth of the tumor, Dr. Wadsworth advised its removal, and this was done by Dr. Proctor soon after. There was good recovery from the operation, with preservation of the vision. The patient died in the early fall. The growth was examined by Dr. Verhoeff, who pronounced it carcinoma. In March, 1906, Dr. Wadsworth wrote Dr. Abbe for information as to the original tumor and quoted his reply, as follows: "I first had my attention called by her to a small mammary tumor in June, 1901. It was not a large growth and was in the upper outer segment of the right breast. There were numerous lymphatics involved thus early in the axillary chain. I made a very thorough removal of the breast with both pectorals and complete axillary contents, finding some small lymphatics even as high as the subclavian and below the minor pectoral. The physiologic report was made by Dr. Francis C. Wood, pathologist of St. Luke's. He said the mass was 'carcinoma of a rather soft cellular type, with but little connective tissues.'"

Dr. R. D. Gibson, Youngstown, said that this lamp can be used on an alternating street current as well as the battery by interposing a resistance lamp. If the voltage of the little lamp is known it is easy to know what resistance to interpose. Much depends on the man who makes the lamp; if he understands it he can make a lamp which will remain cool, but if he is not an expert he will make one that will get hot.

Dr. H. V. Würdemann, Milwaukee, asked Dr. Brown to look over the statistics again, and said that Dr. Brown will find that he is the only one, at least in this society, who says that there is practically no difference between prognosis as regards recurrence and life in leucosarcoma and melanosarcoma. As regards the recurrence of malignant tumors, Dr. Würdemann showed a specimen of leucosarcoma, the only one he has seen that did not return, and one of pigmented sarcoma of the ciliary region and choroid cured after eight years. He also showed three specimens, two of them completely filling the eye, in which there has been no recurrence in eight years, and one in the second stage in which there was no recurrence in nine years. He has been in the habit of using the transilluminator with the street current with a rheostat. In transillumination of the eye we likewise, he said, get a direct examination; we can see the fundus; we can see the tumor; we can see the retina and ciliary body, and in using the rheostat with the light cut down the ciliary body is beautifully brought out. Dr. Würdemann also thinks that it would be useful in showing foreign bodies. He had a case in which a piece of steel was visible in the vitreous. He thinks it would be valuable, too, for examination of the lens and iris.

Scoliosis.—F. W. Harvey, *Montreal Medical Journal*, June, 1906, states that gymnastic treatment has been employed for a long time, but that never before has its value been so much recognized as at the present day. To obtain the best results daily exercises should be given, if necessary, extending over a period of several months. After a careful examination one may determine what group of muscles are to be acted on and what movements are best suited to overcome the curvature. In many cases other hygienic measures should be combined with the gymnastics.

SO-CALLED LEUCOSARCOMA OF THE IRIS.*

E. V. L. BROWN, M.D.
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CHICAGO.

It has long been known that most sarcomas of the uveal tract contain more or less pigment, but it remained for Ribbert,[1] in 1897, to first maintain that all so-called leucosarcomas were in reality made up exclusively of pigment-bearing stroma cells and their derivitives.

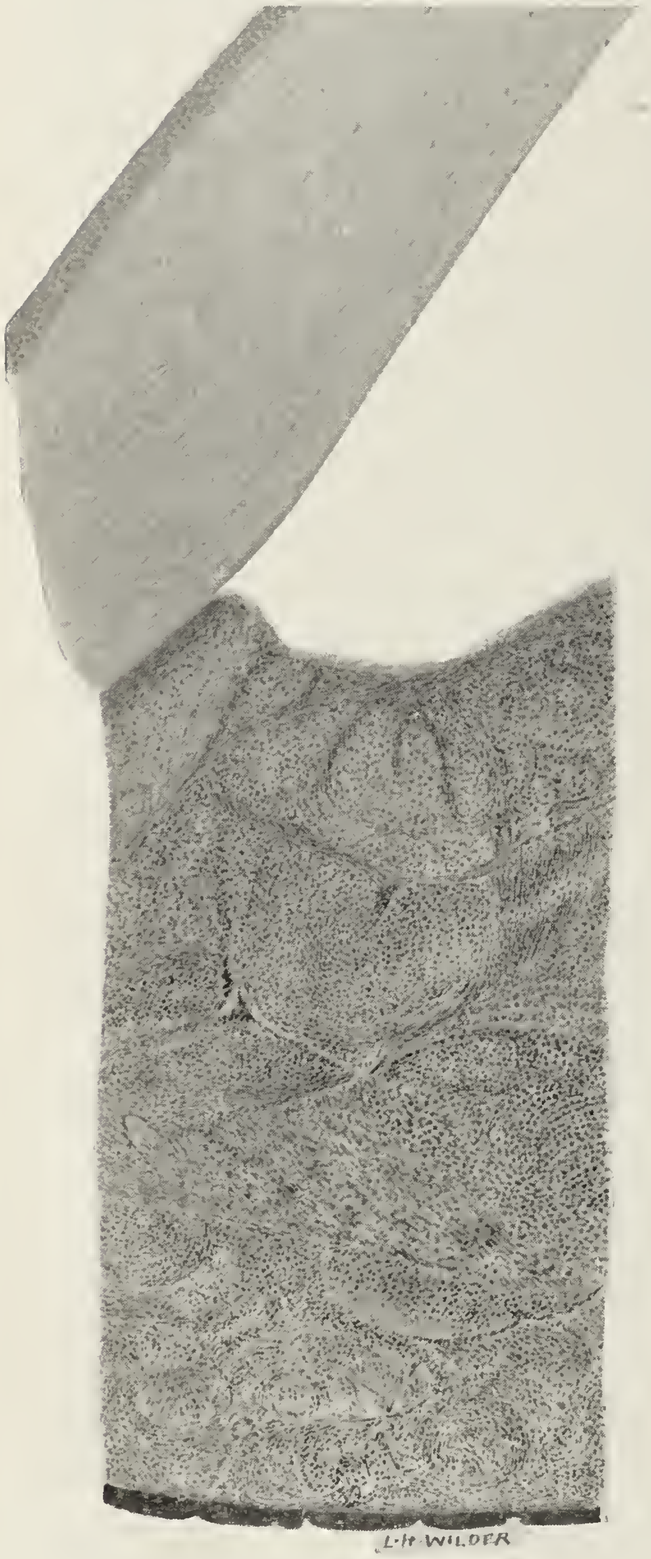

Fig. 1.—Case 1. Leucosarcoma of the iris (Leitz obj. 1/3 oc. 3).

He conceives of a species of cell "reversion," by which the normally pigmented chromatophore recurs to its embryonic prototype, and is then later encountered in tumor formation in its successive stages of development, as, namely, the unpigmented, small round cell, the spindle cell (either pigmented or unpigmented), or as the fully developed, branched and pigmented chromatophore differing in no way from its physiologic predecessor. No other type of cell increase, such as that from ordinary connective tissue, vessel endothelium or perithelium, ever produces uveal sarcoma.

Sweeping as these statements seem on first consideration, various other writers, and notably Tashiro[2] and Schieck,[3] have contributed a series of articles which substantiate, in the main, Ribbert's theory. They have described in detail a large number of leucosarcomas in which they demonstrate isolated, pigmented and branched chromatophores surrounded by wide fields of unpigmented cells; they most emphatically deny that these pigment cells are only remnants of the normal pigment cells of the uvea, as claimed by Lagrange.[4] But what is far more conclusive, they have shown the analogy and perhaps the identity between these cell forms in uveal sarcoma, and the various stages of development of the choroidal stroma cell as studied in the human embryo by Riecke.

Riecke[5] finds that chromatophores first appear in the choroid in the seventh month of fetal life. He distinguishes two forms of unpigmented cells, the spindle and the star form, bound together by a network of long and short processes. The spindle cell has bipolar processes and an oval nucleus; the star form has several processes, some of which show nodular swellings at the end, and a large, rounded, vesicular nucleus. In addition to these two types, a few isolated, longish nuclei, bordered by a scant rim of protoplasm, are encountered. These cells, too, are looked on as chromatophores, because they, in common with the spindle cell and the star-shaped cells, have the characteristics of all chromatophores, namely, a sharply contoured and plainly granular nucleus. The form of the pigment and its first appearance in the cell is worthy of note. Molecules of unequal size arrange themselves in the protoplasm about one pole of the nucleus, and in a double row along the sides of the processes, the axes remaining free; nearer the center of the cell the pigment is almost unmeasurably fine.

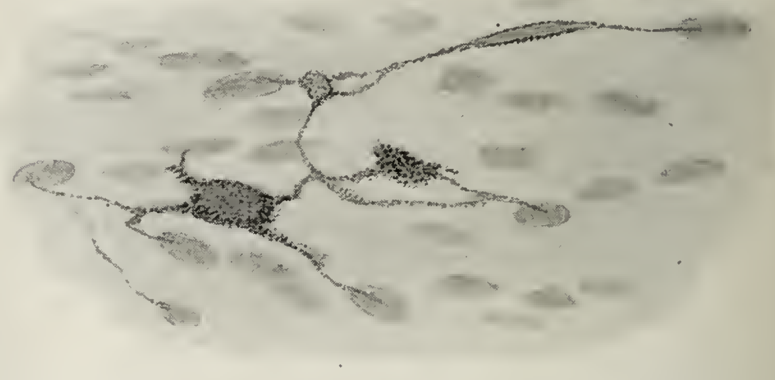

Fig. 2.—Case 1. Four anastomosing, branched, pigmented chromatophores surrounded by pigmented tumor cells (1/12 in. oil immersion).

All these various stages are reproduced in the cells found in the so-called leucosarcoma, according to Schieck; but he makes one modification of Ribbert's teaching, namely, that the reversion of the branched cell to the widely different round cell is not a necessary stage, and only a possible one in any case. He agrees with Fuchs[6] that sarcoma of the uvea may proliferate directly from a highly developed type of uveal cell; thus we may have a spindle-cell sarcoma in which round cells are not present and never have been present. Indeed, a pure round-cell sarcoma of the uvea has never been described. Ribbert[7] says, however, that he does not doubt that a wholly unpigmented, round or spindle-cell chromatophore sarcoma can occur.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Ribbert, H.: "Ueber das Melanosarkom," mit Taf. XXII, Beitraege z. path. Anat. u. all. Path., 21, 3, pp. 411-499, 1897.

[2] Tashiro, A.: "Ueber Bau und Pigmentirung der Aderhautsarkome." Inaug. Diss. Halle a. S. 59 pages, mit. Taf. III 1902.

[3] Schieck, F.: "Ueber die Ursprungsstaette und der Pigmentirung der Choroidealsarkome." Mit Taf. XX und XXI. Fig. 1-9. Arch. f. Ophth., 48, pp. 435-465, 1898.

"Ein weiteres Beitrag zur Lehre von den Leucosarkomen der Choriocapillaris." Mit Taf. XIV. Fig. 1-2. Arch. f. Ophth., 48, 2, pp. 319-327, 1899.

"Gibt es wirklich Leucosarkome des Uvealtraktus?" Ber. der ophth. Gesellsch. zu Heidelberg, pp. 173-184. 1905.

"Zur Frage des Vorkommens von Eisenreaktion in Melanosarkomen der Choroidea." Beitrage z. path. Anat. u. allg. Path. Suppl.—Heft., 1905.

"Das Melanosarkom des Uvealtraktus in seinen verschiedenen Erscheinungsformen." Mit. Taf. VIII, Fig. 1-9. Arch. f. Ophth., 60, 1, pp. 377-400, 1905.

"Das Melanosarkom als einzige Sarkomform des Uvealtraktus." Mit. 35 Abbild. im. Text u. 18 Fig. auf Taf. 1-111. 131 pages. Wiesbaden.

[4] Lagrange: "Traité des tumeurs d' l'oeil" Bd. 1. Paris, 1901.

[5] Riecke, A.: "Ueber Formen und Entwickelung der Pigmentzellen der Choroidea." Mit Taf. IV, Fig. 1-9. Arch. f. Ophth., 37, 1. Pp. 62-96. 1891.

[6] Fuchs, Ernst: Ber. der Ophth. Gesselsch. zu Heidelberg (discussion); p. 183, 1905.

The view that the round cell develops into the spindle cell and the spindle cell into the star-shaped cell has been criticised by Borst,[8] who says he has not seen anything to lead him to believe that the cells of one stage go over into those of another stage. Even though this is true it does not seem to me that it in any way vitally affects the chromatophore theory. Why may we not suppose that some adult cells revert to the epithelioid stage, others to the spindle-cell stage and still others to the stellate-cell stage? Such a conception would accord well with the teaching of Flexner[9] that the various cells found in glioma represent only variously differentiated types of embryonal neuroglia; thus astroblasts give rise to small round-cell gliomas, simulating sarcomas, ependymal cell proliferations give rise to neuroepitheliomatous gliomas, the astrocytes proliferate in spider or Dieter's cell gliomas, and adult neuroglial tissue is reproduced in the type of tumors made up largely of fibers. It is interesting to note in this connection that neither Flexner nor Schieck have actually encountered pure round cell gliomas or sarcomas, which they consider the most embryonal type, although they both speak of them as possible forms.

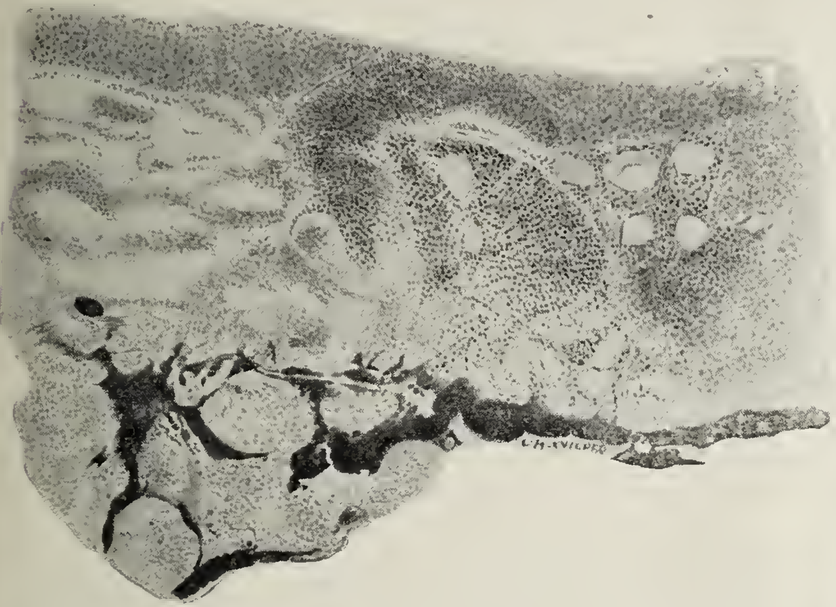

Fig. 3.—Case 2. Leucosarcoma of the iris (Leitz obj. 1/3, oc. 3).

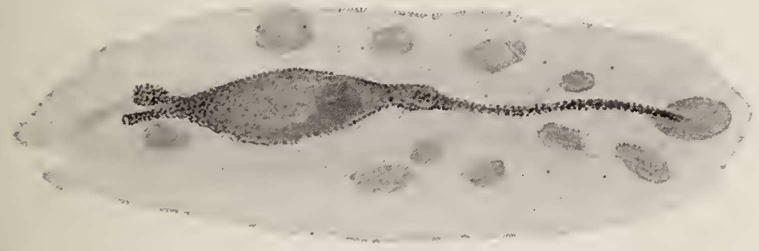

Fig. 4.—Case 2. Incompletely pigmented, bipolar, spindle-cell chromatophore occurring in a wide field of unpigmented chromatophores (1/12 in. oil immersion).

On the other hand, I can find nothing in Riecke's article to bear out Schieck's inference that the round cell is the first and most rudimentary stage of the chromatophore in the embryo. Riecke's statement (p. 75) is, as given above, to the effect that one first finds spindle and star-shaped cells in the seventh month of fetal life; round cells are not mentioned. Schieck[10] states that Riecke's findings agree throughout with his own study of a series of embryonic choroideæ, and then says in his summary (p. 72): "Therefore the stage of the unpigmented cells precedes that of the pigmented cell and the round and spindle cell that of the branched cell." I contend that it has not yet been definitely proved that there is a round cell embryonal stage. Just this point seems to me to be of great moment for the whole theory, because we frequently encounter areas of small round cell proliferation in uveal sarcoma.

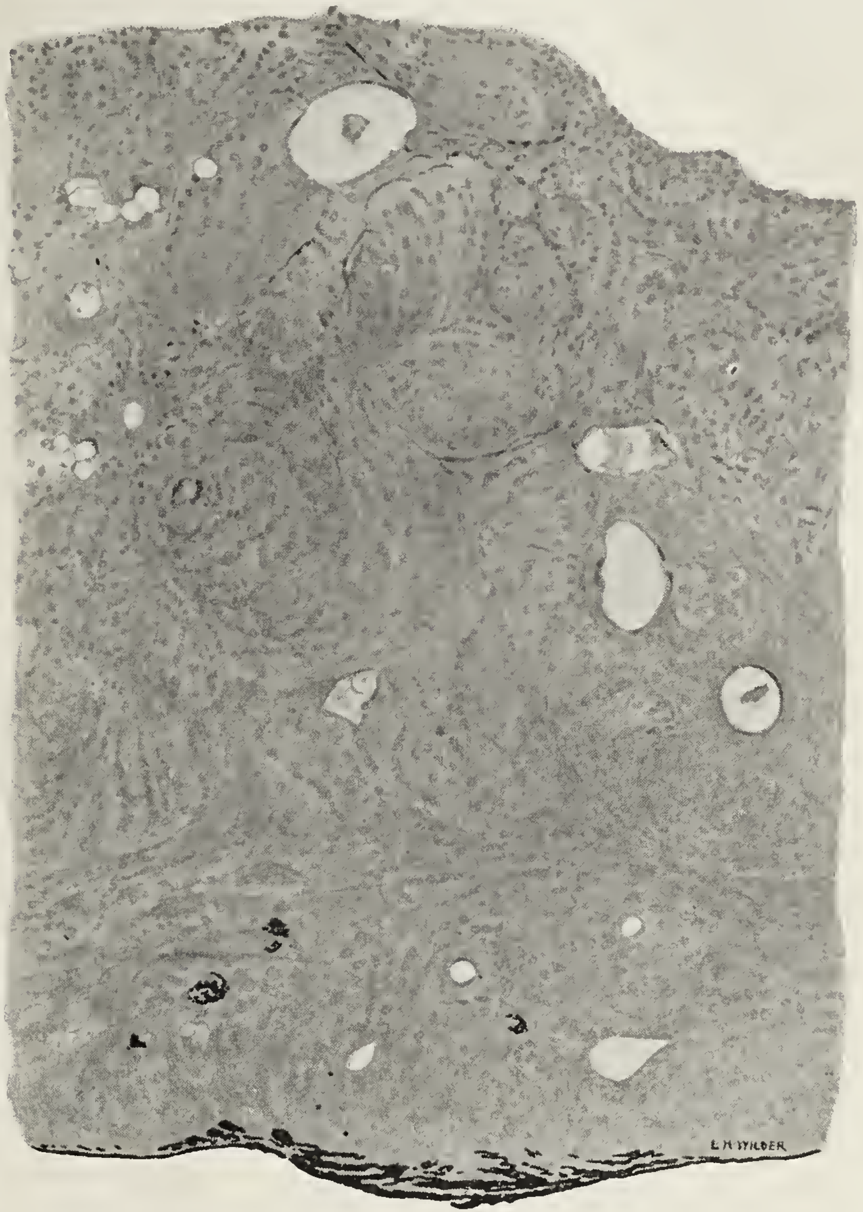

Fig. 5.—Case 3. Leucosarcoma of the iris (Leitz obj. 1/3, oc. 3).

Degenerative changes in the chromatophores have been given careful study. The pigment granules lose their even distribution throughout the cell body, nucleus and processes, and group themselves together in clumps; at the same time the processes either lose their connection with the cell body, or, what is more probable, undergo contraction into the body, thereby increasing its volume and making it more

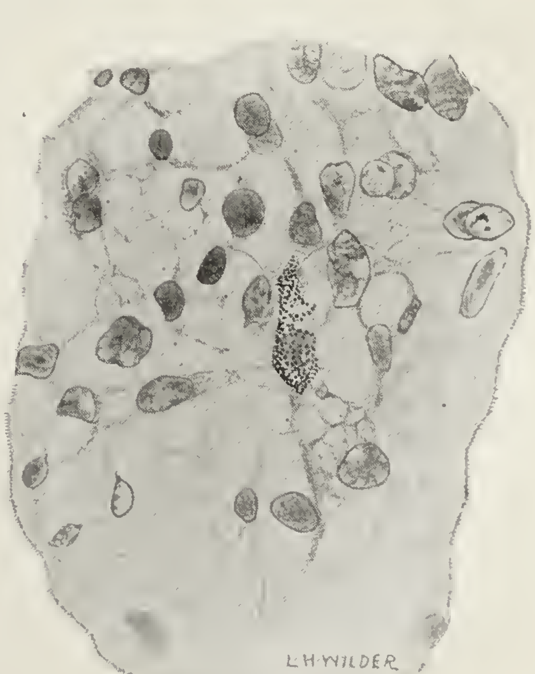

Fig. 6.—Case 3. Fully pigmented, angular chromatophore in a very broad area of unpigmented chromatophores. The processes have disappeared (1/12 in. oil immersion).

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[7] Ribbert, H.: "Geschwulstlehre," p. 256, Bonn, 1904.
[8] Borst, Max: "Die Lehre von der Geschwuelsten," vol. i, p. 154. Westbaden, 1902.
[9] Flexner, Simon: "Glia and Gliomatosis." Jour. of Nervous and Mental Disease, vol. xxv, pp. 306-309. 1898.
[10] Schieck (1906): Loc. cit.

spherical. The nucleus of a "ripe" chromatophore stains normally after the cell has been depigmented, but in the "over-ripe" stage the nucleus scarcely stains at all, or has disappeared entirely along with the whole cell; thereon the pigment-heaps keep the spindle or star-form of the cell for a while, and then become diffused through the tumor. Normal chromatophores do not give the iron reaction, but as soon as the pigment begins to clump the iron reaction is present; clumping of the pigment therefore is an index of cell death.

All of the cases studied to date have been sarcomas of the choroid; indeed, few cases of leucosarcoma of the iris have been described in the literature, and none of them studied with respect to the chromatophore theory. I therefore take the liberty of presenting three cases of leucosarcoma of the iris for special consideration in the light of the chromatophore theory.[11]

Case 1.—O. J. M., aged 41. I am indebted to Dr. W. A. Barr for the privilege of studying this eye; it was removed for sarcoma some three months subsequent to the appearance of the tumor; there had been three hemorrhages into the anterior chamber within the two years previous.[12]

Unstained macroscopic sections, submitted therewith, show one entire half of the iris to be the seat of a lens-shaped tumor 3 mm. long in the plane of the iris, and 1.5 mm. broad from before backward. Although the sinus angle is completely blocked and the canals of Schlemm invaded, yet the adjacent cornea and ciliary body are not encroached on. No discoloration by pigment can be seen with the naked eye or by the loupe.

Microscopic examination shows a highly vascular, alveolar, small spindle-cell sarcoma completely replacing every vestige of the body of the iris, including its normal vessels and stroma pigment cells (Fig. 1). Each alveolus, of which there are ten to twelve from pupil to iris root, is bounded by a narrow, incompletely closed connective tissue band representing obliterated or still patent blood vessels; in nearly every instance a few red cells can be seen along these bands. There is no rosette formation or palisade arrangement of cells about vessels or alveolar septa, and nothing to suggest that the cells originate in the endo- or perithelium. The cells are nearly all fusiform in shape and arranged in densely packed bands and trains with very little intercellular substance. Their nuclei are oval spindles 3 by 4.5 to 3 by 12 microns in size, with a sharp, heavy staining outline and a clear, distinctly granular central portion containing one or more nucleoli. In the older, less heavily staining alveoli toward the back part of the iris the cell bodies are more quadrilateral in shape and give off processes from their angles; more often these processes are developed from the opposite poles of spindle cells.

In striking contrast to the apparent lack of pigment noted in the examination by the loupe, one now finds that nearly every alveolus, and all the vessel-bearing septa between them, contain spindle shaped and branched pigmented chromatophores. These are best studied in alveoli which contain only three or four of them, as shown in Figure 2.

Under the oil immersion they present a beautiful picture, reproducing all the features of the delicately branched, physiologic chromatophores, except that they contain either more intensely pigmented granules, or many times more granules than I can find in any non-sarcomatous stroma cells. This, to my mind, makes it extremely improbable that they are remains of normal cells, as maintained by Lagrange in leucosarcoma of the choroid. Of course, the iris stroma cell is much less intensely pigmented than is the choroidal cells, and the contrast between normal and proliferated chromatophores in the iris correspondingly greater than in the choroid. The fact, too, that all the normal iris vessels have disappeared makes it almost inconceivable that such delicately branched cells could persist in the face of such pressure. Aside from well-formed, finely granular, pigmented cells, the whole tumor is more or less permeated by formless mass and clumps of pigment, much of which is evidently migrated epithelial pigment. But again, the groups often have a fusiform-cell shape; these represent end stages of over-pigmented chromatophores, because the clumps give the iron reaction, while the finely granular, pigmented, intact chromatophores do not.

The case, therefore, while clinically a leucosarcoma, is in reality made up of proliferating, pigmented chromatophores, i. e., cells with oval-spindle shaped, sharply contoured and distinctly granular nuclei, and finely and intensely pigmented, branched chromatophores.

Case 2.—Mrs. N., aged 42, from the private practice of Dr. J. B. Loring, through whose kindness I am able to present this case. In August, 1904, the right eye of this patient was to all appearances normal, but when she returned three months later an oval, smooth, milky white, intensely vascular, slightly prominent growth, some 4 to 5 mm. across, was seen springing from the temporal root of the iris and ligamentum pectinatum. The eye was promptly enucleated.

Unstained sections, exhibited herewith, seen with the naked eye or loupe, show a lens-shaped tumor mass 5 mm. wide from side to side and 2 mm. thick, occupying the outer two-thirds of the iris and the adjacent internal half of the ciliary body. It seems to be entirely without pigment and of the same color reflex as the neighboring cornea and sclera.

Microscopic study shows the tumor to be a highly vascular, alveolar, spindle-cell sarcoma, originating from the anterior endothelium of the iris and involving the canals of Schlemm and forepart of the ciliary body by extension (Fig. 3). The tumor is evidently of much more recent growth than in Case 1. One can count twenty-five or thirty vessels in cross section; their walls are thickened and the lumina narrowed or obliterated, all out of proportion to the findings in the vessels of healthy half of the iris. Most of the blood is supplied to the tumor by wide, new-formed vessels. Here, as in the previous case, there is apparently no relation between these vessels and the tumor cell proliferation. Alveolar septa are much less numerous. The oval and spindle form nuclei again show the sharp contour and plain granulation of chromatophores. Spindle-form and star-form, branched, pigmented chromatophores are numerous; one with incomplete pigmentation is drawn in Figure 4. Many of them are intensely pigmented. This is in marked contrast with the stroma cells of the healthy half of the iris, among which there are but four pigmented cells aside from those proliferating in a metastasis to the surface endothelium. Considerable pigment detritus is strewn about among the cells, but it is evidently from the retinal pigment epithelium because none of it gives the iron reaction; the chromatophores likewise do not stain, probably because, the tumor being so young, none of the cells have died.

While, then, Case 2 is clinically a leucosarcoma of but three months' duration, it already shows a large number of proliferated, pigmented chromatophores.

Case 3.[13]—William D., aged 41, from services of Dr. H. W. Woodruff at the Illinois Eye and Ear Infirmary, to whose courtesy I am indebted for the history of the case. The patient has noticed a cloud before his eye during the past two months; examination reveals a pinkish, gelatinous, translucent, conelike 2.5 mm. elevation seated in or on the iris near the lower, outer, pupillary border between axis 320 and 350 degrees. A single vessel is seen running through the center of the tumor. The diagnosis of leucosarcoma was made after the exclusion of tuberculosis by the tuberculin test, and of syphilis by the therapeutic test. A broad strip of iris 6 by 4 by 2 mm. was then excised.

Macroscopic examination showed a soft pultaceous mass, bordered by the posterior pigment epithelium.

Microscopic study of some thirty-five serial sections, 5 microns thick, shows an oblong tumor, about three times the thickness of the iris, situated near the pupillary border, sharply separated from the cut root-edge by a wide zone of healthy tissue. The tumor is a vascular, alveolar, oval-spindle cell sarcoma developing from the anterior part of the iris. The nuclei are sharply contoured and contain tiny nucleoli and numerous chromatin granules. The cells, although closely packed, are everywhere separated from one another by a large amount of delicate fibrillar substance, made up for the most part of cell processes. In addition to this supporting structure the mass is subdivided into twenty or thirty rounded alveoli from which a connective tissue meshwork is given off among the adjacent cells. Branched spindle cells and typical pigmented chromatophores are not numerous, yet unmistakably present. One is shown in Figure 6.

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[11] The clinical and anatomic aspects of all these cases will be more fully reported at a later date.

[12] Shown before the Chicago Ophthalmological Society, May 10, 1904. (See Ophth. Record, vol. xiii, p. 376, August 1904.)

[13] Shown before the Chicago Ophthalmological Society, Oct. 10, 1905. (See the Ophth. Rec., xiv, p. 604, December, 1905.)

The specimen from Case 3 contains pigmented and unpigmented chromatophores, although a growth of but two months' duration and only a couple of millimeters in size, and is therefore a melanosarcoma histologically.

In conclusion, I would recapitulate as follows:

1. Ribbert's theory of the origin of all uveal sarcomas from chromatophores is worthy of most careful further consideration.

2. The analogy between the round, spindle and star-formed cells, which proliferate in sarcoma, and the spindle and star-formed cells, found in the embryonic choroid, is incomplete, because a round cell first stage has not been proved to exist in the latter.

3. It is more reasonable to suppose that the "cell reversion" takes place to any one of these forms of sarcoma, analogous to the relations which obtain between embryonal and pathologic conditions in glioma, than it is to suppose that lower cell forms are transformed into higher cell forms. (Borst.)

4. So-called leucosarcoma of the iris offers a more favorable opportunity for the study of the chromatophore theory than does sarcoma of the choroid, because here the normal chromatophore is much less heavily pigmented than in the normal choroid, or than the chromatophore in the iris. Pressure, too, destroys the normal cell.

5. The term leucosarcoma should be retained, but used only in reference to the clinical appearance of iris sarcoma.

DISCUSSION.

F. H. Verhoeff, Boston, said that Dr. Brown's observations are valuable in confirming the facts on which the theory of Ribbert is based, although they still leave the theory itself open to doubt. Through the courtesy of Dr. Brown, Dr. Verhoeff has had the opportunity of examining his specimens and has been able to confirm his findings in regard to the occurrence of chromatophores. Dr. Verhoeff has also found similar cells in a case of his own. In this case he was able, in addition, to show conclusively that the pigment is not hematogenous by the fact that it was bleached by the method of Alfieri. Dr. Verhoeff understands that Ribbert's theory, briefly stated, is that both melanotic and leucosarcomata arise from chromatophores, and that the cells of leucosarcomata are unpigmented because they are in a lower stage of differentiation than normal chromatophores. It seems to him that the facts brought forward by Ribbert and Schieck in support of this theory are insufficient, and that too many unproven assumptions are involved in it. Granting that the few chromatophores found in leucosarcomata really belong to the tumors proper, Dr. Verhoeff is not yet ready to admit this in all cases, their presence could equally well be explained by other theories. For instance, there is nothing to show that choroidal sarcomata may not arise from a group of cells instead of from one cell, and if some of the cells should be pigmented and others not, a certain proportion of chromatophores would be expected in the tumors. Then, again, it is conceivable that the unpigmented cells of the choroid, should they give rise to a tumor, might well differentiate into chromatophores. It is equally possible, he said, that choroidal sarcomata may arise, according to the theory of Cohnheim, that is, from cells in the choroidal stroma that have remained in an embryonal condition. It is perfectly obvious that the further differentiation of such cells in tumor formation might give rise not only to unpigmented cells but to all varieties of chromatophores as well. Certainly, it seems more probable that the cells of small round-cell, or rather small polygonal-cell sarcomata, correspond to the cells of early embryonic mesoblast than exclusively to the anlages of chromatophores. He does not regard as valid the objection to Ribbert's theory made by Dr. Brown on the ground that the origin of chromatophores has not been traced as far back as round cells. For it is recognized that cells of all kinds when in an undifferentiated stage tend to assume a round form.

Dr. H. V. Würdemann, Milwaukee, declared that for purposes of diagnosis and prognosis we must discriminate between these leucosarcomata and malignant sarcomata in a clinical way. He believes that he has found chromatophores in all cases of uveal sarcomata that he has examined in recent years, even in two years of the so-called leucosarcoma of the choroid. Cells containing many chromatophores, or fusiform elements, are more prone to reproduce themselves, and, hence, such tumors are more prone to recurrence than those containing cells more like the normal elements of the body and, therefore, from the microscopic diagnosis, we may offer a more favorable prognosis in the case of these tumors containing few chromatophores.

Dr. E. V. L. Brown, Chicago, agreed with Dr. Verhoeff as to the uncertainty of this theory, but the burden of proof must rest with those who contend that there are leucosarcomas which do not contain chromatophores. They were found in all these specimens. Dr. Würdemann's criticism, he said, would be important, if true. The theory that melanosarcomata are more malignant, Dr. Brown thinks, must be abandoned. When the cells are overpigmented the nucleus degenerates and we get Perle's reaction to iron. It is in accord with Virchow's teachings that the lower forms of undifferentiated cells have the greater power of reproduction. Dr. Brown believes that the leucosarcomata are the more malignant of the two.

INJURIES TO THE EYE WITH BIRDSHOT*

WILBUR B. MARPLE, M. D.
NEW YORK CITY.

I have recently had under my care two cases in which the eye was injured with birdshot, both having double perforation. The histories, briefly, are as follows:

Case 1.—E. B., aged 30, was accidentally shot, November 16, from a distance of 35 yards, while hunting, one shot penetrating the left eye. The injury took place in North Carolina, and it was not until about 5 o'clock of the afternoon of the next day that I first saw him.

Examination.—There was a penetrating wound of the left eye, exactly in the limbus, at the nasal end of the horizontal diameter of the cornea. The lens was partially opaque, there was no prolapse of the iris, but there was a coloboma toward the nasal side, as clean as if it had been an operative coloboma. Apparently a piece of the iris had been torn loose and carried out of sight. There was no evidence of any infection, though the ocular conjunctiva was much injected. There was some swelling and discoloration of the lids. Vision was reduced to perception of light. Numerous other shot had penetrated other parts of the face, and also the right shoulder. A probe introduced into one of these wounds passed in fully ⅜ in. before touching the shot, from which it seemed very likely that the one which had entered the globe had passed clear through the latter.

Treatment.—The eye and conjunctival sac were thoroughly cleansed, atropin was instilled, and the patient was sent at once to the hospital. Here the treatment consisted in boric acid irrigation, atropin, and bandage. There was never at any time any evidence of infection or even of iritis. The pupil was easily dilated and kept so. But as the perforation gradually healed, it was evident that shreds of the lens capsule were incarcerated in the tissue of the cicatrix. As this contracted there was traction through the lens capsule on the ciliary body, as the wound was exactly through this important structure. As the connective tissue continued to contract, lachrimation and photophobia became prominent symptoms, and the eye looked red. The patient, however, was very averse to enucleation, so the good eye was carefully watched, and its accomodative power was daily tested. About six weeks after the injury the patient had excessive photophobia in the right (uninjured) eye, so much so that it was almost impossible to separate the lids to examine the eye. He had had some slight conjunctivitis in both eyes for two days previously, which made the eye somewhat injected, but the iris and media were clear, and the fundus and vision normal. Nevertheless, it seemed very risky to postpone enucleation any longer, with such evidences of sympathetic irritation present, and on December 28, the injured globe was removed. No *x*-ray picture had been taken in the case. The recti muscles were divided, under holocain and cocain, then a little gas was administered in completing the operation, as the patient did not wish to take ether. Inasmuch as I suspected a double perforation on account of the depth to which the other shot in the face had gone (⅜ in.), I divided the optic nerve very far back, (14 mm.) of the globe, and had reason to congratulate myself that I had done so. For on completing the separation of the oblique muscles, I discovered a mass of hyperplastic tissue adherent to the posterior wall of the globe and optic nerve in which, close to the nerve, on its temporal side, and 10 mm. back of the globe was found the shot (Fig. 1). The shot had passed out of the globe just to the temporal side of the optic nerve. Vision was never more than perception of light, and finally not that in all portions of the field.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

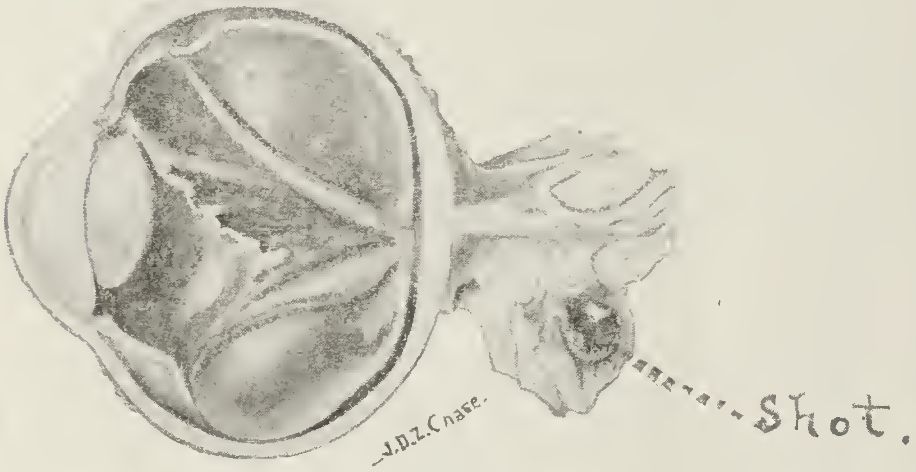

Figure 1.

Case 2.—Geo. L. aged 34, was shot in the face from a distance of 25 yards, November 22, 1905, while out hunting. Both eyes were penetrated with shot, and the left one was so badly injured that two days subsequently, it was removed in Birmingham, Ala., near which place he had been hunting.

Examination.—I first saw the patient twelve days after the injury, December 4, 1905, when the following condition was noted: The left eye had been enucleated. Right eye, pupil dilated *ad maximum* (atropin). The eye was absolutely free from any evidence of irritation, the sclerotic presenting its normal white appearance, except at one small spot, located 6.5 mm. vertically below the temporal end of the horizontal diameter of the cornea. This spot, which has possibly a diameter of 2 mm. or less, is of a dark color, with slight injection surrounding it. Evidently, this was the point of entrance of a shot, and the patient informed me that a probe was passed a little way into this opening (now closed) by the oculist whom he first consulted in the South. The cornea and iris were of normal appearance, and the lens was uninjured and transparent, but with oblique illumination masses of blood clots could be seen in the vitreous, and no red reflex could be obtained, except in the extreme upper periphery of the fundus. The whole lower two-thirds of the background of the eye gave no red reflex and were absolutely dark. The patient counted fingers at three feet with good projection.

Treatment.—He was sent to the New York Eye and Ear Infirmary, where he was under treatment from December 5, 1905, till February 11, 1906. He was put to bed, given 40 gr. of salicylate of soda daily for three days, when this was stopped, and iodid of potash, at first 30 gr. increased to 50 gr. daily. Atropin was instilled for two weeks, then discontinued. He was also given fluid extract of jaborandi, 30 m. daily, for a couple of weeks in January, going to bed after the dose, and wrapping up warm to encourage diaphoresis. The day after his admission Dr. Dixon very kindly took an *x*-ray picture and localized 14 shot. (Fig. 2). Three of these were in the left orbital cavity. The shot which had entered the right eye was localized about 1 mm. back of the globe, at its temporal side below, having penetrated the sclera at the point described above, thence passing through the lower segment of the globe, almost on a horizontal line, and making its exit through the sclera behind (No. 7 in the cut). His vision slowly improved without any very evident ophthalmoscopic change.

Result.—December 13, ten days after admission, his vision was fingers at 40 feet, though movements of the eye would often be followed by lessening of the vision. January 10, one month after admission, vision was 20/70; two weeks later it was 20/50, and two months after admission, February 7, the vision was 20/30. When I say that it was 20/30, I mean that the patient could read promptly down through the 20/50 line, but from there on down, he would have to make frequent movements of the eye so as to shake the opacities to one side. By occasionally repeating these movements, he would complete the 20/30 line. At this time he could read Jaeger No. 8 at 30 cm. February 24, vision was 20/30 and he could read Jaeger No. 4 at 30 cm. On March 5 he read all but one letter of the 20/20 line and also Jaeger No. 2 at 30 cm. At this time I made a note that the area above where details of the fundus could be made out ophthalmoscopically, was a little larger than when I first saw him, but that the region of the disc and macula was just as invisible as it had been three months before. The patient stated that the cloud before him seemed to be thinning out, and the chinks in the opacities to be getting larger. March 31, the vision was 20/20 minus one letter, and he could read easily Jaeger No. 2 at 30 cm., and more slowly No. 1. While ophthalmoscopically, there are still numerous large opacities in the vitreous, open spaces are now beginning to show, and today for the first time I got a glimpse of the optic nerve and vessels. The patient walks along the street very independently, though he still has to shake his head occasionally to clear things up. Still, the improvement has been most gratifying, and I anticipate that this improvement will continue, and that he will ultimately get a very useful eye.

He has been taking iodid of strontium, 30 gr. daily, ever since he left the hospital, on February 11, 1906. It was for a long time a constant surprise to me how well he could see, but how little of his fundus I could see when I looked into his eye with my ophthalmoscope.

DOUBLE PERFORATIONS.

In considering the interesting features of these two cases the first thing to be noted is that they were both cases of double perforation, and such are not at all infrequent among cases of injury to the eye by birdshot. In a more or less careful perusal of the literature I have found eight or ten cases in which the diagnosis of a double perforation was made either ophthalmoscopically or discovered after enucleation of the eye, and it is by no means sure that such was not the case also in many others not reported as such.

The importance of making the diagnosis in these cases of double perforations was early recognized by the ophthalmologist, and their symptomatology was carefully studied. If other shot had penetrated to a considerable depth in the patient's face or body (in my first patient the fact that one shot had gone over ⅜ in. deep into the patient's cheek led me to suspect a double perforation); if there were paralysis of the ocular muscles or retrobulbar hemorrhages with exophthalmos, such symptoms pointed to the probability of a double perforation, provided a second shot had not entered the orbit without perforating the globe. Extreme care was necessary in excluding such a condition, for a perforation of the globe by one shot, and the passage of a second shot into the depths of the orbit (without touching the eye), the latter shot injuring some retrobulbar structures, has been met with in not a few cases.

But all these methods of diagnosis, however intelligently worked out, do not in any way compare in accuracy with the skiagraph. One has only to read the reports of these cases published ten years ago, or even less, to appreciate what surprising advances have been made in the treatment of such cases by the *x*-ray. There is no question but that a considerable number of eyes were removed quite unnecessarily in cases in which, on enucleation, no shot was found in the globe; but a second perforation through the sclera behind.

An instance of such an unnecessary enucleation of an eye is that of Milbradt,[1] published in 1890, and there are numerous similar ones to be met with in the literature of the subject in which, if the case were treated today, the eye would be preserved.

In my first case no *x*-ray picture was taken, and while I felt pretty confident that I had to do with a double perforation, for the reason stated above, and acted accordingly in doing my enucleation, there was not the feeling of certainty which was present in the second case, after Dr. Dixon had so accurately localized the penetrating shot, back of the globe. There can be no question, therefore, but that in perforations of the eye by birdshot, just as is the case where the penetrating object is a particle of steel or any other foreign body, the first thing to do is to have an accurate skiagraph taken. We are then in a position where we can intelligently treat the patient and give a much more positive prognosis.

Gengnagel[2] reports a curious case of double perforation of the cornea, in which the shot had entered this structure in the lower temporal quadrant and passed out through the nasal limbus, with prolapse of the iris in both wounds.

In my first case the shot passed through the globe and was found lying in contact with the optic nerve 10 mm. back of the lamina cribrosa. Several interesting cases have been reported, the first by Schweigger,[3] in 1873, another by Vossius,[4] in which immediate and permanent blindness has resulted from the injury, followed in some weeks by atrophy of the optic nerve. In such cases the optic nerve had evidently been injured or lacerated by the shot. In most of the cases the normal appearance of the vessels on the disc indicated that the injury to the nerve was back of the point where the central vessels entered it.

In a case of Gengnagel's,[5] while the ophthalmoscope subsequently revealed an atrophic papilla, the vision became finally 6/12, with contracted fields. In most of these cases of injury of the nerve the shot had not penetrated the globe, but had entered the orbit at one side. Much more serious results than the loss of an eye are possible, for the shot may penetrate the brain and meningitis and death result, as in an interesting case reported by Steindorff.[6] The patient, a little girl, was shot from a distance of six feet in both eyes, the left being perforated, the right not. Death resulted in one month from meningitis, the symptoms of which were very characteristic. At the autopsy a shot was found in the temporal lobe and another on each optic nerve near the foramen opticum. On the right side, while the shot had not torn the nerve, there was in the adjacent sheath an extensive hemorrhage, and the peripheral layers of the nerve were infiltrated with round cells; ophthalmoscopically, marked atrophy was present. In my own case the optic nerve near the shot was left for the macroscopic specimen, and the media were so clouded as to make an ophthalmoscopic examination impossible. Examination of the rest of the nerve microscopically showed no atrophy.

Kretschner[7] reported a case in which pulsating exophthalmos came on some three or four weeks after the accident, due, probably, to an injury (aneurism) either of the orbital artery or, as Sattler[8] thinks, caused by a communication between the carotid artery and cavernous sinus. Kretschner's case had also nausea, slight chills and vomiting, so that such symptoms can be present without the existence of meningitis.

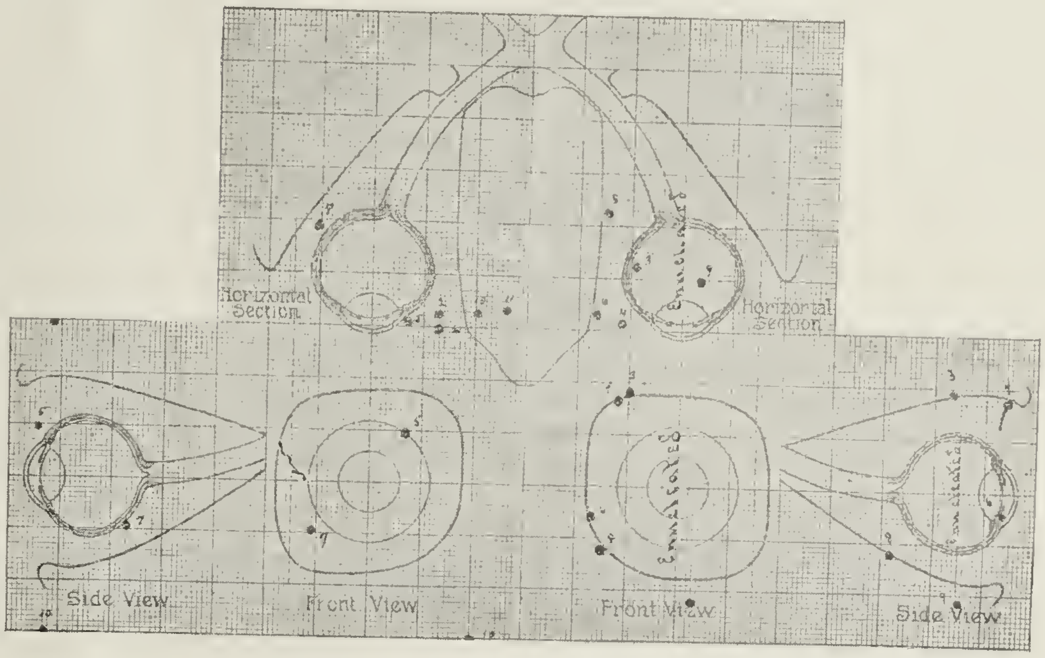

Figure 2, half size.

A case presenting a curious medicolegal aspect was reported by Weiss[9] in 1898, in which a man was shot in one eye immediately after two hunters had discharged their guns, one of whom used No. 7 and the other No. 9 shot. The eye when enucleated had a double perforation and Weiss could not localize the shot in the orbit. So that the victim who wanted to sue some one for damages did not know against whom to bring suit—the man who used No. 7 or the man who used No. 9 shot! I venture to say that if Sweet, of Philadelphia, or Dixon, of New York, had taken the skiagraph they would have supplied him with the necessary information!

It is not necessary that the globe should be perforated by the shot in order that serious injury to the eye should result, as numerous cases demonstrate. The shot may either pass alongside of the globe (glancing against the latter) into the depths of the orbit, or it may strike against or penetrate the lid, but not pass clear through the latter. In either case the eye may be seriously injured, possibly by *contre-coup*.

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[1] Milbradt: Inaug. Diss., Greifswald, 1890, Case 2.
[2] Gengnagel: Inaug. Diss., Giessen, 1894, p. 22.
[3] Schweigger: Klin. Monatsbl., vol. xii, p. 25.
[4] Vossius: Klin. Monatsbl., 1883, p. 282.
[5] Gengnagel: Loc. cit., p. 10.
[6] Steindorff: Inaug. Dissert., Halle, 1898, p. 52.
[7] Kretschner: Centbl. f. prakt. Augenhk., 1889, p. 112.
[8] Sattler: Graefe-Saemisch, first edition, vol. vi, part 2.
[9] Weiss: Klin. Monatsbl. f. Augenhk., 1898, p. 10, 350.

Lindenmeyer[10] reports a case where the shot struck the lower lid, but did not penetrate the latter. There was no perforation of the globe. Vision at first was entirely lost. Three days afterward the patient could count fingers at three feet, there were thick masses of blood in the vitreous and the pupil was small. Later choroidal rupture could be made out after the blood had been absorbed (three weeks) and vision was 5/15.

One must not conclude too hastily, therefore, that the eye has been penetrated when, after these accidents, the vision may be abolished and the vitreous full of blood. Careful investigation should be made to ascertain whether the damage is the result of a perforation or merely from the impact of the shot directly, as in the last case, or by a glancing shot, which subsequently has buried itself in the orbit.

Among the conditions found after injury of the eye with birdshot, either with or without perforation, are rupture of the choroid and retina, one or both, commotio retinæ, retinal and intraocular hemorrhages, cataract, injury to the nerve, paralysis of various ocular muscles, pulsating exophthalmos, and finally meningitis and death.

PROGNOSIS.

In discussing the prognosis I will consider it first as to the preservation of the globe and, second, as to the recovery of useful vision. So far as the preservation of the globe is concerned, this will depend much on the location of the perforation. In my first case the shot passed exactly through the limbus, damaging in its passage the ciliary body and lens. Into the cicatrix the lens capsule became incarcerated, and we had to deal with conditions exactly similar to those present in the case of a penetrating wound in this region by anything else, and we all know how prone such are to set up sympathetic trouble.

Several cases have been reported where the shot penetrated this region, and they all required enucleation. In a case of Valois[11] iridocyclitis developed in three months, necessitating enucleation. He states that iridocyclitis may also develop if the shot at first fixed in the vitreous or elsewhere becomes loosened and falls on to the ciliary body. The *x*-ray can be employed, however, to show whether such change in position has taken place. Of course, if the victim is so close to the gun that numerous shot pierce and lacerate the globe (as was the case in the left eye of my second patient, according to what was reported to me), immediate enucleation is the only possible course to pursue.

Aside from these two conditions, viz., a lacerated wound through the ciliary region (and even here expectant treatment for a while may be advisable) and the laceration or disorganization of the globe by numerous shot entering it from close range, the prospects of saving the globe are very good.

Fornatola[12] reported in 1894 twenty-two cases (he has since reported many others), and stated that most cases in his hands showed very little reaction, and out of the twenty-two he only had to enucleate one eye, and this patient had neglected treatment. In my second case the right eye was never infected, nor did it give any evidence of the slightest irritation.

So far as the visual prognosis is concerned, that will depend on the structures through which the shot passes. Where the course of the latter is through the peripheral structures, and especially where there is a double perforation, as in my second case, the ultimate result may be good. In this class of cases the visual disturbance is principally due to hemorrhage into the interior of the eye, and it not infrequently takes several months, or even a year, before the maximum of visual improvement has been reached. In Snell's case,[13] in which the globe was filled with blood, the absorption at first was rather rapid and in nine months vision was normal. It is now five months since the accident occurred in my second case, and his vision is now 20/20, and I am sure absorption will continue for a long time. In any individual case of perforation with blood in the interior it is not easy to give a very positive visual prognosis. Some cases improve more or less slowly, while others remain unchanged, notwithstanding patient and long continued treatment. A case under the care of Dr. Percy Fridenberg[14] for months had finally vision ability to recognize the movements of the hand a short distance away. Of Fornatola's twenty-two cases, eight recovered vision more or less good; in two cases it was 20/20.

Prognosis When Shot Remains in the Eye.—While Leber considered lead as one of the metals likely to set up inflammation in the eye, the majority of observers consider the presence of shot in the eye as relatively harmless, though, of course, their situation is important, for if they rest on the ciliary body they are apt to produce trouble. Bürstenbinder[15] presented a patient in Hamburg in 1901 who had been shot in the left eye eight years previously. There had been a shot in the anterior chamber, at the iris angle; the eye was perfectly quiet and vision was 1/3. In a case of Gotti's the shot was in the periphery of the anterior chamber for one year, when irritation set in and the shot was removed.

Schneider[16] in 1877 reported the case of a soldier who, standing near a target, was struck in the eye by the splinters of a bullet which had struck the target near him. Vision was at first completely gone, and gradually rose to 20/50, in two years, when he was first seen by Schneider. There was a pupillary membrane in which were several bits of lead the size of a pinhead; there were two or three larger pieces movable in the vitreous, and two imbedded in the retina. There was no irritation of the eye, and all the pieces of lead had entered through the same wound in the limbus. Fornatola reported twenty-two cases, and in one only did he have to enucleate. He experimented with infected shot fired into gelatin which remained sterile. He then shot into rabbits' eyes and found that if the lids had been previously sterilized, and if the eye was protected from the subsequent external infection, the shot became encapsulated.

Ovio[17] and Rolland[18] repeated these experiments and found that shot infected with the spores of the anthrax were the only ones which were not rendered sterile by the discharge of the gun. Shot infected with other germs, as the *Staphylococcus pyogenes*, were demonstrated to be sterilized, either by the heat of the discharge or by the friction of the passage of the shot through the air, or gun, one or both.

Our chairman, Dr. L. A. Taylor, in a paper read before this section in 1897, stated that on examination of an ordinary birdshot shell he found covering the powder a series of wads, at least ¾ in. thick, so that it was not probable that any of the flame from the powder explosion could come in contact with the shot. Whether all shells are made alike or not I do not know. Experiments, however, have been repeated now by numerous observers, so that there can be little doubt as to the fact that in most all cases a shot from a gun is sterile if it has not come in contact with anything else in its flight. How this sterilization is produced is not quite clear.

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[10] Lindenmeyer: Sammlung aus dem Gebiet. der Augenhk. (Vossius), vol. v, No. 1, p. 6.

[11] Valois: Rev. d'Ophthal., 1901, p. 71.

[12] Fornatola: Rev. gén. d'Ophtal., 1894, p. 206.

[13] Snell: Ophth. Rev., 1893, p. 156.

[14] Fridenberg: Deuts. med. Wochft., 1897, No. 46.

[15] Bürstenbinder: Centbl. f. Augenhk., 1901, p. 328.

[16] Schneider: Klin. Monatsbl. f. Augenhk., 1877, p. 292.

[17] Ovio: Rev. gén. d'Ophtal., 1895, p. 305.

[18] Rolland: Rev. d'Ophtal., 1887, p. 530.

TREATMENT.

If the eye is lacerated or badly torn by the entrance of several or numerous shot, as happens if the victim of the accident is very close to the gun, immediate enucleation should be done. When there is a single perforation the important thing is to protect the eye from infection. The only case of Fornatola's twenty-two which required enucleation was one in which treatment was begun late, and the cases in which treatment was postponed or discontinued too soon all proved troublesome. The conjunctival sac should be cleansed if the swelling of the lids permit it and a bandage applied.

If there is much swelling of the lids ice applications should be made and the patient should be put to bed. Of course, if there is prolapse of the iris the wound should be freed from this by excising what is prolapsed. The patient should be treated in this careful, systematic manner until the wound is thoroughly healed and all danger of external infection is past. If there is much gaping of a scleral wound, conjunctival sutures should be introduced to close it as well as possible.

One thing which should not be done is to introduce a probe, for this is a crude way of undertaking localization, and can only add to the risk of infection. An accurate *x*-ray picture should be taken as soon as possible. If by this a double perforation is shown, the eye can probably be saved, provided the ciliary body is not lacerated and infection does not take place. When the vitreous is full of blood the iodids, either of strontium or potassium, have been usually given, and probably are useful in assisting absorption.

If the shot is still in the eye the latter can still, in all probability, be saved, as the history of a great many cases show. The reaction in many of these cases is surprisingly slight if promptly and carefully treated. If the shot is in some position easily accessible, as in the anterior chamber, an attempt should be made to get it out. If, however, it is in the vitreous or other place not easy to get at, I think it should be left undisturbed in the hope that it would become encapsulated, as has often occurred. Now that the *x*-ray can tell us exactly where the shot is located, we can treat these cases much more intelligently. If it is resting on the ciliary body, or if originally in some other position, it has shifted, so as to rest on the ciliary body, it will in all probability set up irritation. In such a case an attempt to remove the foreign body would be warranted, and if it failed the eye could be removed.

A considerable literature is appended to the articles of Pahl[19] and Lindenmeyer.[10]

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DISCUSSION.

Dr. G. E. de Schweinitz, Philadelphia, said that the selective action of shot in so far as vital portions of the eye are concerned is sometimes strikingly illustrated in accidents of this character. The most notable one in his experience is the following: A man was shot with No. 6 bird shot. One shot entered exactly over the pupil space of each eye, passing through the cornea and the lens and burying itself in the posterior portion of the eye. Both eyes were filled with blood, and as this was, before the days of *x*-ray examination, exact localization was never made. The ultimate result was bilateral blindness. Dr. de Schweinitz agreed with Dr. Marple regarding the importance of *x*-ray examination in these cases, particularly for the purpose of ascertaining whether or not shot has remained within the globe or passed through into the orbital tissue. For example, in a recent patient a shot passed through the lower lid, penetrated the sclera at the outer border of the internal rectus muscle 1 cm. from the corneoscleral margin. The man was examined about thirty hours after the accident. Intense subconjunctival ecchymosis of the entire eyeball was present, the pupil was inactive and slightly irregular, and the entire lower half of the eyeground was occupied by a large hemorrhage. The position of the disc could be dimly seen and above it was another dark mass, doubtless also a hemorrhage. *X*-ray examination showed that the shot was 37 mm. back of the center of the cornea, 6.5 mm. below the horizontal plane, and 18 mm. to the nasal side of the vertical plane; in other words, in the orbit. The usual treatment produced a perfect result in so far as a quiet eye was concerned. Vision, however, was reduced to light perception in the lower part of the field. The lens was not penetrated. In another case the shot did not wound the lens, but must have passed through the lower part of the ciliary body. The vitreous was so filled with blood that even after months of treatment it was possible to see dimly only certain portions of the eyeground. Extensive retinal detachment followed. Vision was reduced to faint light perception, but the eye in other respects is normal in appearance. *X*-rays demonstrated a double perforation, that is to say, that the shot had passed entirely through the eyeball was buried in the tissues of the orbit. The relief given by the knowledge that the shot is not buried in the tissues of the eye itself is most satisfying and lessens the dread of the possibility of sympathetic ophthalmia.

Occasionally *x*-ray examination is not absolutely satisfying. In a notable case the patient was examined and it was found that a bird shot, No. 6, had penetrated through the upper part of the iris, passed through the lens, and was buried, probably, somewhere in the eyeball. The lens was cataractous and the vision reduced to light perception. A slow iridocyclitis developed, and on enucleation the shot was found exactly where it had been localized by the *x*-rays, lying against the inner side of the sclera. In this case there was a possible error in localization represented by the width of the scleral coat.

The ultimate fate of eyes when a shot grain remains within the globe depends entirely on the situation. If it is in the anterior chamber, or even imbedded in the iris, or sometimes in the angle of the chamber, as Praun points out, it may remain there for many years without producing disturbance, and becomes encysted or covered with a layer of carbonate of lead. The result is different, however, if the ciliary body is penetrated, or if the shot remains in the choroid, under which circumstances iridocyclitis, detachment of the retina, shrinking of the eyeball and sympathetic ophthalmia may occur. Moreover, as is common with all foreign bodies, shot may remain there for a long period of time, apparently quiescent, but finally originate processes which bring about the results already recited.

Occasionally, in spite of extensive changes in the eyeground and the presence of retained shot, the disastrous consequences just detailed do not take place. If it is intended to save the eye, and certainly every attempt should be made, especially if the radiograph has demonstrated that vital structures in the sense of the ciliary body are not seriously damaged, the outlook is fairly good. If, however, infected iridocyclitis be present, enucleation in most instances will be required.

Dr. H. V. Würdemann, Milwaukee, stated that lead shot, although one might think that it would contain pathogenic germs, is not only aseptic, but antiseptic, therefore there are very few infected wounds from shot gun injuries. In spite of the statistics and of Dr. Marple's statement, Dr. Würdemann is of the opinion that all eyes containing bird shot, and having little or no vision, should be enucleated, because they have extensive trauma and later undergo changes that demand enucleation. Chemical changes also occur from the irritating effects of the carbonate of lead. Dr. Würdemann showed specimens illustrating the usual serious traumatisms and secondary pathologic changes from retained shot, and the chemical changes showing usual necessity for enucleation in this class of injury.

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[19] Pahl: Inaug. Dissert., Greifswald, 1898.

Dr. Edward Jackson, Denver, said that before the time of the *x*-ray in one case he based a probable diagnosis of double perforation on the instantaneous loss of sight. The patient was not stunned or much disturbed by the single shot striking the eye, and said he noticed instantly the loss of sight in that eye. Contrary to the rule, the eye showed infection and had to be enucleated. The optic nerve was found to be divided about 3 mm. back of the eyeball. The extraction of bird shot from the eyeball is more difficult than might be supposed, the shape of the shot preventing it from becoming fixed, so that it readily moves away from the instrument. Even when in the anterior chamber it is difficult to remove it.

Dr. Robert L. Randolph, Baltimore, reminded Dr. Würdemann that this subject of the aseptic condition of shot has been gone over experimentally, and a number of years ago an army surgeon performed experiments in which bird shot and bullets were thrown into culture media from a distance, and while in the majority of cases the results showed no growth, there were a number of cases in which they did, showing that it is not exactly true that bird shot are really aseptic.

Dr. S. D. Risley, Philadelphia, said that he could not recall a single instance in his experience in which infection has followed injury to the eye from bird shot, but he has seen several curious changes take place, apparently chemical, which have proved serious and required removal of the eyeball. For instance, within a few weeks he had to remove an eye containing bird shot, in which the vitreous was as black as ink and fluid. Another curious case was one in which the bird shot had entered the brow and, glancing from the orbital wall, struck the eyeball at the upper and outer side. Dr. Randolph supposed that the shot had gone through the eyeball. No sympathetic symptoms were manifested. He waited, therefore, until the blood was absorbed and he could see the interior of the eye. There were wide bands of lymph apparently extending through the vitreous body from side to side. Six weeks after the injury the ball was removed because of sympathetic irritation, and he found the shot in the lamina fusca, between the sclera and choroid coat near the equator of the globe at the upper temporal side. It left a large scar, and from that was a band of lymph, which in contracting had already begun to detach the retina in the ciliary region of the opposite side. There are certainly other considerations than those of sepsis which should control the physician in the care of these cases. In Dr. Randolph's experience sooner or later bird shot in the eye have necessitated removal of the organ.

Dr. R. D. Gibson, Youngstown, said that we can often see the shot with the ophthalmoscope, but after we have located it we are puzzled to get it out. He found himself up against that proposition last February. The shot lay in the back part of the eye. After rotating the eye the question arose as to whether, in making the incision, to cut backward or forward, in order to reach the shot without making unnecessary traumatism. He took a piece of glass and drew it to a point, about 3 inches, with 3/16 inch diameter and curved it. He put that through and held it in front of the light and had the end of the rod as his luminous point. This he could put through the opening into the vitreous and illuminate the entire anterior of the eye, showing the foreign body perfectly.

Dr. Charles H. Beard, Chicago, said that if after a reasonable time the blood in the anterior chamber does not disappear and is present in considerable quantity, he would strongly advise its removal. By leaving it too long there is always the risk of the clot becoming organized and doing damage; whereas the operation of removing it is a rather simple affair. One has only to make an incision with a keratome and wash out the blood with warm boric or warm salt solution, by means of a suitable irrigator such as that of Lippincott of Pittsburg.

Dr. William M. Sweet, Philadelphia, said that in plotting the position of shot or other foreign bodies on the diagrammatic charts employed for this purpose, it is often difficult to indicate whether the body is within the eyeball resting against the sclera or in the orbit close to the globe, owing to the possible variation in the size of the eyeball in different individuals. Dr. Hansell has called attention to the error in localization that might arise from changes in the diameter of the eyeball by refractive errors, particularly high myopia. Stilling contends, however, that variation in the various diameters of the eyeball are independent of errors of refraction, and that a myopic eye of 4 D. may be actually shorter than a hyperopic eye. He found the anteroposterior diameter of the normal eye to vary between 20 and 25 mm., and it is, therefore, of importance to consider these differences in the localization of bodies that are shown to be situated near the line of the sclera.

Dr. W. B. Marple, New York, said in regard to the point made by Dr. de Schweinitz and Dr. Sweet that he was interested some time ago in a case in which Dr. Dixon located a foreign body just outside the sclera. It was found just inside the sclera. Dr. Dixon subsequently studied the patient and found that he was a man 6 foot 2 inches and with an eye 26 mm. in diameter. If that had been taken into consideration the localization would have been inside instead of outside the sclera. As to Dr. Randolph's remarks regarding sterilization of shot, Dr. Marple thinks that anthrax spores are the only ones not sterilized in those experiments.

APPENDICOSTOMY.*

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The term appendicostomy, although less than four years in use, has already been applied to describe two entirely different conditions. It was first suggested by Willy Meyer, in 1902, to designate an operation devised by Dr. Robert F. Weir, which consisted in the fixation of the appendix to the skin of the abdomen and utilizing its caliber and opening into the cecum for the purposes of washing out or medicating the colon in chronic inflammation of this organ. The term appeared so appropriate that it was at once adopted by the profession and until the early part of the present year was used as synonymous with Weir's operation. Unfortunately, Lance,[1] either ignorant of or ignoring Meyer's use of the term, has employed it to describe the following procedure. In cases of appendicitis where the appendix is bound down by adhesions so that it can not be extricated, he cuts it off at the base and sews up the cecal opening; he then brings the cut proximal end of the appendix up into the abdominal wound and fastens it to the skin. Later on, he says, the stump may be extracted without difficulty or pain, and this he calls "appendicostomy." Without entering into its philology, the prior use of the term by Meyer and the common acceptance of the word as applied by him would seem to render this application by Lance entirely unjustified. We shall, therefore, employ it as describing the Weir operation alone.

The operation is the latest development of a suggestion by Hale White,[2] to make an artificial anus on the right side, thus giving the colon rest and affording an opportunity for local treatment in cases of intractable mucous and ulcerative colitis. The difficulties of making an effective artificial anus on the right side, its disagreeableness to the patient when made, the fact that the operation was in many cases more dangerous to life than the disease, the uncertainity as to its ultimate closure, and our lack of definite knowledge with regard to the pathology of the different types of chronic colitis all militated against general adoption of White's suggestion, although surgeons generally admitted it was a step in the right direction. In the few cases in which it was employed it was soon discovered that the benefit arose more from the local medication than from the functional rest. Increased knowledge of the pathology of colon diseases also indicated this line of treatment. It, therefore, appeared desirable to establish some method by which the local treatment could be carried out without the disgusting features of an artificial anus. To accomplish this Gibson suggested the application of the Kader method for gastrostomy to the cecum, thus forming what is known as a valvular colostomy or cecostomy, through which the colon could be irrigated and yet there would be no escape of feces. This was put into application by Bolton and was so successful that surgeons at once began to recommend it.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Münch. med. Woch., Jan. 23, 1906.

[2] London Lancet, 1895, page 538.

In 1902, however, Dr. Weir intending to do this operation, noticed the appendix rise up into the wound so prominently that the thought occurred to him it might be possible to utilize the caliber of this organ through which to medicate the colon, and acting on his inspiration of the moment he stitched the tip of the appendix to the skin of the wound and closed the latter. As he was preparing to apply the dressings it occurred to him that possibly the appendix might not be patulous and preferring to take no chances he cut off the tip and introduced a No. 12 soft rubber catheter, which entered freely into the cecum. This was withdrawn and a ligature thrown around the stump of the appendix to prevent leakage. The ligature was removed in 24 hours and two days later irrigations of the colon were begun. The case was one of chronic amebic dysentery and the results eminently satisfactory. The simplicity of the operation, its freedom from danger, the certainty of ultimate closure, and the rational treatment offered by it appealed to all surgeons and it was at once adopted as an accepted procedure. As stated in a previous paper on this subject, "there are certain objections to the original technic; viz.: when the appendix is sutured by the tip, its greater part being left in the abdomen, it acts like a suspensory ligament to the caput coli with a very frail anchorage, which may be easily broken loose; it still remains a menace to life, unless removed by secondary operation; there is also the possibility of the small intestine worming itself around it, thus causing acute flexure or hernia between it and the abdominal wall, which might result disastrously." In addition to this, it either requires a secondary operation for closure or it affords us no security against a future appendicitis. The technic of Weir was, therefore, soon altered by Meyer, Dawbarn and the writer all having done the operation soon after Weir.

TECHNIC OF OPERATION.

The technic, as evolved from these modifications, resolves itself into an extra-peritoneal appendicectomy with consequent appendicostomy through the original opening of the appendix into the colon and is as follows:

The site of the lower end of the cecum having been mapped out in advance, the patient is prepared as for "interval operation," the abdomen is opened by the gridiron method; an incision large enough to admit two fingers is all that is necessary. The appendix is grasped and brought up into the wound, the artery of the mesentery is tied and the mesentery stripped from the appendix down to its junction with the cecum; the latter is then fastened to the parietal peritoneum at the lower angle of the wound by sutures on either side and above the appendix; the last suture being continued to close up the peritoneal wound. One should avoid involving the lesser appendical artery in the side sutures; the muscular and fascial layers are then closed by sutures of chromicized catgut; the appendix itself is fastened in the lower angle of the skin wound by a suture on either side and the skin wound is finally brought together by plain catgut sutures. The protruding appendix is wrapped with gutta percha tissue and the abdominal wound is then sealed either by collodion or by gutta percha tissue and chloroform. At the end of two days the dressing around the appendix is removed and if the organ is found gangrenous at its tip, as it frequently is, it should be cut off about ¼ to ⅜ of an inch from the skin. If the aperture appears small the tract should be followed up by a probe at once and then dilated by some such instrument as a conical bougie or Earle forceps, after which a properly adjusted catheter should be introduced and a ligature tied around the stump of the appendix, which will serve the double purpose of preventing leakage around the catheter and at the same time cut off the stump of the appendix flush with the skin. The catheter should be introduced about 2 to 4 inches, according to the thickness of the abdominal wall and should protrude about 4 inches. If there is abdominal distension its end should be left open in order to allow the escape of gases; if there is none, it should be bent on itself and fastened with a safety pin to avoid leakage into the dressings. On the third or fourth day irrigation may be begun, using at first warm saline solutions until the bowels have been freely opened. After this the temperature of the solution should be reduced in dysenteric cases to about 65 to 75 F.

The special features of the operation to be noted are as follows:

SITE OF INCISION.

As a rule for guidance we may say the incision should be made one and one-half inches inside of the right anterior superior spinous process at right angles to and just above a line drawn from this process to the umbilicus. A hard and fast rule of this kind, however, may lead one into difficulties. In cases where the appendix is bound down or the cecum displaced it may put the parts on too great tension or it may be impossible to bring the appendix properly out through such an incision. By careful percussion, palpation and auscultation, one can nearly always locate the lower end of the caput coli, especially if it has been distended by air pumped in through the rectum. This point should be located a day or two before the operation and the incision should be made directly over it, so that the appendix when brought out will form a straight conduit into the gut and will not be under too great tension.

OPENING THE APPENDIX.

Most operators who have written on this subject have followed Dr. Weir's practice and opened the appendix at the time of operation in order to assure themselves of the patulousness of its canal. Without exception, I believe they advise doing this after the gut and appendix have been fastened in position. This seems to me illogical. If there is any doubt of its patency, the appendix should be opened before the bowel is fixed to the parietal peritoneum in order that, if its canal is found obliterated the operator may abandon appendicostomy and proceed at once to make a Gibson cecostomy. I am of the opinion that a practised surgeon can always tell whether or not the organ is patulous by rolling it between the fingers, and if it is so, he should not take the risk of infecting the wound by opening the canal until two or three days after the operation. Of course this does not apply to cases in which the operation is done for intestinal obstruction or paralysis, for artificial feeding or for any very acute conditions. In such cases a few hours delay is all that is necessary, just as in colostomy. When opened early, however, the appendix should be cut off fully a half inch from the skin, a catheter introduced and a thread tied around the stump to avoid leaking around the catheter.

SIZE OF THE APPENDIX.

The questions may arise, is it advisable to attempt this operation in the presence of a small atrophied appendix, even though it be patulous; will its caliber admit a catheter large enough to serve the purposes of irrigation? From personal experience in two such cases I can answer this question affirmatively. The organ was found easily dilatable and the results in these cases were more satisfactory than in those with very large appendices. This opinion is confirmed by C. B. Keitley,[3] who, in a case of carcinoma of the transverse colon with slender atrophied appendix, was able to dilate the latter until he could introduce a small-sized rectal tube, the opening afterwards serving as an artificial anus.

WHEN AND HOW TO CLOSE THE OPENING.

The time at which the appendicostomy should be closed can not be fixed by any hard and fast rule. It depends on the disease for which it has been done, the history and condition of the patient, the amount of annoyance it gives, and his proposed future residence.

In amebic dysentery, the condition for which the operation has been chiefly done, the disease is usually apparently cured in four weeks or less, but it would be very inadvisable to close the opening at this time. In this disease we have periods of quiesence lasting sometimes months even without treatment. I always advise these patients to wait six to nine months before closure. If they are to return to the tropical regions I advise them not to have the opening closed at all, as it affords them a promising refuge in case of reinfection. This position is confirmed by the experience of Arthur, who has had two recurrences after closure.

In cases of simple mucous colitis the opening may be closed whenever the bowels have become regular in their movements without irrigation or laxatives and the mucus has been absent from the stools for several weeks.

In intestinal distension from peritonitis or volvulus, closure may be made as soon as the condition for which the appendicostomy was done has disappeared. In other conditions the time of closure must be left to the judgment of the operator, as there are no statistics thus far to guide us.

The only disappointments from the operation, so far as I have heard, have followed too early closure.

The method of closure is very simple and was suggested by Weir in his first communication on this subject. He said: "When normal defecation is obtained the fistula may be closed by cauterizing the mucous membrane with the Paquelin"; at the same time he said the closure might be made by dissecting out the stump of the appendix and suturing, if thought desirable. In my paper before the Academy of Medicine, of New York, in May, 1905, I mentioned no other method of closure than cauterization. Nitric acid applied to the mucous membrane has invariably and promptly closed the aperture. Notwithstanding these authentic utterances, we find C. B. Maunsell[4] claiming priority in this method of closure.

INDICATIONS FOR THE OPERATION.

In general the operation may be said to be indicated in all chronic inflammatory diseases of the colon. It has been chiefly employed in chronic amebic dysentery, muco-membranous colitis and syphilitic ulcerations of the colon. In all these conditions it has proved almost uniformly successful.

Maunsell[4] has employed it successfully in one case to fix the cecum in a case of volvulus of the cecum and ascending colon; and in another to prevent gaseous distension after resection of the small intestine. He also recommends it in general peritonitis.

Keitley[5] has employed it as a substitute for cecal colostomy in case of carcinoma of transverse colon; to fix cecum in case of intussusception of ileum, appendix and cecum into the ascending colon; and to relieve most obstinate constipation. He also recommends its use for artificial feeding and in the treatment of typhoid fever, as suggested by Ewart.[6] Sir W. H. Bennett has employed it once with success in chronic ulcerative colitis and suggests the possibilities of the operation as follows:

1. A means of treating diseases of the large and small intestine.
2. A means of relieving or preventing intestinal distension.
3. A means of artificial feeding.
4. A substitute for cecal colostomy.

Willy Meyer has employed it with great benefit in one case of tuberculosis ulceration of the colon. The results in this case encourage us to believe that the operation offers some hope to these cases which are otherwise hopeless

SOLUTIONS FOR IRRIGATION.

The selection of a fluid for irrigation will depend on the diseased condition.

In amebic dysentery the consensus of opinion is largely in favor of quinin solutions. In my experience normal saline at a temperature of 65° to 75° has been effective in all dysenteric cases. One must be careful though to use normal saline and not brine. In one case where an excess of salt was used the patient suffered from collapse with great thirst and dryness of the throat for some hours.

In catarrhal conditions, with or without ulcerations, solutions of nitrate of silver 1/5,000, ichthyol ½ to 1 per cent., solution of peroxid of hydrogen 10 to 20 per cent., aqueous fluid extract of krameria 10 per cent. and argyrol 5 to 25 per cent., have all been used with more or less satisfaction. Some of these cases yield very promptly, while others are very obstinate.

I have one case of mucous colitis under my care at present, due to pelvic adhesions, in whom I did appendicostomy over a year ago. She has improved; is kept comfortable by the irrigations, but she is not well and probably never will be until the adhesions are absorbed or broken up.

Ewart[6] reports a case in which appendicostomy was done for colitis with diarrhea and profuse bloody discharges. The hemorrhages continued in spite of all the ordinary irrigations, but was stopped by injecting liquid paraffin into the colon.

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[3] Lancet, 1906, i, 1023.

[4] London Lancet, April 28, 1906.

[5] Lancet, 1906, 1023.

[6] Lancet, May 12, 1906.

SUMMARY OF CASES.

Weir	3	Dawbarn	3
Meyer	5	McCosh	1
Lilienthal	3	Major Arthur	9
Major Bordon	3	Gant	8
Curl	11*	Sir Wm. Bennett	1
Ewart	1	Maunsell	2
Keitley	3	Nydegger	2
Hutchinson	1	Moynahan	1
Spencer	1	Armour	1
Lynch	4	Tuttle	14
Total			77

* Some cecostomies, but number not stated.

CONDITIONS FOR WHICH THE OPERATION WAS DONE.

Amebic colitis	45
Mucous colitis	15
Syphilitic ulceration of colon	4
Tubercular ulceration of colon	4
Multiple papillomata	2
Intussusception	1
Volvulus	1
Chronic constipation	2
Carcinoma transverse colon	1
Hemorrhagic colitis	1
In resection of ileum as precaution against gaseous distension	1

RESULTS.

In the 44 cases of dysentery there were six deaths following, but not due to the operation; two from unsuspected tuberculosis, two from extensive ulceration of bowel with chronic nephritis, one from exhaustion before the appendix was opened and one from cerebral disease, three months after the operation, the dysentery having been apparently cured for two months. The balance of the cases (38) are reported cured. Arthur reports two relapses, one after two years. In the cases of papillomata the operation was only palliative, as was also the fact in carcinoma. The cases of syphilitic ulceration appear to have been greatly benefited, if not permanently cured. In the cases of volvulus and intussusception the operation was effectual. In the cases of mucous colitis the reports are all favorable. In these, however, we must consider how much was due to the removal of the appendix and how much to the effects of the appendicostomy. The relationship between chronic appendicitis with adhesions and chronic mucomembranous colitis is a very close one and the etiologic influence of one on the other merits a wider discussion than the limits of this paper permit. Suffice it to say, that by appendicostomy we accomplish the double purpose of getting rid of the appendix, whether it be the cause or effect of colitis and at the same time give access to the parts for local treatment.

DISCUSSION.

Dr. Willy Meyer, New York, said that there are quite a number of cases of chronic colitis, ulcerative and non-ulcerative, that can not possibly be cured by medicinal means. Surely drugs, prolonged rectal lavage, diet, etc., should first be given an opportunity to show what they can do before surgery is tried, but in many of these cases medication is not only useless but is a time consumer. There are two operations, appendicostomy and cecostomy. The latter, he said, needs the permanent presence of a tube in the opening, which is a great annoyance to the patient, and is certainly more dangerous than appendicostomy. Dr. Meyer said that whenever the appendix appears to present an opening large enough to introduce a catheter it ought to be utilized to gain access to the interior of the cecum. He also said that it is necessary to attach the cecum to the parietal peritoneum and not simply to stitch the appendix to the wound. In one of the first cases in which there was a recurrence after apparently a perfect cure of the trouble and in which the opening was still present, another surgeon, not knowing the anatomic conditions present, advised the introduction of a silver catheter through the appendix. This procedure evidently was not done very gently and perforation occurred two years after the establishment of the appendicostomy wound. In spite of immediate laparotomy, cleansing and drainage, the patient died. It is necessary, Dr. Meyer repeated, to place the appendix entirely outside of the peritoneal cavity by stitching the cecum into the peritoneal wound. It seems to be wise to place the origin of the appendix at the upper angle of the wound and then to let the appendix pass through the abdominal wound in an oblique downward direction. In this way there is slight angulation at its origin, but there is less leakage than if the appendix passes through the middle of the wound. We ought also to satisfy ourselves at the time of the operation that the appendix is permeable. He considers it absolutely necessary to open the appendix at the time of operation. Thus, after the wound is closed by layer sutures, as used in appendicitis (always using the gridiron incision), the tip of the appendix should be cut off, and the surgeon should satisfy himself that the organ is permeable. There may be tight strictures which can not be stretched. The wound would then be opened and colostomy done after appendectomy. To reopen the next or second day and use the cecum means doing a second operation. By taking these safeguards, it will usually be possible after twenty-four hours, to introduce a catheter and to irrigate. The proper indications for this operation are ulceration, ordinary and specific, amebic colitis and tuberculosis. In the last named the procedure is not attended by such success as in the other three, but Dr. Meyer thinks that if we get these cases in time and operate, and if we will then send these patients to the country, as we do with other tuberculous patients, they will have a better chance to improve. Otherwise, irrigation should be commenced after twenty-four hours, and in the majority of cases the diarrhea, which may have existed for many years, will be subdued in a short time. Appendicostomy, he declared, is an excellent operation, and is the operation of choice in chronic intractable colitis.

Dr. Robert F. Weir, New York, said that he used this method in a number of instances, and has never felt the desirability of stretching the appendix to the parietal peritoneum, for the risk of possibly doing damage to its circulation. He has accepted the judgment of others in not opening the appendix primarily, and he has also learned from the experience of other surgeons, and from his own, that the appendix in the majority of cases can be made to take the instruments required in the after treatment. In the treatment he has found that in the cases of ordinary dysentery, not those of amebic origin, the washing out of the bowel with warm water or warm saline solution is the first thing to do. In the majority of instances that will bring about prompt improvement. Dr. Weir has finally got down to a routine treatment in which he places considerable reliance. After having washed out the bowels carefully, he uses a very weak solution of silver nitrate, one-eighth or one-sixteenth grain to the ounce of water, daily and sometimes twice daily. He apprehended that even such a weak solution might cause some irritation, but it is only rarely that his patients have complained of some little tenesmus or of a sensation of heat in the bowel, and then he gives them a little bismuth to soothe the mucous membrane and success has followed this treatment pretty rapidly.

In only one case of amebic dysentery he followed the suggestion of Dr. Tuttle. He discovered by accident that the amebic parasite was quickly checked in its movements, deadened in fact, by contact with cold water, and injected into the bowel by rectum, cold water, ice water and pounded ice. Subsequently, when this operation of appendicostomy was brought to his attention, he injected ice water and chopped ice in through the tube along the whole colon. Dr. Weir's experience had practically prepared him that cold water passed in through the colon did not depress the patient, as he had previously thought it might. Dr. Tuttle has had a large number of cases of cures of cases of amebic dysentery of years' standing by virtue of the injection of, or thorough irrigation with, this cold water. Dr. Weir has several friends, one a medical man, who were relieved by Dr. Tuttle by the use of these ice-cold injections in amebic dysentery.

Dr. J. A. MacMillan, Detroit, stated that he has had a little experience with colostomy performed for an ulcerated rectum, and he has been gratified to find how rapidly the ulceration disappeared after rest was given to the bowel below by the colostomy and also the benefit derived from irrigation through the colostomy. He believes that very great benefit would accrue from taking advantage of the appendix in the manner indicated by Dr. Tuttle. He asked Dr. Tuttle whether or not this treatment would be advisable in cases of intractable ulceration in the rectum itself, and if irrigations through the appendix would not bring on violent peristalsis. Dr. MacMillan thinks that the liquid might accumulate in the colon and induce a very violent peristalsis. He also asked how the opening was closed.

Dr. J. P. Lord, Omaha, stated that Dr. Summers, of Omaha, said he had done enterostomy by the Kader method of gastrostomy and has extended it to these cases for irrigation. It has not the disadvantages connected with using the appendix for this purpose, and one can readily imagine that the appendix might be unfit for this purpose. After the granulations have formed two or three days the catheter may be moved and reintroduced daily with safety and the irrigations made, and as soon as one ceases to introduce the catheter the sinus closes. Dr. Lord suggested that this method is, perhaps, to be preferred to the one proposed by Dr. Tuttle.

Dr. Tuttle said that there are a number of affections which he did not mention, but for the treatment of which this operation is peculiarly applicable and in which it has been used. Our English brethren are using it in the treatment of volvulus and intussusception of the ascending into the transverse colon, in so-called postoperative intestinal paralysis, for artificial feeding, and for the treatment of typhoid fever. It is remarkable to note the number of conditions in which the method has been employed or recommended. He said that he has tried every solution that has been suggested; he does not think that it makes much difference what solution is used for irrigation in dysentery as long as it is not used too warm. He used normal saline solution at about 60° or 70° F. Dr. Tuttle has used this method in the treatment of ulcerations of the rectum, in cases of dysenteric type, and it has been marvelous how rapidly the ulcerations low down in the rectum heal. In the cases of tuberculous and syphilitic ulceration where the operation has been employed, it has been most beneficial. Dr. Tuttle advised strongly against opening the appendix at the time of operation. Every case of hernia he has seen has followed opening the appendix at that time, and there has been subsequent, if not consequent infection. The closure of the opening depends entirely on the condition treated. In tuberculous conditions, never close it. In cases of dysentery, if the patient is going back to tropical regions, where he may be infected again, Dr. Tuttle would advise him to keep it open. It acts as a safety valve. He has never employed the method in cases of acute dysentery, although he has used the cold irrigations in those cases. A short time ago he received a letter from Dr. Musgrave, of Manila, in which he says that Dr. Weir's discovery promises much for all these cases of chronic dysentery. Three patients were cured within as many days and never a return of a single symptom after forty-eight hours of irrigation. There has not been a single death from the operation itself. The six deaths reported, occurred as follows: Two of them from exhaustion before the appendix was opened; the other four patients died from tuberculous peritonitis which had not been suspected before the operation.

The Blood Changes in Dementia Praecox.—O Sandri (*Rivista di patologia nervosa e mentale*), finds that the early stage of dementia præcox is accompanied by changes in the white corpuscles of the blood indicating a systemic intoxication, viz., a slight increase of the number of the leucocytes with a moderate polynucleosis. The appearance of catatonic symptoms in hebephrenics is accompanied by an alteration of the hemoleucocytic formula; that is, the appearance of a pronounced mononucleosis. In the paranoid and hebephrenic conditions there is nothing specially abnormal in the number and proportion of the blood elements. The above mentioned changes in the leucocytes are as constant and severe in recent cases of catatonia as in those that date back a number of years and that can, therefore, be called chronic.

TREATMENT OF SARCOMA OF THE NASOPHARYNX BY INJECTIONS OF ADRENALIN.*

JOHN EDWIN RHODES, M.D.
CHICAGO.

The prognosis of sarcoma of the nasopharynx is so uniformly bad that any treatment that offers hope for either the amelioration of the symptoms or a possibility of cure deserves our attention: Having recently had an opportunity of trying a remedy in an inoperable and unfavorable case of sarcoma of the rhinopharynx with encouraging results, I wish to present the method employed to the fellows of this Association with the hope that it may be found worthy of further trial in other cases. The treatment employed was first suggested by Mahu,[1] in 1903, and recently used in a case of carcinoma of the rhinopharynx by Berdier and Falabert[2] with very marked benefit.

Patient.—Mrs. B. G., aged 22, married seven months, was sent to me Jan. 19, 1906, by Dr. G. E. Turrill, of Cleveland, Ohio. Her mother was living and well; her father had died of erysipelas following an injury.

History.—There was no history of hereditary disease in the family. She had not been well for about twelve years, and for the last three years had been subject to attacks of bronchitis. She had measles in childhood and had had several attacks of tonsillitis in the preceding three years. She said that she had had a growth removed from the back of her throat five years ago, and that this had been growing for seven years previously. She had complete relief of all the symptoms connected with this growth by the operation, and had no further trouble until seven months ago, about the time of her marriage.

The early symptoms were those of a cold in the head, and she had been under treatment since the condition first appeared. About this time she had an attack of what was diagnosed as pertussis, and the growth in the throat, which had been increasing in size slowly before that time, began to grow more rapidly and continued to enlarge until about two months previous to her visit, since which time it had seemed to remain stationary.

Examination.—When first seen, she complained of a large growth in the back of the throat, completely obstructing the nasal passages, so that no air entered them at all; she also had marked loss of hearing, progressively increasing; severe pains at times in the back of the neck, radiating to the vertex; a profuse discharge in the nares, which could not be completely removed because of the obstruction, and also symptoms of dryness of the throat, etc., from the necessity of breathing through the mouth continually. There had been a constant loss of weight, declining from a normal weight of 125 pounds seven months before to 92 at that time. The appetite was poor, but there had been no fault of digestion and the bowels were regular. The tongue was thickly coated and dry. Her menses had been regular and normal. She said she had become nervous of late. The patient was much emaciated and pale, but her strength was comparatively good and she was able to come to the office for treatment during the time I had her under observation, although an increasing weakness was evident. She breathed through the mouth and her voice was the characteristic voice found in complete nasal occlusion. The temperature was 98 F. and the pulse 128, feeble, of small volume, but regular. The heart and lungs were normal.

The nasal cavities were free anteriorly, but the choanæ were completely occluded and the nares were partly filled with thick mucus. The tonsils, uvula, palate, tongue and larynx were normal. A tumor mass presented on the pharyngeal wall, descending to the level of the laryngeal vestibule and gradually sloping forward and upward behind the velum palati, pressing the latter forward against the posterior molars of the upper jaw. Palpation showed this tumor to be attached on its posterior aspect only, as the finger could be forced between it and the soft palate and choanæ and the Eustachian cushions could be felt by firm pressure. The tumor, therefore, had a broad base of attachment on the nasopharyngeal and pharyngeal wall and undoubtedly originated from the former. It was firm but not hard, somewhat lobulated, was pinkish-white in color and on raising the soft palate its surface was seen to be mottled with bright red spots. It did not bleed easily and there were no points of ulceration.

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* Read at the Twenty-eighth Annual Congress of the American Laryngological Association, Niagara Falls, N. Y., June 2, 1906.

[1] La Presse Médicale, April 4, 1903.

[2] La Escuela de Medicèna, Dec. 31, 1905, vol. xx, No. 24.

Diagnosis and Treatment.—A diagnosis of sarcoma was made and I sent her to the hospital. The next day I removed a mass of the growth for microscopic examination, which showed a spindle-celled sarcoma, highly cellular, with many lymphoid cells. Considering everything in the case, especially the certainty of a speedy recurrence of the growth, an operation could not be recommended, and at the solicitation of the husband that something be done I made injections of adrenalin into the substance of the tumor daily. For this purpose I used a needle long enough to reach the tumor through the nasal cavities. I had the following solution prepared by my druggist:

Adrenalini chloridi		12
Acidi borici		60
Chloretone		025
Aquæ dest.	15	

M. Ten minims equal five milligrams of adrenalin chlorid.

An injection of 5 minims of this solution was made into the faucial portion of the growth on January 25, and a 1-to-1,000 solution of adrenalin was swabbed over the surface. About twenty minutes after the injection she had some nausea, but there was no faintness nor any appreciable effect on the pulse. An ulcerated spot had appeared on the anterior surface of the soft palate, due to its being crowded against the left posterior molar by the pressure forward of the tumor, so the injection was made into the portion of the tumor directly behind this ulcerated spot.

On January 27 I injected 10 minims of the solution into another place. On the following day I injected the tumor through the right naris and on the next day through the left. In this way I alternated the size of puncture. After the second treatment diminution in the size of the growth was apparent.

On January 30 the retraction was shown by the removal of the pressure from the site of the ulcer and the healing of the same. There was an almost complete restoration of hearing from the removal of pressure from the Eustachian tubes and the pain was very much less.

I made seven injections and it was thought advisable to send her home and to have the treatment continued there. At her last two visits the injections caused an almost immediate nausea and vomiting. She had become much weaker at this time and in the extremely nervous condition she was in the last day there followed some faintness with blueness of the lips and weak pulse. The encouraging results of this treatment were the immediate reduction in size of the sarcomatous mass and temporarily the alleviation of pain.

Dr. Turrill continued the treatment after her return home and wrote me that he had alternated the treatment in the nasal cavities and throat with .0025 mg. adrenalin daily, using .005 mg. but once, making seven injections only. The improvement was noticeable and in about ten days she could blow the left nostril and breathe through the nares at times.

She had become very weak, with considerable gastric disturbance and vomiting, due, she believed, to a remedy she was still taking; this was discontinued. The fauces became inflamed and swollen, but there was no visible increase in the size of the tumor and no necrosis of tissues. A spray of adrenalin relieved the throat symptoms. An attack of diarrhea still further weakened her, but this soon subsided. The treatment was discontinued. The fearful exhaustion due to the inroads of the disease persisted, notwithstanding every effort at nourishment and stimulation, and the patient died March 15.

While the results were only encouraging in this case, in view of the experience of Mahu by topical application and the notable improvement in the cases treated by Berdier and Falabert, I assume the method should be given a trial in other instances.

Mahu[1] treated three patients with ulcerating epitheliomata by local applications of adrenalin (1 to 1000) and found it arrested persistent hemorrhage, suppressed the pain and was followed by a rapid and continued amelioration of the general condition of health. He did not claim curative effects, but in each case the neoplasm seemed to have been arrested in growth, for a time at least, and there was less tendency to spread and to invade new tissues. The disease in these cases, respectively, involved the tongue, the larynx and the laryngeal vestibule. He suggests, in conclusion, that attempts be made to destroy certain circumscribed epitheliomata by adrenalin injections.

CASES REPORTED.

Berdier and Falabert[2] report a series of nine cases of cancer, treated by subcutaneous injections of adrenalin in the internal ones and interstitial injections in the external ones. The cases are reported at length.

The first case was one of cancer of the rhinopharynx. The patient was a man aged 52. He had no specific history and his family history was negative.

History.—He was well until July, 1902, when he had an attack of erysipelas. In February, 1903, he began to have severe pain in swallowing and intense headache. The nasal passages became occluded. This continued about a month, when an eruption appeared about the nostrils and there was a foul, sanious discharge from the nose. In June he consulted several specialists, who pronounced his case cancer of the rhinopharynx, and gave a grave prognosis. Later, some portions of the growth were removed.

Examination.—He was finally sent to Dr. Berdier for more radical treatment, in June, 1904.

At this time the isthmus of the fauces was very much deformed, the palate very tense, hard, infiltrated, lustrous; the anterior pillar on the right side in a similar condition, extending forward into the buccal cavity, where there was a vegetating mass, irregular in form, covered with a false membrane, gray, adherent and of a very fetid odor. Posterior rhinoscopy was impossible, but on palpation there was found a hard, irregular mass in the nasopharynx, which bled easily. The anterior nares were free, except for a slight thickening of the mucous membrane. Dysphagia was marked and there was difficulty of respiration. The mucous membranes were pallid. The submaxillary glands were enlarged and hard, and there was enlargement of the maxillary and inguinal glands also.

Treatment.—He had had thorough antispecific treatment over an extended period, without benefit. Topical applications of lactic acid, potassium chlorate and various other remedies were also tried, but internal remedies were suspended on account of their irritation of the stomach. An application containing cocain 1 to 30 was applied and a gargle of chloral 1 to 200 was used and also enemas of peptones.

On June 29 there was some improvement, less odor; he could breathe a little through the nose, and pain was less, and at greater intervals. The thermocautery was used at this time on the oral growths. This improvement was of short duration and the patient soon became worse. July 10 Berdier applied adrenalin, 1 to 1,000, topically to blanch the exuberant masses and to reduce the growth. This gave some relief till August 24, when the condition of the patient was so bad that respiration was labored and stertorous, articulation difficult, as was deglutition also, even of liquids, from increase of the growth and glandular enlargement.

Tracheotomy was advised but deferred on recommendation of Falabert, who was called in consultation, and interstitial injections of ½ milligram of adrenalin were begun at irregular intervals of a day or two.

Result.—In a few days the glands of the neck began to diminish, the patient could open the mouth, and began to articulate better, some of the enlarged glands having disappeared after the eighth injection. On September 12 the conditions had changed remarkably. The soft palate had regained its elasticity and mobility, the isthmus of the fauces presented an almost normal appearance, the thickness of the mucous membranes had diminished, there was less disturbance in mastication, and the patient could speak more plainly. The axillary and other glands had diminished very noticeably in size. On September 28 a marked gain in weight was noted. In April the weight was 68 kilograms, and this had declined to 46 in September, and increased to 56 under the treatment.

The patient was reported in good health at the time of the presentation of the paper. It is unfortunate that a histologic examination was not made in this case, but he was seen by a number of the best specialists and they agreed as to the diagnosis.

The other cases were cancer of the esophagus; three of cancer of the stomach, one of which was confirmed by a postmortem; one of epithelioma of the uterine neck; one of epithelioma of the skin, and two of the tongue and mouth. In each of these cases improvement in a marked degree is noted, evidenced by lessening in volume of glands involved, decrease in size of tumors, marked amelioration of pain, increase in weight and general improvement in health. They conclude that when adrenalin is locally applied or injected it has a great influence on cancerous growths; they advise its use in all cases of cancer and think it should largely replace morphin as an analgesic.

PHYSIOLOGIC ACTION OF ADRENALIN.

No satisfactory explanation can yet be given of the physiologic action of the adrenalin in cases of such pathologic change as occurs in cancer, and the subject has never been thoroughly studied. Elliott[3] has made many and valuable observations of the effects of adrenalin on animals. In his exhaustive treatise he shows that it accelerates and augments the heart beat, as do the cardiac accelerator nerves, and that it constricts the blood vessels of the body as do the sympathetic nerves, is proven. Constriction is produced in the largest arteries as well as in the arterioles. Another author states that he had found that in the area around the point of the injections the blood vessels were constricted. Vascular dilatation is probably not produced by it and the veins seem not to be influenced. On local application to unsound flesh it blanches it quickly and briefly, being succeeded by venous hyperemia. Its application to plain muscle invariably is followed by contraction, no reaction and relaxation.

Melzer and Auer,[4] in their studies of the effects of injections of adrenalin in delaying the toxic effects of strychnia, concluded that in some way there was an impairment of absorption through the blood vessels by the tissues. They also found that the blood of adrenalin animals clotted more easily. They brought out another interesting fact, that the suprarenal extract possesses the property of increasing tonicity of contractile tissues, which lasts the longer the less organized this tissue is, showing that the effect is not of short duration. In brief, their theory is "it causes an increase in tonicity of the contractile protoplasm of the endothelia of the blood capillaries and lymphatics. This increase in tonicity narrows the lumen of the pores and decreases the facility for the interchange between the blood and the tissue fluid."

It is certain to my mind that in some way the action of the adrenalin is expended largely on the vessels and the blood stream and thus cuts off the nutrition in these growths. At the same time it must have some specific action on cancerous growths if we accept the conclusions arrived at by the results in the cases reported by Berdier and Falabert.[2] Certain it is that under an interstitial injection there was an increasing shrinkage in the cases of sarcoma I have reported and there is no reason to think that this shrinkage would not have continued if the injections could have been employed longer. The evident increase in physical strength and well being in other cases treated by this method would also tend to show that my patient's rapid decline had nothing to do with the treatment, but continued in spite of it, as is usual in such cases without treatment of any kind.

As this method is new and the action of adrenalin when injected over a long period and frequently is not yet thoroughly understood, I believe it will be necessary to be cautious in its administration.

Within the past month Joseph L. Miller, at the Congress of American Physicians at Washington, presented an admirable study of the production of arteriosclerosis by the continued administration of adrenalin. In a personal note he gives briefly his conclusions as follows:

> Josue, in 1903, first demonstrated that repeated intravenous injections of adrenalin chlorid in rabbits would produce marked degeneration and calcification of the media of the aorta. It is remarkable how rapidly these vascular changes may occur, even in so short a time as five or six days, or after three or four injections. A few observers have succeeded in producing these same changes by the subcutaneous use of adrenalin and by injecting it into the trachea. The question then arises whether this is a safe remedy when used subcutaneously in man. We know that, when given in this way, it causes considerable rise in blood pressure, and this has been considered an important factor in the arterial changes. Since it has been shown that digalen, when administered intravenously to rabbits, may cause arterial changes of similar character, it is probably safe to say that adrenalin is not more dangerous than some other drugs in common use. Of considerable interest is the recent work of Korany who found that, after injecting the animal with iodopin, the adrenalin did not produce any change in the vessel.

Elliott[2] found that the daily repetition of comparatively small amounts in animals experimented on causes atheroma of the aorta and coronary arteries. The remedy, however, is non-cumulative in action. Would we encounter a like condition in man and should precaution be necessary? The dosage would have everything to do with such a possibility. The experiments by different observers undoubtedly show that calcification of the media of the aorta and degenerative changes in blood vessels can be produced by injections of adrenalin. It must not be forgotten that the dosage necessary to produce these changes in the animal must be very large, increasing from about three minims to each kilogram of weight in the rabbit. Rabbits of 2,000 gm. have been killed in 2½ hours by 20 mg. of pure adrenalin. Smaller doses do not produce these atheromatous changes. In human beings it would be necessary to use a proportionate dose—as 180 minims of a 1 to 1000 solution for an individual weighing 60 kilograms—very many times larger than it would be considered safe to use, or that would be recommended. There is no doubt, therefore, that the production of an arteriosclerosis in man would be a danger that practically does not exist. A careful histologic examination of the tissues being treated should be made, as it has not yet been demonstrated what the changes in pathologic structures at the site of injection have been.

Unfortunately, I did not have my patient under observation long enough to permit such examination, but in other cases I trust it will be made. The unpleasant effects of the amount I used may have been due to the rapidity of the injection and possibly to the size of the dose. Melzer[4] found the toxic effects of injections of bile much influenced by the rapidity with which they were made; the rapid injection of a small quantity may have a fatal effect, while a much larger dose could be given slowly without such result. I think this precaution would be well in the use of adrenalin. Death comes speedily in animals from the injection of large quantities of adrenalin and smaller quantities have provoked glycosuria and inflammatory changes in the liver and kidneys. Symptoms of weakness, prostration, nausea and vomiting may have been evidence that too large a dose was used. I believe 2½ mg. is a safe dose for an injection and possibly 5 mg. is not too large in some cases. The nausea and vomiting, while not severe or prolonged in my case, seemed to be an indication for a smaller dose. I would, therefore, recommend only one milligram every two or three days as initial dosage for an adult in most cases with a possible cautious increase.

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[3] Journal of Physiology, vol. v, 32.

[4] Trans. Assoc. Amer. Phys., 1904.

CONCLUSION.

In conclusion it seems to me that this method merits trial, especially in cases of carcinomata and sarcomata of the throat and nose in which an unfavorable prognosis must almost without exception be made, and the earlier it can be resorted to the better. I believe that it may be safely asserted that this may replace morphin as an analgesic in these cases and that it has a palliative effect, while we have no proof of its being curative in its action as yet. In operable cases, however, in which delay would be dangerous, a resort to surgery, as heretofore, should be the rule, until the matter has had further trial.

AN INFECTIOUS DISEASE OF DOUBTFUL NATURE.

PRELIMINARY NOTE.*

LEONARD K. HIRSHBERG, A.B., M.D. (Johns Hopkins).
BALTIMORE.

During the past four years I have had six cases[1] of continuous fever, which lasted from seven to sixteen days, without enlarged spleen, abdominal tenderness, rose spots, or a positive Widal reaction. In no case were malarial parasites demonstrated; nor was leucocytosis present. The cases all occurred in Baltimore, in young adults, between June and December.

The onset was acute in every case, with a rapidly ascending temperature, which was the main feature, a strong, full pulse which never rose over 80, and flushed face, analogous to that seen in typhoid. In the last three cases agglutination tests were made with strands of paratyphoid, as well as typhoid cultures. They were both entirely negative.

The object in calling attention to these few cases is to lead my friends, who have similar cases, to report them, and perhaps to classify them. They are evidently not typhoid, paratyphoid, malaria, or acute gastrointestinal fevers. It may be that there is more than one disease included in my six cases. Since there is so much in common in these cases, and no reference to an analogous fever in Osler, Allbutt's System, Nothnagel, or the general literature, it seems to me of interest to report them. Cultures made from the blood in two cases were negative.

Case 1.—H. B., male, married, aged 35, a Baltimorean and a butcher, complained of headache for four days. Family history and personal history were unimportant, except that he had typhoid seven years ago.

Patient felt all right except headache. There were no pains elsewhere. He was slightly constipated. There was no nausea, no vomiting. He was not sick enough to be in bed and was not short of breath. Appetite was poor. Stools were brown. Rest of history was negative. He had eaten nothing unusual.

Examination.—Temperature 102.4, pulse 76; face was flushed; pupils were bright; tongue was heavily covered with a thick white fur, dry and scaly. There were no glandular enlargements, no rose spots in back or front. Chest was negative except an old untransmitted, apical blow, systolic in time. There was no jaundice anywhere. Telangiectases were absent. The abdomen was soft; there was no tenderness; no liver or spleen was felt. Bladder was not distended. The genitalia were clear, rectum smooth, prostate normal, urine negative; no bile. Leucocytes, 8,000. Riva Rocca pressure was 140. Widal negative four times.

Course of Disease.—The temperature in this case reached 104.2 on the seventh day. It was kept below by ice sponges and packs. On the fifteenth day the temperature was normal and remained so afterward. The patient resumed his duties as a butcher on the twenty-first day, against instructions, but no ill result ensued.

Case 2.—H. S., female, aged 18, single, a stenographer, complained of feeling tired. Family history and personal history were negative. Present illness began three or four days previously. She felt out of sorts, no pain anywhere, but bowels were very much constipated and breath was foul. There was some nausea and vomiting; no headache. Rest of history negative.

Examination.—Patient's temperature was 101.8, pulse 72; skin clear; mucous membrane was good color; chest was hot and flushed; tache cerebrale conspicuous. The tongue was covered with a dry, thick, gray coating. Heart and lungs were clear. There were no rose spots, no jaundice. Neither liver nor spleen was palpable; abdominal walls were soft and compressible. There were no enlarged glands, no soreness. The genitourinary system was normal, rectum smooth. Widal reaction was three times negative. Urine was clean. No bile was present. Leucocytes, 5,000.

Course of Disease.—The pulse never rose above 80 at any time and the nurse kept the temperature below 103.2, the highest point. This patient had no fever after the fourteenth day.

Neither patient had indulged in unusual food or had been out of the city.

Case 3.—R. P., male, single, aged 26, a lawyer, complained of feeling "badly" and a headache for six days. Family history and personal history were negative, except typhoid ten years ago.

Present Illness.—Patient had eaten no unusual food; had not been out of the city. There had been no nausea or vomiting; breath was fetid; otherwise unimportant. Bowels were regular and appetite was as usual.

Examination.—Patient's temperature was 104.2, pulse 80. Leucocytes, 7,500. Examination exactly as previous patients, except left lobe of prostate, which was distended. Urine was clear. Three typhoid and three paratyphoid tests negative.

Course of Disease.—Nurse succeeded in keeping temperature below 102.6 until the sixteenth day, when it declined rapidly to normal.

Case 4.—L. K., aged 26, male, single, grocer by occupation, was seen by Prof. George J. Preston and myself. The history of this patient is identical with that of Case 3.

Patient had a normal temperature on the seventeenth day. His temperature reached 105 three times. The onset was more acute, for he noticed a headache Saturday and came into my office Monday with a temperature of 103.2.

Case 5.—L. B., student, female, aged 20, single.

Course of Disease.—Fever reached 103.8. Tongue retained its dry fur for five days after the temperature reached 98.6, which occurred on the twelfth day.

Prof. John T. Chambers saw Case 1, while Case 3 was seen by Prof. William F. Lockwood with me. Dr. Henry Flood saw Case 5 with me. All of these cases

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*This article was received June 12, 1906.

[1] Two additional cases since June 12.

were considered mild cases of typhoid by the consultants and myself. at the time, even though there was complete absence of all typhoid symptoms and reactions. It was not until I saw the fourth case that I began to study my histories and notes, and realized that whatever the condition is, it is not typhoid.

Case 6.—Dr. T. R., male, aged 34, single, was a patient of Dr. Louis F. Hamburger. The history of this case is the same as Case 1. Two Widals were negative.

In discussing these cases with some of the older men, who have been general practitioners for 25 years or more, they tell me such cases are constantly met with. They laugh at the idea that they are unclassified, and call them "typhomalaria," "gastrointestinal catarrh," "autointoxication," "aborted typhoid," "malaria," "acute hepatic fever," "acute gastritis," and similar names. It seems to me that more attention should be given to this class of cases, for they are the kind that rarely reach a general hospital.

1937 Madison Avenue.

Clinical Notes

PUERPERAL INFECTION.

REPORT OF A CASE.

THEODORE MERRILL, M.D.
COLORADO, TEX.

The proper treatment of puerperal infection depends fundamentally on the application of appropriate surgical methods when the evidences of such infection call for interference. The indications for surgical intervention are, of course, quite well understood and clearly defined; and after the careful performance of necessary surgery any remaining infection must be combated by the employment, singly or in combination, of (1) means of bodily stimulation and nutrition; (2) general therapeutic measures, including the use of the normal saline solution; and (3) special therapeutic measures of two kinds; antisepsis by preparations of silver, and the employment of a serum. The following case was one in which the serum treatment was tried in connection with general therapeutics and means of bodily nutrition. The use of silver preparations formed no part of the treatment.

Patient.—A young woman, aged 25, in her third labor.

History.—There was a history of a very difficult first labor, which was operative and followed by the delivery of an asphyxiated child, resuscitated with difficulty. After a tedious recovery the patient was treated during a long time for symptoms which, as described, pointed to an endometritis. The second labor was even more difficult than the first, was operative, and the child survived only a few hours. In both of these labors the trouble had been due to an abnormally large passenger.

Present Illness.—The patient came under my observation and care during the eighth month of her third pregnancy, which progressed uneventfully to the time of labor. Labor began October 20, with the discharge of the waters at 11 p. m. After twenty-seven hours of difficult labor a female child of eleven and one-half pounds was extracted at 2 a. m., October 22, through the aid of forceps. The placenta was delivered normally a few minutes after the extraction of the child. The labor was closed by the administration of a hot-water douche, the application of a gauze packing to the vagina and of three sutures to the perineum. The patient made a good immediate recovery, suffering somewhat from soreness. October 22 at 9 a. m. the patient was catheterized; catheterization was unnecessary after this. On October 23 at 11 a. m. the gauze packing was removed.

Pulse, temperature, lochia and other conditions continued normal to the eighth day, when there occurred a rise in pulse and temperature, and chills, which with other conditions after two days gave unmistakable evidence of sepsis. The lochia had a slight odor. Douching failed to control the symptoms and the uterus was curetted November 2. Intrauterine douche and packing applied November 3.

Serum Treatment.—Under general treatment the temperature declined gradually to normal until November 17. Morning temperature 101, evening temperature 104 F. Under these conditions of temperature, with the patient feeling very well, without pain, abdominal or otherwise, with absence of vomiting and chill, the serum treatment was begun. The following is a record of the dosage of serum and the temperature. During the entire illness the bodily nutrition was maintained as thoroughly as possible by appropriate feeding and stimulation:

November 18: Temperature, 7 a. m., 102.6; 2 p. m., 103.8; 6 p. m., 103.9; 10 c.c. of serum administered at 10 a. m. and 8 p. m.

November 19: Temperature, 8:30 a. m., 102.8; 12:30 p. m., 103.8; 6 p. m., 103.7; 10 c.c. serum administered at 1:30 p. m.

November 20: Temperature, 7 a. m., 100.8; 12:30 p. m., 103.6; 3:30 p. m., 102.6; 6 p. m., 103; 10 c.c. serum administered at 3:45 p. m.; urticaria present.

November 21: Temperature, 7 a. m., 102.8; 12 m., 102.8; 6 p. m., 102.6; 10 c.c. serum administered at 10:30 a. m.

November 22: Temperature, 7 a. m., 100; 12 m., 102.1; 6 p. m., 102; 10 c.c. serum administered at 1 p. m.

November 23: Temperature, 7 a. m., 100.7; 12 m., 100.7; 6 p. m., 102.1; no serum.

November 24: Temperature, 7 a. m., 98.6; 12 m., 99.5; 6 p. m., 102; no serum.

November 25: Temperature, 7 a. m., 98.6; 1:30 p. m., 101.8; 6 p. m., 102.1; no serum.

November 26: Temperature, 7 a. m., 100.7.

November 27: Temperature, 9 a. m., 97.

November 29 the patient was attacked by pain in left groin and hip which naturally suggested the possibility of a phlebitis or arthritis, but questioning elicited the fact of past irregular occurrence of rheumatic pain, and treatment directed along this line relieved the pain. She remained resting quietly until December 19, when she was discharged.

Subsequent History.—She made satisfactory progress subsequently, until the eighth month after labor, when menses failed to appear and remained absent for one year longer. The patient, however, did not return for advice until this time had almost elapsed. One year and six months subsequent to the delivery she came to me complaining of the following symptoms: Irregular pain above Poupart's ligament on both sides; a hemorrhagic leucorrhea (pinkish in color), constant nausea, swelling of ankles, attacks of weakness and fainting, temperature varying from 98.8 to 100 or 101 F.

Examination: Vaginal examination showed very lax tissues and what seemed to be a dense mass in pelvis. She was treated with tampons medicated with ichthyol and glycerin, and given daily douches of hot water. Tonics were administered internally. Under this plan the menstrual flow appeared, the symptom group departed and patient has been perfectly well ever since. The following dates may be of interest, whether as coincidences pure and simple or otherwise: Date of delivery of child, Oct. 22, 1903; date of normal menstrual return, June 22, 1904; date of actual menstrual return, June 22, 1905.

An analysis of the temperature record in this case fails to show a regular decrease, but it does show a fall with oscillations. There is no effect on the temperature evident as the direct result of an individual dose of serum, and, while conclusions drawn from an isolated case must not be given undue weight, the efficacy of the serum treatment as carried out in this case remains in question, for the fall in temperature under the treatment was not greatly different from the fall between November 3 (date of curettage) and November 17 (date of subsequent rise), although no careful record was kept of the temperature between these dates.

The patient's previous history, the late appearance of the sepsis, the rise in temperature after curettage, the return to normal, and the later features of the case, are all full of suggestions; but, so far as the main point of the case is concerned, personally the experience chiefly emphasizes the value of constitutional vigor and resistance, as assisted by proper food and general nutrition.

PYO-PNEUMO-APPENDIX, DUE TO OBSTRUCTION BY A FECAL CONCRETION.

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FT. WAYNE, IND.

Inasmuch as I have never met with a similar condition in a large experience, and have been unable to find a similar case reported in the literature at my hand, including the works of Deaver, Mynter, Lockwood, Holmes, Kelly, Maylard, Douglas and Hemmeter, I deem the following case worthy of record:

Patient.—Mr. D., a Lutheran preacher, aged 32, American, was referred to me by Dr. Cook of Bluffton, Ind. He entered Hope Hospital May 14, 1906. The following history was obtained.

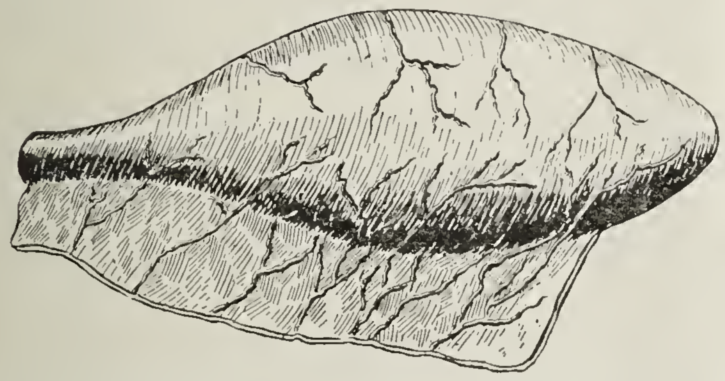

Fig. 1.—The appendix as it appeared fully distended, before it had partially emptied itself.

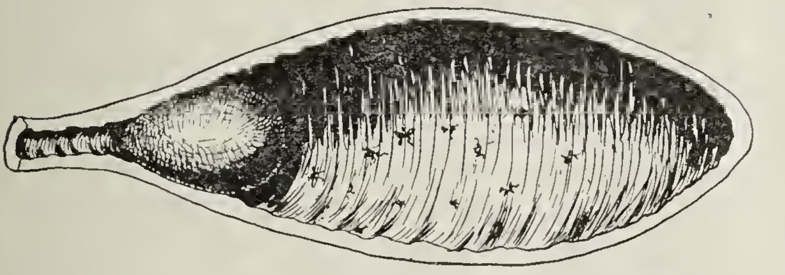

Fig. 2.—Longitudinal section with concretion *in situ*.

History.—He had never been seriously ill before. He ate heartily of fish one week ago and has had some nausea and heaviness in stomach every since. On May 10 abdominal pain commenced and on May 11, centered itself in the appendix region. He has vomited continuously for the past twenty hours. Pain is becoming worse.

Examination.—He is a well-nourished, dark-complexioned man. The abdomen is retracted, with tenderness and rigidity over the appendix.

A diagnosis of acute appenditicis was made; immediate operation was advised and accepted.

Operation.—Ether. After the patient was anesthetized the appendix could be palpated. McBurney incision. A little turbid fluid was found free in the peritoneal cavity. The appendix was found to be as large as the small gut, very much congested, slightly mottled with lymph, very slightly adherent but rather closely held to the back by reason of a short mesappendix very much thickened by inflammatory exudate. The appendix was elastic and tense to the finger. During the manipulation necessary to ligation of the mesappendix, a gurgle was heard and felt and the appendix suddenly collapsed partially. I naturally feared that I had ruptured it and spilled the contents into the abdominal cavity, but inquiry revealed the fact that it had partially emptied itself into the cecum. The operation was completed according to the method which I have been using for about two years, and which consists in ligating the mesappendix with small plain catgut, ligating the appendix flush with the bowel between two hemostats with fine linen, amputation of appendix one-fourth inch distad to ligature, cauterizing mucosa of stump with carbolic acid, crushing it with a hemostat, wiping the expressed débris down to surface of forceps and dropping, the wound in the abdomen being closed with buried sutures of plain catgut for the deep structures and adhesive plaster for the skin and subcutaneous tissue. When, owing to thickness of the fatty tissues, perfect coaption can not be accomplished with adhesive, a subcutaneous suture is employed.

Pathologic Examination.—After removal, the appendix was found to contain pus, fecal débris and gas, together with a fecal concretion, as large as a robin's egg and similarly shaped. This concretion was snugly wedged into the proximal end of the appendix and had evidently acted as a ball-valve, permitting some bowel contents to pass into the appendix and subsequently, owing to the vis-a-tergo resulting from accumulation of inflammatory products, preventing their escape into the bowel. The partial collapse with the gurgling which occurred during the operation was undoubtedly due to a partial opening of this "valve" and consequent escape into the bowel of some of the contents of the appendix. The accompanying drawings were made from the specimen.

207 West Wayne Street.

ACUTE CARBOLIC ACID POISONING: RECOVERY.

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History.—On July 3, a child, aged 2½ years, was hurriedly brought into the Santa Fe Hospital with the explanation from the mother that 5 minutes previously it had swallowed an indefinite amount of pure carbolic acid. A 2 ounce vial was found empty and a considerable burned area appeared on the chin, lips and neck. The child was limp and unconscious; respirations were slow and shallow; pulse was slow and feeble; pupils were contracted.

Treatment.—Although somewhat contrary to precedent, a small caliber soft rubber stomach tube was carefully and easily introduced and a saturated solution of magnesium sulphate was introduced and syphoned out. This operation was repeated until two quarts of the solution had been used when some 6 ounces were allowed to remain and the tube was withdrawn. Atropia sulphate 1/600 gr. was introduced hypodermically, as also strychnia sulph 1/200 gr.

Result.—Within half an hour the pupils responded to the atropia and pulse and respiration improved. In 2 hours the child showed some irritability and signs of returning consciousness; within another hour there was semi-consciousness and the child swallowed a small amount of lime water. Two hours later a small amount of milk and egg albumin was swallowed.

During the lavage small blood-stained masses of mucoid material were ejected. Vomiting followed freely, but within 12 hours milk was retained and the child was so greatly improved that recovery was assured.

The response to the atropin injection was so marked that it is my opinion that this procedure is entitled to the principal credit as a life-saving measure.

The child was catheterized during the first hour of treatment and, though the urine was at that time clear, shortly afterward it was of the characteristic cloudy appearance, so that, while the amount of carbolic acid swallowed is uncertain, it must have been considerably more than is usually considered a fatal dose.

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[*For other information see second page following reading matter.*]

SATURDAY, AUGUST 11, 1906.

NEW IDEAS CONCERNING APHASIA.

Plausible ideas, with relatively little observational foundation, when put forward by distinguished medical men and especially if they refer to pathologic domains difficult of general access, very often attain to a credence that they do not deserve and, indeed, may be handed down from one generation to another until they become veritable medical dogmas. It would appear as though something of this sort had been going on in the field of aphasia; at any rate, an article of unusual importance has recently appeared which is so subversive of beliefs to which we have grown accustomed that it must seem to those who have not kept fully apace with the progress of ideas aphasic during the past few years nothing less than iconoclastic; to a few, perhaps, who have immersed themselves more deeply in the problems of motor and sensory aphasia, and followed the recent trend of work, the article of Marie[1] will come as less of a shock.

Marie, in the paper referred to, makes several bold assertions. He declares (1) that current ideas of aphasia are built up on a psychophysiologic theory of language which has no anatomic or clinical basis; (2) that the dominant feature in aphasia is a disturbance in the comprehension of speech, and that this disturbance is due, not to "word deafness," but to a real intellectual deficit; (3) that this intellectual deficit may be demonstrated in every case of aphasia, though the demonstration may necessitate a methodical examination; (4) that the erroneous idea that the intelligence is intact in aphasia has prevailed because the menal abnormality is not striking on superficial examination, the affective reactions being preserved or even exaggerated and the emotive mimic retained; (5) that Broca's aphasia (ordinary motor aphasia) is a syndrome entirely independent of the posterior part of the inferior frontal gyrus on the left side (Broca's convolution), cases being known (a), on the one hand, in which this gyrus has been destroyed, though speech had been undisturbed, and (b), on the other hand, in which the gyrus was intact, though typical motor aphasia had existed; though the gyrus is often destroyed in motor aphasia, the lesion is merely episodal, not causal; (6) that there is only *one* aphasia (by which he means the intellectual deficit whose main symptom is the loss of comprehension of speech, ordinarily called "sensory aphasia of Wernicke"); it is to be sharply distinguished from anarthria or dysarthria, (the condition sometimes called subcortical motor aphasia in which speech is lost or disturbed, though the patient hears, understands what he hears, and can read and write); (7) that the so-called motor aphasia or Broca's aphasia is nothing but aphasia (the sensory aphasia of Wernicke) plus anarthria; (8) that anarthria is due to a lesion of the nucleus lentiformis or its neighborhood (in *either* hemisphere), while aphasia (in Marie's sense) is due to a lesion of the zone of Wernicke (gyrus supramarginalis, gyrus angularis and the posterior extremities of the gyrus temporalis superior and the gyrus temporalis inferior), or the white matter underneath it, in the *left* hemisphere, the degree of aphasia being proportional to the extent of the lesions in this gray or white matter (so-called "global law"); (9) that motor aphasia (Broca's) being merely aphasia (Wernicke's or Marie's) plus anarthria, the lesions accompanying it correspond and consist of (A) the aphasic lesion in the zone of Wernicke (or the white fibers from it), and (B) the anarthric lesion in the lentiform nucleus (or near it); the lesions are almost always due to softening from thrombosis or embolism of the middle cerebral artery, and the extent of the lesion varies according as (a) the trunk of this artery (near its origin or after the branches have been given off to the gray ganglia at the base) or (b) one of its branches of bifurcation or trifurcation is involved; (10) that a knowledge of the various modes of distribution of the arteria cerebri media and the lesions following plugging of the different branches permit an understanding of the great variety of clinical findings known as "mixed aphasia," due to the combination of a more or less marked aphasia of Wernicke, with a greater or less degree of anarthria, according as the lesion in the region of the nucleus lentiformis is prolonged more or less into the white matter of the temporal and parietal lobes, or according as the lesion of the zone of Wernicke extends more or less into the neighborhood of the lentiform nucleus; every aphasia of Broca is a "mixed aphasia," with predominance of anarthria; (11) that a knowledge of the same arterial branches carries with it an explanation of the fact that in the aphasia of Broca the left gyrus frontalis inferior is sometimes involved in the softening, though without exerting any notable effect on the clinical picture. Startling statements these are, certainly!

It is promised by Marie that this paper, which is to be regarded as a preliminary communication, will be followed by a larger report, by himself or his pupils, containing the clinical and pathologic anatomic facts which support his views. That some of his ideas will not pass unchallenged we may be sure, though it seems to us that, as far as the uprooting of the error regarding the left inferior frontal gyrus is concerned, he has made his point. At first reading one is inclined to criticise his apparent unwillingness to value the aid which introspective psychology has given us in the unraveling of the phenomena of aphasia; it may have led us into error, but it has certainly helped us in the discovery of much truth. And, further, it seems to us, that Marie, though rightly prizing the well-tried method of clinical observation controlled by autopsy, unduly scorns the work of the brain anatomist and of the experimental physiologist. Surely some of the ideas put forward by investigators in anatomy and physiology are fully as well established as is the Marie-Guillain "global" theory, for instance, or Marie's denial of special cortical localization for either word-deafness or alexia.

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[1] Marie P.: Revision de la question de l'aphasie; la troisième circonvolution frontale gauche ne joue aucun rôle spécial dans la fonction der langage. Sem. méd., Paris, 1906, xxvi, 241-247.

It is not our purpose, however, at this time to criticize, but to praise. The article is the most interesting and important contribution which has for a long time been made to the bibliography of aphasia, and we can not but recommend our readers to pay the most serious attention to the views it contains, promulgated, as they are, by the distinguished physician-in-chief to the *Bicêtre.*

SENSORY ILLUSIONS IN DIAGNOSIS.

The value of cutaneous sensations and other sensory phenomena in the realm of diagnosis is perhaps not sufficiently appreciated by the general practitioner. Men very often have feelings of peculiar character which they insist on rehearsing and to which the physician often pays but little attention, not realizing that they may be of precious significance as diagnostic aids. For instance, even the sensations of the patient suffering from delirium tremens when he complains of things crawling over him are not mental delusions entirely, but have a definite basis in certain modifications in the circulation to the nerve endings in the skin. Congestions in cutaneous areas give rise to feelings of heat, but more frequently special nerve activity is aroused either by the presence of too much blood or by anemia consequent on its absence. As a result there are sensations as if an insect were crawling over a portion of the cutaneous surface. This is not difficult to understand and may be illustrated from the symptoms of other diseases.

It is well known that when a patient is in the chilly stage of an attack of malaria, though he insists on covering himself up with many blankets in order to keep warm, and, though his teeth are chattering and all his muscles are trembling just as if he were suffering from cold, his temperature is not lower but actually higher than before, and a thermometer may reveal that a chilly patient under six blankets has an actual temperature of 103 or 104 degrees. The reason for this is not hard to find. When one is actually cold the arterioles in the skin contract in order to keep the blood from flowing through them, because it would thus lose its heat by exposure to the external cold. This shuts off the nutrition from cutaneous nerves and after a time the sensation of cold which is first felt becomes transformed to pain. The shutting off, as it were, of the blood supply to the muscles near the surface of the body causes loss of control over them, hence the trembling and the chattering of the teeth. Whenever, for any reason apart from cold, the arterioles in the skin and neighboring structures become contracted the sensation is translated as if it were cold. The malarial poison acts thus on the capillaries just when the malarial organism is being discharged into the blood in greatest numbers and consequently there is the chilly stage of this affection.

Other toxic substances act in different ways, each having its own specific effect on the sensory nerve terminals. Chronic alcohol poisoning, whether due to the actual accumulation of toxic materials or because the alcohol no longer neutralizes certain toxic substances that are being manufactured in the system because of ethylic overstimulation, is likely to produce certain phenomena in the cutaneous nerve mechanism which are translated as sensations from without. This is true for all forms of the illusions from which delirium tremens patients suffer. When they complain, for instance, of snakes crawling over them, there are actual cold sensations in the parts and "goose-flesh" is usually present. The seeing of snakes is due to the hypersensitiveness of the retina and the overdistended state of the capillaries of the eye, the two factors combining to project these tortuous arteries into space where they seem snake-like in character.

There seems to be no doubt that the preliminary symptoms of an attack of delirium tremens might be sooner recognized if more attention were paid to the first complaints of the patients with regard to such sensations. Something of the same thing is true with regard to cocain, morphin and other such poisons, the taking of which may not be suspected for some time. Cocain often gives the sensation of the presence of a veil over the face or as if cobwebs had been blown against it. These the patient wants to remove and certain groping gestures for this purpose are significant. Morphin, on the other hand, has a distinct tendency to cause certain portions of the body to get into the state that is described as going to sleep. A knowledge of the significance of such symptoms is always very valuable. Even deeper sensory phenomena may prove of diagnostic aid.

In these modern days it is extremely important that nothing that can be of the slightest value in diagnosis should be missed, and accordingly even the queer stories of patients' sensations might be listened to with attention in the hope that some significant feature may be recognized that will aid in solving the diagnostic problem. It has often seemed that the study of that department of physiologic psychology which is devoted to the explanation of the underlying basis of sensation and the exploitation of illusions should be definitely recognized as of importance in medical training.

INSURANCE EXAMINATION FEES.

As will be remembered, the House of Delegates of the American Medical Association, at the Boston session, appointed a committee to consider the question of insurance examination fees. It is on this account that for some time we have purposely refrained from making comments on the matter, hoping that this committee would be able to make a report. We understand that the committee has held several more or less satisfactory conferences with the executive officers of some of the larger insurance companies that have seen fit to commence their retrenchment reform by reducing their examiners' fees. These conferences were interfered with on account of the intrusion of the vacation period of those with whom the committee had to deal and also by the unsettled condition of the management of the internal affairs of some of the companies. Hence, nothing definite has thus far been accomplished, although we understand that the spirit of fairness and courtesy manifested on the part of those already consulted by the committee promises a favorable outcome.

Meanwhile, we earnestly urge that the profession, individually and through societies, maintain its contention for a restoration of the former schedule of examination fees. Evidences are continually being received to the effect that medical societies in nearly all parts of the country are resisting the reduction. We urge that this resistance be kept up, and that societies which have not taken up the matter do so at the earliest opportunity. It may be taken for granted that the companies will not restore their former fees if the examiners passively leave the matter in the hands of the companies. It should be remembered that it was a concerted action on the part of certain of the old-established companies that brought about the reduction; concerted action on the part of the examiners will compel the restoration of these fees, and without this co-operation on the part of the examiners the American Medical Association committee can accomplish but little.

But while we urge this resistance, we also urge that union methods be not adopted. In some instances—happily in only a few—threats have been made to expel or to suspend from society membership those who do not live up to the agreement to refuse to examine except at the old schedule. This is to be deplored. Medical societies are not trades unions and union tactics have no place in them. If we can not succeed with moral suasion, then we can not succeed. But we can and will, because, in this instance, legitimate and honorable resistance is all that is necessary for success. The standard companies want good men—well-qualified men—to pass on the physical condition of applicants, and it will not be necessary to use compulsion to get this class of physicians to stand with their fellows in their demand for simple justice. Hence, we need not fear the ultimate outcome. In fact, the resistance already made has had the effect of making several companies decide not to reduce their medical examiners' fees.

One of the strongest arguments, or excuses, offered by the companies is that the insurance law passed this spring by the New York Legislature compelled the action. In reply to this it is only necessary to say that several of the companies had made the change before the law was passed—in fact, in some instances before the bill was introduced. It is not at all probable that these companies had the gift of prophecy and knew that such legislation was coming. Undoubtedly, this New York law is compelling retrenchment, and possibly too much so, but if this can be proved to be the case the law undoubtedly will be modified. Further, it only applies in the State of New York.

One more thought: The companies say that physicians are making examinations for fraternal insurance companies for as small a fee as one dollar. It is to be regretted that such is the case. We are glad to say that in many instances in which societies have taken definite action they have recognized this, and reasonable fees for such examinations are to be demanded in the future. To make a thorough physical examination, with urinary analysis, for $1.00 is absurd. In fact, such examinations are not made. But is not a physician lowering himself when he fills out and signs a certificate which contains statements at the truth of which he has only guessed?

FOREIGN-BORN LEPERS AND THEIR TREATMENT.

An unfortunate leper from West Virginia, seeking to return to Syria and said to be provided with the necessary funds, has been made the subject of discussion between the authorities of two states and, according to the newspaper accounts, has received rather harsh treatment. He reached Maryland, and from there was escorted with the greatest precaution back to West Virginia, and now is said to be sojourning near Pickens in a tent pitched in a forest. In this case the spirit of the shotgun quarantine seems to have been aroused. There is considerable room for improvement in the public courage. Give a disease a specially bad name and the cowardice of the populace is all at once in evidence. The contagion of leprosy, though somewhat capricious and not yet fully understood, is certainly not excessively virulent and the danger of casual association in ordinary and proper ways is a minimal one. Even the closest association is not always effective in conveying the disease, and lepers are treated in doctors' offices, exhibited before medical societies and are nursed and cared for by non-lepers without any evidence whatever of resulting evil, provided the obvious rational precautions are observed. In any case it would seem to be good policy to further, rather than to hinder, the efforts of any alien leper desiring to return home, instead of doing our best to keep him back. The number of lepers in the country is insignificant, and there is little likelihood of their indigenous increase, except in certain localities, in spite of all that alarmists may say, but with the increased emigration from regions where leprosy is endemic it might be well to have some additional federal provisions for the deportation of foreign-born lepers—some provision in the laws making the development of leprosy annul naturalization perhaps. We do not want lepers here and should not be forced to keep those who come from foreign lands with incipient leprosy.

THE OPIUM TRADE.

The present British Parliament has committed itself to the opinion that the Indo-Chinese opium trade is morally indefensible, a conclusion that has been adopted long since by nearly every one not connected directly or indirectly with the British revenue. It will be remembered by our readers that some years ago a rather voluminous report of a government commission appeared defending the British Indian opium trade and making out that the use of opium by orientals, excepting, perhaps, in Burmah, was not harmful. The testimony to this effect was furnished by British Indian officialdom and interested landed proprietors, while the missionaries —with one or two exceptions—the native authorities not connected with the opium trade and a few British officials were decidedly of the contrary opinion. That opium is a curse to China, which derives much of its supply from British India, has long been acknowledged, and there is considerable evidence by missionaries and disinterested authorities that the opium vice is a serious matter with the East Indians themselves. Whether Parliament will go beyond the resolution stage is yet to be seen, but it is hoped that moral ideas may overcome the long-standing policy of the British revenue officials and the commercial interests that have together been able to keep up the iniquitous business. It would seem as if there was a need of legal regulation of the opium culture in all countries. It is a valuable drug, but for other than medical purposes the world would certainly be better without it..

Medical News

ALABAMA.

Personal.—Dr. James E. Seay, Pratt City, is ill at his home.——Drs. Benjamin G. Copeland, Edwin P. Solomon and Ferdinand H. Turner will open a modern infirmary in Birmingham, October 1.

Correction.—The health officer of Birmingham informs us that an item of medical news in the issue of July 28 was incorrect, that there is no such individual as Thaddeus L. Robinson practicing in Birmingham and that Dr. Thaddeus L. Robertson, whost name is very similar, has always made prompt obstetrical reports.

CALIFORNIA.

Proposed Hospitals.—A hospital to cost about $50,000 may be erected at Los Angeles by the Southern California conference of the Methodist church.——The proposition to establish a hospital at Marysville with the coöperation of the railroads passing through that city, is again being agitated with prospect of early success.

New Hospital.—Plans are being prepared for the Sunset Hospital, San Francisco, to be built by the Sunset Hospital Association. The structure will be constructed of reinforced concrete, will be three stories and a basement in height, and will cover a ground space of 104 by 92 feet. The institution will contain 68 private rooms and two wards, and the roof will be occupied by a solarium and roof garden.

Personal.—Dr. Fitch C. E. Mattison, Pasadena, returned from his trip to the Atlantic coast, July 27.——Dr. Chester Rowell, Fresno, who has been seriously ill, is reported out of danger. ——Dr. David Powell, Marysville, has been appointed local surgeon for the Northern Electric Company.——Dr. John R. Colburn, Los Angeles, has gone to Japan.

DISTRICT OF COLUMBIA.

Communicable Diseases.—No new cases of scarlet fever were reported and 7 patients were discharged, recovered, leaving 18 still in quarantine. Diphtheria was increased by three cases, making a total of 4 cases under treatment at the close of the week. No smallpox was said to be in the District at the time of the report.

ILLINOIS.

Prosecution of Midwives.—Judgments for $100 and costs have been secured at Decatur, Macon County, against Mrs. Minna Girk and Mrs. Pauline Schulke, for practicing midwifery without having first obtained licenses from the State Board of Health.

Deaths of the Week.—Deaths from all causes for the week ended August 4 were 501, which is equivalent to an annual death rate per 1,000 of 12.75. Acute intestinal diseases caused 116 deaths; consumption, 56; violence, including suicide and Bright's disease, each 34; heart diseases and pneumonia, each 32; and cancer, 27. Sunstroke was responsible for two deaths.

Addition to Hospital.—An important addition will be made to Brokaw Hospital, Bloomington, this summer. The structure to be erected will be of brick, two stories in height, and located east of the original building. The new building will be devoted to baths, lavatories and rooms for electric and massage treatment.

Better Care for the Insane.—At a joint meeting of the State Board of Charities and of the trustees of the Illinois Eastern Hospital for the Insane, Hospital, it was decided to begin at once improvements in the system of nursing and attention to patients with night supervision and medical attendance. The establishment of a modern pathologic laboratory and the selection of a pathologist who will act also as instructor to the medical staff in special methods of examining cases and record keeping are planned.——A training school for nurses is to be opened in September with a three-year course.

Diphtheria.—Diphtheria was reported near Blue Mound, July 24, where 5 cases have occurred in one family. All possible efforts are being made by the authorities to prevent the spread of the disease.——At Edwards Station 6 cases of diphtheria have developed and others are feared.——Several cases of diphtheria are reported south of Roseville and one or two deaths have occurred at Swan Creek. Reports of the State Board of Health show that diphtheria is present in several localities in different sections of the state.

Mortality of 1906.—During the first seven months of the year, 639 more deaths were reported to the Bureau of Vital Statistics than during the corresponding period of 1905, which is equivalent to an increase nearly of nine-tenths of one per cent. in the annual death rate per 1,000 population. The chief increases in death-causes have been 270 from scarlet fever, 255 from pneumonia, 110 from violence other than suicide, 98 from cancer, 92 from acute intestinal diseases, 60 from nervous diseases, 53 from diphtheria, 47 from Bright's disease, and 33 from typhoid fever. Deaths from the following diseases decreased in number: Consumption, 36; smallpox, 57; convulsions, 53; measles, 105; bronchitis, 154; and whooping-cough, 216. The chief death-causes this year have been, pneumonia, 2,726; consumption, 1,943; Bright's disease, 1,233; violence, including suicide, 1,224; heart diseases, 1,219; and acute intestinal diseases, 1,117.

Successful Prosecution of Itinerant Vendors of Drugs.—In actions brought at the instance of the State Board of Health, judgments have been obtained in both Kane and Peoria counties against an itinerant vendor who styles himself "Phenomenal Kraus," and who heads an organization advertised as the "Hot Springs Doctors." This man has been mentioned frequently in these columns. A judgment for $100 and costs was secured against Kraus at Aurora, Kane County, July 30, and judgments amounting to $1,000 were obtained in Peoria, August 3. In an action brought against this defendant in Vermilion County two years ago the State Board of Health was unsuccessful. Judgments against two other itinerant vendors of drugs were obtained in St. Clair County, July 25, fines of $100 and costs being assessed in each case—one against Andrew Backe, representing the Clifton remedy, and the other against William S. Hill, representing the Rawleigh Remedy Company.

Chicago.

Dr. Senn Returns.—Dr. Nicholas Senn returned, August 3, from a trip to northern and eastern Africa.

Isolation Hospital Empty.—The Isolation Hospital has had no patients since July 18, when the last of the 19 smallpox patients discovered since January 1, was discharged, recovered. No deaths occurred from any of these 19 cases.

Low Mortality.—With one exception, July, 1904, the mortality for July was the lowest on record. The mortality of that month was equivalent to an annual mortality of 11.9 per 1,000. The death rate for July this year was 13.29 per 1,000. The deaths numbered 2,313, and intestinal diseases with 413; consumption with 254, and violence with 202 deaths headed the death causes.

Coroner's Investigations During July.—The coroner investigated 336 deaths in Chicago during July. Of these, more than 150 were due to violence; street-car and railroad accidents led with 40 fatalities, followed by suicide with 33. During the month 24 individuals were drowned and one death only was charged to an automobile accident. During the month 14 homicides were reported and 11 deaths were due to Fourth of July injuries.

Mortality of the Week.—During the week ended July 28 there were reported 542 deaths, which is equivalent to an annual death rate of 13.7 per 1,000. Of the decedents, 146 were children under one year of age; acute intestinal diseases caused 122 deaths; consumption, 55; violence, including suicide, 50; heart diseases, 39; pneumonia, 37, and Bright's disease, 34. Scarlet fever caused 11 deaths; diphtheria, 5; typhoid fever, 4, and whooping cough, 3.

INDIANA.

Personal.—Dr. G. W. H. Kemper, Muncie, has been made emeritus professor of the School of Medicine, Purdue University, Dr. George R. Green, Muncie, succeeding Dr. Kemper as professor of history of medicine.——Dr. George H. Wells, Indianapolis, and Dr. Sam C. Norris, Anderson, have been appointed associate professors of sanitary science in the State College of Physicians and Surgeons, Indianapolis.

First Announcement.—The first annual catalogue and announcement of the School of Medicine of Purdue University, gives the reason for the merger of the medical colleges of the state as follows: "For the good of medical education, the three former medical schools of Indiana have united and have surrendered their rights and properties to one of the state universities. The Medical College of Indiana, the Central College of Physicians and Surgeons and the Ft. Wayne College of Medicine have become one, and as such have become a part of Purdue University under the name: Indiana Medical College, the School of Medicine of Purdue University."

A New College.—We are informed that a new college has been formed in affiliation with Indiana University at Bloomington, to be known as the State College of Physicians and Surgeons of Indianapolis. The first two years' work, it is reported, will be given at Bloomington and the last two at Indianapolis. As noted above three of the old schools of Indiana, namely, the Central College of Physicians and Surgeons and the Indiana Medical College, both of Indianapolis, and the Fort Wayne College of Medicine, of Fort Wayne, united, forming the Medical Department of Purdue University. But it seems that there are still to be two medical schools in Indianapolis.

Disease Prevalence.—During June the order of disease prevalence as reported to the State Board of Health was as follows: Rheumatism, diarrhea, tonsillitis, bronchitis, intermittent and remittent fever, cholera morbus, typhoid fever, scarlet fever, whooping cough, cholera infantum, dysentery, measles, peritonitis, pneumonia, pleuritis, diphtheria, influenza, erysipelas, smallpox, typho-malarial fever, cerebrospinal meningitis and puerperal fever. Smallpox was reported to be present in eight counties, 69 cases occurring, with no deaths. Typhoid fever was reported from 37 counties, with 105 cases and 39 deaths. Tuberculosis caused 315 deaths during the month, pneumonia 111 and violence 164. The total number of deaths for the month were 2,322, which is equivalent to an annual death rate of 10.6 per 1,000.

IOWA.

Hospital Enlarged.—Drs. Conn and Conn, Ida Grove, are enlarging their hospital by the addition of ten more rooms.

Smallpox.—Hopkinton is reported to have several cases of smallpox which has spread rapidly. It was as usual diagnosed as chicken pox.

Failed to Report Disease.—Dr. Frank J. Murphy, Sioux City, pleaded guilty to having violated the law concerning the prevention of contagious disease, and was assessed the minimum fine of $10.

Personal.—Dr. Cleanthus E. Birney, Estherville, coroner of Emmet County, has resigned.——Dr. Gilbert G. Cottam, Rock Rapids, has resigned as examining physician and member of the insane commission.——Dr. Geo. E. Decker, Davenport, has been appointed medical director of the Register Life Insurance Co., vice Dr. Andrew W. Bowman, deceased.——Dr. Maurice E. Wilson Estherville, has been elected coroner of Emmett County.——Dr. J. Leland Van Gorden, Emmettsburg, has been commissioned first lieutenant and attending surgeon of the Iowa N. G. and assigned to duty with the Fifty-sixth Infantry.——Dr. Robert E. Conniff, Sioux City, for four years president of the State Board of Health, retired from that office July 31, and was succeeded by Dr. Fred W. Powers, Waterloo.

KANSAS.

College Will Use Old Quarters.—It has been decided that no new building will be erected this year for the Kansas Medical College, Topeka.

Communicable Diseases.—During June 150 cases of smallpox were reported, with no deaths; 104 cases of tuberculosis, with 47 deaths; 61 cases of measles, with no deaths; 59 cases of typhoid fever, with 7 deaths; 36 cases of scarlet fever, with no deaths, and 25 cases of diphtheria, with 4 deaths.

Meffert to Cease Practice.—William Meffert, Emporia, whose license to practice medicine was revoked four years ago, but who has since been practicing, has agreed to cease practice, close his office, take out his telephone and receive no new patients. He is to be allowed to treat a few acute cases which he has on hand and also to treat a few chronic cases free of charge.

"Patent Medicine" Vendor Fined.—In the case of the state against J. W. Kessinger, tried July 28 for practicing medicine in Brookville without a license, the jury returned a verdict finding the defendant guilty on two of the three counts charged. The judge imposed a fine of $50 for each of the two counts and entered judgment against the defendant for the costs in the case, amounting to $99.25. In default of payment the defendant was committed to the county jail.

Hospital Notes.—The first building of the Eleanor Taylor Bell Memorial Hospital group, Rosedale, the medical pavilion, was opened yesterday. The pavilion has accommodations for 24 patients and is in charge of a superintendent and six nurses. The building cost, with the equipment, $25,000, and all medical cases are to be cared for in this building for the time being. The first surgical building is expected to be ready in October. ——The Santa Fé Hospital Association appropriated $10,000, July 31, for an addition to the Santa Fé Hospital, Topeka.

MARYLAND.

Arrives at Manila.—Dr. Harry T. Marshall, Baltimore, has been appointed pathologist of the United States Bureau of Science, Manila, and has arrived at Manila.

Addition to State Hospital.—The contract has been awarded for the erection of an addition to the Springfield State Hospital in Sykesville.

Deaths.—During the week ended July 28, 232 deaths were reported in Baltimore, 21 less than for the corresponding week of 1905. The mortality is equivalent to an annual death rate of 20.5 per 1,000. The chief causes of death were infantile diarrhea, 59; consumption, 23; debility, 17, and nephritis, 14.

Where Baltimore Physicians Spend the Summer.—Dr. Louis M. Allen in the Adirondacks; Dr. Jacob H. Hartman in Canada; Dr. George A. Fleming, Little Deer Isle, Maine; Dr. Lilian Welsh in Maine; Dr. William H. Baltzell at Aix-les-Bains; Dr. William T. Howland at Hot Springs, Va.; Dr. William H. Howell, Great Chebeague Island, Maine.

The Case of the Leper.—The leper, who was sent to Baltimore from West Virginia, on his way to New York, and who was refused passage through Philadelphia, was returned by the Maryland State Board of Health to West Virginia, and he is now occupying a tent in Randolph County, and is under the care of the West Virginia State Board of Health. We understand that orders have been issued that the leper be visited and examined by a surgeon of the United States Public Health and Marine-Hospital Service. He is believed to have had leprosy before he came to this country, and therefore to be deportable, under the immigration laws.

MICHIGAN.

Personal.—Dr. Frederick McOmber, Berrien Springs, who has been seriously ill with heart disease, is reported to be improving.——Dr. Thomas B. Henry, Northville, fell and injured his back while alighting from a street car in Detroit, July 25.——Dr. Fanny L. Draper, Jackson, will sail next month for Foo Chow, China, where she will be placed in charge of the Methodist Hospital.——Dr. Robert G. Marriner, Menominee, fell and broke his leg while getting out of his buggy, July 28.

June Mortality.—During June, 2,650 deaths were reported, a decrease of 377 over the previous month and an increase of 256 as compared with the corresponding month of 1905. The death rate was equivalent to 12.5 per 1,000 population. Among the important causes of death were: Tuberculosis, 263; accidents and violence, 207, 54 of which were deaths from drowning; cancer, 123; pneumonia, 120; diarrhea of infants, 96; meningitis, 43; measles, 36; diphtheria, 34; whooping cough, 33; typhoid fever, 20; scarlet fever, 15. One death was reported from smallpox, one from hydrophobia, four deaths from tetanus were reported, and nine deaths from lightning.

NEW YORK.

Smallpox.—The Board of Health, Bath, announces that there are three cases of smallpox in that village, and that many have been exposed to the infection.

No License for Medicine Vendors.—In the future no licenses will be granted to street fakers and vendors of nostrums in Geneva. In issuing orders, the mayor stated that the loss in revenue to the city would be more than equaled by the amount saved by the people.

Additions to Faculty.—The following instructors have been added to the Albany Medical College: Drs. John F. Robinson and Frank G. Schairle, bacteriology and pathology; Dr. Arthur Holderig, radiography; Dr. A. Rulison, clinical microscopy, and Dr. W. A. Larkin, chemistry.

Personal.—Dr. Julius Pohlman, Buffalo, has returned from Glasgow.——Dr. H. U. Williams, Buffalo, is abroad.——Dr. Nelson G. Russell and Norman L. Burnham, Buffalo, have returned from Europe.——Dr. Samuel S. Carter, Haverstraw, who was recently operated on for appendicitis at the Nyack Hospital, July 23, is now out of danger.

Slaughter Houses Inspected.—Commissioner Porter of the Department of Health, declares that the recent inspection of slaughter houses and meat-making establishments by local health officers has been carried out thoroughly in nearly every part of the state. He says that, while a comparatively small number of establishments were found in which the conditions were considered insanitary, enough was discovered to show the value of maintaining an inspection of the establishments. The local boards have been advised to act in ordering the premises cleaned and general conditions bettered, and the result has been a marked improvement in a large number of these establishments.

New York City.

Impure Food at Bellevue.—A large number of nurses have been suffering from ptomain poisoning caused by eating canned foods.

Sixty-Year Record Broken.—There was no death reported at the coroner's office from 10 o'clock Sunday night, July 30, to Monday morning at 10 o'clock. This is the first time in sixty years that a Sunday night has passed without a death.

Garbage Crematory Denounced.—A mass meeting was recently held by the citizens of Rockaway Beach to denounce the garbage plant, and the politicians interested in it in particular. An epidemic of typhoid fever has broken out among the tent-dwellers near by, but the health inspector claims that it is due to impure drinking water and not to the garbage plant.

Anti-Tuberculosis Lectures.—The first public stereopticon exhibition of slides on the dangers of consumption and the proper means of combating the disease was given in Battery Park July 29. On August 1 the exhibition was given in City Hall Park, and on August 3 in Mulberry Bend Park. The last exhibition is booked for October 1. At present the slides are printed in English and Yiddish, but later will be given in other languages.

Contagious Diseases.—During the week ended July 28, 393 cases of tuberculosis were reported to the sanitary bureau with 147 deaths; 213 cases of measles, with 21 deaths; 166 cases of diphtheria, with 24 deaths; 98 cases of typhoid fever, with 10 deaths; 54 cases of scarlet fever, with 1 death; 43 cases of whooping-cough, with 16 deaths; 12 cases of cerebrospinal meningitis with 12 deaths; and 18 cases of varicella—a total of 997 cases, with 231 deaths.

Bequests.—The will of Mrs. Amelia B. Lazarus, widow of Jacob Lazarus, bequeaths $10,000 each to the New York Institution for the Blind, the Manhattan Eye and Ear Hospital, the Montefiore Home for Chronic Invalids, and Mount Sinai Hospital; and $2,000 to the Good Samaritan Dispensary. After bequests to relatives and servants, the residuary estate is to be divided among several institutions, among which are the Montefiore Home and Mount Sinai Hospital.

City Death Rate Low.—The death rate for the week ended July 28 was not only lower than that of the corresponding week of 1905, but lower than the average for the past five years. This is attributable to favorable weather, but especially to increased rigidity of food and milk inspection. For 1906 the deaths from diarrheal diseases numbered 398 as against 483 in 1905. The death rate for the week ended July 28 was 18.4 per 1,000 as against 20.27 for last year, and an average for the past five years of 22.00.

Hospital Facilities Increased.—Through the purchase of an adjoining building the Metropolitan Hospital and Dispensary has increased its facilities from 16 to 34 beds. The medical board of the hospital comprises Dr. Fred H. Albee and Dr. Edward W. Lee, surgeons; Dr. Bernard S. Talmey and Dr. John A. Schmitt, internal medicine; Dr. Herman B. Sheffield, pediatrics; Dr. Max Talmey and Dr. Alois Schapringer, eye, ear, nose and throat. On the visiting staff are Drs. Gedide A. Friedman, Morris Cisin, Israel Grushlaw, James E. Murphy, Robert P. Muellenback, Maurice Caspe and Augustus F. Dempewolff.

Personal.—Dr. Thomas Darlington, President of the Health Board, is to speak on "Civic Righteousness" at St. Bartholomew's Roof Garden next week.——Dr. and Mrs. Charles H. Chetwood and Dr. Gustav Seeligmann sailed for Europe August 31.——Drs. Peter A. Callan and Thurston G. Lusk sailed for Naples on the *Carpathia* August 31.——Dr. James A. Nichols sailed for London on the *St. Louis* August 4.——Dr. and Mrs. John Kepke sailed for Naples on the *Cretic* August 4.——Dr. J. Carlyle de Vries, formerly assistant surgeon in the United States Navy, has been appointed assistant attending surgeon at St. Bartholomew's Clinic.——Drs. James Battey and Edward J. Murphy had a narrow escape from drowning while attempting to rescue a stranger at Brighton Beach, July 20, but succeeded in saving the drowning man's life.——Dr. Matthew Chalmers was robbed of a valuable watch on Twenty-eighth street, near Fifth avenue, July 28.

NORTH CAROLINA.

Hospital Near Completion.—The hospital at Sanford is nearing completion.

Mortuary Reports for June.—During June, 306 deaths were reported, representing an annual death rate of 20.2 per 1,000. Diarrheal diseases caused 65 deaths; consumption, 36; heart diseases, 20; pneumonia, 14; typhoid fever, 11; and whooping-cough and accidents, including violence, each 9.

Morbidity for June.—The following diseases were reported from 74 counties of the state: Measles were reported in 22 counties, whooping-cough in 28, scarlet fever in 4, diphtheria in 4, typhoid fever in 57, malarial fever in 17, cerebrospinal meningitis and influenza, each in one, and smallpox in 20.

Personal.—Dr. Hubert A. Royster, Raleigh, has returned from a month at Maryland coast resorts.——Dr. Andrew J. Crowell, Charlotte, is spending the summer in Europe.——Drs. Stephen D. Booth, Oxford, and David A. Stanton, High Point, are spending the summer in Vade Mecum Springs, near Winston.

Smallpox.—From May 1, 1905, to May 1, 1906, there were 6,049 cases of smallpox reported in the state, 3,251 of which were among the colored population, and 2,798 among the white. Seventeen deaths occurred, 12 colored and 5 white. The disease was most prevalent in Hyde County, where it is estimated that 2,000 cases occurred.

Will De-license Liquor and Drug Habitués.—The State Board of Medical Examiners, at its recent session, emphatically expressed its willingness to de-license any physician of the state whose addiction to the alcohol or drug habit has gone to such an extent as to unfit him for proper practice of his profession by calling the attention of the state and county societies to the matter and asking their coöperation.

PENNSYLVANIA.

To Protect Children.—The Pennsylvania Society to Protect Children from Cruelty has arranged to have every child with whom it deals, from families where drunkenness, immorality and cruelty are rife, carefully examined physically and mentally to determine not only the presence of any immediate disease, but whether there are any lurking symptoms of disease or any mental retardation which would still further the child's chances of becoming a diseased and suffering citizen. The Philadelphia Board of Health has given the services of two of its medical inspectors, Dr. Alexander C. Butcher and Dr. Lewis C. Wessels, who visit the homes five days a week and examine the eyes, ears, nose and throat of from ten to eighteen children, and Dr. Alfred Gordon follows with careful mental examination. A card catalogue of pathologic conditions is kept, and the consent of the parents is secured, whenever possible, for operations which may be deemed necessary by the examining physician.

Philadelphia.

Health Report.—The total number of deaths reported for the week aggregated 511. This is a decrease of 46 from last week, and an increase of 27 over the corresponding week of last year. The principal causes of death were: Typhoid fever, 10; whooping-cough, 10; diphtheria, 6; consumption, 62; cancer, 17; apoplexy, 17; heart disease, 30; acute respiratory disease, 32; enteritis, 115; cirrhosis of the liver, 6; appendicitis, 4; Bright's disease, 32; suicide, 8; accidents, 22; and marasmus, 11. There were 165 cases of contagious disease reported, with 16 deaths, as compared with 170 cases and 22 deaths reported in the previous week.

In Europe.—Dr. and Mrs. James M. Anders are touring Europe.——Dr. and Mrs. Eugene Townsend sailed for Europe July 31.——Dr. and Mrs. Harry Lowenburg sailed for Europe August 8.——Dr. J. William White sailed for Europe August 1.

Bequests.—The will of the late Horace M. Potts bequeathes $5,000 to the Hospital of the University of Pennsylvania for the endowment of a free bed, and $10,000 to the Orphans' Home and Asylum for the Aged Insane of the Lutheran church. With the exception of a few private bequests the remainder of his estate, valued at $75,000, is divided between the Academy of Natural Sciences and the University of Pennsylvania.——By the will of the late Miss Mary Castle the Little Sisters of the Poor receive $1,000.——By the will of the late Isabella Culbertson the Sheltering Arms Hospital receives $500.

SOUTH DAKOTA.

Personal.—A recent fire at Roscoe destroyed the residence of Dr. J. A. Rott, with a loss of $3,200.——Dr. Edward C. Day, Platte, was thrown from his buggy in a runaway accident and fractured his arm.——Dr. Homer Denman, De Smet, has been appointed superintendent of health for Kingsbury County, vice Dr. J. E. Coulter, resigned.——Dr. Robert L. Murdy, Aberdeen, suffered dislocation of the right shoulder in an automobile accident July 8.——Dr. Granville J. Coller, Brookings, a pioneer physician of Brookings County, retired from practice July 1.

Hospital Notes.—Drs. Boyden and B. T. Green, Brookings, have established a hospital in that city.——Yankton is to have a $50,000 hospital, to be maintained by the Sisters of Mercy and to accommodate from fifty to seventy patients.——Dr. Edward A. Hoefer is arranging for the erection of a hospital in Clear Lake.——A hospital is to be established at Miller, with Dr. William H. Lane at its head.——The Rapid City Hospital has been incorporated.——The Aberdeen Hospital and Sanitarium has been incorporated, with a capital of $100,000. The hospital will contain two public wards and eighteen private rooms and is expected to accommodate 250 patients. The medical men among the incorporators are Drs. Robert L. Murdy, Frank Miller and George E. Countryman.

TEXAS.

Epidemic at Asylum.—Cholera morbus prevails at the Insane Hospital, Terrell. About 400 patients are suffering from the disease.

Local Physicians Organize.—The physicians of Hillsboro organized a medical association, July 23, with the following officers: President, Dr. George D. Bond; vice-president, Dr. John Buie, and secretary, Dr. D. T. Atkinson.

Infirmary at Marlin.—Dr. John W. Cook's infirmary is completed and will be formally opened in a few days. It is a three-story brick building, equipped in modern fashion and connected with the hot artesian wells of Marlin.

Personal.—Dr. Harry D. Bartnitz, San Antonio, who has been suffering from septicemia, is now convalescent.——Dr. Joe S. Blackburn, Fort Worth, is reported to be one of the heirs of the Blackburn estate in England. His share is said to be more than $3,000,000.——Dr. Thomas D. Wooten, Austin, is seriously ill at Eureka Springs, Ark.

Vital Statistician Needed.—The physicians of Texas asked the late legislature to pass a law creating a statistician for the health and vital statistics of the state. This request the legislature complied with, but failed to make any provision for the salary of a statistician. The statistics, consequently, are being heaped up by the wagonload in the State Department of Health without any provision for filing or otherwise disposing of them.

Hospital Arrangements.—The general manager of the Missouri, Kansas & Texas Railroad has notified all officials of the new hospital arrangements for Texas. The Providence Sanitarium at Waco is to be the general hospital for the company in Texas. Arrangements have also been made with the Houston Infirmary, the Sisters of the Incarnate Word, Fort Worth; St. Paul's Sanitarium, Dallas, and Santa Rosa Infirmary, San Antonio.

Pasteur Institute Report.—Dr. Benjamin M. Worsham, Austin, superintendent of the State Lunatic Asylum and in charge of the State Pasteur Institute, reports that up to date 291 patients have been treated, only one of whom died. At present there are nineteen patients in the institution, which is more than self-sustaining. The treatment costs $25 per patient and payment is left to the honor of the individual. Up to the present time the institution has paid for its maintenance and has a cash surplus of more than $1,400.

Revision of National Guard Organization.—In general orders No. 10, issued July 9, revising the Texas National Guard organization, the following changes are made in the medical department:

> The medical department will consist of one surgeon-general with the rank of colonel, one deputy surgeon-general with the rank of lieutenant-colonel, seven surgeons with the rank of major, seven assistant surgeons with the rank of captain, seven assistant surgeons with the rank of first lieutenant, and a hospital corps of five sergeants, first class; fifteen sergeants, thirty privates, first class, and fifteen privates.

Mosquito Extermination.—The Department of Public Health and Vital Statistics has sent to all health officers a paper prepared by the city health officer of Galveston on "Mosquito Extermination," and a paper issued by the department on "General Information for the Prevention of Yellow Fever and Destruction of the Mosquito," with the urgent request that the health officers put them before the citizens and endeavor to secure their immediate coöperation in sanitary matters, especially with regard to the destruction of the mosquito and the consequent extermination of yellow fever.

Car Hygiene.—The state health officer has put in force the following rules for sleeping cars:

1. Each sleeping car used for passengers must be provided with at least one cuspidor for each section or compartment, cuspidors to be emptied and cleansed thoroughly at the end of each trip, or every twenty-four hours.
2. The floors of all cars may be swept in transit, provided that they are first thoroughly sprinkled with water to prevent raising dust. If it is desired to remove rubbish or trash with broom and dustpan from portions of the car while in transit, sprinkling will not be necessary. Dusting of cars with a brush is prohibited, but it may be removed from walls and seats with a cloth.
3. Containers of water for drinking in cars must be emptied and thoroughly cleansed at the end of each trip.
4. Ice which is used in water coolers in cars must not be dumped on floors, sidewalks or car platforms, where people have to tread and expectorate. It should be handled with ice tongs to place it in the coolers.
5. All persons are prohibited from spitting on the floors of cars.
6. All sleeping cars must be disinfected in a manner approved by this department at the end of each third round trip, where the cars do not leave the State of Texas.

Sleeping cars leaving the state are to be fumigated every second trip, where the trips are of not more than four days' duration, and every trip if of longer than four days' duration, and every third trip if only one night run.

Sleeping cars crossing the state are to be fumigated each round trip of six to eight days' duration, and at the end of each single trip where round trip is of more than eight days' duration.

All carpets, curtains, blankets and bedding, except linen, to be disinfected with cars.

Provided, that when any sleeping car is known to carry a case of infectious or communicable disease it must be fumigated at the end of that trip, or it may be disconnected from train and fumigated at any station if required by this department.

7. All sleeping cars must be thoroughly cleansed at the end of each trip.
8. In the event that sleeping cars passing through the state are not fumigated at the terminals outside of the state, as required in Rule 6, then they will be required to stop at some point inside of the State of Texas, approved by this department, for fumigation.
9. All persons must be prohibited from washing their teeth over or expectorating in the basins which are used for bathing face and hands in sleeping cars. Large cuspidors should be provided for such purposes.

The following sanitary rules for day coaches have been put in force:

1. Each day coach used for passengers must be provided with at least six cuspidors, cuspidors to be emptied and cleansed thoroughly at the end of each trip, or every twenty-four hours.

This rule shall not apply to parlor cars, except that cuspidors must be provided for the smoking compartment.

2. The floors of all cars may be swept in transit, provided that they are first thoroughly sprinkled with water to prevent raising dust. If it be desired to remove rubbish or trash with broom and dustpan from portions of the car while in transit, sprinkling will not be necessary. Dusting of cars with a brush is prohibited, but it may be removed from walls and seats with a cloth.

3. Containers of water for drinking in cars must be emptied and thoroughly cleansed at the end of each trip.

4. Ice which is used in water coolers in cars must not be dumped on floors, sidewalks or car platforms where people have trod and expectorated. It should be handled with ice tongs to place it in the coolers.

5. All persons are prohibited from spitting on the floors of cars.

6. Day coaches used for passengers must be fumigated whenever the necessity exists at some point in this state acceptable to this department.

If a car becomes infected by being occupied by a person having a contagious disease it must be disinfected immediately at end of run.

UTAH.

Personal.—Dr. Joseph E. Scallon, Salt Lake City, has been appointed chief physician of the Hancock Consolidated Mining Company, Hancock, Mich.——Dr. Ray E. Carnahan, Ogden, is critically ill at his home.

County Association Admits Members.—At a regular meeting of the Utah County Medical Society, held at Provo, July 11, it was decided, in view of the requirements of the American Medical Association, to admit to its membership qualified physicians of the adjoining counties in which there is at present no county society.

Misdemeanor of Health Officer.—The attorney-general has decided that the city health commissioner of Salt Lake City committed a misdemeanor when he caused a scarlet-fever patient to be released from quarantine without the consent of the attending physician. The decision of the attorney-general is as follows:

> A case presenting the typical symptoms of scarlet fever, diagnosed and reported as such by the attending physician, who thereafter discovers no evidence to change his opinion, is duly quarantined and a flag placed by the local board of health. Has the health officer the right or power to visit the said patient without the knowledge or consent of the attending physician at the end of the second week of the quarantine and thereon assert that the patient was not and had not been afflicted with scarlet fever, also removing the flag, releasing the patient without disinfection and raising the quarantine?
>
> So far as material to the question submitted, section 12 of chapter 45, session laws of 1899, reads as follows: "It shall be the duty of every physician or other person caring for the sick in the State of Utah to make a report to the local board of health immediately after such person becomes aware of the existence of any case of scarlet fever, diphtheria, smallpox, etc., in his or her charge," and a penalty is attached for failure to do so.
>
> When this report is made the person must be quarantined and a yellow flag be displayed on the premises where such person is domiciled and shall not be removed or taken down for twenty-one days, and no person who has been affected with scarlet fever, etc., shall be permitted to leave the house during the same period in which he or she is quarantined without a permit from the board of health, to be issued on receipt of a certificate from the attending physician that all danger of communicating the disease has passed. The law seems to be plain and unambiguous and does not demand any technical interpretation to discover its meaning.
>
> If a person is stricken with scarlet fever or other contagious disease the physician in charge must report the case to the local board of health, and the person so afflicted must immediately be quarantined and prevented from carrying the disease to others, and this quarantine must last twenty-one days unless the attending physician shall sooner be satisfied and certify that all danger of communicating the disease has passed. Without this certificate no one is authorized to raise the quarantine or to tear down the flag, and if any one does so he is guilty of a misdemeanor and should be punished. The quarantine regulations are for the protection of the community and the safety of the people and should be vigorously enforced.

The censors of the Salt Lake County Medical Society, despite the opinion of the attorney-general, insist that the health commissioner had not violated the ethics of the profession.

VIRGINIA.

Hospital Closed.—Hygiea Hospital, Richmond, will be closed until September 1 to provide for the remodeling and enlargement of the institution. A roof garden for the use of patients is to be added.

Personal.—Dr. E. C. Levy, city bacteriologist of Richmond, has been elected chief health officer of that city. Dr. E. Guy Hopkins has succeeded Dr. Levy as city bacteriologist.——Dr. William McC. James, Richmond, has been appointed assistant surgeon at Panama.

Cocain Selling.—James Hill, a colored vendor of cocain, of Richmond, on July 19, was fined $100 with imprisonment for one year in default of $500 security.——Fred Valentine, Manchester, a negro cocain seller, who was arrested recently on the charge of selling cocain, was found to have thirty-two packages of the drug on his person.

Faculty List.—The Medical College of Virginia announces the following list of faculty for the coming session:

Christopher Tompkins, M.D., dean of the faculty and emeritus professor of obstetrics; John S. Wellford, M.D., emeritus professor of diseases of women and children; M. L. James, M.D., emeritus professor of practice of medicine; J. W. Long, M.D., emeritus professor of diseases of women and children; Henry H. Levy, M.D., emeritus professor of practice of medicine, lecturer on diseases of nervous system; William H. Taylor, M.D., professor of chemistry, toxicology and medical jurisprudence; George Ben Johnston, M.D., professor of abdominal surgery and clinical gynecology; Lewis C. Bosher, M.D., professor of practice of surgery and clinical surgery; C. A. Blanton, M.D., professor of diseases of children; William P. Mathews, M.D., professor of orthopedic surgery; John P. Davidson, M.D., professor of diseases of the eye and ear; Charles M. Hazen, M.D., professor of physiology; Ennion G. Williams, M.D., professor of histology, pathology and bacteriology; J. Shelton Horsley, M.D., professor of principles of surgery and clinical surgery; Frank M. Reade, M.D., professor of materia medica and therapeutics; Daniel J. Coleman, M.D., professor of obstetrics and diseases of the puerperal state; Clifton M. Miller, M.D., professor of diseases of nose and throat and instructor in diseases of the eye and ear; Charles R. Robins, M.D., professor of gynecology; J. Fulmer Bright, M.D., professor of anatomy, and Manfred Call, M.D., acting professor of practice of medicine.

WASHINGTON.

Pardon Sought and Refused.—The governor has denied the petition for pardon presented by the attorney of Dr. Mary A. Latham, Spokane, who is now serving a sentence of four years in the state penitentiary for arson. At the proper time, it is stated, records will be sent to the superintendent of the prison, who may, if he chooses, grant a parole.

Hospital News.—The Broadway Hospital and Sanitarium, Seattle, is planning to erect a new building, to cost $100,000 and to have accommodations for 250 patients.——Improvements are being made to the Deaconess Hospital, Spokane, including a wing on the east side of the building, which will accommodate fifty-five additional patients, at a cost of $20,000.——A building has recently been purchased in Garfield by Dr. L. J. Coberly, which has been remodeled for hospital purposes and is open to all regular practitioners.

Personal.—Dr. William H. Olds has been elected president of St. Luke's Hospital, Spokane, vice Edwin L. Kimball, term expired; Dr. Edward R. Northrop, secretary, and Dr. Frank Hinman, interne, succeeding Dr. John P. Corkery.——Dr. Harvey J. Felch, Ellensburg, is reported to be seriously ill in South Missoula, Mont.——Dr. Arthur P. Calhoun, of the Eastern Washington Hospital for the Insane, Medical Lake, has been appointed superintendent of the Western Washington Hospital for the Insane, Fort Stellacoom, vice Dr. Euclid Van Zandt, Bellingham, resigned.

Attack Constitutionality of Law.—To test the constitutionality of the statutes of Washington in regard to the practice of medicine and surgery, Drs. O. V. Lawson, Arthur George, P. J. Smith and J. D. Peters have filed suit in equity against the State Board of Medical Examiners and its individual members. The complainants state they are competent physicians and are able to comply with the state laws regulating medicine and surgery, but are denied their right under the act of legislature which provides for a state medical board vested with examining and licensing powers. They further charge that they are denied the right to be examined, because under the provision of the act each applicant for examination must be a graduate of a medical college which now has a four-year course. They state that there is no such medical college in the state and that the board conducts its examinations in an "unreasonable, unfair and arbitrary manner," asking misleading questions, confusing to applicants, and thus affording itself a pretense for denying the licenses.

WISCONSIN.

Practicing Without License.—On complaint of Dr. Wilbur T. Sarles, Sparta, president of the State Board of Medical Examiners, Jacob Green was arrested at Tomah, July 30, pleaded guilty to practicing medicine without a license and was fined $50 and costs.

Personal.—Dr. Joseph F. Gill, Madison, has been appointed city physician, vice Dr. Theodore W. Evans.——Dr. L. H. Anderson, Bayfield, while handling a revolver, July 9, shot a toe from his right foot.——Dr. Charles H. Mason, Superior, has been made president of the Scandinavian Workingmen's Association of America.——Dr. Edwin J. Farr, Eau Claire, has been made grand master of the Masonic fraternity of Wisconsin.

Fined for Criminal Practice.—Dr. Edward Schnittker, Milwaukee, charged with having performed a criminal operation on Miss Bertha Krause, was found guilty, July 20, and fined $250 and costs. The fine and costs were paid by the defendant's mother. The charge of his having performed a similar operation on Miss Anna Severson is still pending. Action to have the medical license of Dr. Schnittker revoked has been begun in the circuit court by F. E. McGovern, district attorney of Milwaukee, and A. C. Umbreit, attorney for the State Board of Medical Examiners, on the ground that since the issuing of his license Schnittker has been "guilty of immoral, dishonorable and unprofessional conduct."

GENERAL.

The Surgical Treatment of Intestinal Indigestion.—In Society Proceedings, July 21, page 230, in the report of the meeting of the Cincinnati Academy of Medicine, it should have been stated that Dr. Earl Harlan discussed the subject "Surgical Treatment of Intestinal Indigestion." By mistake, the word "intestinal" was omitted.

The Arkansas Journal.—The Arkansas Medical Society has converted the neat and attractive little *Bulletin,* formerly published by the society, into a full-fledged and very creditable journal, known as the *Journal of the Arkansas Medical Society.* Dr. C. C. Stephenson, Little Rock, is the editor-secretary. The publication was begun in June and the second number has just appeared. It is neatly and attractively gotten up, 7x10 in size, and, judging from the two numbers already issued, will take rank among the active and influential journals. In the July number appears the full report of the annual meeting of the Arkansas Medical Society at Hot Springs in May, also much interesting matter in the shape of news items, letters, reports of county societies, etc. There is no doubt that this new member of the sisterhood of state society journals is capable of exercising and will exercise great good on the members of the Arkansas Medical Society, as well as on the medical profession of the State of Arkansas.

Smallpox at Colon.—Acting Assistant Surgeon Mohr of the Public Health and Marine-Hospital Service, reports that since the first cases of smallpox were discovered on July 9, 13 new cases have developed from the original focus. All of the patients with a number of contacts have been isolated in a temporary camp. A cordon has been placed around the infected area where all suspects have been vaccinated and held to complete the period of incubation after the disinfection of all suspected houses is accomplished. A general vaccination will be instituted as soon as a supply of vaccine can be obtained. New cases continue to appear among the negroes living in the infected area. On July 16 6 cases were found among those quarantined in the infected district, and 6 cases have developed among the contacts isolated in the camp. The infected district is very densely populated, as many as 140 people having been found inhabiting two or three houses. A large number have been vaccinated, and as soon as a sufficient supply of vaccine matter is received a general vaccination will be instituted. Thus far there have been no deaths from the disease, and among the cases no deaths are expected to occur, as the disease is running a very mild course.

CANADA.

British Medical Association.—Almost all the buildings of the University of Toronto will be utilized in connection with this meeting. It will have six or eight of the sections, and in addition will provide offices for the secretariat and the editor of the *British Medical Journal,* a postoffice, reception room, museum and a space of 15,000 square feet for exhibitors. It is hoped that the new convocation hall will be completed in time to enable the ceremony of the official reception and the public addresses to take place there. Accommodation is being provided in the various dormitories and fraternity houses of the university for the visitors. One of the most pleasant features provided by the entertainment committee is the excursion to Niagara Falls on invitation of Sir Henry Pellatt. The summer rates which are in force at the time of the meeting will, as a rule, be lower than the fare and one-third authorized by the various passenger associations. There will undoubtedly be a large attendance from the United States.

Publication of Papers.—Dr. Dawson Williams, the editor of the *British Medical Journal,* in a recent circular announces the regulation of the association as regards the exclusive right of publication in the journal of all papers read before the association. He states, however, that the journal is always open to any reasonable arrangement with the author or with any other journal. Dr. Williams will arrive in Toronto, August 19 or 20, and will have his office in the southeast corner of the main building of the university on the first floor.

FOREIGN.

The Imperial Cancer Research Fund.—The annual meeting of the Imperial Cancer Research Fund was held in London, July 25. The report of the executive committee gave a sketch of the work done during the past year. Various "cancer cures" were examined, the report states, but investigation failed to show that they had any value. Dr. Ernest Bashford, the general superintendent, in his report, stated that the results of the investigations made during the past three years of the fund's existence in spontaneous development of cancer in human beings had led to an alteration in the details of the work. He pointed out that the facilities for ascertaining the occurrence of this disease in native races and within different geographical areas are unique. He also gave some interesting statistics concerning cancer in native races. In referring to the experimental work Dr. Bashford stated that the results "only indicate the possibility of rendering normal mice unsuitable for the growth of experimental cancer. They have not enabled us to arrest the progress of experimental tumors, far less to effect the cure of the disease occurring naturally."

Food Adulteration in New South Wales.—The *Australasian Medical Gazette* states that at a recent meeting of the municipal council of Sydney it was agreed that: "The city health officer be instructed to furnish returns to the health committee for presentation to the council showing the names of all persons fined for selling adulterated food, the nature and percentage of adulteration, and, where practicable, the name of the manufacturer of any adulterated food product." At a recent meeting of the Board of Health of Victoria regulations for securing the cleanliness and freedom from contamination of articles of food were adopted with amendments. These regulations refer to milk, cream, butter, cheese, cooked meats, bread, pastry, confectionery, honey, jam and other articles of food to which flies are attracted, and which are ordinarily consumed in the condition in which they are purchased. Persons who sell on any wholesale or retail premises, including cafés, restaurants and licensed premises, are, so far as practicable, to protect such articles from dust and flies by storage in covered receptacles or by means of metal covers, wire gauze screens, or other effectual appliance. The second provision declares that no person shall transport through the street for sale any of the above-mentioned articles of food unless they are so far as practicable protected from dust and flies. The regulations will come into operation on Nov. 1, 1906, and the maximum penalty for a breach of them is $50.

LONDON LETTER.

(From Our Regular Correspondent.)

London, July 28, 1906.

Dust and Disease.

At the Royal Sanitary Institute's Congress held at Bristol, one of the papers which gave rise to the most interest was on the influence of dust on health. It was read by Dr. P. Boobyer, Nottingham, who considers that we are not sufficiently careful in discouraging the dissemination of dust in ordinary life. We should have streets paved with smooth material, check so far as possible the depositing of refuse in streets and yards, forbid the sweeping of house dust into the streets, forbid the shaking of mats and carpets outside houses, encourage the burning of all house refuse and pursue a vigorous campaign against the smoke nuisance. During the discussion comment was made on the responsibility of motorists, fast riding being strongly deprecated. Some one asked what the poor housewife is to do amid all these reforms. The remark was made that it is strange that people should take off their hats on entering a house instead of their boots which had been collecting refuse in the streets. Dr. Boobyer advocated municipal carpet cleaning and reform in public scavenging.

Action for Damages in Consequence of Injury Produced by the X-Rays.

A man in the early stage of locomotor ataxia was sent by his physician to a firm of chemists for treatment with the x-rays. The rays were applied ten or eleven times and the physician was never present. The man who administered the treatment often left the patient during the sitting. The machine emitted great sparks and once or twice gave the patient a shock, but being quite ignorant, he made no complaint to his physician. His feet began to blister, for weeks he suffered greatly and his screams were such that lodgers left the house. Eventually, the soles sloughed off and he became unable to walk. He brought an action for damages against the firm of chemists. Mr. Chisholm Williams, superintendent of the *x*-ray department of the West London Hospital, was called as a witness. He said that it was evident that the plaintiff had been placed too near the instrument—12 or 18 inches is the proper distance, not 2 or 3. In cross-examination he admitted that the use of the *x*-rays is a recent innovation, and that even physicians are burned at times. The plaintiff's physician said that he had never administered the rays, and that he had only studied the subject from books. He said that he thoroughly trusted the defendants, who had often administered the treatment for him, merely telling them the part to which the rays were to be applied. For the defense it was urged that the defendants were not liable for mistakes of the physician. Witnesses were called to show that it is essential that a physician should be present as well as the person who administers the treatment. The defendants stated that they had not studied the properties of the rays or administered them from a therapeutic point of view. The jury returned a verdict for the defendants.

A Dying Profession.

According to the ex-president of the Royal College of Veterinary Surgeons, in three years there will be employment in London for only 300 veterinary surgeons. The remainder will have to follow the horse. Before the introduction of motor cars and motor omnibuses there were 6,000 veterinary surgeons in London.

Insurance Fees and Lodge Practice

Societies Take Action.

THE DE SOTO COUNTY (FLA.) MEDICAL SOCIETY.

At a recent meeting of this society the following resolutions were adopted; they were also concurred in by all the other physicians in the county:

Whereas, The class of examinations required by life insurance companies is of a nature that entails responsibility, and which in justice to the medical profession should not be made for a less fee than five dollars heretofore allowed, and, whereas, we charge a similar fee to private patients for examinations of like character, therefore be it

Resolved, That we, the undersigned, members of the De Soto County Medical Society, hereby agree to make no examinations for any life insurance company, or society, for a less fee than five dollars ($5.00).

Resolved, Further, that these resolutions be forwarded to The Journal of the American Medical Association and to the respective life insurance companies, whose accredited examiners we are.

D. L. McSwain, President.
C. H. Smith, Vice-President.
R. L. Cline, Secretary.
Ed Green, Treasurer.
D. N. McQueen.
Kirby H. Smith.
Samuel D. Smoke.
G. W. Dawson.
M. R. Gill.
T. J. Myers.
D. H. Vaughn.
W. S. Hart.
Y. E. Wright.
J. E. Garner.
J. M. Beeson.
F. Y. Hanna.
J. R. Moore.
J. B. Mobley.

WHITMAN COUNTY (WASH.) MEDICAL SOCIETY.

At a meeting of this society at Palouse, Wash., July 9, 1906, a resolution was adopted by a unanimous vote of the society to the effect that the members of the Whitman County Medical Society henceforth refuse to make life insurance examinations for the old-line companies for a fee of less than $5.

ASSUMPTION PARISH (LA.) MEDICAL SOCIETY.

Dr. Adrian A. Landry, secretary of this society, notifies us that at a recent meeting of the society the following resolution was adopted and a copy sent to all insurance agents in the state:

Resolved, That we, the undersigned, members of the Assumption Parish Medical Society and qualified practitioners of said parish, do hereby enter into and bind ourselves to the following agreement, to-wit: That on and after the first day of August, 1906, we will not examine applicants for insurance in the old-line companies for less than five dollars.

Augustin J. Himel.
Adrian A. Landry.
Thomas B. Pugh.
H. C. Dansereau.
H. A. Le Blanc.
A. A. Aucoin.
W. E. Kittredge.
Clifford Himel.
Fulton Rogers.

MISSISSIPPI COUNTY (ARK.) MEDICAL SOCIETY.

Similar resolutions to the above were passed by this society at the May session. At a meeting held in Osceola, July 17, an amendment was added providing that the members of the society shall collect the fee for examination direct from the insurance company and shall refuse to accept the fee or any portion thereof from the agent.

Correspondence

Trypsin and Amylopsin in Malignant Growths.

8 Barnton Terrace, Edinburgh, Scotland, July 16, 1906.

To the Editor:—An article on "Trypsin in Malignant Growths," by Dr. W. A. Pusey, Chicago, appears in No. 23, vol. xlvi, June 9, page 1763, of The Journal of the American Medical Association. I should like to say a few words about this matter. The treatment has really only been in use for about six months, and naturally it is still in the experimental phase of its existence. The results recorded by the author can hardly be termed good by any stretch of the imagination, and did I not know of better ones I, as the scientific originator of this treatment, might well despair of it. But in science I do not know the meaning of the word despair. My lips are closed regarding results, but shortly they will be forthcoming, and the unfavorable cases will *not* be in proportion to the favorable ones as seven is to one. As to abscesses, I have known as many as eighty ampoules to be given (in America) to a single patient, with, I think, only one abscess, and altogether I have as yet only heard of about six abscesses all told, excluding the record number mentioned by Dr. Pusey.

Over here we (Dr. Robert Maguire, F.R.C.P., and myself) have, I think, considerably improved this treatment, and in the following I will indicate briefly the lines which, as results go to show, it should follow. For a summary of the scientific reasons for including the diastatic ferment of the pancreas gland, amylopsin, I beg to refer to my letter in the *New York Medical Record*, June 23, 1906, page 1020, under the title, "Trypsin and Amylopsin in Cancer." Messrs. Fairchild Bros. & Foster have now put out two preparations for injection, injectio trypsini and injectio amylopsini. The very good results obtained in certain very serious cases in Europe (to name a few, a case of cancer of the rectum, one of inoperable cancer of the tongue and two of cancer of the uterus) point to the following as on the lines of a right treatment. After a few preliminary injections of small amounts (half an ampoule of the injectio trypsini), the course should be:

1. Injectio trypsini daily up to two ampoules for three or four weeks.

2. Then one ampoule of injectio trypsini on a certain day, followed by an ampoule of injectio amylopsini on the next day, and so on alternately for about four weeks.

3. Lastly, one or even two ampoules of the new injectio amylopsini daily for about four weeks, or longer, in the judgment of the physician.

The injectio amylopsini, therefore, is meant to replace the injectio trypsini in the later periods of the treatment, and also even from the start to meet any bad symptoms, such as nausea, vomiting, pain in the back, drowsiness, albuminuria, high arterial tension, edema, etc. If using this injection any injections be still not well borne, the injection should be further diluted and given more frequently, but so that the total daily amount is not thereby diminished. It is easy enough to kill every cell of a cancer with injections of trypsin, but for its removal and to prevent the formation of poisonous products from its degeneration injections of the diastatic ferment of the pancreas gland, amylopsin, are absolutely necessary.

John Beard, Sc.D.

Atropin and Strychnin Combined, a Specific for Seasickness.

Chicago, Aug. 1, 1906.

To the Editor:—Referring to the letter of Dr. Crane in The Journal, July 21, on my article with the above title, I desire to acknowledge his courtesy in pointing out an unintentional omission on my part. In a prior paper on the subject, which appeared in The Journal, March 3, 1904, I gave full credit to Dr. Skinner and would have done so in the article referred to by Dr. Crane had I remembered the name and the publication.

As mentioned in the concluding paragraph of my article, the present report was called forth by an Associated Press dispatch stating that the "Anti-Seasickness League" would hold a meeting at Lisbon in April that its members might "personally test the medicines which had been advanced as preventives of seasickness." I prepared the paper rather hastily while absent from San Francisco and without having access to my former paper, in order that it might be submitted to the International Medical Congress at its meeting.

While making corrections I desire to draw attention to a grammatical error on the second page of the paper. *Per orem* should be *per os*. A. C. Girard, M.D.

Triplets Living Over Eighty Years.

Wrightsville, Pa., Aug. 1, 1906.

To the Editor:—In The Journal, July 28, Dr. John L. Davis, Cincinnati, speaks of triplets alive at the age of 47, and states that so far as he knows this record is unequaled. In this connection I would say that at Manchester, York County, Pa., on Dec. 3, 1903, there died the last of a set of triplets aged 86 years, 10 months and 6 days. The other two died at the ages of 84 and 80, respectively. This remarkable trio was of German ancestry, of the name of Strickler, a common name in this part of the country. David, the brother, was born last and died first. One sister, Lena, the second born, died second, while Mary, the first born, survived the longest. These people lived quietly and peacefully in the country engaged in agricultural pursuits, which probably added to their longevity. In this case triplets survived to the eightieth year and over. If any reader of The Journal can report anything equaling or exceeding this it will make interesting reading.

B. A. Hoover, M.D.

Qualifications and Reciprocity as Viewed by the Illinois Board.

[Editor's Note: Dr. James A. Egan, Springfield, calls attention to a typographical error in his letter, which was published in The Journal, August 4. On page 374, line 17, for 1889 read 1899. Nine lines below the same error is repeated. —Ed.]

Detroit, Aug. 4, 1906.

To the Editor:—When I referred to the "disturbed periods" of my worthy brother Egan of Illinois, in my communication to The Journal, published July 21, I did not anticipate in the least that your readers would be furnished with so complete a demonstration of the affliction so mildly suggested by me. I am truly sorry, not for myself, as I am immune, but for those of your readers who do not enjoy personalities and recriminations.

In my letter I criticised the action of the Illinois State Board of Health in resigning from the American confederation from the standpoint of the reasons given for such resignation and of its subsequent action in passing regulations and qualifications exactly a counterpart of the qualifications of the confederation objected to, and forming the basis for disagreement.

I also criticised the Illinois board for its usurpation of the functions of the state legislature in granting exemption to a class of practitioners under the excuse of reciprocity when the act of reciprocity is impossible *per se*. I also asked Dr. Egan to formulate some rule by which a physician of national reputation could be defined by executive officers less fortunate in observation qualities than himself.

I merely referred to Qualification 2 of the American confederation with the statement that some fifteen states not only believe in the virtue of this qualification but also had adopted it. In his reply Dr. Egan very cautiously refuses to discuss the material questions and contents himself with a very irrelevant abuse of Qualification 2, the Michigan State Board of Registration in Medicine, and my humble self as secretary of such board.

Now, the Michigan board (and myself as its secretary) was and is entirely immaterial to our controversy. My communication was signed as secretary of the American confederation, in which Dr. Egan's board has membership, and I made no reference in my letter either to Michigan or to the Michigan board. It certainly was within my right to criticise a board in membership, especially so when the reasons given for this board's withdrawal from membership on their face, appeared inconsistent and not in accord with the facts.

As my letter had absolutely no reference to the Illinois or Michigan boards, nor to Dr. Egan or myself as executive officers of such boards, outside of the membership of our respective boards in the confederation, and as Dr. Egan refuses to discuss the questions raised by me on their merits and insists on denouncing the shortcomings of my board and myself, with which your readers at this time are not especially interested, I can only say in a general way, that Dr. Egan's statements regarding my official acts are not based on facts and his conclusions are unwarranted in the light of such facts; I can only ask, in justice to myself and the cause I represent, that your readers review together my letter and Dr. Egan's reply to it. I am content to rest my contentions on such a review.

Dr. Egan fails to see the analogy between the present prerequisite of the confederation, which states that an applicant for reciprocity at the discretion of either board *may* file proof of membership in a recognized medical society, and that such membership *may* be considered in connection with the other evidences of character presented and the Illinois requirement of letters of recommendation with regard to the moral, professional and ethical character of the applicant, from a state, district, county or city medical society in the state from which the applicant comes. He states that he must decline to insult the intelligence of readers of The Journal by attempting to recognize a material distinction in the above optional requirements.

The trouble with Dr. Egan seems to be that he is unable to distinguish the difference between the "may" and "shall," for he states that the prerequisite makes it incumbent on an applicant to show proof of membership in a medical society, and that a comparison of the two requirements will make the distinction quite apparent. Taking for granted that the prerequisite requirement of membership in a state society was expressed by the word "shall" instead of "may," this would not consistently give a reason for the withdrawal of a board in membership from the fact that it is impossible to formulate a qualification acceptable to all states in membership, and in addition the qualifications of the confederation are advisory, not mandatory.

Dr. Egan's statement that I had expressed an opinion that the prerequisite is unconstitutional is not based on fact. I pronounced the mandatory qualification of membership in a state society, introduced by Dr. McCormack as unconstitutional, but I had no support in this contention from Dr. Egan, who was present. This mandatory qualification was not adopted by the confederation.

Dr. Egan refuses to enlighten me and other executive officers as to the method employed by his board in measuring a physician of national reputation, and also declines to discuss the action of his board in usurping the authority of the legislature and tells me that it is none of my business. I accept his courteous explanation as the only rational method in justification of the action of his board.

In a question as large and intricate as that of reciprocity some degree of consideration must be shown by states, otherwise it would be impossible to accomplish results, and results have been accomplished by the American confederation in an extraordinary degree, over one thousand certificates having already been endorsed through its administration during the past four years.

My valiant and bellicose brother Egan challenges me to meet him and his big brother, the president of his board, at a future unofficial meeting of his personal friends, and to repeat some of the unkind criticisms I have felt it my duty to subscribe to in my former letter, and he states that I have neglected the opportunity of expressing my opinion of his official acts at former meetings at which he was present. Dr. Egan must remember, however, that these meetings were held prior to the date on which he joined the United States Army, Navy nd Marine-Hospital Service through reciprocity, and that revious to this event I had never taken him seriously from strictly reciprocity point of view. In all other questions we armonize exactly. B. D. Harison, Secretary.

Hay-Fever Treatment by Dunbar's Remedies (Pollantin).

Baltimore, Aug. 5, 1906.

To the Editor:—Permit me to endorse Dr. Ingals' report of esults with pollantin, published in The Journal, August 4, age 376. I summarized the literature and claims of hay-fever ntitoxin in the *Maryland Medical Journal*, August, 1904. This rticle was misquoted and exploited in the lay press in favor f the serum. I wrote to Messrs. Fritche & Bros. and told hem that my actual experience with the powder was pracically a failure and that at an early opportunity I should colect these cases and send them to The Journal. Other maters more pressing have prevented me. When I saw Dr. Ingals' tter I hastily examined ten histories of those who had conientiously tried pollantin. Eight were absolutely not inroved, one claimed some benefit, and the other said he was ree from attacks on some days and not on others.

Leonard K. Hirshberg.

Indianapolis, Aug. 6, 1906.

To the Editor:—I can heartily agree with all that Dr. Ingals as stated concerning pollantin. A year ago I reported two ets of hay-fever cases, one treated by pollantin and the other y the use of quinin locally in the form of a saturated soluon sprayed into the nose and followed by an ointment of the ame drug, as recommended by Helmholtz many years ago. Iy success with the simple quinin preparation was greater ian with pollantin. I regard the literature accompanying the reparation very objectionable; it is impossible to prescribe ollantin for the patient without him learning all about the emedy he is using. John F. Barnhill.

Marriages

Frank Donald Burns, M.D., Chicago, at Shellsburg, Iowa, uly 18.

W. O. McBride, M.D., Joliet, Ill., to Miss Nannie Francis f Lima, Ohio, June 20.

Andrew P. Cornwall, M.D., to Anna S. Marlin, M.D., oth of Boston, July 22.

Aloysius J. Lennon, M.D., Joliet, Ill., to Miss Rose Finlen f Streator, Ill., June 20.

Haydon Rochester, M.D., to Miss Mary Thomas, at ochester, N. Y., July 31.

Walter Walton White, M.D., to Miss Lenore Griffith Doyle, oth of Baltimore, August 1.

Isaac Clark Gary, M.D., Chicago, to Miss Emma C. Bolnger of Kahoka, Mo., August 1.

Roy Hayman McKay, M.D., Milton, W. Va., to Miss Edna yna Riley of Cincinnati, May 9.

Charles O. Nelms, M.D., Taylorville, Ill., to Miss Cora T. llen of Rock Island, Ill., July 26.

George M. Kline, M.D., Ann Arbor, Mich., to Miss Ethel ry of Grand Rapids, Mich., June 23.

Charles Pern Robbins, M.D., to Miss Frances Lyon Sinair, both of Winona, Minn., July 28.

Alexander H. Rouss, M.D., Kabletown, W. Va., to Miss nna M. Stough, at York, Pa., July 26.

Francis G. Swedenburg, M.D., Rock Elm, Wis., to Miss live Eggleston of Red Wing Minn., July 25.

H. C. Manning, M.D., Flat Lick, Ky., to Miss Dora Smith Booneville, Ky., at London, Ky., June 2, 1905.

Ralph H. Parker, M.D., Storm Lake, Iowa, to Miss Ethel awyer Ranney of Koshkonong, Wis., August 2.

Schuyler Lott, M.D., Bellona, N. Y., to Mrs. M. Cornelia opkins of Fayette, N. Y., at Seneca Falls, N. Y., July 26.

William H. Neumann, M.D., Lewiston, Minn., to Miss Berce Holt of Utica, Minn., at Winona, Minn., July 18.

Deaths

Alexander Hutchins, M.D. New York Medical College, New York City, 1860; surgeon in the United States Navy from 1861 to 1863; from 1876 to 1879 president of the Kings County Medical Society, and in 1883 president of the Medical Society of the State of New York, of which he was a life member, senior consulting surgeon to the Brooklyn Hospital, consulting physician to St. John's, St. Mary's and Long Island College Hospital, instrumental in the foundation of the official journal of the Kings County Medical Society and its reading rooms and library, died at his home in Brooklyn, July 30, after a brief illness, aged 71.

William Partridge Brandegee, M.D. College of Physicians and Surgeons in the City of New York, 1889; instructor in otology, University and Bellevue Hospital Medical College, senior assistant surgeon to the New York Eye and Ear Infirmary, a member of the American Laryngological, Rhinological and Otological Society, New York State Medical Society, Medical Society of New York County, Medical Association of Greater New York, Otological Society of New York, and Bellevue Medical College Society, died suddenly at his home in New York City, July 30, from cerebral hemorrhage, aged 42.

Robert Mills Whitefoot, M.D. University of Georgetown Medical Department, Washington, D. C., 1866, a member of the American Medical Association; a pioneer physician of Bozeman, Mont.; a veteran of the Civil War and after the war a member of the medical corps of the Army; for one term surgeon general of Montana; for three years a member of the State Board of Medical Examiners, and for many years health officer of Bozeman, died at the Bozeman Sanitarium, July 25, from Bright's disease, after a long and severe illness, aged 66.

Josiah Giddings, M.D. Castleton (Vt.) Medical College, 1856; a surgeon during the Civil War, and a member of the Harrison County (Iowa) Medical Society, died recently at his home in Woodbine, Iowa. At a regular meeting of the Harrison County Medical Society held at Missouri Valley Iowa, July 19, resolutions were adopted expressing regret at the death of Dr. Giddings and sympathy with his family.

Alexander Memelsdorf, M.D. University of Würzburg, Germany, 1881; some-time staff surgeon in the German Army, professor of dermatology and venereal diseases in the Illinois Medical College, a member of the American Medical Association; a respected practitioner and a successful teacher, died at his home in Chicago, May 18, from heart disease, after an illness of one year, aged 47.

Louis H. Willard, M.D. Hahnemann Medical College, Philadelphia, 1866, of Pittsburg, Pa., for forty years a member of the staff of the Pittsburg Homeopathic Hospital; a surgeon in the Navy during the Civil War, and at the time of his death president of the State Board of Medical Examiners, died suddenly at his summer home in Beaumaris, Ont., July 30, aged 66.

Edmond Church Ingalls, M.D., Rush Medical College, 1894, but never a practitioner of medicine, formerly a resident of Oak Park, Ill., for many years a sufferer from sciatica, on account of which he had acquired the habit of drug use, which he had repeatedly tried to overcome, died in the Shirley Hotel, Denver, Colo., August 1, from an overdose of cocain, aged 38.

Jessie Maclarin McGregor, M.D. University of Edinburgh, Scotland, a member of the Medical Society of the City and County of Denver, and an instructor and clinical teacher in the departments of pathology and gynecology in Denver and Gross Medical College, Denver, died at her home in Denver, March 22, from cerebrospinal meningitis, after an illness of four days.

Wilbur Alexander, M.D. Medical College of Ohio, Cincinnati, 1893, a specialist on diseases of the eye, ear, nose and throat, oculist of the Toledo, St. Louis and Western railroad; a member of the Clinton County and of the Indiana State Medical Society, died suddenly at his home in Frankfort, Ind., from angina pectoris, July 23, aged 36.

Charles F. Herman, M.D. Long Island College Hospital, Brooklyn, 1898; a member of the American Medical Association and Kings County Medical Society, physician to the Brooklyn Dispensary and Polhemus Memorial Clinic, a resident of Brooklyn, died in Waterbury, Conn., August 2.

Samuel H. Frank, M.D. University of Maryland School of Medicine, Baltimore, 1862, of Baltimore, a specialist on diseases of the eye and ear, president of the Hebrew Hospital and Asylum, died suddenly at Chattolanee Springs, Baltimore County, Md., August 3, from heart disease, aged 65.

John Harris Westerfield, M.D. Southwestern Homeopathic Medical College, Louisville, Ky., 1871; a member of the Pope County (Ark.) Medical Society, and of the American Medical Association, died at his home in Atkins, July 31, from gallstone disease, after an illness of four weeks.

George Peck, M.D. College of Physicians and Surgeons in the City of New York, 1847; commissioned assistant surgeon in the Navy in 1881, and retired as captain and medical director, July 9, 1888, after more than twelve years' sea service, died July 27, at Lake Mohonk, N. J.

John Ellison Best, M.D. Rush Medical College, Chicago, 1870; a member of the American Medical Association, and an esteemed practitioner of Cook County, Ill., died at his home in Arlington Heights, August 1, from myocarditis, after an illness of five weeks, aged 63.

George Chapman, M.D. Rush Medical College, Chicago, 1875; founder of the Zauber Wasser Sanitarium, Hudson, Mich., for more than forty years a resident and once mayor of Hudson, died at his home in that city from kidney disease, July 29, aged 80.

C. M. Drew, M.D. Physio-Medical College of Texas, Dallas, 1903; professor of physiology in his alma mater and president of the state society, was instantly killed by being thrown from his buggy in a runaway accident, July 22, in North Fort Worth, Texas.

Joseph John Elliott, M.D. Trinity Medical College, Toronto, 1896; for three years house surgeon of the Toronto General Hospital, and a promising practitioner of Toronto, died at the General Hospital in that city, July 27, after an operation, aged 31.

Joseph B. Wolfe, M.D. University of Virginia Medical Department, Charlottesville, 1853, for more than fifty years a practitioner of Scott County, Va., died at the home of his son in Joplin, Mo., June 20, after an illness of several months.

John T. Gray, M.D. Columbus (Ohio) Medical College, 1878; a member of the Chicago Medical Society, a veteran of the Civil War, died at his home in Chicago, July 10, from cerebral hemorrhage, after an illness of less than an hour, aged 67.

John Morrison, M.D. Rush Medical College, Chicago, 1887; a member of the school board of Houston, Pa., for five years, and at one time its president, died at his home in Houston, June 3, after an illness of several months, aged 57.

Luke H. Cooper, M.D. Royal College of Surgeons Ireland, Dublin, 1848; for many years a practitioner of Bay City, Mich., a veteran of the Civil War, died at his home in Monroe, Mich., July 25, after an illness of two days.

Frederick C. Poehler, M.D. Medical Department of Hamline University, Minn., of Herried, S. Dak., died in St. Barnabas Hospital, Minneapolis, July 22, from typhoid fever, after an illness of two months, aged 26.

Charles Scott McKnight, M.D. College of Physicians and Surgeons in the City of New York, 1877, of New York City, died suddenly at his summer home in Saratoga, from cerebral hemorrhage, June 21, aged 53.

Albert L. King, M.D. Cincinnati College of Medicine and Surgery, 1881; a veteran of the Civil War, died at his home in Youngstown, Ohio, July 28, from cerebral hemorrhage, after an illness of two days, aged 62.

Parke G. Young, M.D. University of Georgetown Medical Department, Washington, D. C., 1872, died at his home in Washington, July 29, from heart disease, after an illness of one week, aged 55.

Reuben C. Dunnington, M.D. Medical College of Indiana, Indianapolis, 1874; fell down stairs at his home in Indianapolis, July 20, and received injuries from which he died twenty minutes later, aged 55.

Comegys Paul, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869; of Belvidere, N. J., died in a sanitarium near Baltimore, June 28, from cholera morbus, aged 60.

James Clarke, M.D. Faculty of Medicine of Queen's University, Kingston, Ont., 1868, died at his home in Bay City, Mich., from cerebral hemorrhage, July 27, after an illness of five weeks, aged 65.

Samuel Burks Scott, M.D. Jefferson Medical College, Philadelphia, 1853; a widely-known practitioner of Lynchburg, Va., died at his home in that place, June 26, after a protracted illness, aged 74.

Newell M. Johnson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1881; of Williamsport, Pa., died at the University Hospital, Philadelphia, May 19, aged 44.

William Fletcher Hughey, M.D. Columbus (Ohio) Medical College, 1880; a veteran of the Civil War, died at his home in Yellowbud, Ohio, July 23, after an illness of three months, aged 61.

J. F. Miller, M.D. Starling Medical College, Columbus, Ohio, 1857; for many years a practitioner of Port Jefferson, Ohio, died at his home in Delaware, Ohio, from malignant disease, aged 73.

George H. Macpherson, M.D. Medical Department of Victoria College, Toronto, died at his home in Fowler, Mich., June 8, after an illness of a week, from nervous collapse, aged 46.

Charles Rye, M.D. Medical Department of Arkansas University, Little Rock, 1889; died at his home in London, Ark., June 16, from tuberculosis, after a protracted illness.

Joseph De Vere, M.D. Rush Medical College, Chicago, 1894; died at his home in Chicago, July 29, from cancer of the stomach, after an illness of one year, aged 55.

Harriet A. Woodward, M.D. College of Medicine, Syracuse (N. Y.) University, 1875, died suddenly from heart disease at her home in Round Lake, N. Y., July 25.

J. S. Hamilton, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1898; committed suicide at his office in Joy, Ill., by cutting his throat, July 27, aged 40.

Edward Hartshorn, M.D. Harvard University Medical School, Boston, 1840, died at the home of his son in Berlin, Mass., from senile debility, July 25, aged 88.

Charles McDonald, M.D. New York University, New York, 1858; a Confederate veteran, died suddenly at his home in New York City, February 22, aged 81.

David C. Parris, M.D. Atlanta (Ga.) Medical College, 1882, died at his home in Hillsboro, N. C., July 19, from pneumonia, after an illness of eight days, aged 52.

Charles C. O'Donnell, M.D. (License, California), a practitioner of California since 1860, is reported to have been killed in the earthquake at San Francisco.

C. O. Craig, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1884; died at his home in Galena, Mo., July 25 from cerebral hemorrhage, aged 45.

Thomas Jefferson Grayson, M.D. (County license, Indiana) 1901; died at his home in Vincennes, Ind., July 27, after an illness of several weeks, aged 62.

J. A. R. Jones, M.D. University of Louisville, Medical Department, 1873; died from rheumatism at his home in Ensley Ala., June 4, after a long illness.

Harry Litchfield, M.D. Hahnemann Medical College, Philadelphia, 1892; a veteran of the Civil War, died at his home in Philadelphia, July 23, aged 63.

John H. Schmidt, M.D. Homeopathic College of Missouri St. Louis, 1869, died at his home in Quincy, Ill., July 28 after a long illness, aged 83.

R. Fay Livermore, M.D. Cleveland Homeopathic Medical College, 1902; died suddenly in his room in Cleveland, July 27 from heart disease, aged 31.

Noah F. Jackson, M.D. Eclectic Medical Institute, Cincinnati, 1899, of Kincaid, Kan., is reported to have been shot and killed in Kincaid, July 19.

John T. Mitchell, M.D. Jefferson Medical College, Philadelphia, 1858; died at his home in Clarksville, Ark., July 31, from senile debility, aged 72.

Andrew J. Miller, M.D. Rush Medical College, Chicago, 1869; died at his home in Halstead Kan., July 22, after a protracted illness, aged 75.

James Willard, M.D. University of Maryland School of Medicine, Baltimore, 1843, died at Lovittsville, Va., July 30, aged about 90.

Wallace Cleveland Clark, M.D. New York University, New York City, 1882, died in New York City, May 19.

Charles W. Long, M.D. (examination, Kansas), of Neodesha Kan., died in Kansas City, Mo., February 22.

Medical Organization

Arkansas.

Polk County Medical Society.—At a meeting of the physicians of Polk County, held in Mena, a medical society was organized on the standard plan and the following officers were elected: President, Dr. William P. Parkes; vice-president, Dr. Philip R. Watkins; secretary, Dr. Columbus C. Gunnells; treasurer, Dr. Gonzalez P. Dunman; delegate to the state society, Dr. D. O. Holmes; alternate, Dr. Columbus O. Gunnells; and censors, Drs. Philip R. Watkins, Charles Cockran and D. O. Holmes, all of Mena.

California.

Stanislaus County Medical Society.—At a meeting of the physicians of the county, held in Modesto, a county medical society was formed, to be affiliated with the state and national organizations.

Tulare County Medical Society.—A county medical society was organized recently and elected the following officers: President, Dr. William W. Cross, Jr., Visalia; vice-president, Dr. John B. Rosson, Tulare; and secretary, Dr. Mark L. Pettit, Visalia.

Connecticut.

Northern Connecticut Medical Society.—At a meeting held recently in Thompsonville an organization was formed with the following officers: President, Dr. Edward F. Parsons, Thompsonville; vice-presidents, Drs. Joseph A. Coogan, Windsor Locks; Howard O. Allen, Broad Brook; Thomas G. Alcorn, Thompsonville, and A. Proctor Sherwin, Jr., Suffield; secretary, Dr. Myron P. Robinson, Windsor Locks; and treasurer, Dr. John L. Bridge, Thompsonville.

Georgia.

Laurens County Medical Society.—The physicians of Laurens County met at Dublin, June 27, and organized a medical society on the standard plan, with the following officers: President, Dr. J. L. Wedington; vice-president, Dr. Robert H. Stanley, and secretary and treasurer, Dr. William R. Brigham, all of Dublin.

Madison County Medical Society.—The physicians of the county met at Danielsville and organized, electing the following officers: President, Dr. G. W. Westbrook, Ila; vice-president, Dr. Asa L. Payne, Fort Lamar; secretary and treasurer, Dr. A. J. Griffith, Comer; and censors, Drs. James S. Daniels, Danielsville, A. J. Griffith, Comer, and Dr. W. D. Gholston, Danielsville.

Berrien County Medical Society.—The physicians of Berrien County met at Nashville and organized a county society as a branch of the state medical society, with the following officers: President, Dr. Robert C. Woodard, Adel; vice-president, Dr. Pleasant H. Askew, Nashville; secretary and treasurer, Dr. F. P. Key, Nashville; and censors, Drs. L. A. Carter and J. A. Ward, Nashville, and Dr. William A. Moore, Allapaha.

Cherokee County Medical Society.—The physicians of the county, at a meeting held in Cherokee, have organized a county society on the standard plan, with the following officers: Dr. John M. Turk, Canton, president; Dr. M. G. Hendrix, Ball Ground, vice-president; Dr. Jack M. Bates, Canton, secretary and treasurer; and Drs. George D. Blackwell, Canton, Tarpley W. West, Ball Ground, and W. Howard Perkinson, Woodstock, censors.

Jefferson County Medical Society.—Dr. W. W. Pilcher, Warrenton, councilor for the tenth district, met with the physicians of Jefferson County at Louisville and organized a county society on the standard plan, with the following officers: President, Dr. James W. Pilcher, Stellaville; vice-president, Dr. C. H. Raley, Wrens; secretary and treasurer, Dr. C. G. Todd, Wrens; and censors, Drs. C. W. Kitchen (Avera), Raley and Thomas.

South Fulton, Campbell and Clayton Counties Medical Society.—At a meeting of the physicians of South Fulton, Campbell and Clayton Counties, held in College Park for the purpose of organizing a medical society, Dr. E. W. Hawkins, College Park, was elected temporary chairman and Dr. J. F. Henley, College Park, temporary secretary. A permanent organization was then effected with the following officers: Dr. Charles M. Curtis, College Park, president; Dr. C. Thomas Cannon, Jonesboro, and Dr. John T. Longino, Fairburn, vice-presidents; Dr. J. J. Foster, treasurer; Dr. John H. Dennard, East Point, secretary; and Drs. J. T. Henley, College Park, Floyd, and Solon B. Cousins, Jonesboro, censors.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

SWELLING OF THE KNEE.

Wentworth, S. D., July 18, 1906.

To the Editor:—Can you help me in a case of traumatic injury of the knee in a fleshy woman? The nature of the injury is that of a sprain. After about two weeks the leg began to swell, particularly from knee to foot. It is now about seven weeks and the swelling still continues. Otherwise the woman is perfectly healthy. Why does this swelling take place, and what was the proper treatment for it, and also method of handling sprain? L. B. P.

Answer.—This question is so indefinite that it is impossible to give a satisfactory answer. If the leg was in a cast, swelling for a time after the removal of the cast is the rule. If there is an effusion in the joint as a result of the injury some swelling below might be expected, particularly in fleshy people, in whom the circulation is poor, so that injuries are more liable to be followed by an edematous swelling, which is slow to disappear. The proper treatment for a sprain is rest with immobilization until the acute symptoms are over, followed by deep massage, passive and active motion, hydrotherapy, etc.

IODIZED SULPHUR.

Cal., July 31, 1906.

To the Editor:—In the *London Practitioner*, July, 1906, page 122, there is recommended for gaseous fermentation "iodized sulphur, first obtained by Prunier, which contains a large amount of sulphur with a small quantity of iodin." Will you be kind enough to inform me through the pages of The Journal if this is the sulphur iodid of the Pharmacopeia, and, if not, wherein it differs? C. S. P.

Answer.—The official sulphur iodid, sulphuric iodidum, U. S. P., is obtained by heating to fusion a mixture of 20 parts sulphur with 80 parts of iodin. S. Prunier (*Jour. de Pharm*, (6) IX, No. 9 from Proc. Amer. Phar. Assoc., vol. xlviii, page 689) directs "iodized sulphur" to be made by melting together equal parts of iodin and sulphur.

THE INJECTION TREATMENT OF HERNIA.

Harrington, Del., July 30, 1906.

To the Editor:—Will you please inform me, if possible, where I can get some practical lessons on the treatment of hernia by the hypodermic needle? It is very successfully done here by the —— Hernia Cure, and I am often called on to treat cases in that way. T.

Answer.—The injection treatment of hernia was first proposed and used by the regular profession, but it was soon found to be not only unsuccessful in so far as curing the rupture is concerned, but also a blind and unscientific method of treatment. After it was abandoned by the regular profession, it was taken up by the quacks and charlatans, who, as a rule, are unqualified to operate, and who, by advertising to cure hernia without the use of the knife and without laying the patient up, are able to do a flourishing business. The method consists in injecting by means of a hypodermic syringe and a long needle, some irritating fluid into and about the hernial ring with the intention of producing sufficient hyperplasia of the connective tissue to plug up the opening, or to so constrict it as to prevent the descent of the hernial contents. The fluid injected varies in composition and each one is supposed to have a particular fluid which is better than that of any one else. They are all, however, of a similar nature and contain either extract of white oak bark, tannic acid, carbolic acid, sulphate or chlorid of zinc, etc., to which morphia or other anodyne is frequently added to diminish the pain caused by the injection. Some use simply alcohol. The most recent method consists in injecting paraffin, with a melting point a little above the temperature of the body, into and about the ring in the hope that the masses of paraffin, which are practically insoluble in the tissues, will act as a mechanical plug to the opening and thus prevent the descent of the hernia. The great trouble with all injection methods is that, as a rule, they do not effect a permanent cure. Besides the apparent simplicity of the method, another feature that is enticing to many patients is the fact that many charlatans advertise "no pay until cured." They take the patient's note payable when cured. Sufficient exudate can be produced in many cases to retain the hernia long enough to make the patient believe he is cured, and the note is paid. In a few weeks or months, the exudate is absorbed or yields so that the rupture returns, since the unclosed sac remains. Every surgeon of experience is constantly meeting cases for operation that have been unsuccessfully treated by the injection method. Surgeons are meeting cases treated by the paraffin method in which the hard masses of paraffin not only do not retain the rupture, but caused so much pain by pressure on surrounding nerves that the patients seek operation for their removal in order to get relief from the pain. Nor is the paraffin method entirely safe, as numerous cases of emboli of the lungs following the injections have been reported with serious and even fatal results; in more than one case there has been permanent loss of sight produced by an embolus of the central artery of the retina.

TRYPSIN TREATMENT OF CANCER.

Waseca, Minn., July 31, 1906.

To the Editor:—Can you give me any information about the methods used by Dr. Beard in the trypsin treatment of cancer? I am anxious to begin treatment on a case at once.

F. A. Smartwood.

Answer.—When we answered a similar question in this department last week (see page 379), we lost sight of the fact that trypsin is on the market in this country. On receipt of the letter from Dr. Beard, which appears in our Correspondence department this week, we wrote to Fairchild Brothers & Foster, New York City, asking them about the preparation which they market. They have sent price list and circulars, and from these we learn that injectio trypsini comes in boxes of a dozen tubes, at $1.25 per box. Lotio pancreatis is sold in two-ounce bottles at 67 cents each. The latter preparation is a surgical solvent to be diluted with about two volumes of distilled water and applied freely by a wet compress once or twice a day. The trypsin injection has been used in various strengths and quantities and an exact dosage has not yet been established. It is recommended, however, that at the outset, about five minims, diluted with two volumes of sterilized, distilled water, be injected every other day and gradually increased to 10 minims and then to 20 minims. Further particulars will be found in the circular which the manufacturers will send on request. In their advertising, they emphasize the fact that they reserve decision as to the value of this treatment. They say that the advertisement published in The Journal, Feb. 17, 1906, advertising page 9, is the only public announcement they have ever made on the subject, as they simply desired to have the medical profession know that they were in a position to supply those who desired to try the trypsin treatment. In other words, they have endeavored to confine their attention to the perfection of the preparation and have not allowed consideration of the importance of the matter to lead them to make announcements that would not be fully justified by the outcome. Although we may have no confidence in the treatment, as we stated last week, because Dr. Beard's own announcements do not warrant such belief, nevertheless his insistence that it is valuable, coupled with his position (lecturer on comparative embryology at the University of Edinburgh), compel us to do what we can to aid those who desire to put the treatment to a test.

RECIPROCITY WITH ILLINOIS.

Huron, S. D., July 29, 1906.

To the Editor:—(*a*) What states have reciprocity with Illinois? (*b*) In what states can one practice after successfully passing the State Board of Illinois?

Friede Van Dalsem.

Answer.—(*a*) Illinois reciprocates—in the case of licenses issued after examination—with the following states: Indiana (after Jan 1, 1905), Iowa, Kansas, Maine, Maryland, Michigan, Minnesota, Nebraska, New Jersey, North Dakota (after July 1, 1905), Ohio, South Carolina, Vermont, Wisconsin and Wyoming. (*b*) With any of the states mentioned, but registration must first be accomplished.

Association News

New Members.

List of new members of the American Medical Association for the month of July, 1906:

ALABAMA.

Carpenter, N. H., Jasper.
Creamer, J. D., Hanceville.
Gordon, F. E., Anniston.
Grimes, J. W., Talladega Springs.
Hardin, E. B., Birmingham.
Pow, J. R., Maylene.

ARIZONA.

Adams, John, Flagstaff.
Drane, J. E., Jr., Mesa.

ARKANSAS.

Hinson, T. B., Bono.
Hughes, J. C., Walnut Ridge.
Hughes, W. E., Pocahontas.
Martin, J. S., Morrilton.
Simmons, J. A., Hensley.

CALIFORNIA.

Armistead, C. M., San Francisco.
Davis, G. E., San Francisco.
Gibbons, M. R., San Francisco.
McChesney, G. J., San Francisco.
McNutt, Wm. F., Jr., San Francisco.
Merritt, Emma S., San Francisco.
Sawyer, W. B., Riverside.
Willits, Emma K., San Francisco.

COLORADO.

Brown, L. G., Colorado Springs.
Burgess, L. MacD., Delta.
Gillett, O. R., Colorado Springs.
Johnstone, O. P., Boulder.
Morris, R. E., Cripple Creek.

CONNECTICUT.

Coogan, Jos. A., Windsor Lock.
Farrell, J. E., Waterbury.
Lyman, D. R., Wallingford.
Perry, E. F., Putnam.
Shannon, J. B., Danielson.

DELAWARE.

Beck, C. A., Wilmington.
Chandler, J. H., Wilmington.
Conwell, L. S., Camden.
Spruance, H. R., Wilmington.

DISTRICT OF COLUMBIA.

Barber, J. M., Washington.

FLORIDA.

Macauley, George, Mayport.

GEORGIA.

Atkinson, J. P., Milledgeville.
Graves, J. R., Zebulon.
Peniston, Paul, Newman.

ILLINOIS.

Amerson, G. C., Chicago.
Barnes, H. T., Maywood.
Brown, A. I., Vienna.
Buckley, J. E., Chicago.
Burnside, L. A., Martinsville.
Camerer, J. D., Kinmundy.
Carpenter, F. E., Chicago.
Catlin, S. R., Rockford.
David, F. E., Chicago.
Diamond, P. T., Chicago.
Eakin, A. C., Shirland.
Egan, J. C., Chicago.
Engels, N. R., Chicago.
Ferguson, Clara, Chicago.
Foelsch, A. J., Bondville.
Fox, C. M., Chicago.
Freeman, H. E., Millington.
French, W. M., Chicago.
Fults, J. C., Waterloo.
Gleeson, Benj., Danville.
Hammond, J. L., Chicago.
Hecox, C. R., Golden.
Hubert, J. F., Chicago.
Hyde, D. L., Chicago.
Jefferson, F. A., Chicago.
Lyness, J. D., Savannah.
McDavid, J. T., Decatur.
Nickerson, L. H. A., Quincy.
Orcutt, D. C., Chicago.
Ostrom, Louis, Rock Island.
Patterson, H. A., Joliet.
Selby, F. S., Chicago.
Smith, S. A., Annapolis.
Stookey, V. P., Colchester.
Tarr, A. W., Grand Chain.
Thomas, H. B., Chicago.
Waggoner, E. L., Lebanon.
Weber, F. J., Olney.
Williams, H. O., Belknap.

INDIANA.

Blount, R. D., Valparaiso.
Combs, C. N., Terre Haute.
Cravens, W. R., Bloomfield.
Cromer, Mary O., Union City.
Dierking, A. W., Oolitic.
Good, A. H., Selma.
Gray, J. W., Bloomfield.
Jones, Oscar, Jolietville.
Loring, C. J., Rochester.
Mattox, E. L., Terre Haute.
Owens, O. W., Muncie.
Reavis, W. J., Evansville.
Rhamy, B. W., Ft. Wayne.
Ried, S. M., Muncie.
Taylor, C. H., South Bend.
Williamson, Harry, Marion.
Wilson, James, Wabash.

INDIAN TERRITORY.

Lyford, H. O., Sapulpa.
Spangler, A. S., Phillips.

IOWA.

Abegg, H. H., Dougherty.
Cole, F. M., Battle Creek.
Conaway, J. W., Hartley.
Garth, J. W., Clarion.
Ghrist, D. M., Ames.
Heetland, L. H., Sibley.
Hull, J. A., Ottumwa.
Hyde, Oliver, Des Moines.
Peo, Evalene, Boone.
Rockafellow, J. C., Des Moines.
Sievers, C. L., Calumet.
Smillie, B. A., Palmer.
Traverse, I. W., Ft. Madison.
Wright, J. C., Clear Lake.

KANSAS.

Carmichael, F. A., Goodland.
Darrah, P. W., Leavenworth.
Eshom, Josaphyne R., Topeka.
Harner, M. W., Clay Center.
Moses, H. N., Salina.
Schenck, F. E., Burlingame.
Steele, Samuel, Chanute.
Stivers, C. C., Horton.

KENTUCKY.

Bass, W. J., Paducah.
Daughtrey, W. T., Marion.
Dixon, J. O., Marion.
Forwood, W. S., Henderson.
Hodges, W. J., Pineville.
Kahn, Lee, Louisville.
Logan, V. G., Jamestown.
McCarty, J. Aud., Louisville.
McKenney, W. A., Falmouth.
Raw, Ernest, Bowling Green.
Ridgway, S. H., Sheperdsville.
Sams, J. W., E. Bernstadt.
Schulte, B. O., Louisville.
Spears, L. P., Louisville.

LOUISIANA.

Lewis, J. L., New Orleans.

MAINE.

Ames, J. D., Norridgewock.
Bragg, J. S., Bangor.
Hull, J. C., Rockland.
Kendall, C. F., Biddeford.
Robinson, W. W., Portland.

MARYLAND.

Hepburn, S. S., Annapolis.
Novak, Emil, Baltimore.
Stone, W. C., Ellicott City.

MASSACHUSETTS.

Brady, J. F., Boston.
Brooks, H. E., Gloucester.
Butterfield, G. K., Taunton.
Cummings, M. A., Winchester.
Gardner, H. M., Cambridge.
Greene, D. C., Jr., Boston.
McCormack, A. H., Northampton.
Mendelsohn, Louis, Dorchester.
Paine, A. E., Brockton.
Parker, W. H., Boston.
Reed, W. G., Southbridge.
Turner, W. G., Fall River.
Whittemore, Wyman, Boston.

MICHIGAN.

Andries, J. H., Detroit.
Chase, W. D., Kalamazoo.
Clippert, J. C., Detroit.
Colver, B. N., Battle Creek.
Dean, R. G., So. Lyon.
Doty, A. G., Hillsdale.
Estabrook, B. U., Detroit.
Fenton, D. W., Reading.
Groff, C. F., Detroit.
Hockstein, Adolph, Kalamazoo.
Joy, L. S., Marshall.
Layton, C. S., Blaney.
McCann, J. J., Ionia.
Reid, George, Reese.
Sackett, C. S., Charlotte.
Stockwell, G. W., Detroit.
Williamson, Hedley, Detroit.
Wilson, Wm., Coldwater.

MINNESOTA.

Brand, W. A., Redwood Falls.
Branton, B. J., Atwater.
Carpenter, G. S., Porter.
Coon, W. F., Elysian.
Frasier, G. W., Detroit.
Gray, G. W., Brownsdale.
Huxley, F. R., Faribault.
Murdock, A. J., Minneapolis.
Onsgard, C. K., Rushford.
Rhines, De Costa, Caledonia.
Rodgers, E. H. W., Austin.
Sweltzer, S. E., Minneapolis.
Watson, N. M., Red Lake Falls.

MISSISSIPPI.

Baskervill, George, Winona.
Cooper, J. A., Friar Point.

Gibert, J., Shaw.
Green, C. L., Utica.
Greene, J. H., Guntown.
McAuley, A. M., Marianna.
Nimocks, R. F., Poplarville.
Wickliffe, T. F., Wayside.

MISSOURI.

Baumgarten, Walter, St. Louis.
Collasowitz, Albrecht, St. Louis.
Cook, Jerome E., St. Louis.
Dixon, C. H., St. Louis.
Edelen, B. H., Gorin.
Eyermann, E. H., St. Louis.
Farber, M. J., St. Joseph.
Fischel, Walter, St. Louis.
Hope, D. H., Cape Girardeau.
Howle, W. P., Charleston.
Hunterson, D. J., Parnell.
Jungk, C. G. W., St. Louis.
Martin, W. H., Kahoka.
McCrea, Maggie L., Kansas City.
Rowe, A. R., St. Louis.
Schmidt, W. C., St. Louis.
Thornburgh, A. H., West Plains.
Vinyard, G. W., Jackson.
Woods, S. E., Jackson.

MONTANA.

Kellogg, K. H., Stevensville.

NEBRASKA.

Bamford, S. E., Hastings.
Bolling, W. A., Omaha.
Foss, J. B., Crete.
Kohout, J. A., Omaha.
McGrath, B. R., Grand Island.
McKirahan, J. Ralph, Minden.
Plumb, J. N., York.
Straight, J. W., Hastings.
Weiss, Johannes, Grand Island.

NEW HAMPSHIRE.

Crosby, W. T., Manchester.
Dolloff, C. H. Concord.

NEW JERSEY.

Collier, W. S., Trenton.
Epstein, H. B., Newark.
Van Dyke, B. S., East Orange.

NEW YORK.

Anderson, L. N., Brooklyn.
Beyea, Samuel, New Rochelle.
Buchanan, Archibald, Troy.
Carr, E. W., Lyons.
Castelli, Enrico, New York.
Cornell, I. M., Wappingers Falls.
Daniel, Annie S., New York.
Filkins, S. L., Albany.
Foland, J. P., New York.
Fowler, R. S., Brooklyn.
Frank, R. T., New York.
Gazzam, E. Van D., Utica.
Gregory, W. E., Dansville.
Hamilton, B. W., New York.
Hogan, Austin, Johnstown.
Houghton, H. A., New York.
Jacobson, Sidney D., New York.
Jones, F. A., Rochester.
Kelley, C. D., Mt. Vernon.
Kenefick, J. A., New York.
Kidder, W. H., Oswego.
Kissane, J. W., Norwood.
Kouwenhoven, J. B., Yonkers.
Le Comte, J. R., New York.
Marlow, F. W., Syracuse.
May, C. S., New York.
McNutt, Sarah J., New York.
Montmarquet, J. D., Cohoes.
Murphy, J. E., New York.
Neiman, L. A., Brooklyn.
Osgood, W. W., Syracuse.
Palmer, J. O., New York.
Parker, F. H., Auburn.
Quirk, J. M., Montour Falls.
Rae, Alexander, Brooklyn.
Reed, A. P., Geneseo.
Rieger, Joseph, Dunkirk.
Simrell, G. W., Brooklyn.
Squier, E. M., Albion.
Stanton, Wm., Webster.
Stillwell, J. E., New York.
Tierney, W. J., New York.
Walrad, C. B., Johnstown.

NORTH CAROLINA.

Bell, A. E., Mooresville.
Johnson, Alice E., Southern Pines.
Phifer, E. W., Morganton.
Sharpe, F. L., Statesville.
Tyson, T. D., Mebane.

NORTH DAKOTA.

Johns, J. G., Bowdon.

OHIO.

Bacharach, F., Cincinnati.
Barrett, S. B., Byers.
Bushuell, W. S., Mansfield.
Caldwell, J. S., Cincinnati.
Coe, O. P., Cincinnati.
Cole, A. T., Millersburg.
Culbertson, E. C., Caldwell.
Donaldson, J. B., Lorain.
Dye, E. A., Vienna Cross Roads.
Eichberg, J. H., Cincinnati.
Evans, C. E., Newark.
Flenner, Merle, Hamilton.
Fry, Melvin, Arcanum.
Garber, J. M., Plymouth.
Gohn, G. D., Dayton.
Goodhue, N. D., Dayton.
Grafft, J. A., Hamilton.
Hamblin, I. B., Columbus.
Henry, A. S., Cleveland.
Hindley, M. L., Monroeville.
Hutchings, S. R., Springfield.
Iutzi, Leon, Hamilton.
Jump, C. F., Toledo.
Long, J. W., Bryan.
Maddox, R. D., Cincinnati.
McElhany, B. B., Youngstown.
Miller, J. W., Cincinnati.
Miller, R. W., Hemlock.
Preston, H. B., Toledo.
Rowland, G. O., E. Palestine.
Scott, A. C., Cleveland.
Smith, Warren, Columbus.
Wakefield, E. F., Chagrin Falls.
Wehr, C. J., Cleveland.
Wilkins, A. M., Delta.
Wise, R. C., Millersburg.
Woodburn, H. I., Cincinnati.

OKLAHOMA.

Gray, E. J., Tecumseh.
Wallace, G. H., Hamburg.

PENNSYLVANIA.

Achison, H. M., Washington.
Bushey, F. A., Greencastle.
Gasslein, R. J., Philadelphia.
Haines, D. D., Allenport.
Kelly, J. A., Philadelphia.
Klein, W. F., Lebanon.
Krickbaum, W. H., Danville.
Leiser, Wm., Jr., Lewisburg.
Linebaugh, H. W., New Cumberland.
Lutz, J. F., Glen Rock.
Martin, W. D., Dunns Station.
Mervine, G. D., Bitumen.
Mudie, Wm., Pittsburg.
Murrin, C. E., Scranton.
Patten, R. S., Danville.
Scattergood, Joseph, W. Chester.
Stewart, A. H., Philadelphia.
Trockmorton, C. B., Canonsburg.
Warlow, Margaret A., Philadelphia.

RHODE ISLAND.

Barnes, H. L., Wallum Lake.

SOUTH CAROLINA.

Ball, J. A., Charleston.
Black, H. R., Spartanburg.
Gilliland, R. J., Easley.

SOUTH DAKOTA.

Roane, James, Yankton.

TENNESSEE.

Jones, Kennedy, Memphis.
Maddin, J. W., Jr., Nashville.
Zemp, E. R., Knoxville.

TEXAS.

Baldwin, J. E., Dallas.
Bartlett, Glenn, Shafter.
Biggs, W. D., Lometa.
Bledsoe, R. B., Lufkin.
Chilton, P. H., Comanche.
Combe, F. J., Brownsville.
Combe, J. K., Brownsville.
Crowder, T. W., Sherman.
Curry, H. P., Reagan.
Denham, H. S., Livingston.
Everitt, W. D., Livingston.
Fletcher, J. K., Hondo.
Foster, J. H., Houston.
Gillam, J. R., Mart.
Houston, B. F., Corsicana.
Kyle, J. A., Houston.
Mathers, W. R., Prosper.
McLeary, S. B., Weimar.
Milburn, C. L., San Antonio.
Pollok, L. W., Temple.
Searcy, C. A., Hempstead.
West, H. A., Quanah.
Wickline, R. M., Austin.

VERMONT.

Read, Fayette E., Salisbury.

VIRGINIA.

Gochnauer, Fred, Upperville.
McGill, E. L., Petersburg.

WASHINGTON.

James, R. J., Seattle.
Kennedy, T. S., Ilwaco.
Marshall, H. P., Pullman.
Power, Henry, Spokane.
Sturgis, M. G., Seattle.
Sutton, E. O., Tacoma

WEST VIRGINIA.

Bond, X. E., Salem.
Bruns, W. F., Ceredo.
Burwell, W. N., Parkersburg.
Gates, M. A., Ronceverte.
Hamilton, M. F., Mannington.
South, Genevieve, Parkersburg.

WISCONSIN.

Armstrong, C. E., Oconto.
Butzke, E. J., Jackson.
Fenger, J. S., Luck.
Foat, J. S., Ripon.
Freligh, C. N., Plum City.
Radloff, A. C., Eden.
Russell, Rose A., Neenah.
Tompach, E. L., Racine.

WYOMING.

Gray, E. W., Rawlins.
Swisher, T. J., Rawlins.

PHILIPPINE ISLANDS.

Card, W. S., Manila.
Soll, C. H. Catbalgan, Samar.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 4, 1906:

Connor, C. H., asst.-surgeon, left Fort Stevens, Oregon, en route to Camp of Instruction, American Lake, Washington, for duty.

Russell, F. F., arrived at Benicia Barracks, Cal., for duty with Signal Corps, Camp of Instruction, American Lake, Wash.

Hess, Louis T., asst.-surgeon, reports arrival at Vancouver Barracks, Wash., for duty with troops to Camp of Instruction, American Lake, Wash.

Wilson, James S., and Clark, John A., asst.-surgeons, report arrival at Camp of Instruction, Chickamauga, Georgia.

Skinner, George A., asst.-surgeon, left Fort William Henry Harrison, Mont., en route to Camp of Instruction, American Lake, Wash., for duty.

Robbins, C. P., asst.-surgeon, reports arrival at Camp of Instruction, Camp Roosevelt, Mount Gretna, Pa., for duty.

Rich, E. W., asst.-surgeon, reports arrival at Camp of Instruction, Camp Roosevelt, Mount Gretna, Pa., for duty.

Maus, Louis M., deputy surgeon general, reports for duty as chief surgeon, Camp of Instruction, near Austin, Texas.

Wales, Philip G., surgeon, and Wolfe, E. P., Shockley, M. A. W., and Hansell, H. S., asst.-surgeons, arrived at San Francisco, from duty in Philippines Division.

Jones, Percy L., asst.-surgeon, reports arrival at Camp Roosevelt, Mt. Gretna, Pa., for duty.

Stephenson, William, surgeon, left Presidio, San Francisco, en route to Camp of Instruction, American Lake, Wash., for duty.

Duncan, Louis C., asst.-surgeon, reports arrival at Camp of Instruction, Fort Benjamin Harrison, Ind.

Pinkston, Omar W., asst.-surgeon, order assigning him to temporary duty in the Department of California amended so as to direct him to proceed to Camp of Instruction, Fort Riley, Kansas, on relief from temporary duty at U. S. Military Prison, Fort Leavenworth, Kans.

Lynch, Charles, surgeon, general staff, detailed to attend encampment of the Ohio National Guard near the villages of Strasburg and Bolivar, Ohio, Oct. 13 to 20, 1906.

Bosley, John R., asst.-surgeon, left Fort Egbert with Companies G and H, 3d Infantry, en route to Skagway, Alaska.

Phalen, James M., asst.-surgeon, reports arrival at Camp of Instruction, near Austin, Texas.

Wolfe, Edwin P., asst.-surgeon, having reported arrival at San Francisco, will proceed to Fort Hancock, N. J., for duty at that station.

Hartnett, Eugene H., asst.-surgeon, relieved from duty at Fort Hancock, N. J., and ordered to duty in the Philippine Islands.

Shockley, M. A. W., asst.-surgeon, having reported arrival at San Francisco, will proceed to Fort Wright, Wash., for duty at that station.

Hansell, Haywood S., asst.-surgeon, having reported arrival at San Francisco, will proceed to the Presidio, San Francisco, for duty at that station.

Rand, Irving W., asst.-surgeon, relieved from duty at the Presidio, San Francisco, and ordered to the Philippines for duty.

Shockley, M. A. W., asst.-surgeon, granted 30 days' leave of absence.

Rockhill, E. P., asst.-surgeon, granted leave of absence for 30 days.

Mason, Charles F., surgeon, leave of absence extended 15 days.

Shook, Jay R., asst.-surgeon, left Fort Des Moines, Iowa, en route to Camp of Instruction, Fort Riley, Kansas.

Baker, David, asst.-surgeon, reports for duty at Fort Bliss, Texas.

Stone, John H., asst.-surgeon, left Key West Barracks, Fla., en route to Camp of Instruction, Chickamauga, Ga.

Marvin, Marlon F., contract surgeon, returned to Fort Mansfield, R. I., from temporary duty at Fort H. G. Wright, N. Y.

Stone, Frank P., dental surgeon, left Fort Sam Houston, Texas, for duty at Camp Mabry, Austin, Texas.

Long, Charles J., dental surgeon, left Fort Keogh, Mont., and arrived at Fort Lincoln, N. Dak., for duty.

Wertenbaker, Clark I., contract surgeon, left Madison Barracks, N. Y., on leave of absence for 10 days.

Reagles, James, contract surgeon, left Fort Keogh, Mont., for temporary duty at Fort Assinniboine, Mont.

Harris, Herbert I., contract surgeon, relieved from further duty in the Philippines Division and ordered to duty at Fort Snelling, Minn., at the expiration of his present leave of absence.

Stuckey, Harrison W., contract surgeon, relieved from duty at Fort Snelling, Minn., and ordered to Philippine service.

Johnson, Charles W., contract surgeon, ordered to Fort Des Moines, Iowa, for duty.

Davis, Oscar F., contract surgeon, relieved from duty at Fort Des Moines, Iowa, and ordered to Philippine service.

Hammond, William G., dental surgeon, ordered to Fort Logan, Colo., for duty.

Ware, William H., dental surgeon, relieved from duty at Fort Logan, Colo., and ordered to Philippine service.

Brown, Wilmot E., contract surgeon, ordered from Fort Walla Walla, Washington, to Fort Stevens, Oregon, for temporary duty.

Davis, Oscar F., contract surgeon, returned to Fort Des Moines, Iowa, from field duty near Fort D. A. Russell.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending July 28, 1906:

Moore, J. M., surgeon, orders to *Columbia* revoked; wait orders.

Von Wedekind, L. L., surgeon, to *Alabama*.

De Valin, C. M., surgeon, detached *Alabama*; to *Washington*.

Brown, H. L., asst.-surgeon, to the Navy Yard, Washington, D. C.

Hoen, W. S., asst.-surgeon, to *Philadelphia* and additional duty Navy Yard, Puget Sound, Wash.

Brister, J. M., P. A. surgeon, detached *Philadelphia*, Navy Yard, Puget Sound, Wash.; to the *Pennsylvania*.

Payne, J. H., Jr., P. A. surgeon, to the *Arkansas*.

Wright, B. L., P. A. surgeon, detached *Arkansas*; to *Columbia*.

Butler, C. S., P. A. surgeon, detached *Columbia* and wait orders to Naval Station, San Juan, P. R.

De Bruler, J. P., asst.-surgeon, to the Navy Yard, Washington, D. C.

Verner, W. W., asst.-surgeon, to Navy Recruiting Station, Pittsburg, Pa.

Baker, M. C., acting asst.-surgeon, appointed an acting asst.-surgeon in the Navy from July 23, 1906.

Geiger, A. J., P. A. surgeon, detached *Brooklyn*; home and wait orders.

Carpenter, D. N., surgeon, to the *Raleigh*.

Kindleberger, C. P., surgeon, to the Naval Station, Olongapo, P. I.

Riggs, R. E., Geiger, A. J., Backus, J. W., commissioned P. A. surgeons.

Iden, J. H., P. A. surgeon, detached duty with marine detachment at Camp Elliott, Isthmus of Panama; to home and wait orders.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 1, 1906:

Rosenau, M. J., P. A. surgeon, granted leave of absence for one day, July 28, 1906, under paragraph 189 of the Regulations.

Hobdy, W. C., P. A. Surgeon, directed to proceed to Port Harford, Cal., for special temporary duty, on completion of which to rejoin station.

Warren, B. S., P. A. surgeon, directed to proceed to Buffalo, N. Y., for special temporary duty, on completion thereof to rejoin station.

Earle, Baylis H., P. A. surgeon, relieved from duty as Recorder of the board of officers detailed to conduct an inspection of the government buildings and workshops in the District of Columbia, and directed to report for temporary duty to the Director of the Hygienic Laboratory.

Bailey, C. Wm., acting asst.-surgeon, granted leave of absence for ten days from Aug. 6, 1906.

Blain, A. C., acting asst.-surgeon, granted leave of absence for fifteen days from Aug. 2, 1906.

Rice, W. E., acting asst.-surgeon, granted leave of absence for seven days from Aug. 9, 1906.

Sinclair, A. N., acting asst.-surgeon, granted leave of absence for seven days from July 16, 1906, under paragraph 210 of the Regulations.

Walker, T. Dyson, acting asst.-surgeon, granted leave of absence for eight days between June 26, 1906 and July 6, 1906.

Bierman, C. H., pharmacist, granted leave of absence for thirty days from Aug. 5, 1906.

BOARD CONVENED.

A board of officers was to meet at Baltimore, Aug. 2, 1906, for the purpose of conducting the physical examination of officers of the Revenue Cutter Service. Detail for the board: P. A. Surgeon H. A. Stansfield, chairman; P. A. Surgeon J. W. Schereschewsky, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 3, 1906:

SMALLPOX—UNITED STATES.

Florida: Duval County, July 21-28, 1 case.

Kansas: General, June 1-30, 150 cases.

Massachusetts: Boston, July 21-28, 1 case; New Bedford, July 21-28, 5 cases.

Oklahoma Territory: Oklahoma, July 7-21, 5 cases.

Tennessee: Memphis, July 21-28, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, June 16-23, 1 case.

Brazil: Pernambuco, June 1-15, 4 deaths.

Chile: Antofagasta, June 2-9, 14 cases, 2 deaths; Iquique, June 24, present.

France: Rheims, July 8-15, 12 cases.

India: Madras, June 16-23, 3 deaths.

Italy: General, July 5-12, 31 cases.

Panama: Colon, To July 18, 32.

Russia: Odessa, June 30-July 7, 3 cases, 2 deaths.

YELLOW FEVER.

Cuba: Matansas Province, Aug. 1, 1 case.

Mexico: Merida, July 8-21, 14 cases, 7 deaths.

CHOLERA.

India: Madras, June 16-23, 2 deaths.

Persia: Schistan, June 23-30, 1 death.

PLAGUE.

Brazil: Bahia: July 2, 1 case; Pernambuco, June 1-15, 1 death.

Chile: Antofagasta, June 2-16, 18 cases, 2 deaths.

Egypt: Alexandria, July 8-9, 3 cases, 1 death.

India: General, June 9-16, 2,224 cases, 1,904 deaths.

Japan: Formosa, June 20-30, 119 cases, 129 deaths.

Peru: Paita, June 15-22, 4 cases, 1 death.

State Boards of Registration

COMING EXAMINATIONS.

CALIFORNIA State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco.

WYOMING State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Colorado.—Dr. S. D. Van Meter, secretary of the Board of Medical Examiners, sends us a copy of the schedule of minimum educational requirements, adopted July 19, 1906, by the Colorado State Board of Medical Examiners, which will be accepted as sufficient evidence of the educational qualifications of an applicant to entitle him to a license without examination. This new schedule shows a marked advance, requiring graduation from a recognized medical college and an examination of each one licensed. The new schedule reads as follows:

CLASS A.

FOR APPLICANTS GRADUATING PRIOR TO AND INCLUDING 1893.

All applicants who graduated prior to July 1, 1893, must furnish satisfactory evidence of having been matriculated in, and graduated from, legally chartered and reputable medical colleges (at that time in good standing with the Colorado State Board of Medical Examiners), which required a preliminary examination for admission and a minimum of two winter courses of instruction in at least the following subjects, viz.; Anatomy, chemistry, physiology, pathology, surgery, practice of medicine, obstetrics, and materia medica and therapeutics (of the system peculiar to the college). All such applicants must have received a license to practice medicine in at least one of the United States of America or in a foreign country, in which state, or foreign country, the standard of licensure is, in the opinion of the Colorado State Board of Medical Examiners, equal to that of the State of Colorado, and must have been continuously and actively engaged in the lawful practice of medicine since receiving said license.

CLASS B.

FOR APPLICANTS GRADUATING IN 1894 AND 1895.

All applicants who graduated between July 1, 1893, and July 1, 1895, must furnish satisfactory evidence of having been matriculated in, and graduated from, legally chartered and reputable medical colleges (at that time in good standing with the Colorado State Board of Medical Examiners), which gave a minimum of twenty weeks of instruction in each twelve months of three separate years in at least the following subjects, viz.: Anatomy, chemistry, physiology, pathology, materia medica and therapeutics (of the system peculiar to the college), obstetrics, gynecology, surgery, medical jurisprudence, theory and practice of medicine and hygiene, and which required of their graduates of 1894 and 1895, as a matriculation regulation, a diploma of graduation from some approved university or literary, scientific, normal or high school, or a preliminary examination in all the several subjects embodied in the curriculum of graduation examination from a high school. All such applicants must have received a license to practice medicine in at least one of the United States of America or in a foreign country, in which state, or foreign country, the standard of licensure is, in the opinion of the Colorado State Board of Medical Examiners, equal to that of the State of Colorado, and must have been continuously and actively engaged in the lawful practice of medicine since receiving said license.

CLASS C.

FOR APPLICANTS GRADUATING IN 1896, 1897, 1898 AND 1899.

All applicants graduating between July 1, 1895, and Jan. 1, 1900, must furnish satisfactory evidence of having been matriculated in, and graduated from, legally chartered and reputable medical colleges (at that time in good standing with the Colorado State Board of Medical Examiners), which required of their graduates of 1896, 1897, 1898 and 1899 as a matriculation regulation a diploma of graduation from some approved university, or literary, scientific, normal or high school, or a preliminary examination in all the several subjects embodied in the curriculum of an approved high school, and which gave to its students graduating in the years above named four full courses, in four separate years, of instruction in at least the following subjects, viz.: Anatomy, chemistry, physiology, pathology, materia medica and therapeutics (of the system peculiar to the college), surgery, theory and practice of medicine, bacteriology and obstetrics. All such applicants must have received a license to practice medicine in at least one of the United States of America or in a foreign country, in which state, or foreign country, the standard of licensure is, in the opinion of the Colorado State Board of Medical Examiners, equal to that of the State of Colorado, and must have been continuously and actively engaged in the lawful practice of medicine since receiving said license.

CLASS D.

FOR APPLICANTS GRADUATING IN 1900 AND THEREAFTER.

All applicants graduating after Jan. 1, 1900, must furnish satisfactory evidence of having been matriculated in, and graduated from, legally chartered and reputable medical colleges, which enforce the following requirements of matriculation, advanced standing, instruction and graduation.

MATRICULATION.

First.—Creditable certificates of good moral character, signed by two physicians of good reputation in the state in which the applicant last resided.

Second.—As evidence of preliminary education, as a minimum requirement any of the following: (a) A diploma or a certificate of graduation from an accredited four-year high school; (b) a certificate signed by a principal of a regularly organized approved high school, the faculty of a recognized literary or scientific college or university, State Superintendent of Public Instruction, County Superintendent of Schools, or some person or board duly appointed by the State Board of Medical Examiners to conduct such an examination; of having successfully passed an examination in all the several branches embraced in the curriculum of a four-year high school course. The matriculation examination shall not have been conducted by any member of the faculty of the medical college.

ADVANCED STANDING.

First.—Applicants holding the degree of A.B. or B. S., or an equivalent degree or certificate obtained in an elective course, from a regularly established and approved college of arts or science, which requires an attendance of four years as an essential to graduation, may be given credit for work actually done in the branches in the medical curriculum of the first year and may be advanced to the second year of a four-year medical course, on condition that they comply with the matriculation requirements of this schedule and that they subsequently complete the work of the first year, and provided that the work already taken shall not be below the standard required by this board.

Second.—Graduates of medical colleges complying with the provisions of this schedule may be admitted to any class without examination. Students of such colleges, who possess certificates of attendance and of successful examinations, can enter without examination the term immediately following that previously attended.

COURSE OF INSTRUCTION.

First.—The course of instruction must consist of a minimum of four terms in four separate years of nine months each, on at least the following subjects, viz.: Anatomy, chemistry, physiology, pathology, bacteriology, materia medica and therapeutics (of the system peculiar to the college), theory and practice of medicine, obstetrics, gynecology, surgery, ophthalmology, otology, laryngology, dermatology, neurology, hygiene and medical jurisprudence.

Second.—The number of hours of instruction given in the four terms must be not less than thirty-six hundred (3,600).

Third.—Such colleges must possess adequate laboratory and teaching equipment, and ample hospital facilities for clinical instruction, such as obtain in the majority of medical colleges in the United States, and a proper corps of competent teachers to constitute a faculty, whose salaries are not dependent on the graduation of students.

Fourth.—Clinical and hospital instruction throughout at least two annual terms.

Fifth.—A full dissection of at least the lateral half of a human cadaver.

Sixth.—Regular attendance during the entire lecture course, allowance being made only for absence occasioned by the sickness of the student, or his immediate family, such absence not to exceed 20 per centum of the course.

GRADUATION.

First.—A record for sobriety, honesty and integrity during the college course.

Second.—The attendance on the four full terms of lectures as prescribed (certain persons to whom advanced standing is allowed excepted).

Third.—Students, graduates as well as undergraduates, allowed advanced standing must attend all lectures and stand all examinations embraced in the last year of the curriculum.

LICENSE TO PRACTICE MEDICINE.

All such applicants must have received a license to practice medicine in at least one of the United States of America or in a foreign country, in which state, or foreign country, the standard of licensure is, in the opinion of the Colorado State Board of Medical Examiners, equal to that of the State of Colorado, and must have been continuously and actively engaged in the lawful practice of medicine since receiving said license.

CLASS E.

PHYSICIANS AND SURGEONS IN THE UNITED STATES SERVICE.

This class includes all applicants who have been admitted, and are duly authorized and empowered to practice medicine in any of the regular medical departments of the Army, Navy and Public Health and Marine-Hospital Service of the United States of America, and are in good standing and of good repute in such Federal service.

Society Proceedings

COMING MEETINGS.

American Orthopedic Association, Toronto, Canada, Aug. 20-21.
British Medical Association, Toronto, Canada, Aug. 21-25.
American Roentgen Ray Society, Niagara Falls, Aug. 29-31.
Am. Acad. of Ophthal. and Otol., St. Clair, Mich., Aug. 30-Sept. 1.
Western Surgical and Gyn. Ass'n., Salt Lake City, Aug. 31-Sept. 1.
Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7.
Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.

AMERICAN PROCTOLOGIC SOCIETY.

Eighth Annual Meeting, held in Boston, June 5-6, 1906.

The President, Dr. L. H. Adler, Jr., of Philadelphia, in the Chair.

Medical Specialism.

In his annual address the president discussed the various phases of this subject, arguing that the science of medicine and the public both profit by division of labor. The thing which has probably been responsible for most of the criticism of the specialist is the lack of adequate preparation of many of those posing as such. Something more than a six weeks' post-graduate course is necessary for proper equipment. Five to ten years in the practice of general medicine as a basis, and not less than one year devoted to study of the chosen specialty should be deemed little enough. The antagonism existing on the part of the general practitioner toward the specialist in most instances is due to the fact that the latter fails to recognize the consideration due the former as the family physician. No reference of the patient to another specialist should be made without consulting with the family physician, and all constitutional treatment should be left to him. In dealing with the patient the specialist should at all times protect the former physician, whether referred by him or not. A shrug of the shoulder or elevation of the brow is more eloquent than the spoken word.

Cancer of the Rectum.

Dr. W. M. Beach, of Pittsburg, from an experience with some twenty cases, drew the following conclusions: 1. That a radical operation for cancer of the rectum is indicated, (a), where the disease is not far advanced; (b), where the cancer is located in the anal region and does not involve neighboring structures. 2. Cancer of the movable rectum should be classed as inoperable as far as results are concerned. 3. In cancer high up, colostomy offers the best results. 4. Complications by metastasis and mechanical obstruction indicate colostomy.

New Operation for Carcinoma of the Rectum.

Dr. Geo. B. Evans, of Dayton, said that his proposed operation for cancer of the rectum has for its object: First, a low operative mortality; second, a high percentage of ultimate cures, based on the three-year rule; third, leaving our patient in as comfortable and presentable condition as possible. The technic is about the same as all authors employ, with the exception that he transplants the levator ani muscles and neighboring fascia to the bowel after the disease has been removed, and before the bowel has been stitched to the anus; and he inserts his drainage, fan-shaped, posteriorly to the bowel and in front of the coccyx. The transplantation produces a constriction, and a so-called third sphincter. The drainage so placed allows better union at the anus. He has employed this technic in five cases and in each case the patient has been able to control the bowels and keep clean and neat without the use of a napkin. By virtue of the circular fibers of the bowel and the extensive denudation following the technic, by the transplantation of the levators and neighboring fascia, he obtains the third sphincter, so-called, and thereby controls the action of the bowels.

Operative Treatment of Cancer of the Rectum.

Dr. J. Coles Brick, Philadelphia, expressed a decided preference for the abdomino-perineal method of operation and gave the technic of the method as advised by Quenu and modified by Mayo as being the nearest to the ideal. Two points were emphasized. 1. In view of the large percentage of returns of the growth after removal by the best operators, the first thing to do is to educate the general practitioner to the importance and method of making a rectal examination for the earliest symptoms. 2. The anastomotic circulation of the lymphatics at the anal margin with the sacral glands shows that all attempts at preservation of the sphincters are futile, except in very rare cases, and the lymphatic vessels and glands in all cases should be removed as far as the promontory of the sacrum.

Incontinence of Feces Following Operation for Fistula in Ano.

Dr. Louis J. Krouse, of Cincinnati, expressed the opinion that this accident is due to the action of the levator ani muscles on the cut ends of the sphincter. In order to prevent this he suggests that the internal sphincter should never be divided in its entirety, or if this is absolutely necessary that it should either be closed by sutures, or, better, the action of the levator should be counteracted by incising it on each side of the primary incision.

The Ataxic Rectum.

Dr. C. F. Martin, of Philadelphia, said that among the early rectal symptoms of locomotor ataxia are extreme constipation, rectal crises, lessened myotatic irritability of the anal sphincters and disturbances in sensation of the anal skin and of the rectal mucosa. At times there is more or less loss of the voluntary control of the bowels. When the finger is introduced into the ataxic rectum and firm pressure is made on the sphincters in a lateral direction, the anus can be made to relax, permitting a view into the lower rectum without the aid of a speculum. This is due to the loss of voluntary contraction of the external sphincter. In a few cases, after dilating the muscle, the anus remained patulous for several seconds, apparently caused by the loss of muscle sense. Anesthesia of the anal margin and of the lower rectal mucosa was marked. Persistent constipation is a marked symptom, but one case showed a tendency to periodic evacuations.

Rectal crises were observed in four cases. The pain did not appear to hold any relation to the condition of the rectum, whether the rectum was full or empty, or whether before or after stool, and the expulsion of flatus did not bring any relief. Subjectively, some of the patients complained of a feeling of fullness in the rectum, as if the bowels needed to be emptied. Attempts at stool gave no relief and no lesions were found in the rectum. No feces were present. Loss of sensation of the anal margin causes staining of the perineal region from the leakage of feces and mucus from the anus. Where spasm of the internal sphincter exists, associated with a sensory paralysis of the external muscle, the anus may appear funnel-shaped, simulating that condition supposed to be due to the practice of passive pederasty. There may also be present a prolapsed condition of the anal skin and mucosa, and, in addition to this, there may be some hypertrophy of the anal margin.

The treatment of ataxic constipation is unsatisfactory, but some results may be obtained by training the patient to make regular attempts at stool. Abdominal massage may be tried and regular doses of the mild saline laxatives will help some cases. One-sixteenth of a grain of the extract of physostigma, given three times daily, is a valuable addition to the saline laxative.

Technic of Local Anesthesia in Rectal Surgery.

Dr. J. P. Tuttle, of New York, described his well known technic, which he has employed in about 400 cases with excellent results.

Pruritus Ani.

Dr. T. C. Hill, of Boston, said that the treatment consists in restoring the altered perineal skin to normal. For this purpose nitrate of silver and citrine ointment are the best applications.

Appendicostomy and Cecostomy for Relief of Chronic Diarrhea.

Dr. S. G. Gant, of New York, treated nine cases of persistent ulceration, colitis and chronic diarrhea by means of appendicostomy and cecostomy, there being eight appendicostomies and one cecostomy. A cure was obtained in all the cases except two within a few weeks. Of the failures one was due to death caused by sloughing of the cecum; in the other the operation was successful, but through and through irrigation was prevented because of a stricture in the transverse colon. The results obtained from one irrigating fluid were as good as from another when the irrigations were used daily and in sufficient quantity. Primary union was obtained in all but three cases, and the opening of the appendix during the operation to see if it was patent did not appear to add to the danger of suppuration. In one instance the appendix was found to be strictured and Gibson's valvular cecostomy was resorted to. Only one unpleasant sequela, that of ventral hernia, followed these operations.

Air Dilatation in the Treatment of Chronic Constipation.

Dr. Louis J. Hirschman, of Detroit, believes that this disease is most frequently due to atony of the bowel. An atonic bowel requires a stronger stimulation to produce contraction than a normal bowel, and this the author proposed to furnish by air dilatation. The apparatus he uses consists of a rubber bag, which is slipped over the end of a Wales bougie and is distended by means of a hand bulb or compressed air. The bag is passed into the sigmoid and is alternately inflated and deflated several times for about five minutes. It is then withdrawn in an inflated state so as to massage the entire rectum and gently distend the anus. The author's experience has proved this to be a very valuable mode of treatment.

Rectal Pathology Due to Extrarectal Causes.

Dr. A. B. Cooke, of Nashville, finds the female far more subject to disease of this kind than the male, neoplasms of the pelvic viscera, inflammatory masses and bands and the retrodisplaced uterus being the causes most frequently met. The pathology and symptoms in these cases have nothing to distinguish them. The feature of most importance is the diagnosis, not only of the rectal, but of the extrarectal cause which produces it. No case of rectal disease receives proper attention when the investigation is confined to the rectum alone. Occasionally removal of the extrarectal cause will be all that is needed to effect a cure. This is always the first consideration, and when not effective alone the further treatment will depend on the nature and extent of the rectal lesion, differing in no respect from that of similar lesions due to other causes. The author reported three illustrative cases.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. S. G. Gant, New York; vice-president, Dr. G. B. Evans, Dayton; secretary-treasurer, Dr. A. B. Cooke, Nashville. Executive council: Dr. Louis H. Adler, Philadelphia (chairman); Dr. S. G. Gant, New York; Dr. A. B. Cooke, Nashville, and Dr. W. M. Beach, Pittsburg.

ST. LOUIS MEDICAL SOCIETY OF MISSOURI.

Regular Meeting, held June 16, 1906.

The President, Dr. Geo. Homan, in the Chair.

Surgical Treatment of Epithelioma.

Dr. M. B. Clopton said that surgical interference in new growths is not difficult in the early stages. Opposed to this view stand two factions: First, the "medical-cancer-fatalists" who decry the diagnosis, and by skeptical allusions make the patient of the same mind; second, the group which fears the knife and is willing to undergo anything to avoid operation. The first lesson to be learned is that the earliest removal of epitheliomatous tissue insures perfect cure. A second lesson which has been learned is that in cases apparently hopeless, by a combination of wide excision of the epitheliomatous growth and the application of the *x*-rays, years of life can be added to the patient's otherwise short lease of life.

The application of *x*-rays requires a technic that only a few operators acquire. In unskilled hands the *x*-ray may exert an opposite function and stimulate the malignant cells. In excising the ulcer, the operation should go at least one-half inch into healthy tissue to insure perfect results. Inasmuch as rodent ulcer is not carried to the glands, the operation resolves itself into a plastic operation. In the larger growths there is a certain element of danger, and in some cases the cause of death has been erysipelas, pyemia and meningitis. These causes ought to be eliminated and the mortality reduced. The reasons for bad results are the use of caustics and the infrequent use of the *x*-ray. Patients who are not cured are benefited, and there is always relief from pain.

True epithelioma which attacks the lips is almost as slow in its growth as is rodent ulcer, or it may take on the picture of an acute infection and the patient will die within a few months. The submaxillary glands become involved in this condition and it is best to remove them. Most cases adapt themselves to a V-shaped incision, through which the lymph glands of the neck can be removed. Lip cancers should be excised and then the rays applied. The glands should always be removed. In lip cancer the mortality is less than 1 per cent, with 56 per cent. of cures of all cases. The condition is hopeless and operation useless if the bone is involved.

X-Ray Treatment of Epithelioma.

Dr. H. P. Wells agreed that the best results depend on the technic of the operator. He has taken a few cases and obtained gratifying results where no improvement had taken place previously under *x*-ray treatment. It occurred to him that he was justified in some bad cases of cancer of the skin in burning them severely. Instead of eight or ten inch tube distance, he placed the tube two or three inches from the lesion, with a soft light and with exposures of from fifteen to twenty minutes. The ultimate effect was satisfactory. He touched on the need of having some means of measuring the dosage of the rays.

Cases of Skin Cancer Treated by X-Rays.

Dr. W. H. Mook presented a number of interesting cases. The first patient was 66 years old; family history negative. Present trouble began five years ago, with a lesion on the nose, the entire surface of the nose and cheeks being gradually affected. There was ulceration of the entire nose and cheeks, also a lesion on the side of the neck. Over the left temple was a small ulcerated tumor. There was a keratotic condition of the skin of the hands, known as "sailor's skin," with pigmentation and atrophy. This patient was treated for twelve months without results. Six weeks ago Dr. Wells increased the dosage of the rays with beneficial effects. The next case was one of lupus. The patient was 30 years of age. After an attack of erysipelas, the lupus extended all over the face. The mucosa showed tubercles. There was lymphatic edema, illustrating a rare form of lupus. Histologic examination showed small tubercles deep in the cutis, composed of round cells and giant cells. The patient showed some improvement under *x*-ray treatment. A woman, 19 years of age, ten years ago suffered a severe burn of the thigh. The left posterior side refused to heal. When patient entered the hospital, two-thirds of the posterior surface of the left thigh presented the picture of a fungating carcinoma. The edges of the wound were elevated. Inguinal glands were enlarged. *X*-ray treatment was given with improvement. The patient is suffering from pulmonary tuberculosis also, but in spite of this, she continues to improve in weight.

Case of Carcinoma and Lupus.

Dr. Joseph Grindon presented a case of carcinoma and lupus, an American, of American parentage on both sides, and American lupus is comparatively rare. Another point that is interesting is that although the tuberculosis of the skin in this case was well marked, the patient's general health was excellent. The trouble is purely local. A third point of interest is the length of time, 57 years, which the disease has lasted. There is a characteristic appearance of the nose—the disappearance of all the cartilaginous tissue.

There developed at one time during the treatment of this case a burn from the rays on the right cheek, a burn of the second degree. It yielded without trouble to treatment, yet precisely at that point there developed the carcinomatous change. Whether it was caused by the burn or whether it was merely a coincidence, the speaker did not know. The lupus is entirely healed, but there are a few places which are "lupoid." There existed in this case a troublesome nasal catarrh, which was lupoid in character, and that is now entirely well. The *x*-ray was used to treat the carcinoma on the cheek without result. Dr. Morfit excised the growth and it returned. A second operation was performed. Ectropion followed.

Radiographs of Interesting Cases.

Dr. A. V. L. Brokaw showed a picture of a vesical calculus, pictures of bullets in the body, fractures and dislocations of all kinds and varieties. He showed one picture of a Murphy button *in situ*, and one picture of a lost drainage tube. A number of other pictures were shown, illustrating the usefulness to the practical surgeon of *x*-ray pictures.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Alopecia.

In the treatment of alopecia, J. N. Hyde states that local methods are of importance in nearly all cases and should be directed toward stimulating the nutrition of the hair follicles by producing an artificial hyperemia. This may consist in daily brisk but light rubbings of the scalp with a brush or by massage with the fingers, aided by some local application. The following are some of the combinations recommended by him for such conditions:

℞.	Hydrarg. bichloridi	gr. v	30
	Spts. vini rectif.	℥ii	60
	Acidi acetici	ʒii	8
	Glycerini	℥ss	15
	Aquæ rosæ	℥vi	180

M. Sig.: Apply locally.

Or,

℞.	Hydrarg. bichloridi	gr. iii	20
	Tinct. cantharidis	℥ss	15
	Olei amygdalæ dulc.	ʒi	4
	Spts. rosmarini	℥i	30
	Spts. vini rectif.	℥ii	60
	Aquæ dest., q. s. ad	℥vi	180

M. Ft. lotio. Sig.: Apply locally.

Or,

℞.	Sulphuris precip	ʒi	4
	Lanolini		
	Glycerini		
	Aquæ rosæ, āā	ʒiiss	10

M. Sig.: Apply locally.

Hyperidrosis.

Sweating, limited to the feet, hands or axillæ, according to L. F. Appleman in an abstract in the "Pract. Med. Series," requires very energetic treatment. Baths of formalin or potassium permanganate will cause the fetid odor to disappear rapidly. The former may be used as follows:

℞.	Formalin	ʒi	4
	Aquæ	Oii	1000

M. To be used as a bath locally.

Or,

℞.	Potassii permanganatis	ʒiiss	10
	Aquæ	℥x	300

M. Sig.: One dessertspoonful to a quart of water for a local sponge bath.

Brocq recommends the following combination:

℞.	Betanaphthol	ʒi	4
	Glycerini	ʒii	8
	Alcoholis	℥iiss	75

M. To be used locally, followed by a powder of salt, starch, bismuth, subnitrate, or the following:

℞.	Acidi salicylici	gr. xlv	3
	Pulv. amyli	ʒiiss	10
	Pulv. talci	ʒvss	85

M. Sig.: Apply locally as a dusting powder.

Or,

℞.	Acidi salicylici	gr. xlv	3
	Pulv. amyli	ʒvss	22
	Beta naphthol		
	Sodii boratis, āā	ʒiiss	10
	Pulv. sodii chloridi	ʒivss	22

M. Sig.: Apply locally.

Once in eight days a few drops of the following combination may be dropped between the toes:

℞.	Plumbi oxidi rubri	gr. xv	1
	Sol. plumbi subacetatis	ʒvii	28

M. Sig.: Apply locally between the toes once every eight days.

Erysipelas.

The following local application is recommended by Meunier in *Presse Medicale* as local treatment of erysipelas:

℞. Menthol	gr. xl	2	65
Pulv. camphoræ	gr. x		65
Olei betulæ	ʒi	4	
Guaiacol	m x		65
Petrolati liq	ʒiii	12	
Lanolini	ʒiv	15	

M. Sig.: Apply locally with slight friction.

Local Treatment of Throat and Nasal Disturbances.

The following combinations as recommended by Shurly in his "Dis. of Nose and Throat," are of value as cleansing and antiseptic sprays:

℞. Ammonii chloridi	gr. xl-lxxxx	1.65-5	
Aquæ dest. vel			
Aquæ mentholis	℥viii	240	

M. Sig.: To be applied locally as a cleansing and mildly stimulating spray.

Or,

℞. Sodii benzoatis	gr. v		30
Acidi carbolici	gr. i		06
Glycerini	ʒi	4	
Aquæ dest	ʒvii	28	

M. Sig.: Use as an antiseptic and cleansing spray for throat or nose.

In cases of acute coryza the following is of value:

℞. Sodii benzoatis	gr. xl	2	65
Aquæ calcis	℥viii	240	

M. Sig.: Use locally as a spray in all forms of acute coryza.

In cases of syphilitic lesions and ulcerations the following combination is recommended as an antiseptic:

℞. Hydrarg. bichloridi	gr. ss-i		03-.06
Aquæ cinnamomii	℥viii	240	

M. Sig.: As a spray locally.

As an astringent the following:

℞. Sodii bicarb.	gr. xxv	2	65
Ext. hamamelidis dest.	℥i	30	
Aquæ dest	℥v	150	

M. Sig.: As spray for cleansing and astringent effects.

Or,

℞. Sodii bicarb	gr. xl-lx	1	65-4
Aquæ picis			
Aquæ dest., āā	℥iv	120	

M. Sig.: Use as a spray.

As an anodyne to the mucous membrane the following combination is recommended:

℞. Mentholis	gr. i		06
Alcoholis	m v		30
Calc. phos. precip.	gr. v		30
Aquæ, q. s. ad	℥ii	60	

M. Sig.: Apply locally to the mucous membranes as an anodyne.

As an astringent for the pharynx and larynx the following may be used:

℞. Cocainæ hydrochlor	gr. iv		30
Aluminis	gr. x		65
Aquæ	℥i	30	

M. Sig.: Apply as a spray to the pharynx or larynx. [This should be used by the physician only.]

As a strong astringent the following combination containing lead acetate is recommended:

℞. Plumbi acetatis	gr. v		30
Potassii acetatis	gr. x		65
Aquæ dest	℥iv	120	

M. Sig.: Use locally as a spray when the congested parts demand a strong astringent.

In cases of ozena the following combination containing ichthyol is of service:

℞. Ichthyoli	ʒss-i	2-4	
Aquæ	℥iv	120	

M. Sig.: Use locally as a spray.

In cases of atropic pharyngitis the following combination is of value as a stimulant to the poorly functionating mucous membrane:

℞. Fld. ext. xanthoxyli	℥i	30	
Spts. rectificati	ʒii	8	
Sodii phosphatis	ʒi	4	
Glycerini	ʒiv	15	
Aquæ dest., q. s. ad	℥viii	240	

M. Sig.: Apply as a stimulant to the mucous membrane of the pharynx.

Astringent sprays containing tannic acid may be combined as follows:

℞. Acidi tannici	gr. v-xv		30-1
Alcoholis	℥ss	15	
Aquæ dest	℥viii	240	

M. Sig.: Apply locally as an astringent spray.

Or one containing alum as folows:

℞. Aluminis	gr. xl-lx	2	65-4
Acidi carbol	gr. xv	1	
Glycerini	℥ii	60	
Aquæ dest	℥vi	180	

M. To be used locally to throat and nose.

In some cases oleaginous sprays are preferable. In such event Shurly advises the following combinations:

℞. Olei picis	ʒi-ii	4-8	
Olei gossypii sem.	℥viii	240	

M. Sig.: As a spray locally.

Or,

℞. Olei eucalpyti	ʒi	4	
Petrolati, liq	℥viii	240	

M. Sig.: Locally as an oily spray to the membranes of the nose or throat.

Or,

℞. Olei rosmarini			
Olei eucalypti, āā	m. xv	1	
Petrolati, liq	℥iv	120	

M. Sig.: As a spray locally.

Or, as Kyle suggests, the following:

℞. Camphoræ	gr. i		06
Mentholis	gr. iii		20
Acidi carbolici	m. ii		12
Petrolati, liq	℥i	30	

M. Sig.: Use as a spray locally.

Grayson states that iodin is the most useful of the glandular and vascular stimulants and alteratives. He recommends that it be employed either as a spray or pigment. As a spray the following combination is recommended:

℞. Acidi carbolici (crys.)	gr. xxiii	1	65
Tinct. iodi comp.	ʒi	4	
Glycerini	℥iss	45	
Aquæ dest.	℥ii	60	

M. And place in water bath at a temperature of 100 F. in a tightly corked bottle until the solution becomes colorless; then filter. Sig.: To be used as a spray.

In cases of atrophic rhinitis the following combination is recommended by Grayson:

℞. Iodi	gr. viii		50
Potassi iodidi	gr. xvi	1	06
Zinci sulphocarbol	ʒss	2	
Creolini	m. xlv	3	
Aquæ, q. s. ad	℥vi	180	

M. Sig.: Use as an antiseptic, stimulant and deodorant spray.

In chronic catarrhal conditions of the upper air passages the following combination is of value:

℞. Thymolis	gr. x		65
Olei rosæ	gtt. vi		40
Mentholis	gr. xx	1	20
Eucalyptol	gtt. xx	1	20
Olei cubebæ	gtt. xl	2	65
Petrolati, liq	℥vi	180	

M. Sig.: Use as a spray locally.

Medicinal Doses for Infants.

Several correspondents have asked for some rule by which to compute doses for infants under one year of age.

There is no rule that can be followed safely in enough cases to justify calling it a "rule," the exceptions for various reasons will be so many. Cotton well says that the great error in the treatment of infants is the too common habit of regarding the infant as a miniature edition of the adult. The quantity of a certain medicinal preparation required to produce certain effects on an infant can not be calculated properly by basing that calculation on the effect of the same preparation on an adult. Consequently, the initial dose, to a certain extent, must be experimental and not to be calculated by a formula. It is necessary, therefore, to follow the following precautions:

1. Begin with small doses unless you are acquainted with the patient's tolerance.
2. Repeat the dose at short intervals.
3. Give one preparation at a time or accompanied by as few synergists as possible.
4. Keep in mind the fact that infants take up and eliminate drugs very rapidly as a rule, unless there is present some catarrhal condition of the gastrointestinal tract.

After all this is said, however, there is still need of a starting point for the dosage computation and Young's rule for doses for children (which is given in most of the textbooks on materia medica) may assist. It is as follows: Divide the adult dose by a divisor secured thus: Add 12 to the age in years and divide by the age. For example: The adult dose is one teaspoonful; the child's age is 3 years; 3 plus 12 equals 15; 15 divided by 3 equals 5; the dose is therefore one-fifth of a teaspoonful. Thus also the dose for an average, normal child of one year might be computed as one-thirteenth of the adult dose. This one-year old dose, in turn, can be taken as a basis for fractional division according to the weight, vigor and susceptibility of the baby, which factors are to be appreciated at their full value. Furthermore, it should be remembered that infants show marked idiosyncrasies toward some preparations and increased tolerance for others. In the former class is included opium and its preparations, and in the latter may be included calomel, arsenic and belladonna. This subject is well forth careful study, for, as Butler tersely puts it, dosage is the most vulnerable point of therapeutic science, yet one on which the art of healing almost wholly depends.

Hay Fever.

A query from a correspondent reminds us that the time of year is at hand when the general practitioner will be consulted by hay-fever patients as to the best summer resorts for them to visit in order to escape the attacks of hay fever, it may be well to mention some of the most common and frequented places for such patients. According to Guy Hinsdale, in "System of Physiologic Therapeutics," the ordinary coryza form and the conjunctival form which generally occur together, and the severer asthmatic form, are all best prevented by avoiding the exciting cause—that is, by avoiding the proximity of hay fields, or those places where the ragweed may be encountered.

During the worst season he recommends a sea voyage, which gives immediate relief, but the patient should not return until the season for hay fever has passed, otherwise he may be attacked. According to Hinsdale, there are innumerable places in the United States and Canada where sufferers from this disease may find complete relief. He regards the White Mountain region in New Hampshire as one of the best locations in this respect. He mentions, in this connection, Bethlehem, Maplewood, Dixville Notch, Crawford, Twin Mountain and Waumbek. He also states that the cultivation of sweet peas and other flowers may destroy the immunity which some of these places have enjoyed. Some hay-fever patients may be forced to seek other places farther north, such as the Maine woods, about Rangeley, Moosehead Lake, the Canadian woods, and places in New Brunswick and Nova Scotia.

St. Andrews and Dalhousie, in New Brunswick, and the resorts of Cape Breton, are, according to the author, quite exempt from hay fever. Muskoka Lake, in Canada, and the shores of Lake Superior are recommended as favorable locations for such patients. Nantucket Island, Beach Haven, N. J., and some of the sea and mountain resorts of lower New England, Long Island, and some of the southern states may be suitable to some individuals, but as a rule are not adapted to such cases. Except the less inhabited mountainous regions of some of the southern states, as in North Carolina, which may be chosen in case one should prefer camp life, the almost universal presence of the golden rod, rag weed, and cultivated gardens, together with the dusty roads and other irritants, the middle, southern, and west central United States are not, as a rule, safe for hay-fever sufferers. He speaks, however, of the far west, at high elevations, as at Banff, in the Rock Mountains of British Columbia, as affording relief to such sufferers.

Medicolegal

May Testify as to Cause of Death, Although Not Present at Death.

The Supreme Court of Michigan says that, in the case of Chadwick vs. The Phœnix Accident and Sick Benefit Association, it was contended that the trial court had erred in permitting a physician to testify to the cause of death of the insured, it being insisted that this testimony was inadmissible because the physician was not present when the death occurred. It appeared, however, that the physician was the attending physician and had called on his patient once each day for several days preceding his death. Under these circumstances the Supreme Court holds that there was no error, that the testimony was admissible.

Counties Without Power or Liability as to Smallpox.

The Supreme Court of Wisconsin says, in the case of Martin vs. Fond du Lac County, that there is no common-law liability of counties to care for the poor or to conserve the public welfare by preventing the spread of contagious or other diseases or caring for those afflicted therewith. Counties have no power whatever, as indicated, except as derived from the written law. There is no statute in Wisconsin imposing the duty on counties, primarily or otherwise, to take charge of and care for persons because of their being afflicted with smallpox. The statute, section 1416 of the Revised Statutes of Wisconsin of 1898, clearly imposes that duty on the particular subdivision of the county wherein the necessity arises, whether in the particular instance the person is a resident thereof or is a pauper or stranger. It provides that when any person shall be infected with the smallpox "the proper board of health" shall act in the matter. The term "proper board of health" plainly restricts the liability as stated, because there is no statute providing for county boards of health.

Field for Laws—Against Buying Patients—Association.

The Supreme Court of Arkansas says, in Thompson vs. Van Lear, where it holds valid the act of 1903 prohibiting physicians from soliciting patients through paid agents, that it was argued with much earnestness that laws of this kind are unwise, counsel quoting from Herbert Spencer, who says, in his "Social Statics," that there are no sound reasons why the principles of free trade should not be extended to medical advice and practice. And the court says that there is no doubt some truth in the assertion that it is not best for the law to give too much aid, for people should be taught self-reliance. But this argument is one that should be addressed to the legislature and not the courts. If followed to its logical end it would result in allowing every one to practice medicine who wished to do so, and that is in effect what the author contends should be done. But, however well that may sound as a theoretical proposition, it does not work well in actual practice if we judge by the statutes of the different states, for there is hardly a state in the Union that does not regulate the practice of medicine by requiring some showing of qualification before a license to practice is granted. The tendency is toward raising the standard for admission to practice rather than lowering it. But, as before stated, those are questions for the legislature and not for the courts. The legislature has acted in this matter, and whether the law be wise or foolish the courts must enforce it if it be valid. Under its police power the state has the right to prohibit things that are hurtful to the comfort, safety and welfare of society. It is now well settled that in the exercise of this power the state may regulate the practice of medicine and surgery. The law in question concerns the public health, over which the police power has the fullest sway, for, health being the *sine qua non* (indispensable condition) of all personal enjoyment, it is not only the right but the duty of the state to pass such laws as may be necessary for the preservation of the health of the people.

Continuing, the court says that counsel quoted Oliver Wendell Holmes as saying that "if the whole materia medica was sunk to the bottom of the sea it would be all the better for mankind and all the worse for the fishes." The court does not dispute that statement, for there may be some truth in it, and it is possible that the legislature had something of the kind in mind when it passed this act. It may have thought that people are too much inclined to imagine themselves in ill health, too prone to consult doctors and take medicine anyway without being urged to do so by hired agents. If it is true, as the "eminent medical authority" quoted by counsel says, that "out of twenty-four serious cases of disease three could not be cured by the best remedies, three others might be benefited and the rest would get well anyway;" if this be true, is it not better, as a rule, to "throw physic to the dogs" and let Nature take her course? Now it is probable that the conscientious physician would give that advice to his patient in a case where he needed no medicine. But it is not likely that a physician would hire an agent to drum up patients for him only to say to them, "Go thy way; thou dost not need a physician." A physician who has secured a patient by means of a hired agent has paid out a certain sum to obtain his patient and is under a strong temptation to put him through a course of treatment, whether he needs it or not, in order to get his money back and make a profit on his investment. and therein lies a danger to the public from such a practice. When a physician obtains patients in that way he in effect buys them, just as if he said to the agent, "I will pay you a certain sum for every patient you send me," or "Will pay you a certain fee out of the money I receive from each patient you send me." Now the court does not think prudent people would wish to submit to the advice of a physician who had paid out money to get them under his treatment. To be successful the agent would necessarily have to keep his interest in the transaction secret from the patient, and it can be easily seen that such a method of securing patients would very often result in imposition and fraud on the patient and in inducing many people to take treatment who did not need it.

As the court has stated, even persons of good health are often too prone to imagine themselves in need of medicine. If it is unsafe to allow such persons to be solicited by hired agents to take what they do not need, how much worse is it to expose the sick to such influences? A man or woman who is laboring under a bodily disease is, other things being equal, more easily imposed on than one who possesses a sound mind in a sound body. The mind of the sick man, like his body, is in an abnormal condition. He is inclined to grasp at shadows and to pursue the wind, and is easily misled into paying money for medical treatment that he does not need. The man who is induced by an agent to buy goods of a merchant can see the goods and judge of his quality before paying his money, but the sick man must take the treatment for which he pays as a matter of faith. As to whether he will be benefited or not, he can only conjecture. He can only judge of the value of the treatment to which he submits by its subsequent results, and not even then with any degree of accuracy, for the causes which lead to health or disease are often obscure. They elude even the trained mind of the physician and much more easily that of the patient.

The objections which the court has stated to this method of securing patients, the temptations to which it would subject the physician and the danger to which it would expose the patient, show a wide distinction between the case of a merchant who drums for custom by hired agents and that of a physician who seeks patronage in the same way. The business of the physician directly affects the public health, and it does not follow because the merchant, the manufacturer and others may solicit trade through hired agents that a physician may do the same thing. The legislature has forbidden the physician to do so, and there are, in the court's opinion, sound reasons on which to base the distinction. The law thus undertakes to protect the physician from the temptations and the patient from the danger to which they would be exposed by such a practice.

The law being held valid, it follows that an association of physicians formed for the purpose of upholding it and preventing its violation were engaged in a lawful undertaking. and that there were no grounds for an injunction against them, even if their agents made occasional mistakes and prosecuted innocent parties.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

July 28.

1 *Health of School Children. L. H. Gulick, New York.
2 *Physical Care of School Children. R. G. Freeman, New York.
3 *Treatment of Appendicitis. F. D. Gray, Jersey City, N. J.
4 *Comparative Treatment of Intestinal Amebiasis. W. R. Moulden, Washington, D. C.
5 Review of the Evolution of Modern Surgical Treatment of Fibroid Tumors of the Uterus. LeR. Broun, New York.
6 *Administration of Drugs to Concurrently Retard and Stimulate Systemic Oxidation. B. Oettinger, Denver.

1. **Health of School Children.**—Gulick discusses ventilation, heating, purity of air, lighting, vision, seating, scoliosis, overstudy, feeble-minded children, defective children, physical training, and instruction in physiology and hygiene, in relation to the health of school children. He then formulates certain ideals toward which he believes that additional progress should be made with reference to their health. There should be individual care, personal inquiry into, and knowledge of the home life of approximately the lower tenth of every class. There should also be consecutive records of all children as to age, height, weight, eye, ear, nose, throat, heart, lungs, and so on. The size of classes should be decreased. There should be an open-air playground within walking distance of each child. Special classes and schools should be organized for defective children of all kinds. The most serious obstacle to progress is the lack of informed public opinion concerning the necessities of school children.

2. **Physical Care of School Children.**—Freeman says that an ideal private school should be out of town, but within easy reach of the homes of its patrons. There should be short periods of study, frequent recesses, and ample time for a substantial midday meal. After this the children should play out of doors. The ideal public school should care for the children as many hours a day as is practicable. Out-door play should precede study. Nutritious food should be furnished the scholars at noon. The harder work should come during the morning hours; in the afternoon the easier subjects, the manual work, and preparation for the next day should occupy the time. There should be opportunity for out-door exercise under supervision until late afternoon. In every school strict examination should be made for any evidence of contagious diseases. All children with colds and contagious eruptions should be excluded from school.

3. **Treatment for Appendicitis.**—Gray reviews Ochsner's methods and statistics. He believes that eventually mouth starvation, rectal feeding, gastric lavage, if indicated, and small saline enemata, will be accepted as essential even in cases in which the surgeon believes it either unwise or unsafe to attempt to wait for the interval. He thinks that the question of immediate *versus* later operation in complicated cases will never be fairly settled until some competent surgeon has the opportunity to treat in some one modern hospital a large number of appendicitis cases. This number should be at least five hundred, better one thousand. If, in these cases only the conservative or waiting policy, and then on a like number the radical treatment were tried, conclusions of value could be drawn. Or, two compentent men could make the same comparison on the same number of cases under as nearly as possible the same circumstances and surroundings. The writer concludes by speaking of some of the technical details of the operation.

4. **Comparative Treatment of Intestinal Amebiasis.**—Moulden emphasizes the uselessness of any but a direct method of attack on the affected areas in the lower bowel in amebic dysentery. In his work, in which he tested the effect of weak solutions of copper sulphate on active amebas in fresh stools, he became convinced that this drug in solutions of a strength of one to ten thousand has a decidedly lethal action on the parasite, arresting its motility and causing a shrinkage of the cell protoplasm. Before the copper instillation is given, the colon is thoroughly

irrigated through a double-flow tube with sterile water until the return is perfectly clean. The instillations are given twice a day. The copper seems to have a more or less selective action on *Amœba coli* as well as on the lower forms of vegetable life. Copper solutions are far better borne by the patients than quinin. Recovery is more rapid under its use than under any other method known to the writer. The patients stay cured if the treatment is kept up for a reasonable time after the disappearance of the amebas from the stools.

6. **Action of Drugs on Systemic Oxidation.**—Oettinger believes that a methemoglobinemia of non-toxic proportions may exist, and hence that this blood condition must not invariably be regarded as deleterious to conservative metabolism. He shows that good comes to a patient from slight methemoglobinemia, effecting an increased oxidation of a selective character. This is an oxidation through methemoglobin of intermediate products of metabolism, which in diseased conditions accumulate in abnormal amounts in the blood, but which, at the same time, is an oxidation without effect on the normal tissues. Therapy makes use of this blood change to aid in conservation of nutrition. In connection with the foregoing hypothesis Oettinger advances a second to explain rationally the concomitant use of another class of drugs, whose relation to systemic oxidation is opposed to those already mentioned. Quinin, arsenic, phosphorus, iron, and strychnin are used in both acute and chronic diseases. The first three are given individually, under widely different indications. Their concomitant use, he believes, is due to the fact that they have in common the property of retarding tissue oxidation. In disease, regressive metabolism is always increased. Against such increased catabolic tissue oxidation the use of a drug which retards oxidation must be valuable. Thus is explained the simultaneous use of drugs to effect concurrent retardation and stimulation of oxidation.

St. Louis Medical Review.

July 14.

7 Surgery of Biliary Tract (to be continued). M. H. Richardson, Boston.
7½ Division of Fees. E. S. McKee, Cincinnati.

July 21.

8 Surgery of Biliary Tract (continued). M. H. Richardson, Boston.
8½ Paraplegia. F. B. Hall, St. Louis.

New York Medical Journal.

July 28.

9 *Ocular Factors in Etiology of Spinal Curvature. H. A. Wilson. Philadelphia.
10 Frontiers of Death in Surgery and the Question of Operation in Extremis. C. G. Cumston, Boston.
11 *Possibility of Development of Cancer in Cervical Stump Foling Supravaginal Hysterectomy. A. F. Currier, Mount Vernon, N. Y.
12 *Maxims for Selection of Climate in Pulmonary, Laryngeal and Bone Tuberculosis. S. A. Knopf, New York City.
13 *Should Cold Baths Be Given for Fever in Young Children? C. O'Donovan, Baltimore.
14 Albuminuria, Cylindruria and Bright's Disease. S. J. Meltzer, New York City.
15 Diseases of the Digestive Organs in the Pathogenesis of Arterial Hypertension. G. W. McCaskey, Fort Wayne, Ind.
16 *The High-Frequency Spark in the Treatment of Premature Alopecia. G. M. MacKee, New York City.

9. **Ocular Factors in Etiology of Spinal Curvatures.**—Wilson discusses the relations that exist between certain forms of acquired spinal distortions and postures of the head in using the eyes, whether occurring alone or in conjunction with other recognized cause of scoliosis. He says that in the prophylaxis of scoliosis there is a large field that must carry the investigator into the school life of children and the almost universally faulty postures, whether induced by school furniture or by erroneous positions in writing, or by errors of refraction. The orthopedic surgeon should direct the use of such remedial measures as have been determined as best adapted to securing full normal function and to re-establishing verticality. To accomplish the prevention of scoliosis the necessity for the early resort to the orthopedic surgeon should be strongly urged on the general practitioner and parents.

11. See JOURNAL, June 23, page 1967.

12. **Selection of Climate in Tuberculosis.**—The maxims laid down by Knopf, 12 in number, are too lengthy and detailed to permit of being abstracted in the form which would be of any service to the reader, who is, therefore, referred to the original article.

13. **Cold Baths for Fever in Children.**—In spite of admitted drawbacks to this method of treatment, O'Donovan advises the use of cold baths, in children, even infants, whenever the high fever and flagging powers point to the possibility of an impending collapse; and the child is to be tubbed not once only, but whenever the same symptoms return in sufficient severity to call for such treatment. His opinion is based on clinical results. He suggests that in the convulsions of young children the proper treatment should be a cold rather than a hot bath to reduce the fever, which often is found to exist when the rectal temperature is taken, and to calm the over-excited nervous system of the child. As every child may not be able to stand the severe shock of a cold bath, O'Donovan advises that the physician himself give the first bath, or stand by while it is being given, to note its effect on the child. Terror and fright, even manifest physical suffering from the cold, are not bars to its usefulness. Cyanosis and failure to respond to the shock by crying and struggling are signs of evil to be looked for and feared. Under these circumstances the bath must be stopped, the child wrapped in blankets, and stimulated with whisky or digitalis. The length of time to keep a child in the bath is to be judged by its effect on the patient and the result aimed at. A short dip suffices for a stimulating shock, whereas three or four minutes may be required to check a high and rising fever.

16. **High Frequency Spark in Alopecia.**—According to MacKee, the beneficial action of the high frequency spark is twofold, stimulating and bactericidal. Its prime action in the treatment of alopecia rests in its power to produce a vasomotor dilatation, causing a physiologic hyperemia lasting for several hours. During the period of hyperemia the hair follicles receive an increased blood supply and increased resistance to germ invasion is established. The bactericidal property of the spark is powerful and penetrating. This effect is produced by the actinic rays, by the heat effects, and also by the production of large quantities of ozone. The most important object of the treatment is the production of the hyperemia, and unless the treatment is of sufficient length and strength to produce this reaction, very little will be accomplished. MacKee reports nine cases to show the effect of the treatment on the various forms of alopecia. Usually the quickest results are obtained in alopecia of nervous origin. The rapidity of the cure depends on the extent of the bald patches and the ease with which the hyperemia is produced. The apparatus employed and the technic are described in detail.

Boston Medical and Surgical Journal.

July 26.

17 The General Practitioner and the Specialist. J. L. Hildreth, Cambridge, Mass.
18 Treatment of Tuberculosis of Bones and Joints. J. E. Goldthwait, Boston.
19 *Diagnostic Significance of Decidual Tissue. W. P. Graves, Boston.
20 Medical Department of Japanese Army. C. Lynch, U. S. A.

19. **Diagnostic Significance of Decidual Tissue.**—As the result of study of a number of cases, Graves concludes that the passage of a decidual membrane in a patient with symptoms of pregnancy and with a mass on one side, together with a history of flowing, is extremely significant of an extrauterine pregnancy, but that cases do occur in which this seemingly conclusive chain of evidence is not proof of an extrauterine gestation. An ordinary miscarriage may be preceded by the exfoliation of a part or the whole of the decidua vera. Extreme care should be observed by the pathologist in making a diagnosis, because it may be impossible to differentiate between an exfoliated dysmenorrheic membrane, and the decidua of an extrauterine pregnancy. The pathologist before committing himself to a diagnosis should insist on knowing accurately the history of the patient.

Lancet-Clinic, Cincinnati.

July 28.

21 Principles of Serum Therapy. H. G. Graham, Bellwood, Neb.
22 Medical Weeds. E. S. McKee, Cincinnati.

American Medicine, Philadelphia.

July.

23 *Penetrating Wounds of Abdomen. C. E. Caldwell, Cincinnati.
24 Two Cases of Tropical Aphtha (Sprue). H. F. Harris, Atlanta, Ga.
25 *Limitations to Eradication of Tuberculosis. C. Denison, Denver.
26 *Acute Glaucoma Following Instillation of Several Drops of Adrenalin in a Cataractous Eye. A. Brav, Philadelphia.
27 Efficiency of Copper Foil in Destroying Certain Bacteria in Water. W. H. Buhlig, Chicago.
28 Otitis Media as a Complication or Sequel of Scarlet Fever. C. C. Biedert, Philadelphia.
29 *Pneumonia Complicating Pregnancy. J. A. Wessinger, Ann Arbor, Mich.
30 Municipal Control of Tuberculosis. W. M. L. Copliu, Philadelphia.

23. **Penetrating Wounds of Abdomen.**—Caldwell reports nine cases of penetrating wounds of the abdomen, and one case of traumatic rupture of a congenital cystic kidney. Of the former, all the patients recovered except two, who died from hemorrhage, one dying on the table, and the other three days after the first operation. The method of operating and the complete history of each case is described fully, but without comment.

25. **Eradication of Tuberculosis.**—Denison maintains that the general government should determine the unhealthy limits to air ventilation in living, sleeping, school and working rooms, in order that the *per capita* space necessary for health may be known as a basis of future legislation. With reference to the improvement of the future progeny of the human race, competent education should be provided for the young on the laws of health; and before marriage on the healthful selection of mates, and the baneful results of bad heredity. The greatest need of education is among those chosen as legislators, who are to frame the laws governing the hygiene of homes and of schools; the buildings of workshops, theaters and tenements; the safeguarding of the young and dependent in industrial works; or the limiting of childbearing to the healthy and fit.

26. **Acute Glaucoma Following Instillation of Adrenalin.**—The patient whose case is recited by Brav was a woman fifty years old, rather ill-nourished and very nervous. Three hours after a physician had instilled several drops of a solution of adrenalin, the woman began to feel severe pain in the eyeball, radiating to the frontal and down the superior maxillary region. The pain was so severe that a hypodermic of morphin had to be given. Brav found the eyeball inflamed, marked ciliary injection, cornea hazy, pupil dilated, immobile, anterior chamber practically obliterated, eyeball very hard with tension + 3. After extraction of the cataractous lens, recovery was uneventful. Brav advises against the use of adrenalin in the case of elderly people, even when they are suffering from only a superficial inflammation, in cataractous eyes, in glaucoma, in corneal and deep-seated inflammations, and in superficial inflammation of the conjunctiva.

29. **Pneumonia Complicating Pregnancy.**—Wessinger reports the case of a woman who was suddenly taken ill with pneumonia. She was in the eighth month of pregnancy. Dyspnea and respiratory embarrassment became marked. Labor began on the evening of the third day of the illness, and the patient was delivered with forceps of a dead child as rapidly as possible. The mother died on the following day. The case occurred in the practice of another physician. Wessinger has had one case in his own practice at seven and a half months. The temperature range in this patient was below that usually present in pneumonia. Only during a period of thirty-six hours did the temperature reach 103 F. On the fourth day the temperature was normal. No rusty sputum was noted after forty-eight hours from the time of its first appearance on the third day of the illness. One month afterward the patient was delivered of a healthy five-pound child.

Annals of Surgery, Brooklyn.

July.

31 *Hypertrophic Stenosis of the Pylorus in Infants. A. L. Fisk, New York.
32 Primary Sarcoma of the Omentum. F. Cobb, Boston.
33 *Surgical Aspects of Anuria. C. G. Cumston, Boston.
34 *Retroperitoneal Perirenal Lipomata. E. Reynolds and R. G. Wadsworth, Boston.
35 False Diverticula of the Vermiform Appendix. M. G. Seelig, St. Louis.
36 *Clinical Experiences with Meckel's Diverticulum and Other Vestiges of the Omphalomesenteric Duct. J. B. Roberts, Philadelphia.
37 *Method of Anastomosis of the Vasa Deferentia. G. F. Lydston, Chicago.
38 *Extraperitoneal Ligature of External Iliac Artery for Aneurism. J. A. Nydegger, U. S. M.-H. S.
39 *Wyeth's Method of Hemostasis in Amputation at the Hip and Shoulder. T. H. Hancock, Atlanta, Ga.
40 Wrist Resection by the Lateral Incision. Stewart L. McCurdy, Pittsburg.
41 *Use of a Steel Comb for Dissection in the Axilla. H. A. Kelly, Baltimore.
42 *Postoperative Comfort. W. G. LeBoutillier, New York.

31. **Stenosis of Pylorus in Infants.**—According to Fisk, the total number of cases of hypertrophic stenosis of the pylorus in infants operated on is 71. Of these, 38 recovered and 33 died, giving 53.53 per cent. recoveries and 46.47 per cent. mortality. Gastroenterostomy was performed 42 times; 24 patients recovered and 18 died, a mortality of 42.56 per cent. Pyloroplasty was performed 11 times, with 6 recoveries and 5 deaths, a mortality of 45.46 per cent. Of the fatal cases, one patient survived the operation five weeks, and another ten weeks. Figuring on the latter basis, the mortality would be only 27.28 per cent. Eighteen patients were operated on by divulsion, with 9 recoveries and 9 deaths. One of the patients who recovered had to have a secondary gastroenterostomy performed three weeks later. If this case was considered as a failure, as it certainly would have been, the mortality is 55.55 per cent. There was one case of pylorectomy in which the patient died. Fisk says that gastroenterostomy appears to be the operation of choice, either the anterior or the posterior method. In infants the operation should be done by suturing the parts together. It is Fisk's opinion that preference should be given in selected cases to pyloroplasty, as it is physiologically, anatomically, and surgically the more correct procedure. Early diagnosis and early operation, before the infant has had an opportunity to lose much weight, or has become greatly emaciated and enfeebled so that its reparative power is greatly reduced or lost, is more essential to a successful outcome of surgical treatment than the method of operation, other things being equal.

33. This article appeared in the *American Journal of Eurology*, July, 1906.

34. **Retroperitoneal Perirenal Lipomata.** — Reynolds and Wadsworth report a case of large retroperitoneal lipoma of perirenal origin occurring in a woman, 38 years of age. The operation, which was conducted on anatomic lines, proved successful. The entire mass removed weighed nearly 15 pounds.

36. **Meckel's Diverticulum and Other Vestiges of the Omphalomesenteric Duct.**—Roberts' observations of these congenital anomalies are limited to the following instances: (1) A Meckel's diverticulum on the mesenteric side of the ileum, arising from the ileum a few inches above its entrance into the cecum. The diverticulum was an inch and a half long, and was connected with the gut at its mesenteric border, being attached to the mesentery or developed on it. It did not cause any disturbance. (2) Fatal strangulation of the intestine by a cord consisting of obliterated omphalomesenteric vessels. The autopsy showed a loop of bowel encircled by a thin cord of fibrous tissue, about 13 centimeters long, which extended from the front wall of the abdominal cavity to the mesentery above the point of strangulation of the bowel. From another part of the bowel hung a pedunculated mass 4.5 centimeters long. The cord ran through an opening in this appendage, which had no lumen, as through a pulley. (3) Strangulation of the ileum by a Meckel's diverticulum occurring in a boy, 4½ years old, with a history of unrelievable intestinal obstruction. About three feet from the ileocecal valve a slender diverticulum of the ileum was found. Its end was a fibroid cord attached to the abdominal wall near the umbilicus. The structure was distended at its middle into a sac. Between this sac and the ileum there was a patent tube lined with mucous membrane. The ileum a short distance from the point of origin of the diverticulum was tightly strangulated. (4) The diverticulum in this case was discovered at an autopsy. It was about four inches long, and at its origin was about the size of the ileum. It was situated about two feet from the ileocecal valve. Its ex-

istence was not the cause of death. (5) While operating on a very large umbilical hernia, Roberts found among the intestines, in the sac, a translucent tumor as large as a pea. It had a long thread-like translucent pedicle, descending into the abdomen. Its lower attachment was not revealed. It was a myxoma, covered by epithelium, and the pedicle contained a single artery and vein, but no nerve fibers. It was believed that these structures might have been the remains of the omphalomesenteric vessels which had become free at the umbilical end, and had been transformed into the pedunculated tumor.

37. This article was published in The Journal, July 21, page 169, and also in the *Chicago Medical Recorder*, July 15.

38. **Extraperitoneal Ligature of External Iliac Aneurism.**—In the case reported by Nydegger, the aneurism was of only two months' duration. It was situated in the left groin, and it was about four inches long and about three inches and a half wide, extending well up beneath Poupart's ligament. A straight incision was made, beginning immediately to the outer side of the external abdominal ring, about an inch above Poupart's ligament, and terminating on a level with, but about two inches internal to, the anterior superior spinous process of the ileum. The peritoneum was pushed upward and backward, and held there by blunt retractors. A number of enlarged glands were worked aside with the fingers, and the areolar tissue forming the sheath over the vessels was scratched through by the same means. A heavy kangaroo tendon was carried around the middle third of the vessel and secured by combined reef-knot and surgeon's knot. The pulsation in the aneurism ceased at once. The wound was closed with chromicized catgut ligatures. The leg was swathed in cotton and lightly bandaged, and a long lateral splint applied. Hot-water bottles were kept to the leg for two days. The stitches were removed on the sixth day. The swelling decreased in size and appeared firm and completely organized between the third and fourth week.

39. **Wyeth's Hemostasis in Amputation.**—Hancock reports two cases, one an amputation of the hip, and the other a double amputation of the hip and shoulder, in which Wyeth's method of hemostasis was employed with marked success. The two cases are also interesting from the fact that only a very slight shock followed an unusually severe injury in both instances. Hancock attributes this to early operation, one patient being seen half an hour after the accident, and the other an hour after it.

41. **Steel Comb for Dissection.**—For three years past Kelly has made use of a steel comb in cases of breast cancer in making the axillary and subclavicular dissection. The little instrument has also proved of value in skeletonizing the vascular trunks near their points of origin from the larger trunks for the purpose of ligation. The length of the comb is 19.5 centimeters. The end is made of little steel prongs about one centimeter long, terminating in a fine rounded point. The instrument is curved at its end. It usually has from four to six prongs, and resembles somewhat the so-called "scratch-my-back."

42. **Postoperative Comfort.**—The points of change in the usual plan mentioned by Le Boutillier referred to relieving thirst and pain, procuring more rest, stimulating more freely, feeding more and earlier, and the posture of the patient. At the conclusion of an operation of any extent the patient receives at once an enema of hot saline solution, to which half an ounce to an ounce of whisky is added if there is any shock. This is repeated every three hours, until there is no thirst or the stomach is able to retain fluids and nourishment, or the pulse is of good rate or quality. The amount given varies from a pint to six ounces at each time. Beginning five or six hours after anesthesia is suspended, fluid by the mouth is allowed in moderate and soon in almost unlimited quantities. In order to increase the general resistance, early free stimulation is employed. Subcutaneous injections of strychnin, repeated every three hours, are usually given for twelve to twenty-four or even thirty-six hours, after which the drug is given by mouth until the patient's general condition is satisfactory. When there is a probability that there will be much pain, morphin is given before the effect of the anesthetic has passed off. It is repeated in sufficient doses to keep the patient comfortable. No attempt is made to have the bowels move by a time-table merely because the patient has had an operation. At the expiration of from thirty-six to forty-eight hours an enema is given, preceded by some mild laxative, if desired, or a laxative alone is given. The position of the patient is changed frequently when mechanical conditions permit it. The head and upper part of the body are raised slightly with a back-rest. Backaches and tender spots from pressure are very much diminished in frequency and in intensity. A sufficiently firm abdominal bandage should be used in laparotomy cases. When applying dressings at the close of an operation it is wise to think of how they are to be removed. When gauze is stuffed into a wound, its removal should be effected under an anesthetic, or delayed until it has been loosened from the tissues with which it is in contact. The plan for a new dressing should be prepared before any part of the old one is disturbed. These patients should sleep a good deal, and no attempt should be made to arrange the after-treatment, so that the patient is disturbed at frequent intervals for various purposes. Rest and sleep (the latter secured by drugs, when necessary) favor recovery. Long staying in bed is not resorted to unless the patient is feeble. It is of the utmost importance to adapt the treatment to the individual case.

Chicago Medical Recorder.

July.

43 *Method of Anastomosis of the Vasa Deferentia. G. F. Lydston, Chicago.
44 Points in Surgical Technic. J. C. Webster, Chicago.
45 General Symptoms of Apoplexy. D'O. Hecht, Chicago.
46 *Cases Where Reflex Symptoms Were Proven Not to Be Reflex. E. Ries, Chicago.
47 Neurasthenia: Prognosis and Its Relations to Medical Selection. T. B. Wiggin, Chicago.
48 Contract Practice. J. A. Dawson, Chicago.
49 Present Status of the Proposed Business Bureau of the Chicago Medical Society. G. de Tarnowsky, Chicago.

43. See No. 37, this issue.

46. **Reflex Symptoms not Reflex.**—Ries reports four cases sent to him for gynecologic operations under varying diagnoses and where the operation proved the independence of the symptoms from gynecologic diseases to which they had been ascribed. The first patient, a woman, aged 39, was brought for operation for ovarian and uterine tumors, which supposedly had given rise, reflexly, to gastric irritation. On careful examination the gall bladder was found to be sensitive, although it could not be palpated, which led Ries to conclude that the patient's stomach trouble was due to gallstones. The patient refused two operations, so that Ries merely removed the tumors. During the operation he palpated the gall bladder and discovered a stone in the cystic duct, but did not interfere. The patient recovered from the operation and a week after it had another pain. She has now decided to have the gallstones removed. The second patient, 28 years of age, was sent in to be operated on for lacerated perineum, lacerated cervix, and enlarged uterus, which, according to the idea of the family physican, caused stomach trouble. The stomach cramps proved to be gallstone symptoms, and forty odd gallstones were removed. The patient made a good recovery and has had no further cramps.

The third case was one of double ovarian tumor, fibroids and tuberculosis of the left tube. The tumors were so large that they could easily be felt through the abdomen. There was some abdominal pain radiating to the stomach. The family physician ascribed these pains to the tumors, which he wanted removed. On examination, the gall bladder was palpable and sensitive to pressure. A diagnosis of gallstones was made and at the operation a solitary egg-shaped stone was removed. The tumors were also removed and the patient is doing well. The fourth case was that of a woman, 49 years of age, who was sent to be operated on for a lacerated cervix, lacerated perineum, and a retroversion of the uterus, which caused reflex pain in the stomach. Careful questioning elicited a good history of gallstones. The gall bladder was removed and found to contain 16 stones. Nothing further was done. The patient made a good recovery.

Illinois Medical Journal, Springfield.

July.

50 Popularization of Medicine. H. C. Mitchell, Carbondale.
51 Progress in Serum Therapy During the Year Ending June 21, 1906. E. R. Larned, Chicago.

52 Treatment of Compound Fractures. E. H. Ochsner, Chicago.
53 Hydatidiform Mole, with Report of Seven Cases. G. C. Waiss, Chicago.
54 Prognosis and Treatment of Cerebral Apoplexy. J. Grinker, Chicago.
55 Cerebral Localization in Apoplexy. S. Kuh, Chicago.

The Fort Wayne Medical Journal-Magazine.

July.

56 Lobar Pneumonia: Early Diagnosis and Treatment. J. H. Gilpin, Fort Wayne.

The Physician and Surgeon, Detroit.

June.

57 Practical Discourse to Embarking Physicians. F. B. Walker, Detroit.
58 Lessons in Longevity. J. S. Caulkins, Thornville, Mich.
59 Experience with Static Electricity. N. A. Gates, Dexter, Mich.

The Philippine Journal of Science, P. I.

July.

60 Philippine Fibers and Fibrous Substances: Their Suitability for Papermaking. G. F. Richmond, Manila.
61 Combating Plague in Japan. S. Kitasato, Japan.
62 Observations on the Epidemiology of Dysentery in Japan. K. Shiga, Japan.
63 Consideration of Bail's Recent Views of the Study of Immunity and a Comparison of the Value of Protective Inoculation with Aggression with that of Vaccination in Plague. R. P. Strong, Manila.
64 A Study of Blood in Dengue, with Particular Reference to the Differential Count of the Leucocytes in the Diagnosis. E. R. Stitt, Canacaa.
65 Observations on Malaria: Latent Infection in Natives of the Philippine Islands—Intracorpuscular Conjugation. C. F. Craig, Camp Stotsenberg.
66 Tropical Febrile Splenomegaly. P. G. Wooley, Manila.
67 Amebiasis: Its Association with Other Diseases, Its Complications and Its After-Effects. W. E. Musgrave, Manila.

Annals of Ophthalmology, St. Louis, Mo.

April.

68 Case of Epithelioma of the Ocular Conjunctiva of Unusual Size. J. E. Jennings, St. Louis.
69 Persistent Hyaloid Artery in Both Eyes—Unusual Variety in One Eye. W. T. Shoemaker, Philadelphia.
70 Amaurosis Following Acute Anemia from Hemorrhage. V. Carlini, Livorno.
71 Dionin in Ophthalmic Practice. J. Hinshelwood, Glasgow.
72 Sixty-three Cases of Descending Optic Neuritis, Probably the Result of Pneumococcal Infection. F. H. Napier.
73 Pyemia, Orbital Cellulitis and Death Following Use of Mesotan. E. B. Coburn, New York.
74 Bilateral Gumma of the Orbits in Child of Eight Years. F. C. Parker, Norristown, Pa.
75 A Case of Homatropin Poisoning. S. Brown, Philadelphia.
76. Astigmatic Accommodation: a Study of Its Relative Frequency in Fifty Cases with Marked Asthenopic Symptoms. O. Wilkinson, Washington.
77 Field of Fixation and Methods of Measuring It. L. Howe, Buffalo.
78 Inflammation of Eyes Due to Infection from Hay Fever Conveyed by Tobacco Smoke, with Report of Cases. J. W. Wright, Columbus, Ohio.

Medical Sentinel, Portland, Ore.

July.

79 The Increasing Mortality from Pneumonia. C. E. Hill.
80 Reproduction of Bone After Operation for Necrosis. W. J. May, Baker City, Ore.
81 The Physician's Duties. D. Campbell, Butte, Mont.
82 The Character of the Recent Typhoid Epidemic in Eugene, W. L. Cheshire, Eugene.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 14.

1 Mendelian Heredity and Its Application to Man. W. Bateson.
2 *Enucleations of the Prostate. W. Thomson.
3 *Total Laryngectomy for Recurrent Epithelioma of the Larynx. S. White.
4 *Appendicitis and Abscess Formation. J. D. Malcolm.
5 *Three Cases of Gastrojejunostomy. F. C. Wallis.
6 Relation of Ulcerative Colitis to Dysentery. A. E. Carver.
7 *Effect of X-Rays on Leucocytes in the Blood and Bone Marrow in Leukemia. R. J. M. Buchanan.
8 Case of Lipoma of the Pericardium. M. V. McKechnie.
9 Case in which Large Quantities of Dipterous Larvæ were Passed per Anum. C. H. Cattle.
10 Report of Special Chloroform Committee of British Medical Association.

2. **Enucleation of the Prostate.**—Thomson reports 18 cases of enucleation that he has done since 1902. This does not include cases in which he has explored the bladder by the superior incision, or established a fistula when the patient's condition was so bad, or the age so advanced that it would have been a fatal procedure to carry out enucleation; or cases of malignant disease; nor does it include one case of prostatic obstruction with no palpable evidence of enlargement. Nine patients were over 70 years of age; the youngest was 54, and the oldest 76. Two of the tumors were very large—6¼ ounces, and 10 ounces, respectively; three came away in one mass, including the prostatic urethra. The immediate and remote results did not differ from those following enucleation of the lobes separately. There have been no disagreeable after-results. Four of the patients died, one of gangrene of the lung, twelve weeks after the operation. In the last ten cases there was a deposit of phosphates on the edges of the wound in three instances. In the instances in which there was no appearance of it, Thomson noticed that there was not any preceding chronic cystitis, and the patients responded satisfactorily to preliminary treatment. He has had the most satisfactory results from the use of benzoate of soda, in 10-grain doses, with a dram of tincture of buchu, three or four times a day. But with this must be associated copious flushing of the bladder with boric solution. First, he flushes through the upper wound, then he passes into the urethra a glass nozzle about three or four inches in length. This is attached to an irrigator and the bladder is then flushed thoroughly. One of the fatal cases occurred as the result of infection of the deeper parts of the space of Retzius. Death occurred on the twenty-third day. One patient died of ether bronchitis, he was aged 75, and suffered from mitral disease. Another died fourteen days after operation from a suddenly developed peritonitis, and the fifth died in twenty-four hours from sepsis.

3. **Laryngectomy for Epithelioma of Larynx.**—White reports the case of a man aged 64, who had an extensive warty growth on one of the vocal cords. The growth was removed after mesial section of the thyroid. The patient made a rapid recovery, but soon afterward began to suffer from a slowly increasing laryngeal stenosis, for which a tracheotomy was performed later. His condition became so bad that a total laryngectomy was advised and carried out. The only serious annoyance he experienced after the first few days was due to the collection of inspissated mucus in the tracheal opening during the hours of sleep. This difficulty ceased after a few weeks, and now, six months after the operation, the patient is in excellent health, can swallow perfectly, and has no respiratory difficulty, although he has not worn a tube since the operation. Most remarkable of all, he can carry on a conversation in a loud sibilant whisper.

4. **Appendicitis and Abscess Formation.**—Malcolm reports two cases of appendicitis which simulated abscess of the ovary in their symptomatology.

5. **Gastrojejunostomy.**—In the case of the first patient whose history is reported by Wallis, a posterior gastrojejunostomy was done for obstruction of the pylorus. The patient, a woman, aged 91, made a good recovery, but died of cerebral thrombosis about nine months after the operation. The second patient, a man, aged 57, had a tumor of the stomach involving the lesser curvature and extending to the pylorus. Owing to the extremely bad condition of the patient the stomach was not removed, and a gastrojejunostomy was done. One month after the operation the abdomen was opened again and the stomach pulled forward. It was seen that the growth had disappeared to a great extent. The wound was closed. Two months after this operation the patient was well and healthy. The third patient, a woman, aged 39, had an extensive growth, considered to be malignant, occupying the cardiac end of the stomach. A posterior gastrojejunostomy was done, but death ensued twelve hours later from hemorrhage coming from an oval opening in a large vessel running along the floor of the ulcer.

7. **Effect of Roentgen Ray on Leucocytes in Leukemia.**—Buchanan is of the opinion that there is evidence to show that the action of the Roentgen ray in leukemia is of a twofold character: (1) by inhibiting over-production in the marrow, and (2) by a destructive influence over the leucocytes themselves. This effect is especially noticeable in the cell structures which respond normally to basic dyes, less so in those which respond to acid dyes. Further evidence is afforded by the fact that the myelocytosis recurs rapidly when the *x*-ray treatment is discontinued.

The Lancet, London.

July 14.

11 Dendrites and Disease. W. R. Gowers.
12 *Stuttering. W. S. Colman.
13 *Microbic Cyanosis. G. A. Gibson and C. C. Douglas.
14 *Treatment of Surgical Tuberculosis. V. W. Low.
15 Eye Strain and Its Symptoms. J. Hinshelwood.
16 *Origin of Choanal Polypi. G. Killian.
17 Buboes and Their Significance in Plague. W. Hunter.
18 *Epidermolysis Bullosa. A. F. Savill.
19 *Fracture of Upper End of Tibia from Indirect Violence. R. Lawford Knaggs.
20 Clinical Viscosimeter. A. D. P. Denning and J. H. Watson.
21 *Five Cases of Renal Neoplasm. D. Wallace.

12. **Stuttering.**—According to Colman, the main objects of the treatment of stuttering should be (1) The removal of the shallow, ill-managed respiration so frequently present in stutterers; (2) the stutterer must be taught to speak from a well-filled chest; (3) he must be taught to speak with a resonant and modulated voice instead of the low muttering intonation he usually adopts; (4) he must learn to speak slowly and distinctly, making all the consonants clear. This must be continued until the improved mode of breathing and of using his voice has become habitual to him. Whenever the means of the patient permit, instruction should be carried out by the medical man himself, or by some experienced teacher under his direction.

13. **Microbic Cyanosis.**—Gibson and Douglas report the case of a woman, aged 36, who had suffered for some years from headaches, weakness, attacks of dizziness and faintness. The tint of the skin had assumed a distinctly cyanotic appearance. For some time there had been a considerable tendency to diarrhea and this was frequently accompanied by general gastric as well as enteric disturbance. The erythrocytes numbered less than 4,000,000; the hemoglobin amounted to 70 per cent.; the leucocytes numbered over 10,000. The blood was otherwise normal, presenting only the features of a secondary anemia. Physical examination was negative. A bacteriologic examination showed a pure culture from the blood of *Bacillus coli communis*, so that the condition belongs to the group of affections often termed false cyanosis.

14. **Treatment of Surgical Tuberculosis.**—Low advocates open air treatment, increasing the patient's power of resistance, the use of Koch's new tuberculin when there is no evidence of an excessive autoinoculation, otherwise absolute rest with complete fixation of the diseased part, improvement of the circulation through the diseased area, and when necessary removal of the dead inert material under the most scrupulous aseptic precautions.

16. **Choanal Polypi.**—Killian reports the results of his observation of 22 cases of so-called choanal or benign nasopharyngeal polypi. In structure these polypi hardly differ from the ordinary nasal polypi. They usually do not recur after removal. Killian thinks that these polypi take their origin within the cavity of the maxillary antrum. For observation on the antral origin of these polypi he recommends that their extraction be carried out with the cold snare. The polypus is then torn out and the length of that part of the stalk lying inside of the antral cavity may be determined with exactitude. On one occasion he saw the torn stalk project out of the accessory antral opening. In another case the remains of the stalk within the antrum could be seen by means of a small mirror introduced into the middle meatus.

18. **Epidermolysis Bullosa.**—Savill reports two cases that occurred in the same family, the patients being a brother and sister, both having suffered all their lives from the formation of bullæ.

19. **Fracture of Upper End of Tibia, from Indirect Violence.**—In the instance reported by Knaggs, a bag of chicory weighing 140 pounds, fell from a height of forty feet and struck the man on the back of the head. He happened to be facing a wall, and the impact knocked him against it in the kneeling position, but not before he was able to raise his hands to protect himself from being dashed against it. He was not knocked down. As soon as he tried to walk, he felt pain below the knee. On examination there was some swelling, much tenderness, crepitus, but no deformity. An *x*-ray picture was taken. It showed that the inner tuberosity was split off obliquely from the head of the tibia, tearing with it not only the internal articular facet, but also the spine. In the fibula the styloid process had been separated. There was no misplacement of the parts. The treatment consisted in the application of a back splint, with a foot-piece, and passive movement. Ten weeks later the patient had a freely movable joint and an apparently sound limb.

21. **Renal Neoplasms.**—In the first four cases reported by Wallace, hematuria was the first symptom in each; in fact, no other symptom was complained of. In three the bleeding was very profuse and had the characters of vesical hemorrhage. In one case the bleeding was small in quantity, although the tumor was a large one, replacing nearly the whole of the renal substance. In only two cases were worm-like clots observed and in one of these not until months after the onset of the bleeding. In none of these were tumor cells or casts discovered in the urine.

The Practitioner, London.

July.

22 *The Treatment of Sleeplessness. W. Broadbent.
23 The Distribution and Treatment of Epithelioma of the Lower Lip. G. L. Cheatle.
24 Causation and Treatment of Headaches. H. C. Thomson.
25 *Headaches of Renal Origin. R. Saundby.
26 Intracranial Disease as a Cause of Headache. J. Taylor.
27 Migraine and Toxemic Headaches. W. Harris.
28 Eye Strain as a Cause of Headache. W. H. Jessop.
29 *Headache of Nasal Origin. H. L. Lack.
30 Myomectomy. P. Horrocks.
31 *Fronto-Ethmoidal Sinusitis. St. C. Thomson.
32 Opsonic Factors; Their Estimation and Use in Therapeutics. R. E. French.
33 Bronchitis and Bronchopneumonia. C. H. Cattle.
34 *Afebrile Typhoid Fever. J. P. Parkinson.
35 Etiology of Eczema. J. M. H. MacLeod.
36 *Simple Operation for Hemorrhoids. R. M. H. Randell.

22. **Treatment of Sleeplessness.**—The form of sleeplessness considered by Broadbent is that which is the chief, if not the only, symptom of which the patient complains, and not that which is an incident of disease. When the blood pressure is high, and causes sleeplessness, he states that chloral is indicated. A cold bath or tepid or cold sponging is effective when sleeplessness is due to very low blood pressure. In low tension sleeplessness a cardiovascular tonic is the best remedy, although very frequently a teacupful of strong hot beef tea will send the patient to sleep at once. Beef tea is better than milk, as imposing less work on the stomach. One of the first things to be done in a case of sleeplessness is to inquire carefully and thoroughly into the state of the digestion. Any derangement which may be discovered must be rectified. When sleeplessness is caused by fermentation in the stomach and intestinal canal, intestinal antiseptics, such as salol, and the sulphocarbolates, may be given, not forgetting calomel or other mercurials. In old age, remedies of the chloral group are less to be relied on than opium, and a dram or two of compound tincture of camphor, or a grain of opium, with sufficient colocynth and hyoscyamus to prevent constipation, may be given every night. In the young such preparations as sulphonal, trional, and veronal, he states, are doing incalculable harm. Chloral or paraldehyd are preferable. It is well to avoid opium.

25. **Headaches of Renal Origin.**—Saundby advises that the treatment of renal headache must be that of Bright's disease, but the symptom formally indicates the need for light nitrogenous diet, purging and vapor baths. The occasional improvement of a headache after an accidental hemorrhage, has suggested the value of bleeding. A remedy which rarely fails to give temporary relief is the effervescent powder of phenacetin and caffein of the B. P., but it may need the addition of five or more grains of phenacetin to each dose of the powder.

29. **Headache of Nasal Origin.**—Lack calls attention to the fact that while it is impossible to make any exact statement as to what forms of headache are due to nasal trouble, or to exclude disease of the nose as the cause of the pain from its particular character or site, it is necessary to emphasize the fact that headaches may be due to disease of the nose, although obvious symptoms of nasal disease may be absent, and there may be nothing in the patient's statement to draw attention to the true cause.

31. **Frontoethmoidal Sinusitis.**—Thomson reports three cases in which spontaneous evacuation took place in the region of the orbit. The first case was one of influenza, the patient having

an abscess at the inner canthus of the left eye, with symptoms of suppuration in the left frontal, ethmoidal and maxillary sinuses. The second case was one of frontal sinusitis with abscess over the sinus. An incision was made which was followed by the free escape of pus containing the *Micrococcus catarrhalis* in pure culture. The sinus was opened and drained through the anterior wall. The third case was one of chronic multi-sinusitis, with acute frontoethmoidal exacerbation. An extensive operation was necessary in this case. All the patients recovered.

34. **Afebrile Typhoid.**—Parkinson reports three instances of typhoid in which fever was of very short duration, and one case which terminated fatally showed that though the febrile period was short, the local process in the bowel went on to ulceration and even to perforation.

36. **Operation for Hemorrhoids.**—The operation employed by Randell on more than 300 cases may be described briefly as follows: After the usual preparatory treatment, the patient is anesthetized. The hemorrhoids are seized with forceps and ligated as tightly as possible close to their bases with stout catgut, or if too large, they are transfixed and tied in two portions. They are then cut off with scissors so close to the ligatures that the latter fall off. This completes the operation. A morphin suppository is inserted and the patient is put to bed. The first thing the next morning the patient has a dose of a mild mercurial preparation which is repeated in a couple of hours, if necessary. The same thing is done the following morning, and the patient may be allowed to get up and move about. In the great majority of cases the patient can go about his business in a very few days, certainly less than a week. There is no serious hemorrhage. On only one occasion did a patient bleed profusely. Randell has not yet had to operate on a patient a second time, although several of them had been previously operated on by other methods before coming under his care.

Bulletin de l'Académie de Médecine, Paris.

37 (Year LXX, No. 26.) De la tuberculophobie et de quelques-uns de ses effets en médecine infantile. R. Saint-Philippe.
38 *Les anévrysmes des gros vaisseaux. Traitement par les injections sous-cutanées du serum gelatiné. Lancereaux.
39 *La maladie des scaphandriers (dangers of diving bells). Boinet.
40 *Appendicite. Duret.

38. **Gelatin Injections for Aneurisms.**—Lancereaux believes that subcutaneous injections of gelatin are not only indicated in case of aneurism—even in apparently the most desperate cases—but that hesitation would be actually culpable. He describes 3 instructive cases. In the first there was an aneurism in the upper part of the abdominal aorta and another, a year later, in the lower part, both subsided under 20 injections of 200 gm. of a 7 per thousand solution of sodium chlorid containing 5 gm. of gelatin. The injections were made in the course of three months, every five or six days, the fluid being injected into the buttocks. He has made nearly 1,200 such injections in his hospital and private practice and has never witnessed any inconveniences, not even a local abscess, although a slight, transient rise in temperature was apparent in a few instances. He has sometimes increased the proportion of gelatin to 2.5 or 3.5 gm. per cent. In the second case reported, the aneurism protruded from the thorax, but the vessel sank back into place as the tumor shrank and hardened under the influence of 30 injections. Two years afterward the tumor recurred through overexertion, but again subsided under gelatin injections. In the third case the aneurism was in the ophthalmic artery, just beyond the arteria centralis retinæ. The exophthalmos, diplopia and visual disturbances all subsided under the injections of gelatin. He concludes from his own and others' experience that diffuse arteriosclerosis or endarteritis is only exceptionally followed by aneurism in the larger vessels. The trouble is due to periarteritis which burrows deeper and deeper and finally perforates the elastic membrane. Besides traumatism, the causes of this periarteritis are tuberculosis, syphilis and malarial infection. Rupture is the inevitable termination of the progressive lesion unless coagulation of the blood is promoted in some way. It rarely occurs spontaneously.

39. **Dangers of Working in Compressed Air.**—Boinet analyzes 12 fatal cases and 18 cases of permanent or temporary paralysis occurring in divers. One of the patients had seven different attacks of paralysis, the last rendering him entirely helpless. The predisposing conditions are evidently age above 45 or 50, pulmonary affections, fatigue, alcoholism, eating before going down into the water, excesses of all kinds, long continued work and the depth to which the diver descends, but the principal factor is the sudden change from compressed to ordinary air. If the change from the compressed to ordinary air can be made gradually, there is much less likelihood of trouble. Individuals working in compressed air should be on the lookout for special pains and slight signs of paralysis and should accept them as a warning. Boinet suggests rigorous administrative inspection of diving bells to see that they are in good working order at all times.

40. **Discussion of Operations for Non-existent Appendicitis.**—In the discussion of this subject Duret urged that the clinician must distinguish between: 1. Classic enterocolitis with pains in the cecum and appendix, but no special localization; 2, typhlo-colitis complicated with true appendicitis, and 3, primary appendicitis. Medical, non-operative treatment is indicated in the first, but appendicectomy is urgently required in the two other classes. He declared that the extraordinary frequency nowadays of intestinal affections (including cancer) may be due chiefly to the strenuous life and defective diet and hygiene, but possibly in part to the adulteration of foods and drinks or the use of preservatives, even if these consist merely of large quantities of boric or salicylic acid, adding: "Packers exist elsewhere than in Chicago, and our legislation on behalf of hygiene awaits its Roosevelt."

Presse Médicale, Paris.

41 (XIV, No. 52.) Entérocolite et appendicite. P. Reclus.
42 La rage et la capture des chiens errants (rabies and dog catching). H. Martel.

Semaine Médicale, Paris.

42½ (XXVI, No. 27.) *The Condition that Precedes Disease.—L'état d'imminence morbide. P. Londe.
43 (No. 28.) *De la valeur séméiologique des hémorrhagies occultes dans les affections de l'estomac. Oettinger and Girault.
44 *Conférence Internationale pour la revision de la convention de Genève. Rapport présenté au nom du Comité de rédaction de la Convention. L. Renault.

42½. **"State of Morbid Imminence."**—By this term Londe means a condition in which the organism is depressed from some cause, ready to succumb to the first infection or other malady for which opportunity offers. The diseases apparently most sudden in their onset always have had the way prepared for them by processes going on for days, weeks, months or years. He argues that a depression of the nervous system or clogging of the digestive tract invariably precede disease. By warding off this preceding condition of receptivity, the gates can be closed against the non-specific affections. Rest and dieting are the preventive measures that will ward them off, or attenuate their course if already established. Functional and total rest should be enforced in the early stages of even the simplest affection. Severity of dietetic treatment is the best means at our command to abbreviate the course of any lesion or affection. Instead of wasting strength in digestion, he says, it should be saved for recuperating purposes. Rest and semi-starvation will tide the patient over the "state of morbid imminence." It is especially important for infants, who, Londe believes, are habitually fed too much. Even the amounts given in the text-books are too large. Many an infant a year old thrives better on three-fourths of a liter of milk diluted with a liter of water, than on a liter of pure milk. In youth, rest for brain and muscles should always precede attempts at forced feeding. At least, relative rest should always be enforced. In the aged this necessity is likewise imperative. Rest in bed and restriction of the diet once a week or fortnight he considers an excellent measure for the aged and even for all adults. The benefits of major operations are in many instances, he thinks, due more to the enforced repose than to the operation itself.

43. **Differential Value of "Occult Hemorrhages" in Stomach Affections.**—This article confirms the importance of the discovery of invisible traces of blood in the stomach content

and stools as an aid in diagnosis and prognosis. Oettinger and Girault have been industriously applying the tests during the last eighteen months. They state that they found the Adler technic absolutely reliable and far more sensitive than the Weber and other tests. It shows the presence of blood even in a dilution of 1 to 250,000, while the guaiac test fails beyond a dilution of 1 to 20,000. With the Adler technic the sample of stool or stomach content is stirred with water to a thick paste. About 4 or 5 c.c. is then placed in a test tube and 1 c.c. of glacial acetic acid is added. After shaking the tube, about 2 c.c. of a freshly prepared concentrated solution of pure benzidin in 90 per cent. alcohol, heated, is added, and an equal amount of hydrogen dioxid. If there are even minimal traces of blood the color almost at once turns a deep green, which passes into a bluish green if there is much blood. The tint gradually fades into a dirty brown. For this test to be reliable, no meat should be eaten for two or three days beforehand, and no raw vegetables. Out of 54 tests on persons free from any lesion in the digestive tract, the test was constantly negative in 53. In the one positive case it was learned later that the patient had surreptitiously eaten some meat. Hemorrhoids, the pulling of a tooth, or an epistaxis, are also liable to induce a positive reaction in the absence of a gastrointestinal affection. Likewise the existence of a kidney lesion or cirrhosis of the liver may cause minimal hemorrhage in the digestive tract. The findings in the stools are more reliable than those in the stomach content, and may prove positive when the latter are negative. The occult hemorrhages are never encountered in healthy persons. In 11 cases of cancer of the stomach the findings were constantly positive in the hundreds of tests made. Certain forms of cancer are not accompanied by the occult hemorrhages, but these forms are extremely exceptional. In case of cancer, when the blood is once discovered it is constantly encountered, irrespective of treatment and diet. It was invariably present in all the cancer cases. Consequently, the constant absence of blood in the stools is strong presumptive evidence against the diagnosis of cancer. In case of gastric ulcer, the presence of occult blood in the stools is the rule here also, but the point that differentiates the ulcer from cancer, is that the findings are occasionally negative. Intermittent findings speak for ulcer. Deductions must not be too hasty. In one case the diagnosis wavered between a simple chronic ulcer or an ulcer in cancerous degeneration. The findings were constantly positive for a long time and the diagnosis of cancer seemed inevitable, when the blood abruptly vanished and the patient gradually recovered complete health. The occult hemorrhages will differentiate a neurosis from ulcer, although Oettinger and Girault state that it is possible for the two to be combined, as occurred in 2 cases in their experience. With the sensitive Adler test they found traces of blood frequently in the stools in cases of pure hyperchlorhydria. This confirms the view that it is the expression of a peculiar condition of the stomach mucosa which is liable to be accompanied by small ulcerations. They bleed a little and then quickly heal, but they are liable to pave the way for a genuine ulcer. The occult hemorrhages in such cases prove a valuable guide for treatment and hygiene. Two of their patients presented the symptoms of gastrosuccorrhea and the benzidin test was positive 12 times in 29 examinations in one, and 16 in 21 in the other case. The trouble in these cases was probably the result of an ulcer or ulceration in the stomach, probably near the pylorus, with spasm and relative constriction of the outlet. An argument in favor of this view is that as the general health and the local findings improved under treatment, rest in bed and dieting, the characteristic reaction in the stools gradually subsided. The value of the occult hemorrhages for the prognosis is shown in the cases in which the reaction is positive and constantly increasing in intensity although no other symptoms suggest impending perforation. They relate a typical instance of this kind. One great advantage of the discovery of the occult hemorrhages and their subsidence under treatment is that by repeating the tests the progress of the healing process can be accurately traced. This not only prevents accidents, but it enables the physician to tell how long the treatment must be continued and when it can be abandoned, thus relieving the patient of the annoying restrictions the moment they are no longer needed. If all this is true in regard to readily diagnosed ulcers, they exclaim in conclusion, how much more important and instructive are the findings in case of latent, unsuspected or unrecognized ulcers!

44. **Revision of the International Geneva Conference.**—See news columns on page 285 of The Journal, July 28.

Berliner klinische Wochenschrift.

45 (XLIII, No. 18.) Isolated Abscesses in Late Stages of Appendicitis.—Ueber das Auftreten isolierter Abscesse in den Spätstadien der Perityphlitis. M. Jaffé.
46 *Ueber schwere Anämien ohne Regeneration des Knochenmarks (without regeneration of bone marrow.) H. Hirschfeld.
47 *Causes of Coated Tongue.—Ursachen der belegten Zunge. Rollin.
48 *Operative Treatment of Detachment of Retina.—Zur Deutschmann's operativen Behandlung der Netzhautablösung. M. Goldbaum.
49 Medicolegal Features of Morphin Addiction.—Morphinisten vor dem Strafrichter. H. Marx.
50 Balneologic Treatment of Appendiceal Affections.—Trink- und Bade- Kuren bei Erkrankungen der Wurmfortsatzes. A. Loebel.
51 Ueber Angina pectoris. O. Burwinkel.
52 Changes in Relations Between Respiration and Pulse.—Ueber die Veränderung des physiologischen Verhältnisses zwischen Atmung und Pulsbeschaffenheit bei Herzkrankheiten und ihre Bedeutung für Prognose und Therapie. M. Siegfried.
53 Pathologie und Therapie des Morbus Basedowii. J. Jacob.

46. **Anemia With Degeneration or Atrophy of the Bone Marrow.**—Hirschfeld has observed 2 cases and reviews a few from the literature which presented the clinical picture of severe anemia without any signs of regeneration on the part of the bone marrow. He thinks such cases should be included in a group apart from normoblastic and megaloblastic anemias. The course was somewhat acute, nine months and four weeks in his cases. The hemorrhagic diathesis was pronounced and retinal hemorrhages were noted in all the cases.

47. **Causes of Coated Tongue.**—Rollin presents evidence to prove that the microscopic findings in the fasting stomach are identical with those of the tongue. He has also demonstrated that in case of hyperacidity the blood is nourished more than in normal conditions, and in case of lacking acidity, it is nourished less. The over-nourished blood induces hyperemia, increased metabolism and consequent throwing off of the superficial epithelium. In such conditions the tongue throws off its epithelium and appears red and clean. In case of lacking acidity, the metabolism is depressed and the epithelium is not thrown off but remains as a coating. The coated tongue is thus the result of anemia, and the anemia he ascribes to the lacking acidity in the stomach.

48. **Operative Treatment of Detachment of the Retina.**—Goldbaum extols the value of Deutschmann's method of operative treatment of detachment of the retina and urges its more general adoption. During the last fifteen years Deutschmann has operated on 210 patients with detachment of the retina, 25 per cent. have been definitely cured and 40 per cent. improved.

Deutsche medizinische Wochenschrift.

54 (XXXII, No. 25.) Chronic Inflammation of Appendix not a Prerequisite for Acute Attack.—Ist eine chronische Entzündung des Wurmfortsatzes die Vorbedingung für den akuten Anfall? L. Aschoff.
55 *Functions and Importance of Omentum.—Ueber einen Fall von rudimentarem grossen Netz beim Menschen und über die Bedeutung des Netzes. P. Schiefferdecker.
56 *Die Behandlung der chronischen Darm-Katarrhe (intestinal catarrh). Th. Rosenheim. (Concluded.)
57 *Ueber Zuckerausscheidung im Urin bei kruppöser Pneumonie (sugar in urine). F. Rosenberger.
58 *Simplified Test for Uric Acid in Urine.—Eine vereinfachte Methode zur quantitativen Bestimmung der Harnsäure im Harn. A. Kowarski.
59 *Operationen an den Samenblasen (seminal vesicles). H. Riese.
60 *Ueber Perforation bei Ausschabung der Harnblase (in curetting bladder). A. Strauss.
61 Zur Theorie der typischen Degenerations—Krankheiten des Nerven-Systems. M. Benedikt.

55. **Functions of Omentum.**—The results of Schiefferdecker's researches corroborate those of others in respect to the important part played by the omentum in active protection. Its physiologic functions do not seem to be of much moment, its chief value evidently lying in its protection against pathologic conditions. He reports a case of rudimentary omentum found in the cadaver of a man of 50 who had succumbed to nephritis.

56. **Treatment of Chronic Intestinal Catarrh.**—In concluding this clinical lecture Rosenheim remarks that after successful treatment of chronic intestinal catarrh, the patients are left usually with an irritable intestine with a tendency to pains and diarrhea. He advises them to go to some watering place in the mountains, at an altitude between 1,500 and 4,000 feet, not too exposed, where there is plenty of sunshine and opportunity for comfortable strolls, especially places where there are natural warm baths or arrangements for hydrotherapy. It is important that they should be able to eat à la carte instead of being compelled to take the heavy dinner at night which is detrimental under all circumstances. The seashore is scarcely adapted for such patients, but a brief stay—three weeks at longest—may benefit certain obstinate cases of intestinal catarrh with neurosis if the patient refrains from bathing and avoids getting chilled by sitting or strolling on damp sand, and if the weather is favorable, but it is always an experiment.

57. **Sugar in Urine During Pneumonia.**—Rosenberger reports from von Leube's clinic 2 cases of croupous pneumonia in which the urine contained a carbohydrate of a still undetermined nature. No cause could be assigned for the glycosuria; it seemed to be independent of the food, temperature and course of the disease. Neither the amount, the specific gravity nor the aspect of the urine suggested the presence of sugar. When the urine for twenty-four hours is examined, the dilution is usually so great that even the most delicate tests are liable to fail to reveal the presence of the sugar. The glycosuria generally subsides spontaneously, although in certain cases a predisposition for alimentary glycosuria later may persist.

58. **Simplified Test for Uric Acid.**—Kowarski has simplified the Hopkins technic for quantitative determination of the uric acid in the urine. He describes the technic and states that no special instruments are required for it, that it takes much less time than the ordinary tests, and that only a small amount of urine is required.

59. **Operations on Seminal Vesicles.**—Riese has removed the seminal vesicles in 7 cases, operating through a transverse incision in the perineum. In 5 tuberculous cases the patients were restored to health although there were tuberculous lesions in the lungs and bacilli in the sputum. As the operations were performed in 1900 and 1901 a permanent cure may be assumed, at least of the genital tuberculosis. Another tuberculous patient succumbed five months after the operation to tuberculosis of the bladder. It is possible that the permanent catheter passed into the bladder through the incision may have carried the infection from the tuberculous prostate into the bladder. In some of his cases he removed the testicles and vasa deferentia with the seminal vesicles. In comparison with operations on the seminal vesicles according to Young's technic and that of others, he believes that the perineal route is preferable for various reasons. He has never witnessed any psychic disturbances in his patients; the lesions requiring the intervention are so severe that it is impossible to hope for retention of the genital functions. His patients had a smooth recovery in 2 cases in which the vasa deferentia alone were affected and were removed by this technic. In 2 others in which the seminal cords were removed by evulsion according to Bünger, miliary tuberculosis developed, rapidly fatal. His technic removes the testicles and then exposes the vas deferens by an incision, parallel to Poupart's ligament, upward to the ureter, then severs the vas between ligatures, and removes it with the testicle. The patient is then put in the lithotomy position and the seminal vesicles are removed through a transverse perineal incision. They are drawn down with the proximal end of the previously severed vas deferens. In 3 of his cases there was bilateral, advanced tuberculosis of both testicles with fistulas and extensive lesions in the seminal vesicles.

60. **Perforation in Curetting Bladder.**—Strauss comments on the case recently published by Stern in which perforation of the female bladder occurred during curettement. His catheter-spoon, he says, was devised exclusively for use in the male bladder. The bladder should not be curetted except under profound anesthesia. If this is impossible the curettement had better be dispensed with, unless under lumbar anesthesia.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

Last indexed, page 395.

62 (LXXXI, Nos. 5-6.) Ueber die Erkrankungen des lymphatischen Gewebes und ihr Verhältnis zur Appendicitis. P. Klemm (Riga).
63 Komplikationen bei Perityphlitis von seiten der Blutgefässe (blood vessels). R. S. Hoffmann (Vienna).
64 Resultate der Epityphlitis-Behandlung. O. Kappeler (Constance).
65 Zur Aetiologie des Malum perforans pedis. J. Levai (Budapest).
66 *Cicatricial Tumor Studded with Fragments of Coal.—Eine mit Kohlestückchen durchsetzte Narbengeschwulst. W. Herberg (Breslau).
67 *Clamp Pincers Applied Preliminary to Suture.—Verwendung der Klemm-Technik in der Chirurgie nach dem Prinzip der fremdkörperfreien Klemmnaht. F. Schultze (Duisburg).
68 Koprostatische Dehnungsgeschwüre als Ursache von Darm-Perforation (ulcer from stretching of walls of intestine; perforation). A. Ebner.
69 *Stenose des Rektums bedingt durch ein verkalktes, ausgestossenes Uterus-Myom. E. Payr (Graz).
70 *Der plastische Ersatz des Septum cutaneum. E. Lexer (Königsberg).
71 Fall von Hernia pectinea Cloquetii incarcerata nach richtiger Diagnose operiert und geheilt. Axhausen (Kiel).

66. **Cicatricial Tumor Studded With Scraps of Coal.**—Herberg's patient was a woman of 40 who presented a tumor of melanotic aspect on the brow. It was extirpated on account of the suspicion of malignancy, and the discoloration was found to be due to scraps of coal. It was learned that as a child she had fallen into a coal hole and injured herself at the point where the tumor had developed. The case teaches the importance of removing all traces of foreign bodies after trauma, and also of removing any growth noticed at the point of a trauma, as it may assume malignant features.

67. **Clamp Pincers for Suturing.**—Schultze gives fifteen illustrations of the various ways in which he utilizes Roser's spring pincers as a preliminary to suturing. He applies a row of the pincers not more than half a centimeter apart. When the wound has thus been united and is ready to suture, he takes the sutures between the pincers. It simplifies the process of suturing to a remarkable extent, he says, and the tissues need not be touched with the fingers. A further advantage is the perfect adaptation of the edges of the wound, and the possibility it allows of using the finest suture material. His illustrations show the technic applied in suturing the head, stomach, intestines, appendix, palate, and in herniotomies, etc.

69. **Stenosis of Rectum From Expelled Myoma.**—In Payr's case the myoma had developed in the uterus and had been expelled, settling in the pouch of Douglas. It had become entirely calcified and had invaginated into the rectum, causing stenosis. It would probably have made its way through into the rectum before long. The patient was a woman of 70 and the tumor measured 8.5 by 7 by 5 cm. and weighed 180 gm.

70. **Plastic Substitute for the Septum Cutaneum.**—Lexer cuts a flap in the mucosa of the upper lip, its base close to the junction with the gum, the tip just short of the visible portion of the exposed part of the lip. The edges of the flap are then folded over above and sutured, forming a cylinder. A small slit is then cut through the lip at the base of the nose and the little cylinder is drawn through this hole and sutured in place in the nose to form the septum cutaneum. There is no visible defect left anywhere.

Münchener medizinische Wochenschrift.

72 (LIII, No. 18.) Ophthalmia Neonatorum.—Augenentzündung der Neugeborenen und einprozentige Höllensteinlösung. Leopold.
73 Zur Frage der Bildung spezifischer Leukotoxine im Blut-Serum als Folge der Roentgen-Bestrahlung der Leukämie, der Pseudoleukämie und des Lympho-Sarkoms. C. Klieneberger and H. Zoeppritz.
74 Protozoan Affections.—Ueber Protozoen-Blut-Krankheiten bei Mensch und Tier in Indien und Deutsch-Ostafrika. A. Treutlein.
75 *Why and to What Extent are Anesthetic Measures Useful in Inflammatory Processes?—Anästhesierende Mittel bei entzündlichen Prozessen. O. Rosenbach.
76 Zur Färbung der Spirochæte pallida (staining). F. R. M. Berger.
77 Transmission of Diphtheria by Third Persons.—Uebertragung von Diph. durch dritte Personen. P. Sittler.

78 Zuckerbestimmung im Harn mittelst einer Modifikation der Trommerschen Probe (test for sugar in urine). K. Simrock.
79 *Autointoxikation bei Pylorus-Stenose. R. Michaelis.
80 Zur Kasuistik der cerebralen Kinder-Pneumonie (brain pneumonia in children). A. Bittoroff.
81 Zur Hebotomie. L. Seeligmann.
82 *Zum Verhalten des Pektoral-Fremitus bei der kruppösen Lungenentzündung,—einige Bemerkungen über das Knistern bei derselben. J. Arneth. (Concluded.)

75. **Why and to What Extent Anesthetics are Useful in Inflammatory Processes.**—For some time, Rosenbach has been proclaiming the great value of anesthetics in the treatment of inflammatory processes. The anesthetic soothes the inflamed nerves and limits the excess of the biologic processes keeping up the vicious circle. Spiess has recently published a communication expatiating on the same subject summarized in these columns on page 1405 of the last volume. He prefers the local anesthetics, while Rosenbach lauds morphin as more effectual while allowing more accurate dosage. He believes that the benefit from carbolic acid and other measures in inflammatory processes—which has been attributed to their disinfecting power—is in reality due to their anesthetic action in reducing the reflex excitability, that is, reducing the abnormal excitability of the inflamed (the abnormally working) parts within normal proportions. Pain, he declares, is only one of the elements in this abnormal reaction of the inflamed parts, and it is soothed with the other elements when the excessive excitability is reduced by the general or local anesthesia. He theorizes to explain the phenomena observed, explaining that the favorable action of the anesthesia is restricted to those cases in which the reaction is excessive, just as the action of antipyretics is favorable only in case of excessive fever. The natural, useful reaction should not be interfered with any more than one would seek to prevent the reflex coughing caused by a foreign body in the throat.

79. **Autointoxication from Stenosis of the Pylorus.**—A woman of 46 with pronounced motor insufficiency of the stomach from incipient cancer was seized with convulsions and lay in coma for eight days after presenting various nervous and psychic irregularities. After a retrocolic gastroenterostomy all these symptoms subsided, suggesting that they had been the result of autointoxication from the stagnating stomach content although experiments on animals were negative.

82. **Fremitus in Pneumonia.**—In this long communication from von Leube's clinic, Arneth studies the physical signs in croupous pneumonia and especially the behavior of the vocal tactile fremitus. Its importance as an index of the actual condition of the lung, whether it is in the first, second or the third stage of the infectious process, is not yet fully appreciated. Its behavior is a most delicate test of the existing conditions in the lung, as he describes in detail.

Therapie der Gegenwart, Klemperer's, Berlin.

Last indexed XLV, page 692.

83 (XLVII, Nos. 1-2.) *Zur Behandlung der Pneumonie. A. Fraenkel (Berlin).
84 Ueber Digitalis- Behandlung. F. Umber.
85 Behandlung des Kropfes (goiter). O. Hildebrand.
86 *Behandlung des Malum coxæ senile (Arthritis deformans of hip joint). A. Hoffa.
87 Das Gehör-Organ und die Erkrankungen der Nase und des Nasenrachenraums (ear and nasopharyngeal affections). A. Passow.
88 Interne Behandlung der Basedowschen Krankheit. T. Brugsch.
89 *Behandlung der Frostbeulen (chilblains). C. Binz.
90 Ueber kombinierte Verordnung von Arzneimitteln (combined drugs). E. H. Kisch.
91 *Syphilitische Erkrankungen im Bereich der hinteren Schädelgrube (posterior cranial fossa). T. Ziehen.
92 *Salicyl-Therapie und Nephritis bei akutem Gelenk-Rheumatism. H. Pässler.
93 233 Gelenk-Rheumatiker ohne Salicyl-Präparate behandelt (articular rheumatism treated without salicylates). G. Hauffe.
94 Present Status of Streptococcus-Serum Therapy. F. Meyer.

83. **Treatment of Pneumonia.**—Fraenkel is convinced that the abnormally rapid pulse in certain fatal cases of pneumonia is due to the direct action of the pneumonia toxin on the heart, especially on its nervous apparatus. He has treated exceptionally severe cases of pneumonia with 4 gm. of an infusion of digitalis in 24 hours for three successive days, when commenced with the early symptoms. Caffein seems to answer a similar purpose with less danger of cumulative effects. It acts on the nerve centers regulating the heart action, and has proved remarkably useful in his hands in the severer cases. He uses a ten per cent. solution, injecting it every two or three hours to a total of 0.6 to 1.5 gm. in the course of twenty-four hours. In his extensive experience the caffein proved remarkably effectual in all cases in which the pulse was not over 130. The caffein did not affect the fever. Its action can be supplemented with camphor or alcohol at need. The details of several cases in which the patients were thus treated are appended.

86. **Treatment of Arthritis Deformans of Hip.**—Hoffa emphasizes the necessity for early recognition of this affection. A supporting apparatus should then be worn, to prevent further deformity. Mineral waters, physical therapy and ultimate resection of the deformed head may restore function in severe cases.

89. **Treatment of Chilblains.**—Binz states that the experience of many years has confirmed his opinion of the value of chlorinated lime in the treatment of chilblains. One gram of the chlorinated lime and 9 gm. of paraffin salve are well mixed and a piece the size of a bean is gently rubbed into the chilblain on retiring. It is protected with a simple dressing, and a sock is drawn over the foot. In less than a week all inflammation and pain subside unless the affection is of long standing. He advises the predisposed to bathe their feet in cold water daily during the summer and keep up the practice in the winter as a prophylactic measure.

91. **Syphilitic Affections in Posterior Cranial Fossa.**—Ziehen reports cases of four typical syndromes that may be induced by a syphilitic affection in this region. Treatment has to be exceptionally energetic as a speedily fatal issue is not infrequent. The mercury must be supplemented by sodium iodid on account of its quicker action and because some patients respond better to it. He gives from 4 to 8 gm. a day of sodium iodid and from 4 to 6 gm. of mercury in inunctions up to 8 or 13 gm. in threatening cases. He recently saved an almost moribund patient by pushing the daily dose of mercury to 20 gm. In one group a disturbance of the trigeminus domain was for a long time almost the only sign of trouble. In others, the acoustic nerve was the one predominantly affected. In another group the symptoms chiefly affected the larynx, palate and tongue from involvement of the ninth to the twelfth cranial nerves. The fourth syndrome is that caused by involvement of the superior cervical nerves and the spinal accessory.

92. **Salicylates and Nephritis in Articular Rheumatism.**—Pässler reports an experience which seems to show that the irritating action of the salicylates on the kidney can be obviated by simultaneous administration of an alkali to render the urine alkaline.

Therapeutische Monatshefte, Berlin.

Last indexed XLIV, page 1324.

95 (XIX, No. 4.) Die balneologisch-diätetische Behandlung der chronischen Diarrhoe. E. Gans.
96 Zur Therapie der Cholelithiasis. A. Hecht.
97 Ueber Zuckerproben (tests for sugar). Hecker.
98 Ueber chronische Entzündung der Blinddarmgegend (inflammation of cecum region). H. Herz.
99 Behandlung des vorzeitigen Haarausfalls (premature loss of the hair). E. Saalfeld.
100 Die percutane Iod-Applikation. G. Wesenberg.

Wiener klinische Wochenschrift.

Last indexed, page 314.

101 (XVIII, No. 50.) Digesting Faculty of Body Cells.—Ueber die Verdauungsfähigkeit der Körperzellen. F. Hamburger and E. Sluka.
102 *Zur Landry'schen Paralyse. J. Donath.
103 (No. 51.) Ueber die Indikation zur Appendektomie beim Ileocökal- Schmerz (pain). Hochenegg.
104 *Ueber Metall-Strahlung (radiation). F. Streintz (Gratz).
105 Zur Frage der Tragfähigkeit der Bunge'schen Amputations-Stümpfe (weight-bearing faculty). E. Ranzi and F. v. Auffenberg.
106 Zur Kenntnis der Fibularfrakturen. A. v. Khautz, jun.
107 (No. 52.) *To Detect Incipient Cancer.—Principiis obsta.
108 Withdrawal of Morphin in Severe Chronic Affections.—Ueber Morphinentziehung bei schweren chronischen Leiden. M. Scheimpflug.

102. **Landry's Paralysis.**—Donath's patient was a man of 26; malaria acquired four months before is incriminated in the etiology. The cerebrospinal fluid was extremely rich in fibrinogen and albumose. It solidified almost at once into a

jelly, but became more fluid as recovery progressed. Treatment consisted in administration of potassium iodid and ergot, and recovery was complete in a few months.

104. **Metal Radiation.**—Streintz reports experiments with polished sheet metal which demonstrated that certain metals have an unmistakable chemical action on their environment under certain conditions. They influence the electric conductibility of the air around them and make an impression on sensitized paper. He thinks that these phenomena are connected with beginning oxidation.

107. **To Detect Incipient Cancer.**—This article is an appeal to physicians at large for the earlier recognition of cancer. It is the work of a committee appointed by the Vienna medical society, and discusses the early symptoms of cancer in various parts of the body. The percentage of cures after removal is given as reported by various surgeons this proportion for mammary cancer progressively increasing from Billroth's statistics of 4.7 per cent. (1867-76) to von Bergmann's 28.79 per cent. (1882-99). Later statistics show permanent cure in an average of 42 per cent. In case of rectal cancer the proportion is from 33 to 50 per cent., and in cancer of the cervix, 34.7 per cent., with 75 per cent. for cancer of the corpus. Among the diagnostic points emphasized are the bloody urine in case of cancer of the urinary apparatus. The presence of mucus and blood in the stools, difficulty in defecation and constipation suggest cancer in the rectum, and the trouble should not be ascribed to hemorrhoids without careful digital examination in the knee-elbow or standing position. If the ampulla is gaping this suggests a high stricture. The general health may be excellent even with advanced cancer of the rectum, as the nourishment is not interfered with. This is also liable to be the case with genital cancer. Intermenstrual hemorrhage from the genitals when the uterus is touched suggest cancer. Pain is seldom an early symptom of cancer. Incipient cancer of the uterus can very rarely be diagnosed without microscopic examination of scrapings. Women should be educated to go to the physician to be examined during the menopause as they go to the dentist to have their teeth examined from time to time. There are no reliable signs of incipient cancer of the stomach, but the results of resection should encourage exploratory incision even on mere suspicion. A small incision according to Mikulicz may be regarded as harmless, and is frequently the only means to detect cancer in an operable stage. The absence of a palpable tumor never excludes the possible existence of cancer in the intestines.

Zeitschrift f. Krebsforschung (cancer research), Berlin.

Last indexed, page 315.

109 (IV, No. 1.) *Cancer on Mice.—Krebs der Mäuse. L. Michaelis (von Leyden's clinic, Berlin).
110 *Cancer in Stuttgart.—Die bösartigen Neubildungen in Stuttgart 1873-1903. Weinberg and Gastpar. (First part in Vol. II.)
111 Zur Morphologie der Mäusegeschwülste (mouse tumors). J. Erdheim (Vienna).
112 *Krebs und Wasser (cancer and water)? W. Pöppelmann.
113 3 Fälle von primärem Carcinom des Bauchfeils (of peritoneum). O. Napp.
114 Experimentell bei Hunden erzeugte verimpfbare Tumoren nach Uebertragung von menschlichem Krebsmaterial (cancer on dogs from human material). C. Lewin
115 *Ueber Krebsangst (dread of cancer). Römer.
116 Conjugal Cancer.—Frage des Krebses der Ehegatten. Weinberg.
117 "Origin of Cancer." Reply to Krompecher. R. Borrmann.

109. **Cancer on Mice.**—Michaelis has been working with some tumor mice obtained from Jensen, and also with 20 mice with spontaneous tumors. Only 2 of the total number were found capable of transmitting the tumors. The race of mice that were susceptible to the Jensen tumors proved to be refractory to the tumors he obtained by inoculation, and vice versa, those susceptible to his tumors were refractory to the Jensen tumors.

110. **Cancer in Stuttgart.**—Among the conclusions of this extensive statistical work is that direct infection of cancer occurs so seldom as to be a negligible quantity. Nothing definite resulted from study of cancer houses, cancer localities, etc.

112. **Cancer and Water.**—Pöppelmann has been studying the topography of all cases of cancer known during the last twenty years in a town of 8,000 inhabitants, a total of 85 cases. The results of his research show that the houses which stood nearest to water courses and especially to stagnant water showed much the larger proportion of cancer cases. The principal focus proved to be the region near the back water from a dam. In one house a woman on the first floor and a couple above, all had cancer. In another house a gardener and his successor and a nurse who helped in the gardening; in another both sisters of a gardener and his tenant who also helped in the gardening; in another 2 middle-aged women and a letter carrier of 33 succumbed to cancer within a short space of time. He urges others to compile similar statistics, with maps, in regard to small towns where the conditions are better known than in cities, paying special attention to the brooks, rivers and dams.

115. **Cancer Phobia.**—Römer describes a case in which a supposedly normal woman was referred to a surgeon on account of suspicion of cancer from climacteric hemorrhages. Exploratory curettement revealed nothing malignant, but the woman's excitement and distress at the possibility of cancer left her permanently deranged. In other cases the dread of recurrence after an operation induces distressing cancer phobia. On the other hand, Römer remarks, physicians and cancer research societies seem to strive to increase the dread of the laity for cancer by publicly discussing its increasing frequency, the dangers of heredity, its parasitic origin, etc. The discussion of such matters within hearing of the laity fosters cancer phobia and adds still further to the wretchedness of an individual already affected with cancer. He remarks that mutual confidence between the family physician and the patient and between the physician and the surgeon will aid in reducing this cancer phobia.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A Parasite Found in the White Corpuscles of the Blood of Palm Squirrels, By Captain W. S. Patton, M.B., L.M.S. Price annas 12, or 1s. 2d. Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. No. 24. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Calcutta: Office of the Superintendent of Government Printing, India, 1906.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology at Cornell University, and Tracy C. Becker, A.B., L.L.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition. Pp. 996. Price, $6.00. New York. Cloth. William Wood & Co., 1906.

Report of the Director of the Aquarium to the Board of Managers and Remarks on the Value of Radiographs as Zoological Illustrations. Illustrated with radiographs by Dr. H. G. Piffard, by Charles H. Townsend, director of the Aquarium. Paper. Pp. 23. Reprinted from the tenth annual report of the New York Zoological Society, 11 Wall St., New York, 1906.

A Compend of Materia Medica, Therapeutics and Prescription Writing. By Samuel O. L. Potter, M.D., M.R.C.P., Lond., based on the eighth revision of the U. S. Pharmacopeia, including also many unofficial remedies. Seventh edition, revised and enlarged. Cloth. Pp. 292. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

Manual of Anatomy, Systematic and Practical, including embryology. Vol. 1, Osteology; Upper Limb, Lower Limb, By A. M. Buchanan, M.A., M.D., C.M., F.F.P.S., Glasgow, with 268 illustrations, mostly original and in colors. Linen. Pp. 596. Price, $2.75. Chicago: W. T. Keener & Co., 1906.

Practice of Pediatrics, in Original Contributions, by American and English Authors. Edited by Walter Leslie Carr, A.M., M.D. Illustrated with 199 engravings and 32 full-page plates. Cloth. Pp. 1014. Price, $6.00. Philadelphia and New York: Lea Bros. & Co., 1906.

Medical and Pharmaceutical Latin, By Reginald R. Bennett, Pharmaceutical Chemist, with an introduction by Henry G. Greenish, F.I.C., F.L.S. Cloth. Pp. 442. Price, $2.40. Philadelphia: P. Blakiston's Son & Co., London, J. & A. Churchill, 1906.

Introduction to General Inorganic Chemistry. By Alexander Smith, Professor of Chemistry and Director of General and Physical Chemistry in the University of Chicago. Cloth. Pp. 780. Price, $2.25. New York: The Century Company. 1906.

Preservatives in Food and Food Examination By John C. Thresh, M.D. (Vic.). D. Sc. (Lond). F. I. C., and Arthur E. Porter, M.D., M.A. (Cantab). Cloth. Price, $4.50. Pp. 484. Philadelphia: P. Blakiston's Son & Co., 1906.

Illustrated Key to the Cestode Parasites of Man, Hygienic Laboratory, Washington, D. C., by C. Wardell Stiles. Bulletin No. 25. Pp. 104. Paper. June, 1906.

The First Annual Report of the National First Aid Association of America, 6 Beacon St., Boston. Paper. Pp. 51.

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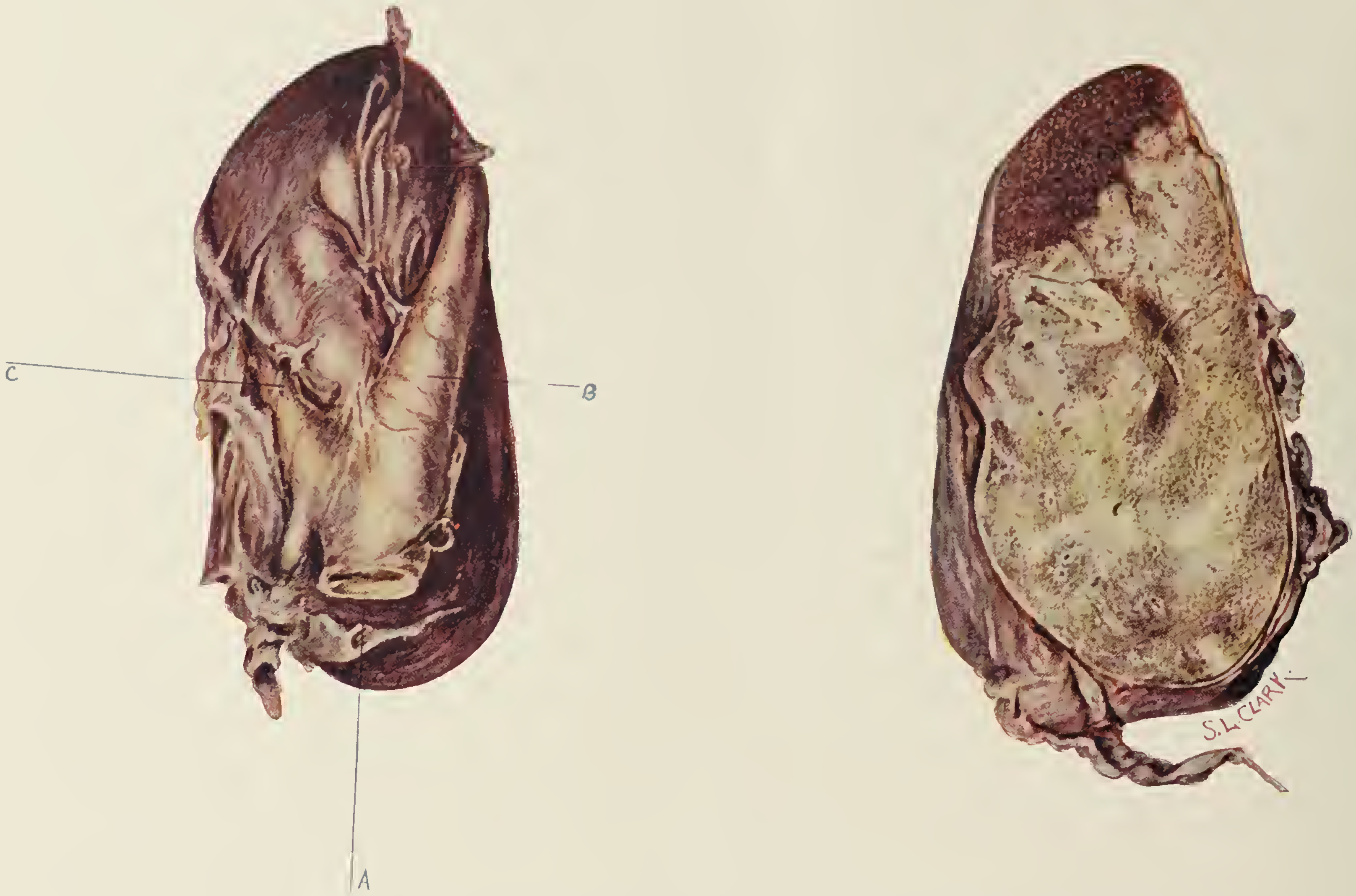

Fig. 1.—Keen's case. Two views showing external appearance and section of the tumor, slightly reduced in size. A, carotis communis; B, carotis interna; C, carotis externa.

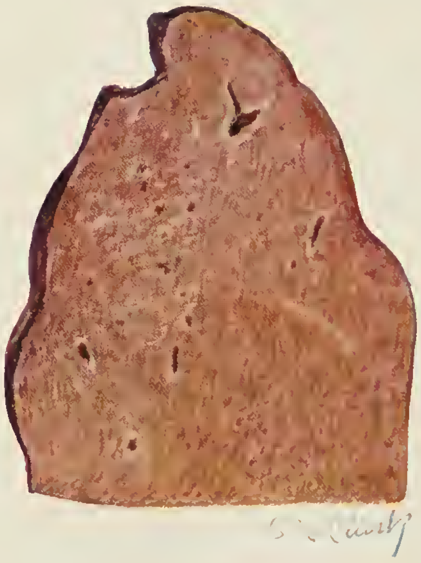

Fig. 2.—Funke-Hearn's Case, No. 22. Appearance of a section of a fragment.

Supplement to
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Accompanying Article by Drs. Keen and Funke.

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Original Articles

TUMORS OF THE CAROTID GLAND.*

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and
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PHILADELPHIA.

SURGICAL PART BY DR. KEEN.

A recent case of this rare specimen of tumor has interested me very much and led me to present for consideration a résumé of all the reported cases and some clinical remarks based on a study of them. My own case is as follows:

Patient.—R. M., male, aged 56, first consulted me March 30, 1905, for a large tumor on the left side of his neck. He stated that he first noticed the tumor about eighteen years ago and that it has slowly but steadily increased in size. There has been no pain, no dysphagia, no dyspnea, in fact, one may say, no symptoms save the existence of the tumor as a slowly increasing deformity.

Examination.—Chiefly anterior to the sternocleidomastoid, but extending under it all the way to its posterior border, I found a tumor measuring horizontally 13 cm. and extending from the lower border of the jaw vertically 10 cm. downward. It was soft, but not fluctuating. The tumor pulsated, but it was clearly a transmitted pulsation from the carotid artery. From the feel I judged it to be a lipoma and advised its immediate removal.

Operation.—On April 4, 1905, I made an incision along the anterior border of the sternocleidomastoid. As soon as the tumor was exposed, I was almost convinced it was an ectopic goiter from a supernumerary thyroid gland. It had the same kind of capsule under which ran very many very large veins. The color of the mass also closely resembled that of a goiter. But my diagnosis was quickly changed to that of tumor of the carotid gland when I found that the carotid artery seemed to run through the body of the tumor and the internal jugular vein on its anterior surface, and that these vessels were so adherent to he tumor that it was impossible to remove it without ligating and exsecting a large portion of the vein as well as the three carotids. Accordingly I ligated the common, internal, and external carotid and the internal jugular vein and removed the tumor entire. I had great difficulty with the hemorrhage during the whole operation. The tumor seemed to bleed at every point. I judged, though without counting them, that I applied fifty or sixty ligatures. During the dissection, the pneumogastric, sympathetic and hypoglossal nerves, the esophagus and the trachea were all exposed, but I succeeded in dissecting the tumor from all these structures without injuring hem. The operation lasted over an hour and a half. At its lose the man's pulse was 88, respirations 18, and temperaure 97. By 8 a. m. the next day these had risen respectively o 90, 20 and 100. At 9 a. m. he suddenly had an attack of evere dyspnea. Within a few minutes I saw him and found n oncoming acute edema of the lungs. This increased rapidly nd with it his temperature rose to 103 and his pulse and respirations became more frequent. He died at 8 a. m., on the morning of April 6, forty-five hours after the operation. Twenty-four hours after the operation I removed the gauze packing, there had been very little oozing and there was none subsequent to the removal of the gauze. The wound looked absolutely well. A postmortem examination was sought, but denied. Figure 1 shows the appearance of the tumor externally and on section.

While my diagnosis prior to operation had been probably a lipoma, I had felt considerable doubt as to the accuracy of the diagnosis, both by reason of the position and the general character of the tumor. As soon as I discovered its relation to the blood vessels I instantly recognized it as a tumor of the carotid body. I gave the specimen to Dr. Funke in the laboratory of the Jefferson Medical College, knowing that he had already made a special study of such tumors. His report is as follows:

PATHOLOGIC REPORT BY DR. FUNKE.

Gross Specimen.—The tumor consists of an ovoid mass, 8 cm. long and 5 cm. in its maximum diameter; weight, 100 gm. One end is slightly larger than the other. One surface or aspect of the tumor is considerably flattened while the other is distinctly convex, giving the specimen very much the outline of a small kidney. The surface is covered by a thin fibrous capsule. The general color is gray, but there are many dark red areas 0.2 to 2 cm. in diameter, apparently due to interstitial hemorrhage. Projecting from a point near one extremity of the flattened surface previously mentioned, is the severed end of an artery, 0.7 cm. in diameter. One centimeter beyond the point of severance, the artery divides into two unequal sized branches, one of which passes along either surface of the specimen for a distance of 4 cm. The disposition of the vessels makes the tumor appear as though springing from a fork formed by the branches. Around one vessel the growth has extended until it formed a groove slightly deeper than the vessel itself. The other branch is more superficial. To the larger branch on the side toward the fork, for a distance of 1.3 cm. from its formation, the tumor is intimately attached; the sheath of the vessels and the capsule of the tumor being directly continuous. The outer portions of the vessels are less firmly attached to the tumor. The entire growth is very dense. An incision partly divides the mass and exposes grayish surfaces which are marked by reddish areas. Near the margin of the surfaces are two circumscribed reddish-black areas, 2 cm. in diameter. Faint lobulation by grayish bands is present and the surfaces appear granular.

Accompanying the tumor is a small mass of tissue containing what appears to be two enlarged lymphnodes; the larger one is 1 cm. in length. These nodules and portions of the tumor were fixed in Zenker's fluid and the remainder of the tumor was preserved in Kaiserling's fluid. Sections were cut from both the tumor and the lymphnodes; they were stained with hematoxylin and by van Gieson's method for connective tissue, by Mallory's reticulum stain and with polychrome-methylene blue.

Histology.—The sections are bounded on one side by a dense fibrous capsule in which are many lymphoid elements, some spindle-shaped connective tissue cells and many strands of wavy elastica. In most places the capsule is sharply defined from the underlying structure, although at one point the distinction is poorly marked. At this particular point a broad trabecula penetrates the adjacent tissue. From the capsule many such fibrous strands emanate and dip into the tumor mass; in the center of which they are found in cross and longitudinal sections, often showing hyalin degeneration. These bands are largely composed of dense wavy fibrous tissue, among which are delicate strands of elastica, large and small blood-containing vessels; around the latter the elastica is especially conspicuous. In addition to the lymphoid elements in the fibrous bands are cell-like structures which fail to react to the ordinary histologic stains. It is difficult to determine whether the small bodies within them are nuclei or foreign bodies. These cell-like structures measure from 10 to 20 microns in diameter; they are sometimes oval, sometimes circular and are tinged yellowish-brown. The contained nuclei-like bodies are round or oval, are highly refractile and are at least two and sometimes four in number. The cell-like structures are often found among the tumor cells also; they are perhaps identical with the chromaffine cells described by Kohn.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

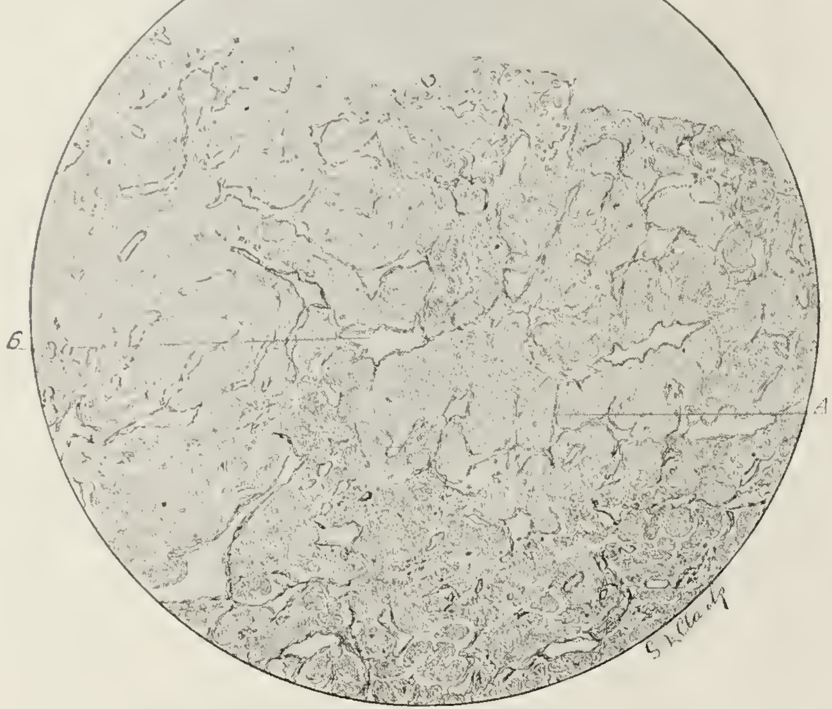

Fig. 3.—Endothelioma of carotid gland. A, an alveolus with contained tumor cells; B, blood vessel from which capillaries arise and form alveolar walls (Zeiss obj. 2/3; eye piece 1½ in.) (Funke.)

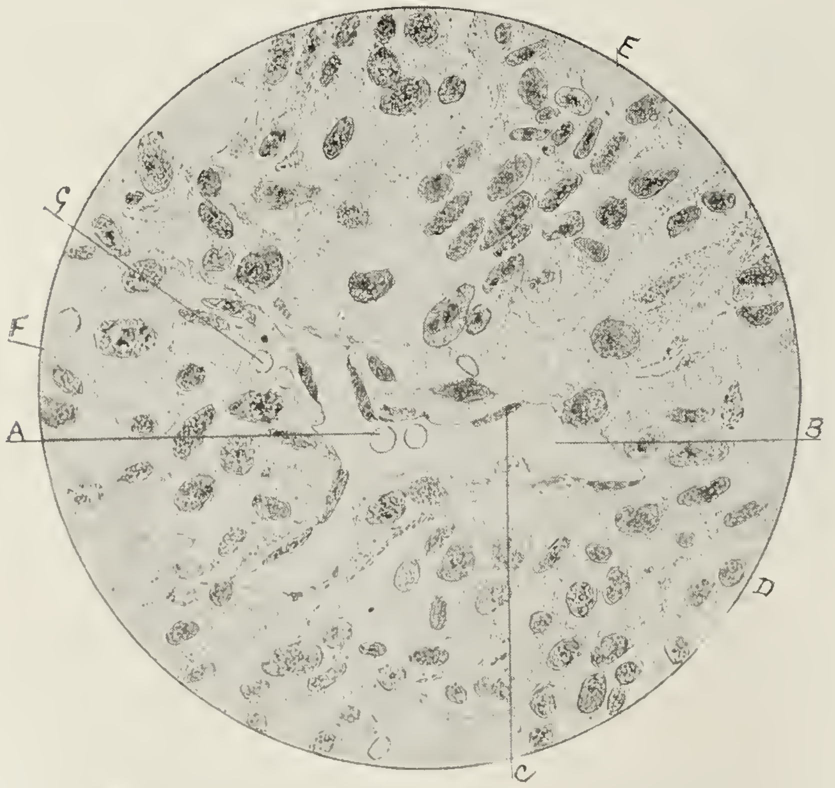

Fig. 4.—Endothelioma of carotid gland. A, red blood cells in capillary; B, capillary forming the walls of three alveoli; C, endothelium of capillary; D, E, F, tumor cells; G, red blood cells among the tumor elements (Zeiss obj. 1/16 oil im., eye piece 1½ in.) (Funke.)

The structure underlying the capsule is distinctly alveolar, in some places lobulated. (Fig. 3). Immediately beneath the limiting membrane the alveolar arrangement is less conspicuous, due perhaps to the smallness of the alveoli and to the great number of the contained cells. The walls of the spaces are frequently made up of delicate capillaries; other walls are composed of fibrous tissue, evidently constituents of the fibrous trabeculæ. In some places comparatively large vessels give origin to capillaries which anastomose, creating many spaces on all sides of the larger vessels. (Fig. 3 B.) Occasionally the capillaries are wide and contain fairly well preserved erythrocytes; others are mere chinks, the endothelium of one wall being almost in contact with that of the other occasionally, even these capillaries contain red blood cells. (Fig. 4). The size of the alveoli varies; the alveoli not a great distance from the capsule rarely exceed 0.1 mm. in diameter, many do not attain such a diameter, being but 0.05 mm. At a point some distance from the capsule the size of the alveoli is much greater, although this feature varies in different sections, the findings being inconstant. Here they reach 0.4 mm. The shape, like the size, varies, the smaller one being either circular or oval, while in the larger one the long exceeds the short diameter, four and even five times. Very often with Mallory's reticulum stain fields are found where the tumor cells are in strings extending from one alveolus into the other, clearly indicating communication between these structures.

The cells in the alveoli vary in size and shape. This statement can not be held as absolute, since packing of the cells in the greater number of the spaces precludes a detailed study so that the deduced facts must be based on the study of the isolated elements. The statement relative to the size of the alveoli in the preceding paragraph indicates, of course, that the number of cells in the different spaces varies. In the smaller alveoli the count does not exceed 25 or 30, while in the larger ones at some distance from the capsule the number may reach 60 or 70; such numbers in a single alveolus are only possible by overlapping of the cell protoplasm. From the isolated elements one is justified in saying that the cells vary from 15 to 20 microns in diameter and that their shape is at times polyhedral, at other times oval. In a large majority of instances the arrangement of the cells within the alveoli is indiscriminate. only now and then is a space found where the elements are so placed that the long axes of the cells are at a right angle to the alveolar wall. Speaking principally of the isolated cells the protoplasm is finely granular and acidophilic: the granules are not closely set, hence this substance is fairly transparent; the absence of the cell membrane is largely responsible for this condition of the protoplasm; it is also responsible for the jagged margins of the cells as well as for the irregularity of their shape. Vacuolation of the protoplasm is rare; it was found but once or twice. The nuclei can be studied with a greater degree of accuracy owing to the fact that their outlines are clear. They vary in size and as a rule are oval, a few are circular, some are spindle-shaped: they are vesicular and sharply circumscribed from the protoplasm. The chromatin granules are rather scanty, those present are disseminated throughout the nuclei, but aggregation is greater at the peripheries; the centers of many of the nuclei are for the most part hyalin, but they are traversed by one, sometimes two and even three, delicate chromatin-containing strands. The most striking feature of the nuclei is the uniformity of structure; only now and then can a cell be found the nucleus of which does not conform to the de-

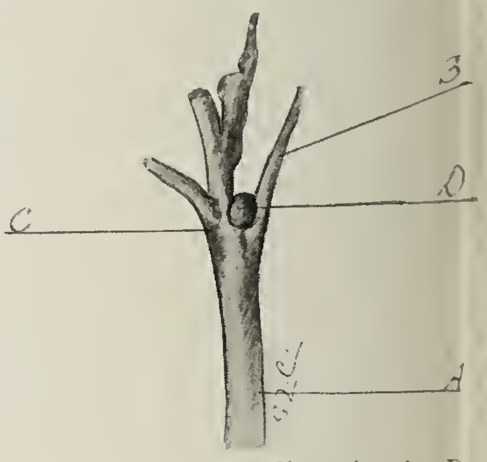

Fig. 5.—From a dissection by Dr. Funke. Carotid gland, natural size, from a seven months' fetus. Seen from the posterior surface of the artery. A, common carotid artery; B. internal carotid; C, external carotid; D, carotid gland.

scription given. Such cells are smaller, the nuclei are smaller and the chromatin granules closely set, the nuclei, of course, stain with greater intensity with the basic dyes.

At one point in the sections the alveolar structure and the disposition of the cells are extremely instructive. Here one can demonstrate small capillaries forming the alveolar walls which are apparently composed of two layers of cells, evidently closely allied to the cells of the alveoli. It is impossible to differentiate the individual cells comprising the capillary walls, but the nuclei of those cells lying next to, or lining the lumen, are spindle-shaped, the chromatin granules are in close contact with one another and the reticular structure is inconspicuous. Similar cells have been described in the latter part of the preceding paragraph. The outer layer is made up of cells the nuclei of which are structurally like both the cells lining the lumen of the capillary and those of the alveoli. These nuclei are not distinctly spindle-shaped, but assume the shape of an object the poles of which are more blunt, tending toward an oval. The structure of the nuclei is less compact, the chromatin granules are not closely set, hence the staining is less intense and the reticular structure is more conspicuous. The long axes of the nuclei are parallel to the lumen of the vessel. Lying at the periphery of the alveolus, now being considered, and closely associated with the cells just described, are other cellular elements not markedly different from the latter, but identical with the cells of the alveolus; some of these cellular elements are placed at a right angle, others at an acute angle, to the capillary wall.

It is not uncommon to find points where the elements of the alveoli or the *Zellballen* of the German writers (Figs. 23 and 24) are disposed around capillaries, more or less crudely, in concentric rings. This is especially seen in the larger alveoli. These capillaries, perhaps, represent the walls of alveoli and the elements disposed around them are cells from different spaces.

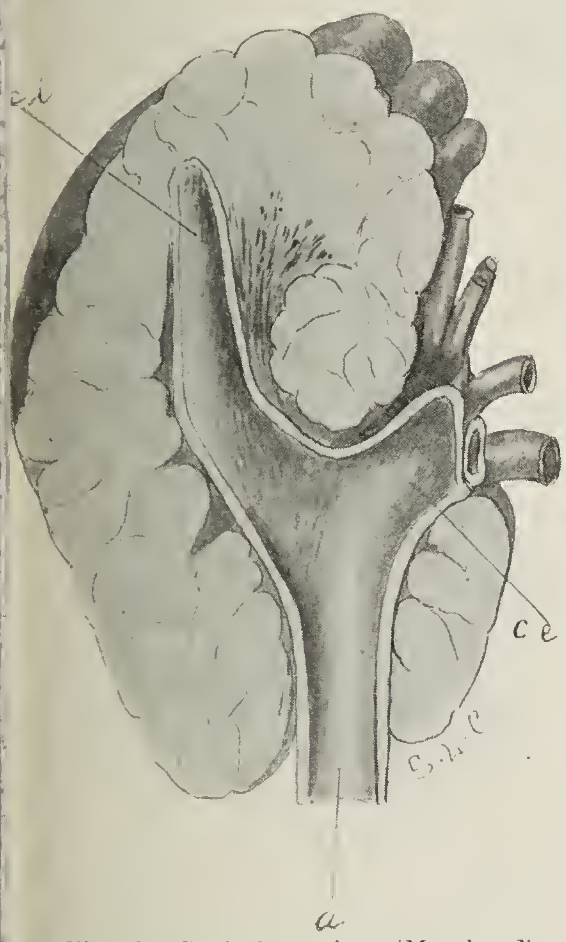

Fig. 6.—Sagital section (Marchand's Case 1). A., carotis communis; C. I., carotis interna; C. E., carotis externa.

Many alveloi, especially the larger ones, contain considerable blood. This substance, as a rule, occupies the periphery of the spaces; occasionally it is among the elements of the *Zellballen.* The hemorrhage is most marked some distance from the capsule, although that structure contains erythrocytes.

Among the tumor cells, in the blood vessels, and in the framework of the neoplasm, are fuchsinophilic bodies, varying from 10 to 20 microns in diameter. They are finely granular; the granules are intensely fuchsinophilic. When they are found free in the spaces there is no evidence of nuclei, but when in the midst of the tumor cells they appear to contain concentrically placed nuclei which in all probability are nuclei of overlying cells. The fuchsinophilic bodies are conspicuous in the blood vessels where they appear to be attached to the walls. The lymphnodes show no noteworthy change and are not participating in the neoplastic process.

Diagnosis and Remarks.—Although this form of growth is referred to as "perithelioma," the fact that the cells around the vessels do not differ from those constituting the inner stratum of the intima, suggests, that for simplicity's sake, such neoplasms should be grouped with the endotheliomata.

While the tumors of the carotid body grow for long periods of time without producing any appreciable effect on the health of the patient, the infiltration of the outer sheaths of the carotid vessels and the surrounding tissues by the neoplasms strongly suggests malignancy, although of a mild nature.

Haller was the first to describe the carotid gland, a century and a half ago, but it was not until 1891 that Marchand[1] for the first time described a recognized tumor of this gland (Fig. 6). Marchand's patient was operated on by Riegner in 1880. Paltauf[2] later described four other operations done in Vienna from 1886 to 1889.

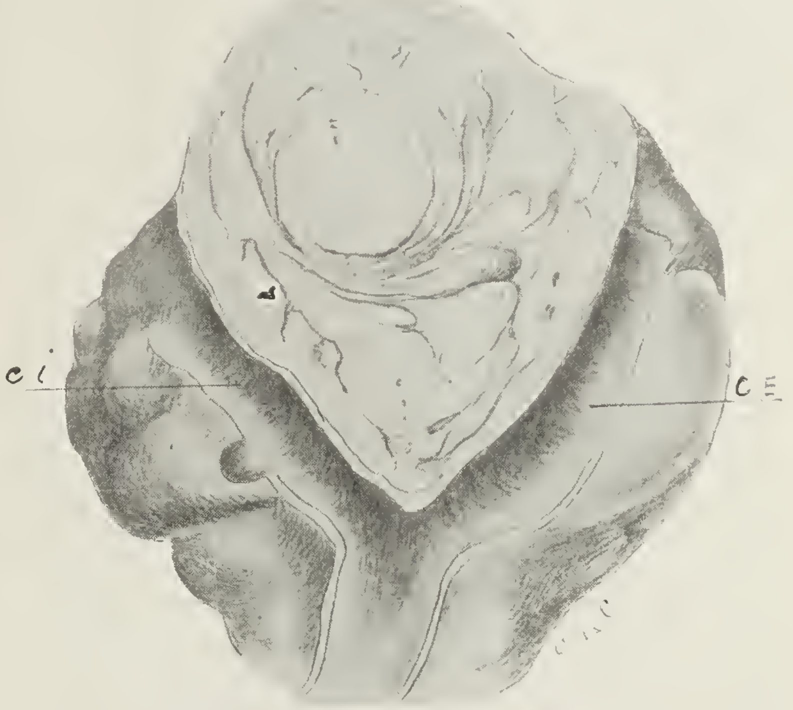

Fig. 7.—Case 9. Paltauf-Dittel. Section through specimen showing relation of tumor to blood vessels. C. I., carotis interna; C. E., carotis externa.

I have been able to collect in all twenty-six cases which have been observed in the living and have added the full notes of one operation of my own, making twenty-seven cases in all. In all the twenty-seven cases, except Case 25, the patients were operated on. Besides that, there are two cases of such tumors found postmortem. Of these I have given a brief résumé, but I have not included them in any of the statistics in this paper. Up to this time, therefore, there have been in all twenty-nine cases of carotid tumor observed and reported from 1891 to 1906.

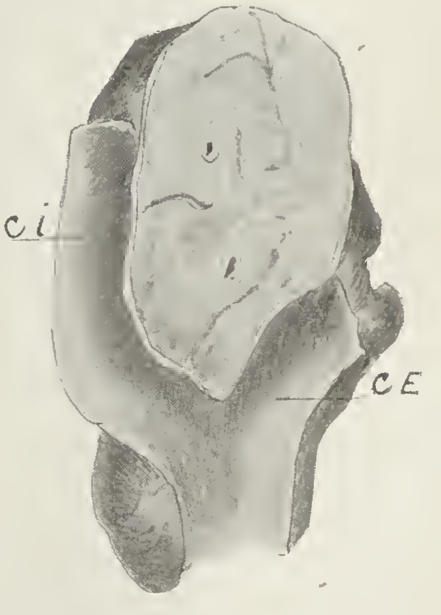

Fig. 8.—Case 4. Paltauf-Gersuny. Section through tumor showing relation of tumor to the vessels. C. I., carotis interna; C. E., carotis externa.

The increasing frequency of reports of such tumors shows that they are less rare than was originally supposed. Curiously enough, Drs. W. Joseph Hearn, J. Chalmers DaCosta and myself, the three clinical surgeons at the Jefferson Medical College Hospital, have each had a case within a period of two years. If we include the tumors designated by Mr. Hutchinson as "potato tumors of the neck" among the tumors of the carotid gland, as seems to me proper, then the experience of Mr. Hutchinson, who stated that he had seen eight cases, further confirms the fact of their relative frequency. So far as I know, no colored drawing of such a tumor exists, and I am glad, therefore, to be able in my own case to show the gross appearances in color (Fig. 1). A fragment of the tumor in Hearn's case has also been preserved, showing the appearance (Fig. 2).

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[1] Marchand: Virchow's Festschrift, 1891, vol. i.

[2] Paltauf: Ziegler's Beitr. z. path. Anat. u. alleg. Path., vol. xi, 1892.

The carotid gland is known by other names, such as the intercarotid gland, the retrocarotid corpuscle. As has been shown by Dr. Funke,[3] it is an inconstant gland, varying in size from 4 to 7 cm. in length and situated at the bifurcation of the common carotid (Fig. 6). It lies a little posteriorly to the vessels and it is more intimately related to the internal than to the external carotid. It has a sheath with septa which penetrate into its interior. There arise also, usually from the common or from the internal carotid, from one to several small vessels, either from the posterior surface of the common carotid, from the bifurcation or from the internal carotid. This vascular connection with the carotid sometimes gives the gland the appearance of having a small pedicle (Fig. 23).

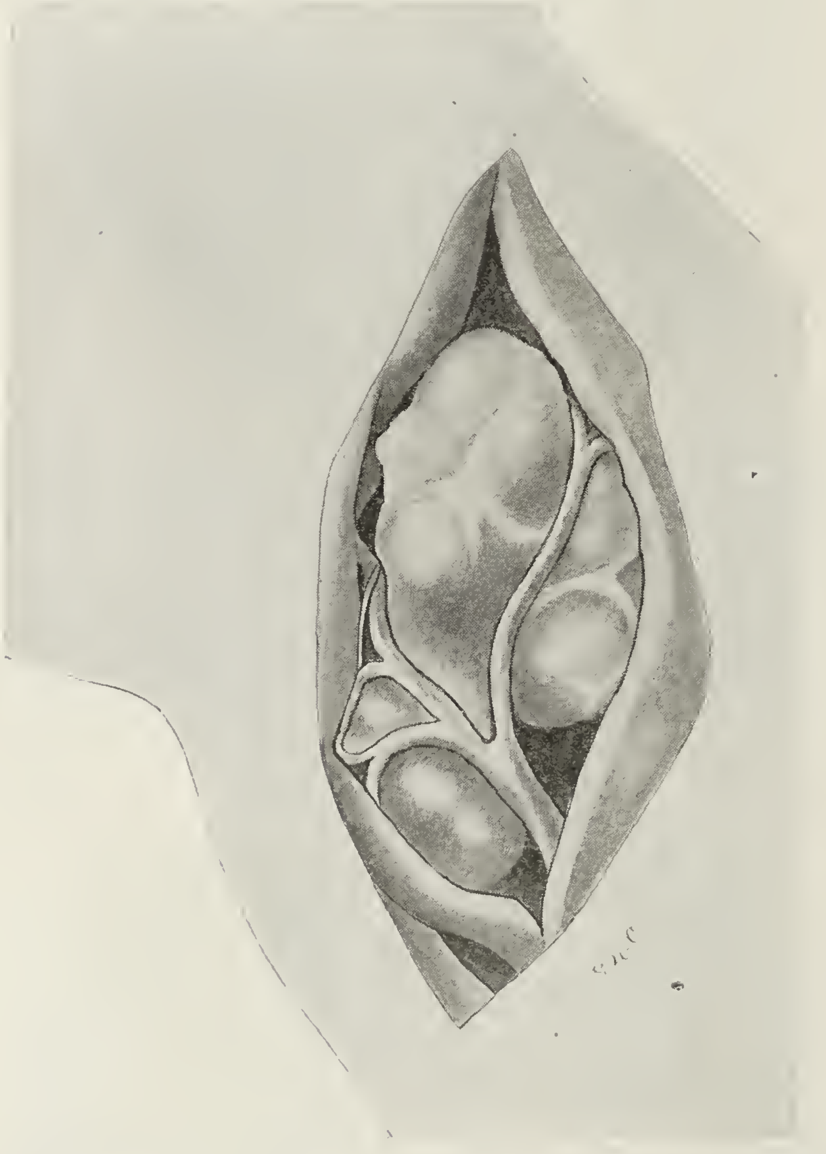

Fig. 9.—Case 6.—Kauffmann and Ruppanner v. Mikulicz, showing the relation of the tumor to the carotid artery and jugular vein on section.

None of the first seven reported cases was correctly diagnosticated. As a result of his observation and experience in his first case, Maydl in his second case (Case 8) made the first correct diagnosis. In my own case I did not make a correct diagnosis, though I was mentally, rather curiously uncertain as to just what kind of tumor it was. Should I see another case, I believe, I would be able to diagnosticate it correctly.

ETIOLOGY.

A number of possible causes have been mentioned, but they have rather been imaginative attempts, I think, to connect the rise of the tumor with some lesion or disease which is very unlikely to have been a cause.

Age.—The ages were as follows:

18 years	1 case.	46 to 50 years	5 cases.
21 to 25 years	3 cases.	51 to 55 years	3 cases.
26 to 30 years	3 cases.	56 to 60 years	2 cases.
31 to 35 years	6 cases.	62 years	1 case.
41 to 45 years	2 cases.	74 years	1 case.

Nearly one-half (13 of the 27), therefore, were *first seen* by the surgeon between 30 and 50 years of age. But the tumors had originated much earlier. If we take the ages when the tumor was first observed we find that they were as follows:

13 years	1 case.	41 to 45 years	4 cases.
16 to 20 years	3 cases.	46 to 50 years	2 cases.
21 to 25 years	3 cases.	51 to 55 years	1 case.
26 to 30 years	6 cases.	61 years	1 case.
31 to 35 years	3 cases.	73 years	1 case.
36 to 40 years	1 case.		

Therefore, 17 of the 27 cases were *first discovered* between the ages of 13 and 35, 7 between 36 and 50 and only 2 after 50 years of age.

There were fourteen males and thirteen females.

SIZE AND CONSISTENCE OF TUMOR.

The tumor has usually been noticed as a small lump in the neck about the size of an almond or a little larger, and when first seen by the surgeon has usually been from the size of a pigeon's egg to that of a goose egg, the most commonly mentioned size being the intermediate one of a hen's egg. This describes also, to some extent, its shape, as it is usually ovoidal. When operated on it is found sometimes to reach to the spine posteriorly. In several cases it produced bulging of the lateral wall of the pharynx internally, and in three cases it extended to the base of the skull. As a rule the surface is not lobulated, but is at least fairly smooth.

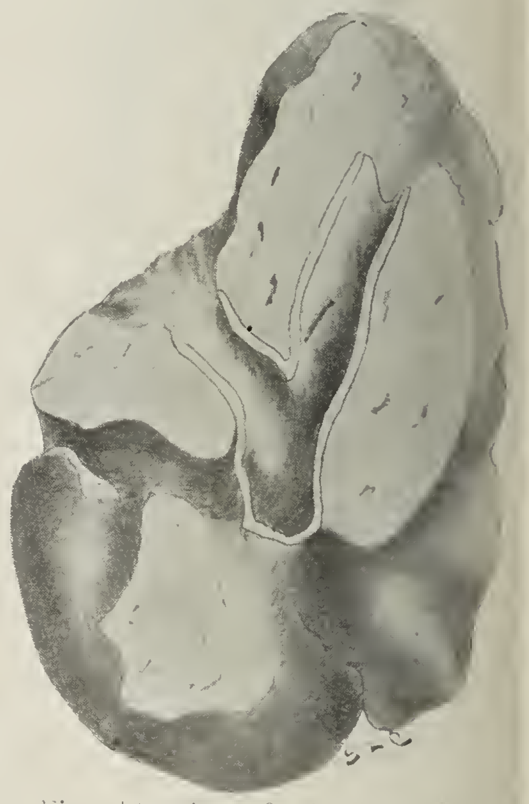

Fig. 10.—Case 8, Kopfstein-Maydl. Section of tumor showing relation of vessels to the tumor.

The consistence varies, but the tumor is usually moderately hard and elastic. In my own case it was so soft that I regarded it as lipoma. Occasionally in parts it will be hard in contrast to the general softness of other portions of the tumor.

CAPSULE AND COLOR.

As a rule there is a fairly well-defined capsule with septa dividing it into separate portions, without, however, as stated above, any marked lobulation as a result.

When reached on dissection the external appearance of the tumor in not a few cases recalls a goiter, so much so that in my own case during the operation I was half convinced that I had to deal with an ectopic goiter developed from an accessory thyroid. The color, the large veins and very abundant hemorrhage were all in favor of this view, and I was not entirely decided as to its real character until I found that the relation of the tumor to the vessels was such as quickly to decide the diagnosis in favor of a carotid tumor.

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[3] Funke: American Medicine, 1904, vol. viii, p. 109.

On section the color varies very considerably; sometimes it is brown, brownish-red or bluish-brown; in Case 2, at least, it is stated to have been white in color. Moreover, the color is not always uniform on section, but varies in different parts. In a number of cases the appearance of the tumor on section suggests a spongy structure.

RELATION TO VESSELS.

As a rule, as the tumor grows it envelops the common carotid and its branches and often becomes so adherent to the jugular that resection of this vein is required. This very intimate connection with the vessels is confirmed by the fact that the common and internal or all three carotids had to be ligated in 18 out of the 27 cases, and the external carotid alone in 2 cases; while the jugular vein was tied in 13 cases, in 12 of which the carotids also were tied.

In eight cases the tumor was dissected from the vessels (in Case 20 by splitting the tumor) but the later history of these cases was not encouraging. In four cases (5, 7, 14, 24) recurrence took place. In two (Cases 13 and 17) there was no recurrence at least for four years, and in two (Cases 9 and 20) there was no later history. The four recurrences took place presumably from microscopic rests of the tumor, which, no matter how capable the surgeon is, must always be left behind.

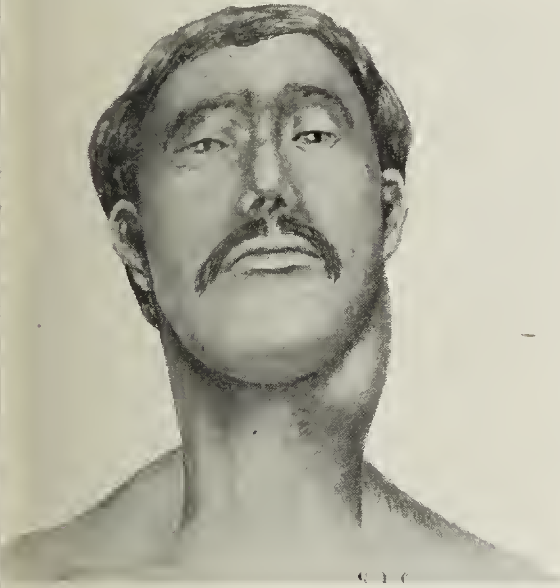

Fig. 11.—Case 9, Kopfstein-Maydl. External appearance of patient.

The relation to the vessels and the nerves and the vascularity of the tumor are perhaps the most important surgical considerations in connection with the treatment. In my own case the operation lasted for over an hour and a half, and I was obliged to apply not less than fifty or sixty ligatures. The same experience was reported in Da Costa's case (Case 26, not yet published in full), and again in the hands of so able a surgeon as von Mikulicz (Case 6). In his case (Fig. 9) the upper pole of the tumor reached to the base of the skull at the jugular foramen and had to be seized by hemostatic forceps *en masse*, this mass containing also the internal jugular vein, which could not be ligated separately.

In the 26 cases so far operated on there were seven deaths, a mortality of 27 per cent., or over one in four. The two principal causes of death were pneumonia from division of the vagus and cerebral disturbances from ligation of the common or internal carotid artery.

In estimating the danger from the operation of ligation of the common carotid, or, what is practically the same, of all three carotids, it would be very unfair to include the cases operated on in the pre-antiseptic era. We have at least two tables belonging to the aseptic era. Zimmerman[4] collected 70 cases from 1885 to 1891, with a mortality of 31 per cent (22 deaths). Kranepuhl[5] collected 46 cases from 1893 to 1899, with 4 deaths, i. e., a mortality of 8.39 per cent., but there were symptoms of cerebral disturbance in 23.9 per cent. Dabrowski[6] has collected 22 cases of simultaneous ligation of the carotid and internal jugular, not all in the aseptic era, however, of which 9 patients suffered from cerebral symptoms and 8 died, a mortality of 36.4 per cent. This simultaneous ligation of both vein and artery, as I have

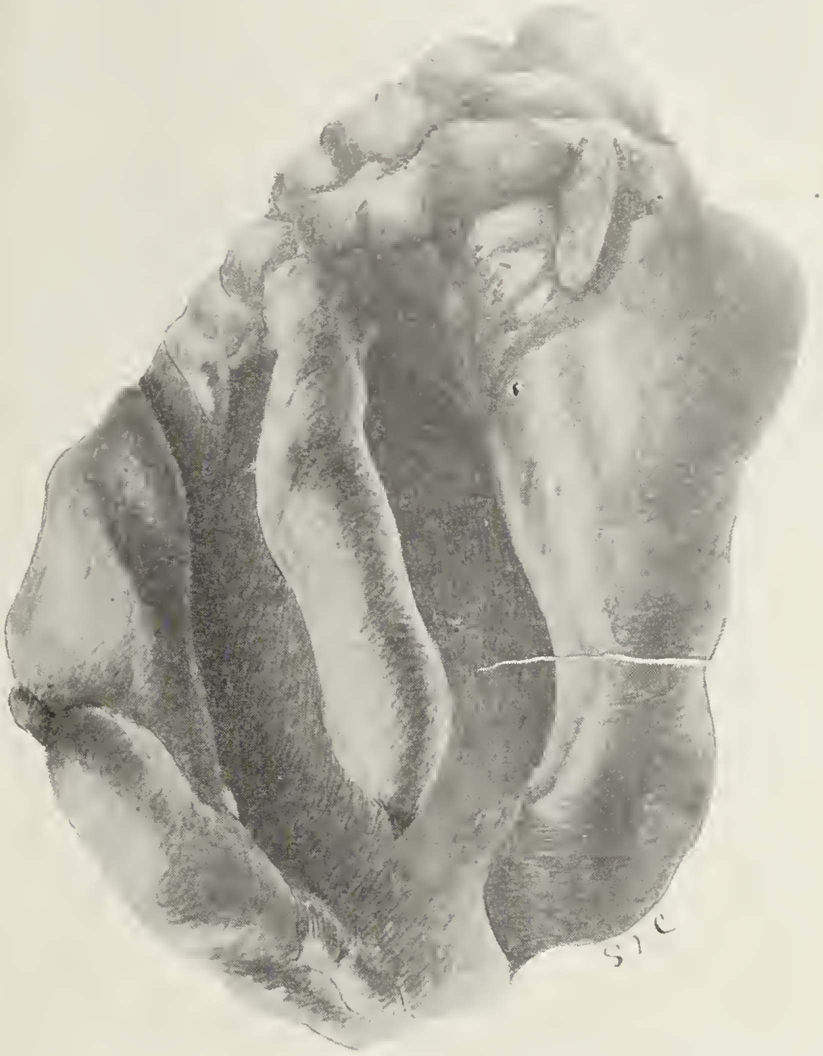

Fig. 12.—Case 9, Kopfstein-Maydl, showing the deep grooves in which the carotids were embedded, requiring the resection of all three.

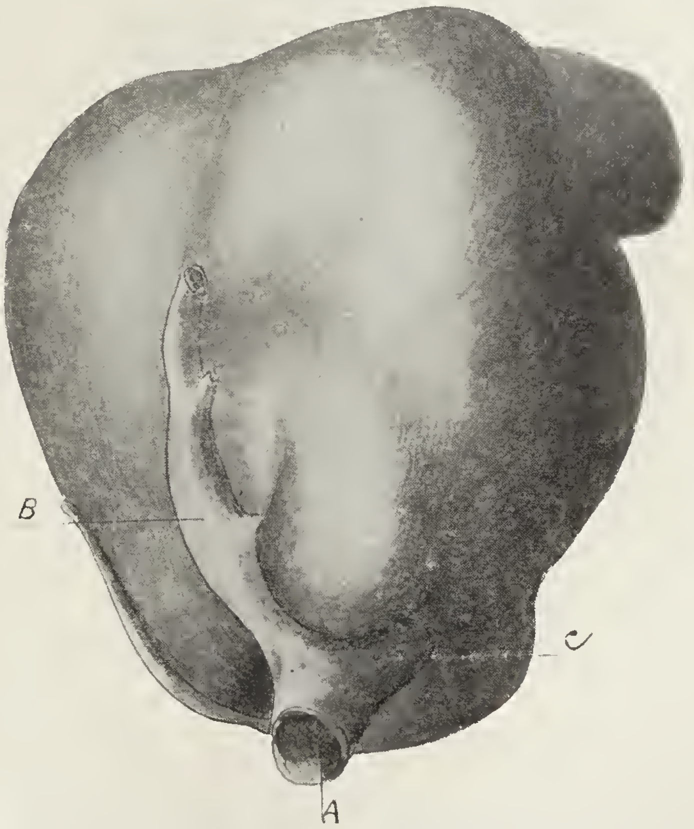

Fig. 13.—Case 11, Mönckeberg. Tumor on its antero internal surface. A, carotis communis; B, carotis interna; C, carotis externa.

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[4] Zimmerman: Inaug. Dissert., Heidelberg, 1892.

[5] Kranepuhl: Dissert., Marburg, 1901.

[6] Dabrowski: Centbl. f. Chir., 1895, p. 119.

shown, is unavoidable in about half of the operations for carotid tumors. Combining all these, we obtain 34 deaths in 138 cases, a mortality of 24.7 per cent., or practically one death in every 4 cases—a high mortality for modern operations.

It is clear, therefore, that ligation of the common carotid or all three (for the ligation of the external carotid adds little to the danger) is a very serious operation, even in our age of aseptic surgical success, and is one of the principal factors in the large mortality of these cases. If we add to this the division or resection of the pneumogastric with the marked tendency toward pneumonia which follows such an injury, and also take into consideration the fact that other nerves were involved in some of the cases in addition to the vessels, we can very easily account for the very high mortality.

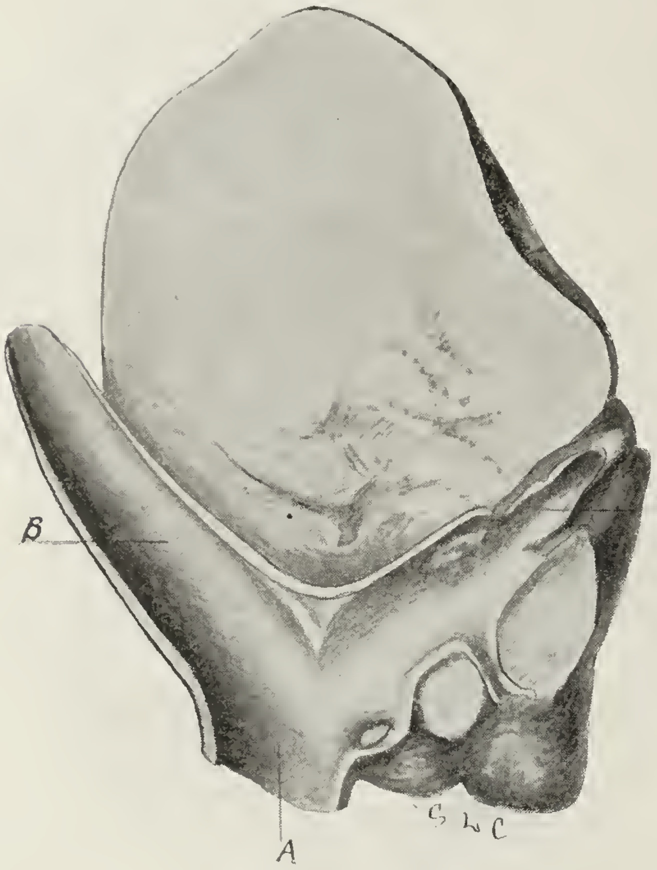

Fig. 14.—Case 11, Mönckeberg. Section of tumor showing relation of vessels. A, carotis communis; B, carotis interna; C, carotis externa.

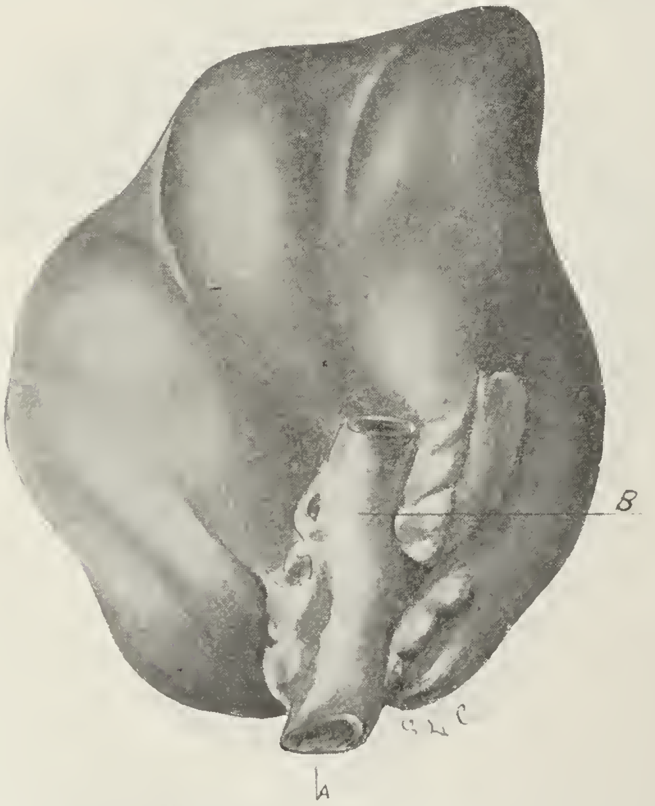

Fig. 15.—Case 12, Mönckeberg. Tumor from behind. A, carotis communis; B, carotis interna.

RELATIONS TO NERVES AND LYMPHATIC GLANDS.

The marked tendency of tumors of the carotid gland not only to envelop the vessels, but also either to become very adherent to the important nerves of the neck or even to envelop them as they do the vessels, is shown by the fact that the pneumogastric nerve was resected in six cases (1, 6, 9, 10, 11, 23), the sympathetic in two cases, the hypoglossal (either resected or divided) in four cases and the lingual in two cases. In several, more than one of the nerves were resected or divided. In Marchand's and von Mikulicz's cases (Nos. 1 and 6) the division of the vague was not recognized during the operation, but was discovered at the postmortem. When we note that of the 7 deaths 4 were from inhalation pneumonia and one from acute edema of the lungs, the division of the vagus is seen probably to be even a greater danger than the ligation of the vessels.

In six cases the lymphatic glands were enlarged; in only one (Case 20) was the lymphatic gland normal. This enlargement would seem to indicate malignancy. In most of the cases no mention is made of any enlarged lymphatic glands.

SYMPTOMS.

The symptoms are chiefly negative; that is to say, except for the presence of a tumor, which is more or less of a disfigurement, there are seldom any other annoying symptoms. As a rule there is no pain, no dyspnea, no dysphagia, no changes in the pupil as a result of involvement of the sympathetic (though postoperative changes are noted in several cases), no cardiac symptoms from involvement of the pneumogastric, no cerebral symptoms from any involvement of the vessels.

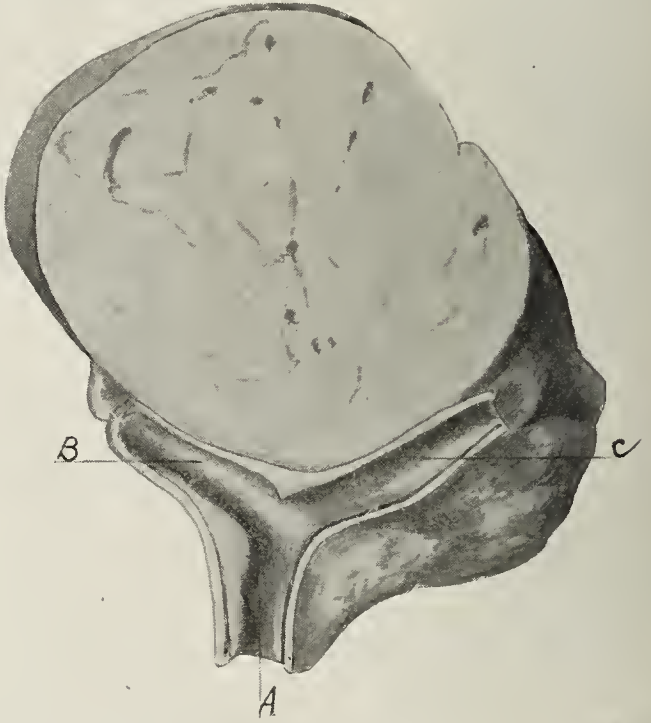

Fig. 16.—Case 12, Mönckeberg. Tumor on section. A, carotis communis; B, carotis interna; C, carotis externa.

As a rule the tumor grows slowly and may persist for a number of years before the patient seeks relief. Thus the tumor had existed prior to surgical consultation in one case for thirty-seven years, and in several others for from four to twenty years. In only three cases had it existed for less than one year.

On the other hand, though slowly growing, after it has thus gradually increased in size for some years, it may suddenly increase in size with great rapidity and become a serious deformity. Symptoms other than the deformity are often wanting. In the great majority of cases the patients have simply sought relief from this increasing deformity. There have been, however, in a very few cases some slight symptoms, such as headache, hoarseness and a narrowed pupil.

Among the physical signs the most important is the location of the tumor. It always arises at the bifurcation of the carotid, extends somewhat downward, but rather more upward, never to such a degree as to displace the auricle. It lies partly under the sternocleidomastoid, and for this reason its posterior boundary is rather ill-defined. As a rule it is movable to some extent laterally, but in consequence of its intimate relation with the carotids it can only be slightly displaced upward or downward. The skin is never discolored, nor is it adherent to the underlying tumor. Pulsation, of course, is felt in nearly all cases, but this pulsation is a transmitted pulsation directly from the artery through the substance of the tumor. There is no such expansile pulsation as is characteristic of an aneurism, though in Reclus' case (Case 20) a slight expansile pulsation was noted. In fact, in only one case was the diagnosis of aneurism even entertained. On auscultation in several cases a distinct bruit was heard and on applying the hand there was also a thrill. These are very easily accounted for by the mechanical condition existing, especially if the caliber of the vessels is at all affected. In no case has this caliber been obliterated. Pressure on the carotid below the tumor, of course, abolishes pulsation, bruit and thrill. In Reclus' case a curious phenomenon was observed, namely, that pressure reduced the volume of the tumor by about one-half, and when the pressure was removed the tumor regained its original volume, not by a continuous but by intermittent staccato enlargements, corresponding to the pulsation of the heart.

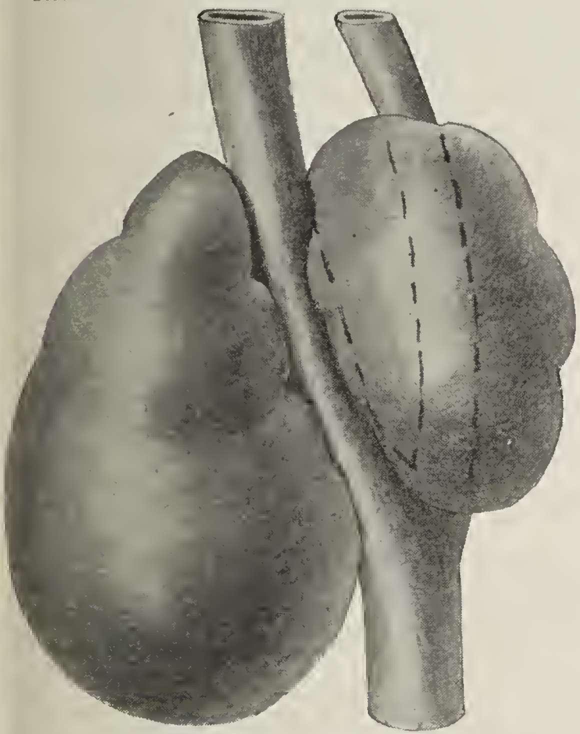
Fig. 17.—Case 13, von Heinleth, showing the relation of the tumor to the carotids like a meal sack thrown over the shoulder.

MALIGNANCY.

Tumors of the carotid body can be rather sharply differentiated into two groups, one which shows but little tendency to malignancy, at least in the early stages, in which there are no enlarged glands and no metastasis. In fact, it may be said that in general such tumors run a benign course in their early stages. Other cases, however, have shown a marked tendency to malignancy. So good a pathologist as Marchand in the very first case believed it to be malignant. In four cases recurrence took place, probably from microscopic rests which were not removed, and in one the patient died four years later from cancer of the ovary.

In addition to this it is to be noted that nine cases were reported so shortly after the operation that we can not draw the inference that they would have been free from recurrence if the case had been reported at a later date. In one case the patient died without an operation, but it was clearly malignant. In five cases there was involvement of the lymphatic glands. All of these had undergo a slow development, followed by a later much more rapid growth.

DIAGNOSIS.

Most commonly the tumor is thought to be a lymphoma or adenoma. Sometimes tuberculosis of the glands has been suspected. In my own case, prior to operation I thought it a fatty tumor, though I was by no means certain of the diagnosis. In a very few cases sarcoma or carcinoma has been suspected.

In Maydl's first case the diagnosis was lymphoma and the tumor was only discovered to be one of the carotid gland after operation. In his second and later cases he was able to make a correct diagnosis. In my own case I was quite in error, though I suspected I was in error at the time.

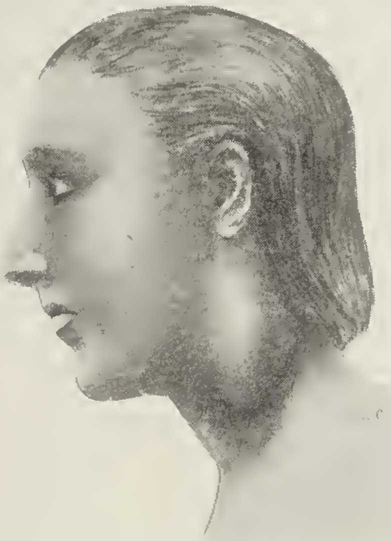
Fig. 18.—Case 17, Kauffmann and Ruppanner-Fritsche. External appearance of the tumor.

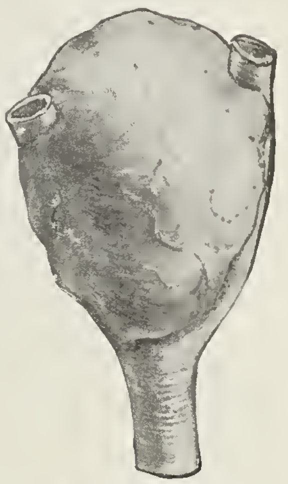
Fig. 19. — Case 18, Scudder, showing the three carotids and their relation to the tumor.

The *diagnosis* is based on positive and negative facts.

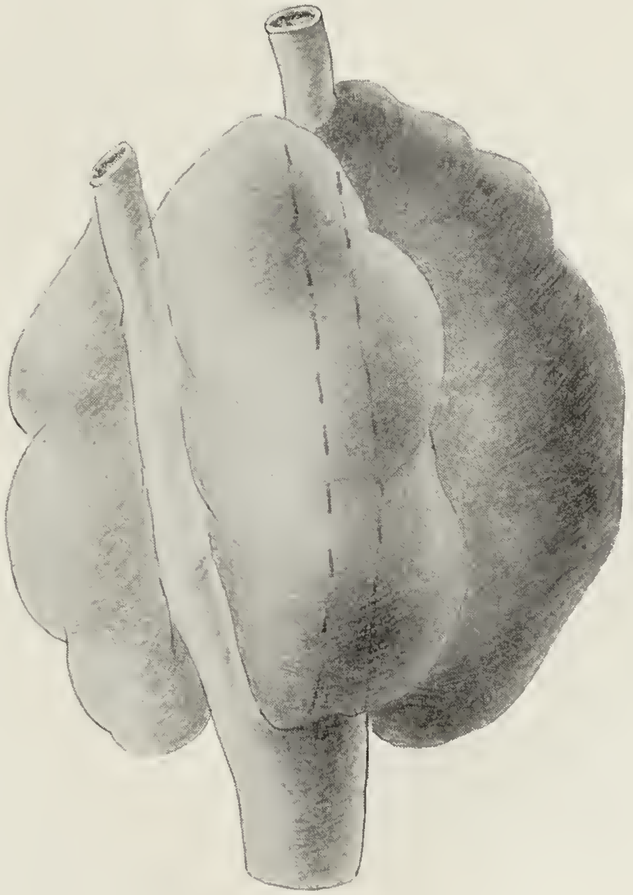
Fig. 20.—Case 20, Reclus, showing relation of tumor to the vessels.

The Positive Facts.—1. There is a tumor arising in the region of the bifurcation of the carotid; that is to say, about on a level with the upper border of the thyroid cartilage. It lies at first under the border of the sternocleidomastoid, but when it has reached any size it is only partly covered by this muscle. 2. The tumor is moderately movable horizontally, but not vertically. 3. It is usually ovoidal in shape. 4. As a rule it is rather smooth and not lobulated. 5. It is a single tumor and not made up of a coalescence of several tumors, as in tuberculous glands. 6. There is transmitted but non-expansile pulsation. 7. There may be bruit and thrill, but this is rare and not marked. 8. It may cause bulging of the wall of the pharynx. 9. The pupil is occasionally contracted. 10. It will usually grow slowly at first, and, possibly, shortly before the surgeon sees it, more or less rapidly. 11. It will have existed for a number of years. 12. The consistence is neither very hard nor very soft, but elastic.

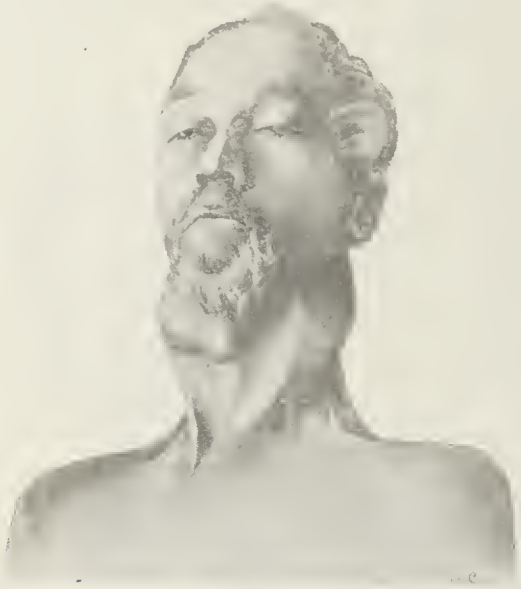

Fig. 21.—Case 25, Gilford and Davis. External appearance of tumor. Patient died without operation.

The Negative Facts.—1. There is no pain. 2. As a rule it is not tender. 3. There is no disturbance, as a rule, of the pneumogastric, either as to its cardiac or laryngeal functions. 4. There is no disturbance of the sympathetic nerve. 5. There is no change in the pupil, except occasionally. 6. So far as the patient is concerned, there are usually no subjective symptoms, but the aid of the surgeon is sought on account of a slowly or rapidly growing deformity, and if the tumor is growing rapidly there may be also fear of its results.

MORTALITY.

The results as to mortality have been as follows: Of 26 patients, 19 have recovered and 7 died. This gives an immediate mortality of 27 per cent. One patient died without operation. But to the 7 deaths as an immediate result of operation are to be added one a year later from recurrence and three other speedy deaths from recurrence in prospect. The causes of immediate death from operation have been: In Cases 1, 6, 11 and 23, pneumonia, in all of which the pneumogastric was divided or resected; in Case 3, hemorrhage; in Case 22, cerebral anemia; in Case 27, acute edema of the lungs.

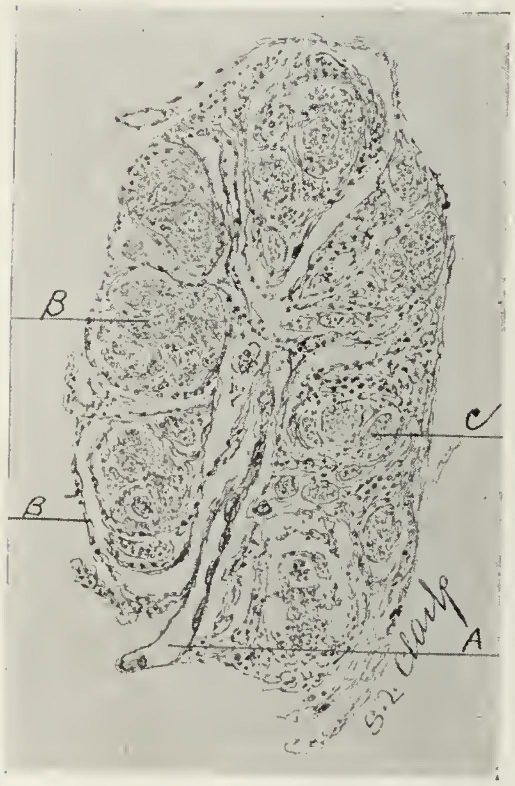

Fig. 23. — Normal carotid gland (Funke). A, main artery; B, lobule; C, *Zellballen* of German writers (Zeiss obj. 2/3 in.; eye piece 1½ in.).

In addition to this mortality, however, other accidents have arisen in the patients who survived, to which Reclus and Chevassu especially call attention. In Cases 2, 12 and 26 the patients have had hemiplegia with aphasia. In three the voice has been affected and there has been more or less dysphagia. In one there has been such tracheal irritation as to produce a constant cough. In four the tongue has deviated to one side and the palate has been paralyzed. In two there was an altered pupil and there was no exophthalmos in one. In three cases the face has been partly paralyzed. In only seven cases (10, 13, 15, 17, 18, 19 and 20) has recovery occurred without any complication, or at least without any being mentioned.

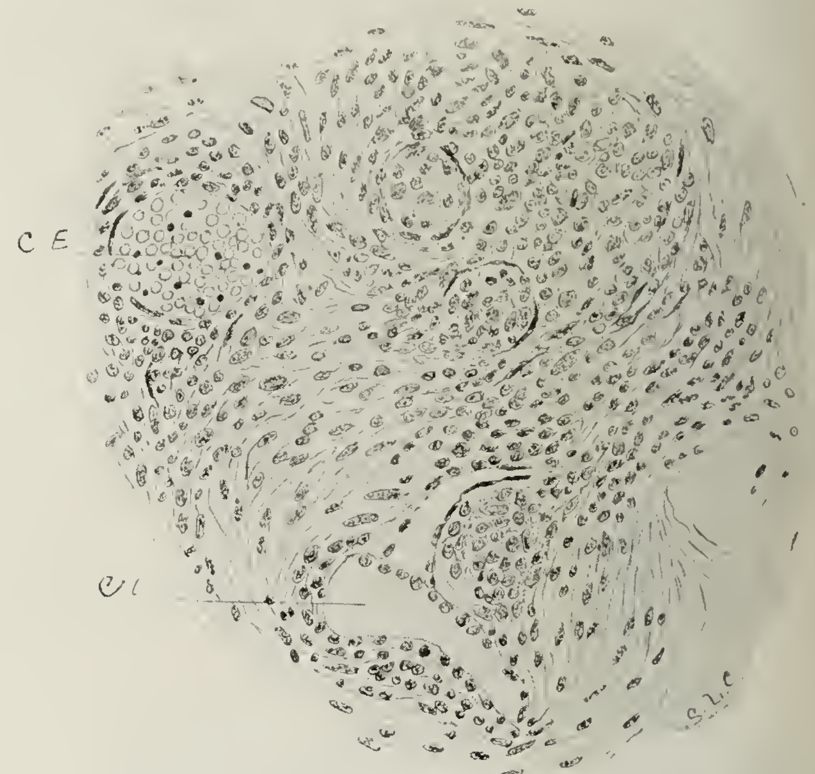

Fig. 22.—Carotid gland from a 4.5 cm. human embryo (Paltauf) C. I., carotis interna; C. E., carotis externa.

In view, therefore, of the large death rate and of the serious and often disabling complications which have followed in a considerable number of those who have recovered, the question arises whether any operation ought to be done.

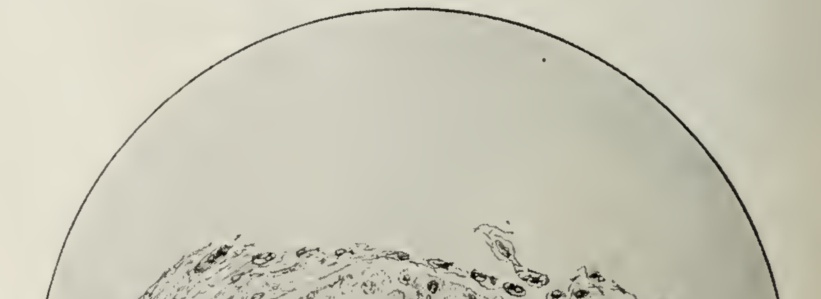

Fig. 24.—Normal carotid gland (Funke), showing part of a lobule. A and B cells constituting the *Zellballen* of German writers (Zeiss obj. 1/8 in.; eye piece 1½ in.).

Reclus and Chevassu reach the following conclusions:

> Every operation undertaken for tumor of the carotid body may require resection of the vessels and nerves of the neck. Interference should be undertaken, therefore, only when serious functional troubles or a rapid evolution of an apparently malignant character is present, thus justifying an attempt.

the consequence of which may be very grave. Apart from this we believe that the surgeon should not operate.

After my unfortunate experience in the case which I have related, and a careful study of all the recorded cases, I entirely agree with these conclusions. The symptoms and inconveniences of a tumor of the carotid body are generally so slight that I do not think any patient who is not suffering seriously or whose tumor does not exhibit symptoms of malignancy or of rapid growth should be subjected to the grave dangers which such an operation may involve. Surely no prudent surgeon would be willing to cause his patient to face such dangers simply for cosmetic purposes.

If, on the other hand, the tumor is growing rapidly and presents a malignant appearance, then I believe operation is justified, but not otherwise.

CASE SUMMARIES.

The following cases I have found reported in the literature:

Case 1.—Marchand.[1] A woman, aged 32, had a right-sided tumor the size of a hen's egg for four and one-half years. A diagnosis of lymphoma was made and she was operated on by Riegner in 1880. The three carotids and the jugular were ligated. The patient died on the third day. Division also of the vagus, hypoglossal and sympathetic was discovered at necropsy. Death resulted from bronchopneumonia, probably from section of the vagus. The tumor completely surrounded the vessels at the bifurcation. The internal carotid was compressed and thrombosed with two excrescences into the caliber. Size of specimen, 5.5x3.8x3.5 cm. (Fig. 6).

Case 2.—Paltauf.[2] A man, aged 28, had a tumor the size of a pigeon's egg on the left side, for six months. A diagnosis of lymphoma was made and later of aneurism; operation was done by Maydl in 1886. The three carotids, the superior thyroid and the ascending pharyngeal were ligated. Hemiplegia, paralysis of right hypoglossal and facial and aphasia occurred on the fifth day. All symptoms gradually faded; the aphasia very slowly. There was no recurrence for four years. The tumor almost completely surrounded the vessels at the bifurcation. From the common carotid there was an arterial pedicle over 1 mm. in diameter to tumor.

Case 3.—Paltauf.[2] A man, aged 32, had a tumor on the right side the size of a hen's egg. for some months. In the last few weeks there was rapid growth: operation was performed by Dittel in 1886. (Fig. 7). The tumor completely surrounded the vessels at the bifurcation. The three carotids and the jugular were ligated. An enlarged gland below the tumor was also removed. Death occurred a few hours later from colossal secondary hemorrhage. The walls of the vessels were thinned. There were two arteries from the internal carotid to the tumor. Size of specimen, 6x4 cm.

Case 4.—Paultauf.[2] A woman, aged 18, had a tumor the size of a hen's egg on the left side. A diagnosis of tuberculous gland was made and she was operated on by Gersuny in 1886. (Fig. 8). The three carotids were ligated. The tumor surrounded the vessels at bifurcation; its section was white. There was postoperative slight paresis of the left vocal cord. There was no return after four years.

Case 5.—Paltauf.[2] A man, aged 35, had a tumor the size of an apple on the right side. There was rapid growth during the last year. He was operated on by Albert in 1889. The external carotid was the only vessel tied, the others were dissected from grooves in the tumor. There was recurrence a year later, with a second extirpation. No microscopic examination was made of the second tumor and the later history of the case is not known. Size of specimen, 6 cm. long; 9 cm. in circumference.

Case 6.—Kauffmann and Ruppanner.[7] A woman, aged 20, had a tumor on the left side the size of a child's fist, for seven years. Two years earlier an attempt at removal was made by another surgeon, but relinquished on account of hemorrhage. Thrill was perceptible on auscultation and there was a bruit. Pressure reduced the size one-half. It bulged in the lateral wall of the pharynx. Operation was performed by Mikulicz in 1891. The common and internal carotid and the jugular were ligated. The hypoglossal was divided. The upper pole of the tumor reached to the base of the skull at the jugular foramen. The upper tip of the tumor had to be left behind in the grasp of hemostatic forceps. In this tip were included the upper end of the internal jugular and the lower end of the internal carotid. Death occurred on the second day. After operation there was hoarseness and the left pupil was small and did not react. The tongue deviated to the left. Death was caused by double inhalation pneumonia. The vagus was found to be divided. The vessels were surrounded by the tumor. (Fig. 9).

Case 7.—Kretschmar.[8] A man, aged 48, had a left-sided tumor the size of a hen's egg for a year. A diagnosis was made of branchiogenous carcinoma. The man was operated on in the Giessen surgical clinic in 1892. The superior thyroid and lingual arteries and the external jugular vein were ligated. Postoperative paralysis of left vocal cord occurred, with whispered speech. The left vocal cord was in the cadaveric position. Recurrence took place about four months after operation. Eight months after the first operation, an attempt was made to remove the recurrent tumor, but it proved to be inoperable. Some enlarged lymphatic glands only were removed. Fourteen months after the first operation the patient was still alive.

Case 8.—Kopfstein.[9] A man, aged 46, had a small tumor on the left side for sixteen years, gradually increasing in size to that of a hen's egg. A diagnosis was made of carotid tumor. This was Maydl's second case; he operated in 1893. The three carotids, the ascending pharyngeal arteries and the jugular vein were ligated. Many ligatures were required toward the anterior face of the vertebræ where the tumor was very adherent. There was postoperative dilatation of the right pupil. There was no recurrence in six months. (Fig. 10). Size of specimen, 6x4x2.5 cm.

Case 9.—Kopfstein.[9] A man, aged 34, had a tumor on the left side for four years. For a short time there was hardness of hearing and noises in the ears. The tumor was coarsely lobulated. At the lower pole there was an enlarged lymphatic gland. There was a systolic murmur. He was operated on by Maydl in 1895. The three carotids, superior thyroid, lingual, external maxillary and ascending pharyngeal arteries and the jugular vein were ligated. The sympathetic, vagus, and hypoglossal nerves were resected. The operation was very difficult (two hours) because the superior pole reached to the base of the skull. The gland was infiltrated by the tumor. Recovery took place with narrowing of the left interpalpebral fissure and pupil with exophthalmos. The tongue and uvula deviated to the left, and there was paralysis of the left half of the palate. There was also insensibility of the left side of the larynx; the left vocal cord was immobile in the cadaveric position, and the voice was hoarse and nasal. Tracheal irritation caused frequent cough. Deglutition of liquids was easy, of bread and meat difficult. Hearing was normal. Noises in the ears had disappeared. (Figs. 11 and 12). Size of specimen, 7.5x5 cm.

Case 10.—Malinowsky.[10] A woman, aged 30, had a tumor on the right side for ten years. Latterly the growth was rapid. There was perceptible vibration to the hand. By auscultation a murmur could be heard. At operation (1895) the three carotids, the superior thyroid, external maxillary and superior laryngeal arteries and the jugular vein were ligated. The vagus was resected. Recovery took place. The vessels were entirely surrounded by the tumor.

Case 11.—Mönckeberg.[11] A man, aged 52, had a tumor on the left side for from two to three years. Growth was rapid until it reached the size of a hen's egg. There was tenderness for several weeks. The man was operated on in the Giessen surgical clinic in 1895. The common and internal carotids and the internal jugular vein were ligated with resection of the vagus and section of the hypoglossal nerve. Death occurred after three days following a right hemiplegia, aphasia, unconsciousness and inhalation pneumonia. The tumor surrounded the vessels. (Figs. 13 and 14.) Size of specimen, 6.5x5.5x4.5 cm.

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[7] Kauffmann and Ruppanner: Deutsche Zeitft. f. Chir., vol. lxxx, p. 259.

[8] Kretschmar: Dissert., Giessen, 1893.

[9] Kopfstein: Wien. klin. Rundschau, 1895, Nos. 22 and 23.

[10] Malinowsky: Kiew, 1899 (from Reclus and Chevassu).

[11] Mönckeberg: Ziegler's Beitr. z. path. Anat. u. alleg. Path., 1905, vol. xxxvii.

During manipulation of the vagus, the pulse fell to about 40; after resection it rose to 130-40, and during the remainder of the operation returned to about 95.

CASE 12.—Mönckeberg.[11] A woman, aged 30, had a left-sided tumor the size of a hen's egg for eighteen months. She was operated on in the surgical clinic in Giessen in 1895. The three carotids were ligated. Recovery took place and there was no recurrence for four years. Operation was followed by right-sided facial paralysis. On the second day right hemiplegia with aphasia occurred. Recovery was gradual. Four years after the operation the woman had an inoperable ovarian tumor. Death occurred two days after an exploratory abdominal section. The ovarian tumor was a papillary adenosarcoma. The carotid tumor surrounded the external carotid. (Figs. 15 and 16). Size of specimen, 4.5x4x4.5 cm.

CASE 13.—von Heinleth.[12] A woman, aged 60, had a left-sided tumor for thirty-seven years. It was said to have appeared after extraction of a tooth and fracture of the alveolar process in 1859. At the extraction of the last of eleven teeth there was sudden, violent pain on the left side, which had never disappeared. The tumor measured 8x5x3.6 cm., and crossed the bifurcation like a meal sack over the shoulder. (Fig. 17). The surface was smooth. There were no stethoscopic signs. At the inferior pole there was an enlarged gland. A diagnosis was made of carotid tumor of malignant character and the woman was operated on in 1896. None of the vessels were ligated nor were any of the nerves wounded, though the internal jugular was very adherent to the tumor. The carotids were laid bare for 11 cm. The tumor was very vascular, like a goiter. Recovery took place and there was no recurrence after four years.[13]

CASE 14.—Middleton and Bierring.[14] A man, aged 43, noted "kernels" on both sides of his neck which he attributed to a cold early in 1895. They subsided on the left side, but a swelling persisted on the right side and gradually increased. He consented to operation in September, 1895. The external carotid was ligated. Hoarseness and dysphagia were marked prior to operation; after operation there was paralysis of the palate, producing occasional regurgitation of liquids through the nose. Recurrence took place in November, not only *in situ*, but also on the left side at the same level. Death occurred from exhaustion about the end of the year. No autopsy was obtainable.

There was a more or less well defined connective capsule. The tumor was oval, lobulated, 4.5x3.5 cm. On section it was found to be of medium soft consistency, resembling a carcinomatous lymphatic metastasis. The facts were submitted to Prof. Paltauf by Dr. Bierring and his judgment was that it was a tumor of the carotid gland.*

CASE 15.—Mönckeberg.[11] A woman, aged 50, had a left-sided tumor for three years. In the last six months there was rapid growth; the tumor caused pain and was the size of a pigeon's egg. She was operated on in the Giessen surgical clinic in 1898. The three carotids and superior thyroid arteries were ligated. The nerves were not involved. Recovery ensued. The vessels were surrounded by the tumor. Size of specimen, 6.5x4.5x4.5 cm.

CASE 16.—Siniouschine.[15] A woman, aged 41, had a left-sided tumor for eight years. It was attributed to a laryngitis. During the last three years there was more rapid growth, with pain in the teeth and right ear, and dysphagia. She was operated on in 1900. The three carotids were ligated. Dissection from the jugular from the posterior face of tumor was difficult. On the following day the tongue deviated to the left and there was drooping of the right angle of the mouth. Recovery took place. The internal carotid was completely surrounded by the tumor. Size of specimen, 4x6 cm.

CASE 17.—Kauffmann and Ruppanner.[7] A woman, aged 21, had a left-sided tumor for two and one-half years. The tumor was the size of a goose egg and had a smooth surface. Diagnosis, lymphoma or ectopic goiter (Fig. 18). Operation was performed by Fritsche in 1902. None of the vessels or nerves was injured. Recovery ensued. There was no recurrence in four years. Four years after the operation a tuberculous lymphoma was removed from the right side of the neck. Size of specimen, 10x4x2.5 cm.

CASE 18.—Scudder.[16] A woman, aged 32, had a right-sided tumor for over nine years. It had grown slowly, was tender when she had a cold, and was the size of a pigeon's egg. She was operated on in 1902. The tumor was very vascular and it was necessary to ligate all three carotids (Fig. 19). Recovery ensued and there was no recurrence after 4 years. (Personal communication.)

CASE 19.—Cuneo and Dainville.[17] A woman, aged 23, had a right-sided tumor for 3½ years. Lancinating pains radiated toward the ear and the base of the neck; no dysphagia was experienced but there was discomfort and dragging when eating. For four months this discomfort and pain had increased and deglutition became difficult. There was no dyspnea except on running. The tumor was the size of a double fist, somewhat oval, and reached from the ear to the clavicle. The skin was normal in color and there were no adhesions. There was some paresis of the ocular and oral branches of the right facial. The right pupil was contracted and reacted to light less rapidly than the left. There was slight nystagmus, especially right. She was operated on in 1903. No artery or nerve was injured nor did the internal jugular require ligation. Enucleation of the tumor was moderately easy. The upper pole of the tumor reached to the posterior lacerated foramen. Recovery ensued. The troubles resulting from compression of the nerve gradually diminished. The authors believe that it belonged to the fibromata and arose from the carotid body.

CASE 20.—Reclus and Chevassu.[18] A woman, aged 49, had a left-sided tumor for five years, also a sarcoma of the left breast. There was bulging of the lateral wall of the pharynx. She was operated on by Reclus in 1903. Section of tumor was done in order to dissect out the internal carotid. Two glands at the upper pole were removed. Recovery ensued. The lower branches of the facial nerve were paralyzed. The tongue deviated to the right. The glands were normal. Size of specimen, 4.5x3.5x2.5 cm. (Fig. 20).

CASE 21.—Macphatter.[19] A woman, aged 31, had a left-sided tumor for 6 years. Latterly it had increased rapidly in size with considerable pain and an uncomfortable sensation at times. There was non-expansile pulsation. She was operated on September (1902?). The three carotid arteries and the internal jugular vein were ligated. Recovery ensued. There was no cerebral disturbance.

CASE 22.—Funke.[3] A man, aged 48, had a right-sided tumor of 6 years. He was operated on at Jefferson Medical College Hospital, by Hearn, in May, 1903. There was profuse hemorrhage. The three carotid arteries and the internal jugular vein were ligated (Fig. 2). For several days after operation there was whispered voice. The man left the hospital on the eighth day. Soon after he had headache, became irrational and suffered rapid loss of flesh. Death occurred from cerebral hemorrhage 9 weeks after leaving the hospital. No nerves were injured. Size of specimen, 5x3.3 cm.

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[12] von Heinleth: Münch. med. Wochft., June 26, 1900, p. 899; also Centbl. f. Alleg. Path. u. Path. Anat., 1900, vol. xi, p. 599.

[13] Kauffmann and Ruppanner, p. 302, state that the case in Leithoff's Würzburg Dissertation, 1904, is a second tumor removed by von Heinleth. This is an error, as is shown on comparing the paper of von Heinleth and that of Leithoff.

[14] Middleton and Bierring: Trans. Iowa State Med. S., 1897, vol. xv, p. 94.

[15] Siniouschine: Soc. de Chir. de Moscow, 1901 (from Reclus and Chevassu).

* The authors had intended to make a full report of this case, but a fire at the University of Iowa destroyed the tumor, slides and drawings; in other words all the material except the brief mention in the Transactions of the Iowa State Medical Society containing a few facts in reference to it, and a pathologic report by Dr. Bierring.

[16] Scudder: Amer. Jour. Med. Sciences, September, 1903.

[17] Cuneo and Dainville: Bull. et Mém. Soc. Anat., 1903, vol.

[18] Reclus and Chevassu: Rev. de Chir., 1903, vol. xxviii.

lxxviii, p. 592.

p. 157.

[19] Macphatter: New York and Phila. Med. Jour., July 25, 1903,

Case 23.—Gilford and Davis.[20] A man, aged 62, had a left-sided tumor of 6 months growth, the last two weeks' growth being very rapid. His appetite was poor and the man was wasting and weakening. There was no glandular involvement. He was operated on in 1904. The three carotid arteries were ligated. The vagus and descendens noni and the internal jugular vein were resected. Soon after recovery from the anesthetic, hemiplegia and double pneumonia ensued. Death occurred on the seventh day. No postmortem was allowed. The tumor surrounded the internal jugular vein and occluded it. The carotids were pressed on, but not occluded by the growth.

Case 24.—Gilford and Davis.[29] A man, aged 52, had a left-sided tumor for 3 months, increasing slowly in size. There were no other symptoms; no enlarged glands. He was operated on in 1904. The tumor was dissected from the carotid arteries and 3 cm. of the internal jugular were removed. There was local recurrence six weeks later, which within two months had extended from the mastoid nearly to the clavicle. The patient died five months after the operation.

Case 25.—Gilford and Davis.[29] A man, aged 74, had a left-sided tumor for over a year. The tumor was nodular and of stony hardness (Fig. 21). There were no enlarged glands, but the liver was enlarged to 3 cm. below the margin of the ribs. No operation was done, the patient died 18 months after the first appearance of the growth. At postmortem metastases were found in the liver.

Case 26.—DaCosta.† A man, aged 52, had had a right-sided tumor the size of a pigeon's egg for 20 years. During the last six months it had begun to grow rapidly and was the size of a hen's egg when it was seen. It was firm but not hard. The anterior margin was lifted with each beat of the artery; the rest of the tumor was not lifted. The man was operated on in 1906. Very great hemorrhage occurred and about 50 ligatures were used. The three carotids and the internal jugular vein were tied. The nerves were uninjured. The tumor reached almost to the base of the skull. Twelve hours after operation, hemiplegia of the left side occurred which rapidly cleared up in a few days. A week later a second hemiplegia (embolic in internal capsule) occurred which is slowly clearing up (June, 1906). A few days after operation atelectasis of the left lung developed from unknown cause; over one-half of the lung collapsed. It slowly but finally expanded. Recovery ensued.

Case 27.—Case reported in this paper by Keen, 1906.

CASES DISCOVERED POSTMORTEM.

In addition to the above-mentioned cases, the following were found at postmortems:

Case 28.—Hedinger,[21] in 1904, accidentally discovered a tumor on the right side in a woman of 62. Size of specimen, 3x1.5 x1.5 cm.

Case 29.—Oberndorfer,[22] in 1905, discovered a tumor on the right side in a woman of 58 who had suffered from severe progressive osteomalacia. The vessels were not involved in the tumor except by lying in grooves on its surface. Microscopic examination showed the tumor to be one of the carotid gland.

(To be concluded.)

CONGENITAL CYSTIC KIDNEY.*

Medical Association, at the Fifty-seventh Annual Session, June, 1906.

F. B. LUND, M.D.
BOSTON.

Congenital cystic disease of the kidney is a rare affection and one which so far appears to have interested the pathologists far more than clinical observers. The pathology of the disease presents an abundance of controversial literature, for the reason, perhaps, that the condition has been hard to explain and has afforded abundant opportunity for discussion and theorizing, but we, as practitioners of surgery, must not forget that the disease is of eminent practical and surgical importance, and that, although we may not meet with it on the operating table many times in a long surgical career, it is well worth while, when those times come, to be prepared by a previous consideration of its clinical history, prognosis and surgical treatment.

It is a disease which frequently runs its course without a diagnosis being made during life, death occurring from uremia or cerebral hemorrhage, due to kidney insufficiency. The real cause of the insufficiency is first discovered at the autopsy, when the enlarged cystic kidneys, not felt during life, are found by the pathologist. In fact, the course of the disease may be so latent that a patient in whom pathologic changes have not been suspected may be stricken with uremia or cerebral hemorrhage.

Strange to say, these cases come more often during life under the observation of the surgeon and obstetrician than of the medical man, for the reason that the symptoms which attract notice are more frequently those due to the size of the tumor than to the renal insufficiency. As is well known, cystic kidneys in the newborn are frequently so enlarged that the abdomen of the child is enormously distended. Normal parturition becomes impossible, version is generally attempted, the limbs are pulled off and it is often necessary to open the abdomen of the fetus and remove the enormous kidneys before the body and head of the child can be delivered. With this class of cases, except to allude to their important bearing on the etiology and pathology of the disease, I do not intend to deal.

It is the cases in which gradual enlargement of a polycystic character takes place later in life, and which present themselves to the surgeon on account of dragging pain and the presence of a tumor in the loin, or possibly on account of mobility of the enlarged kidney, that I wish to consider. Such tumors may suggest malignant disease of the kidney or hydronephrosis, and it is frequently only when they are cut down on that their true nature is revealed, and the importance of a knowledge of their nature and treatment becomes evident. Such kidneys have not infrequently been removed, with the result that the patients have died of uremia, and the autopsy has revealed the presence of cystic disease of the other kidney, usually less advanced, so that a tumor was not felt before operation. A knowledge of the fact that this disease is usually bilateral might have saved the patient's life and the surgeon's discomfiture. Again, the superficial resemblance of polycystic kidneys to sarcoma has been an additional reason for the performance of nephrectomy, which has sometimes been fatal and sometimes not, the issue depending more on good fortune than surgical skill. A slight familiarity with the pathologic condition should ordinarily suffice to prevent such a mistake, and a brief consideration of the pathology and etiology becomes important.

ETIOLOGY AND PATHOLOGY.

The term congenital cystic kidney does not include hydronephrosis, which is a dilatation primarily of the pelvis and sinus of the kidney from retention due to obstruction in the pelvis itself or the ureter, and does not concern the urinary tubules at all. It does not include cystic dilatation of the tubules due to the contraction of the interstitial tissue, which sometimes accompanies a chronic interstitial nephritis. Here the kidney cortex becomes studded with little cysts, seldom larger than a pea, and not, as in the true congenital cystic kidney, greatly enlarged and varying in size. The cyst in interstitial nephritis play only a subordinate rôle and are secondary to scar contraction. Neither does the subject under discussion include the single or occasionally multiple cortical cysts which sometimes result from the absorption of embolic infarcts. In the true cystic kidney the kidneys may be enormously enlarged, e. g., the cases in which they present an obstacle to parturition, or in adults occupy half or two-thirds of the abdominal cavity. The whole organ, both cortex and medulla, is studded with cysts of various sizes, from that of a pinhead to that of a mandarin orange (Fig. 1). The surface is knobby with cysts of different size and color, brown, red, green, translucent, like windows bossed with vari-colored glass, making a pathologic specimen of truly remarkable and imposing appearance. The walls of the cysts are thin, vascular, and the larger ones show folds on their inner surface, which are the remains of the walls of the smaller cysts, which have coalesced to form them. The fluid consists of urine, since in it are found urinary constituents, such as uric acid and hippuric acid, calcic oxalate, cystin, leucin and tyrosin, but in the larger cysts this fluid is considerably diluted (probably by serum which has transuded through the walls), albuminous, and contains blood, pigment, fat and cholesterin in varying quantities, so that the color of the cysts may be red, brown or yellow, and the fluid in them more or less cloudy. Between the cysts are often found more or less extensive areas of normal renal parenchyma; other cysts are separated merely by fibrous tissue. In some cases, with large amounts of parenchymal tissue, we can not distinguish between cortex and medulla.

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† To be reported in the Annals of Surgery, September, 1906.

[20] Gilford and Davis: The Practitioner, December, 1904, p. 729.

[21] Hedinger: Corr-bl. f. Schweizer Aerzte, No. 8, 1905.

[22] Obendorfer: Centbl. f. alleg. Path. u. path. Anat., 1905, vol. xvi, 1905.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

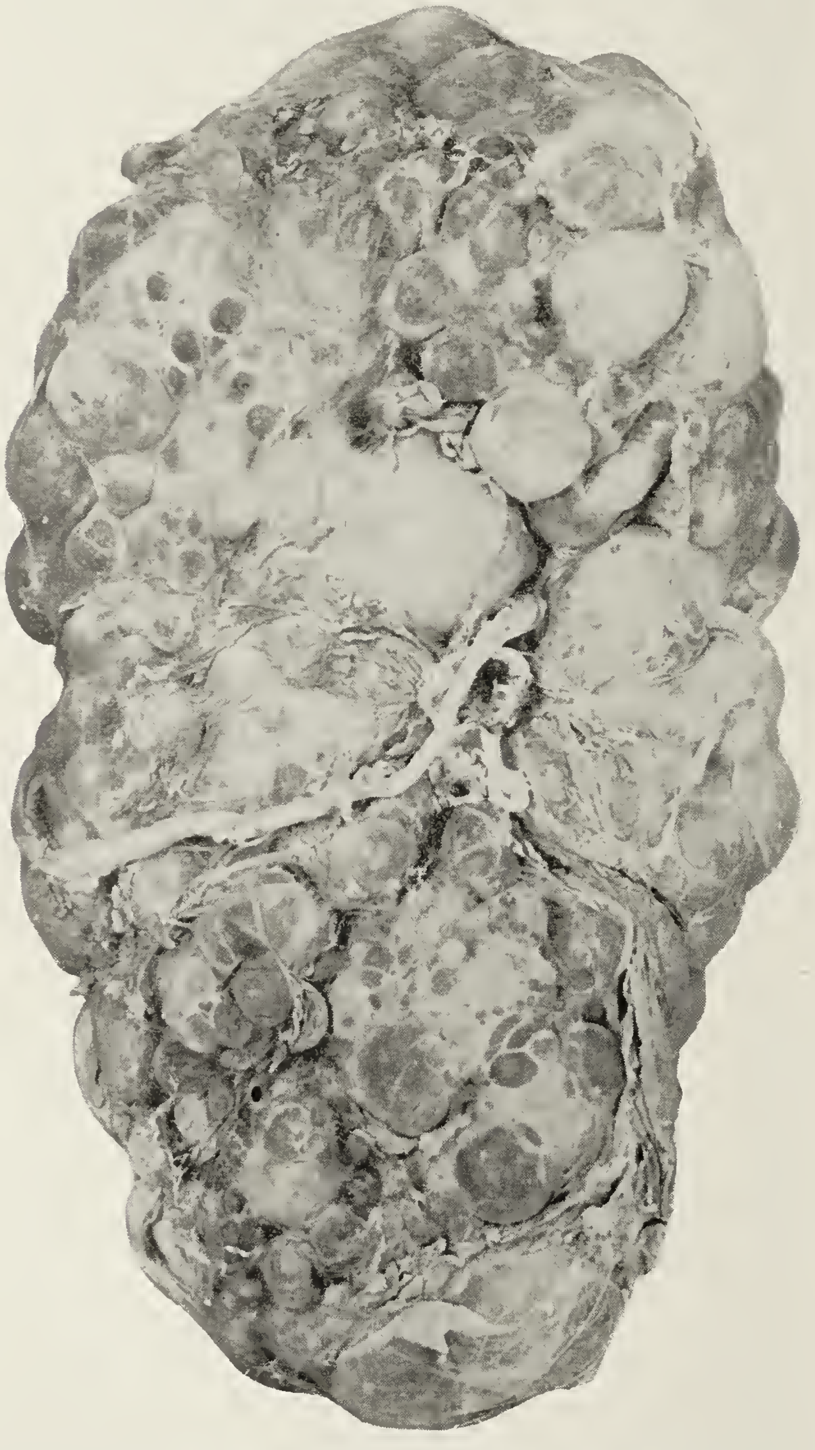

Fig. 1.—Cystic kidney removed at autopsy from a patient of Dr. H. T. Baldwin. The man died at 42 years, of uremia. Both kidneys were equally involved and caused a large abdominal tumor. The patient's mother suffered from the same condition.

The efferent passages, which protrude into the calices or pelvis, frequently show no changes, but in some specimens are shrunken, narrowed, and may be almost obliterated. Thin-walled cysts may sometimes be seen projecting into the pelvis, just as they do on the outer surface of the kidney. Microscopically, each cyst is lined with a single layer of flat epithelial cells, which in the smaller cysts correspond closely to a tunica propria. In the larger cysts this is not found, either because they have no proper wall or because the cysts appear as dilatations in the interstitial tissue. The partitions between the cysts are so thin as to make it probable that the larger cysts have been formed by the coalescence of smaller ones. In some of the smaller cysts glomeruli have been found attached to the walls, flattened, but still permeable to injected fluid (Figs. 2 and 3). It is thus evident that all portions of the tubular tract, from the glomeruli to the terminations in the papillæ, are subject to cystic dilatation. The suggestion of certain investigators that they might arise by cystic degeneration of the interstitial tissue is not supported by recorded observations. That certain of the cysts show no epithelial lining is due to the fact that the epithelium is desquamated and disappears. In the smaller or younger cysts the epithelium is always found.

Cystic kidneys in adults and in the new-born are usually bilateral. If, as is rarely the case, the disease is unilateral, the other kidney is hypertrophied. To the obstetric importance of this disease we have alluded above. Even earlier than this the degeneration of the kidney may have an unfavorable influence on the development of the fetus, so that birth is premature. The child may die within a few moments of birth from respiratory failure, due to the interference with the movements of the diaphragm consequent on the tumor, or may live a few days, only to succumb to the same cause. Death may result early in these cases from renal insufficiency, the amount of normal functionating renal tissue between the cysts being insufficient for excretory purposes. On the other hand, the amount of normal renal tissue may be sufficient to prolong life for indefinite periods, perhaps for decades, before renal insufficiency results in death. The most favorable conditions will naturally be presented by unilateral cases with compensatory hypertrophy of the opposite kidney, which are unfortunately rare.

In considering the etiology of this disease we enter a field which has been fruitful of much wordy discussion. The theory of Neuwerck, Hufschmidt and von Kahlden that these tumors are cyst-adenomata is negatived, it seems to me, by the fact that the cysts may often be demonstrated to be dilatations of the renal tubules, and contain urine, often diluted with serum, it is true, but showing distinct urinary constituents. The epithelial proliferations and connective tissue growths, which Brigidi and Severi had relied on as evidence of tumor growth or adenoma, have been shown by von Mutach to be tissues characteristic of embryonal kidneys. The presence of these proliferations, etc., therefore, is an argument in favor of the developmental rather than the neoplastic origin of the tumors. In order to explain these cases we have to assume, with Orth and others, the existence of some obstruction to the escape of urine from the dilated and cystic canals. The oldest theory, that of Virchow, that the urinary concretions, "uric acid infarcts," so common in the new-born, have plugged the canals, is untenable, since these are rare during intra-uterine life, and after birth so common that cystic kidneys, if due to them, ought to be much more frequent than they are. There seems to be no doubt, and that Virchow himself acknowledged later, that we must assume an organic obstruction and actual obliteration of the tubules. Orth agrees with Virchow's later view that the condition results from a fetal inflammation, involving the papillæ, with resulting obliteration. He says that the papillary atresia can not be attributed to a congenital narrowing, because certain embryologic investigations have shown that the tubules are developed from the Wolffian ducts and do not develop separately from them and afterward unite with them. The fact that we find cysts in all parts of the kidney, including the papillæ, does not, however, make it necessary to assume that the obstruction must be located in the papillæ. The cysts of the upper tubules might extend into the papillary tract and displace the straight tubules and project into the pelvis.

In favor of the theory that the condition is a developmental malformation is the fact that other congenital malformations frequently coexist. The presence of congenital cystic liver in association with cystic kidney, which occurs in 19 per cent. of the cases (Moscowitz), is also significant of the embryonal origin of the condition. The cysts of the liver are ascribed by Moscowitz[1] as due to the obstruction of afferent intra-acinar bile ducts, and are evidence also of congenital origin. Other anomalies which have been found associated with cystic kidney are hypospadias, atresia and absence of ureter, vagina, bladder, etc., also hare-lip, spina bifida or absence of extremities. There is now pretty general agreement among investigators that the condition is due to defect in development, which is explained something as follows: The tubular structure of the kidney, including the glomeruli, the convoluted tubules, the loops of Henle and the straight tubules, to a considerable extent, originate by a development of tubules in the mesoderm of the embryo. The ureter, kidney, pelvis and an uncertain amount of the straight tubules in the pyramids develop from a tubular process which originates from the Wolffian duct. The straight tubules grow out and meet the primitive vesicle, which becomes the glomerulus, and then later from this glomerulus the convoluted tubules and Henle's loops are developed (Brödel). In case this tubule growing from the Wolffian duct fails to connect with the primitive glomerular vesicle, an obstruction occurs, resulting in cystic dilatation of the entire tubular system above the straight tubules. The extent of the process will depend on the relative number of tubules that fail to meet. If a large proportion fail to connect, then the cystic formation will be rapid and complete, and, no kidney tissue being left to eliminate urine, the patient will die. If, on the other hand, there be left comparatively large areas of healthy kidney tissue, enough for the elimination of uric acid, the patient may live for years and die from other causes. The presence of the increasing cystic tissue may finally so squeeze the intervening healthy tissue as to cause insufficiency, and the patient dies from this. This theory seems adequate to explain the facts as observed, and to be in every way more probable than that fetal nephritis involves the papillæ.

Bunting,[2] in a recent article based on a careful microscopic study of specimens from two cases, found that in these cases the urinary path could be opened from the glomeruli through to the pelvis of the kidney, and, therefore, added no evidence in support of the obstruction theory or a failure of two sets of tubules to join with each other. He believes the primary cause of the trouble is the epithelial hyperplasia, which, so to speak, forces out the walls of the tubules. This theory does not satisfactorily explain, however, why we get cystic forms instead of epithelial growths, and needs further confirmation. Whatever theory of cystic kidney be adopted, we can not help concluding that it is a developmental condition, a malformation rather than a new growth. A fact that speaks strongly for the malformation origin is the occasional occurrence in several generations of the same family, showing a tendency to inheritance, as in the case illustrated by Fig. 1.

Cystic kidney has oftenest been observed in the middle decades of life, but cases have been reported in the first and second decades as well. In the adult the pathology corresponds in every way with that of the new-born, except that the individual cysts are larger, as are also the entire kidneys. It becomes evident, therefore, that if our explanation is correct we must assume that in case of cystic kidney in the adult the condition has existed since birth, but has not until later years given rise to symptoms which attract attention.

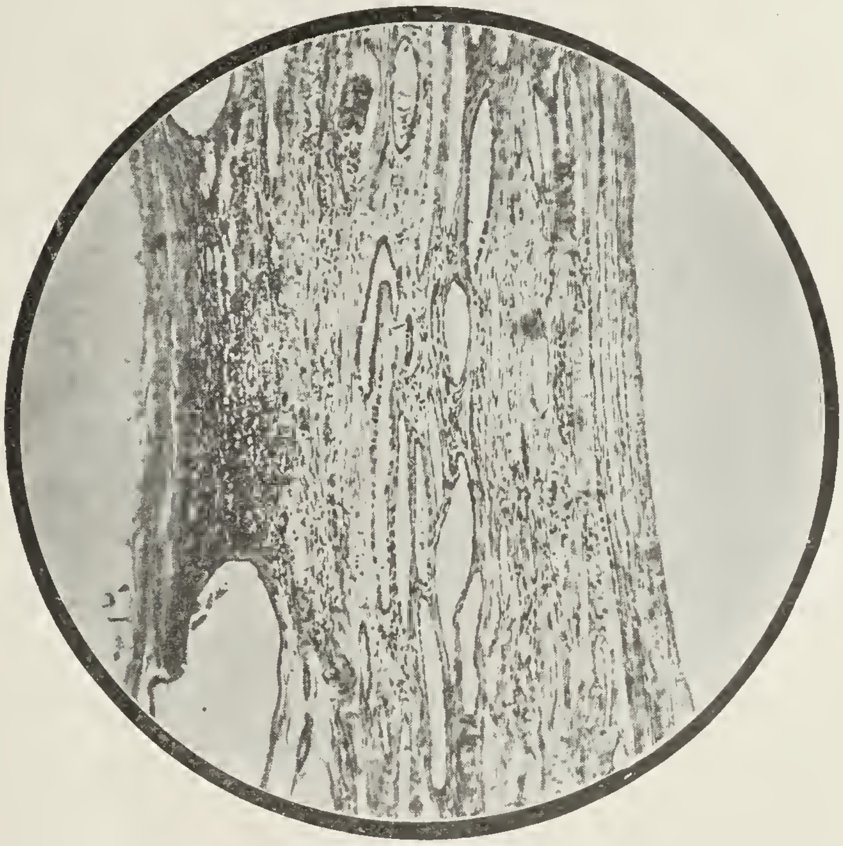

Fig. 2.—Case 3. Section of cystic kidney removed at operation, showing normal kidney tissue between the dilated or cystic tubules. In the upper part of the picture a flattened glomerulus can be seen.

SYMPTOMS AND DIAGNOSIS.

If our views of the etiology and pathology of the disease as given above are correct, they will furnish us an adequate explanation of the somewhat remarkable symptomatology and course of the disease. The most thorough and careful description of the course and symptoms which I have found is that of Milward of Birmingham, who divides the clinical history of the disease into three stages:

1. The stage of progressive enlargement of one or both

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[1] Am. Jour. Med. Sci., April 1, 1906.

[2] Jour. of Exp. Med., March 26, 1906.

kidneys without subjective symptoms. The renal enlargement is discovered, if at all, by accident. This stage may last from a few months to several years.

2. The stage of subjective symptoms and objective signs. This stage lasts from a few months to six or eight years, or even longer. The signs and symptoms are dependent on the size and weight of the tumors.

3. The stage of decreasing elimination of urine. In this stage appear the symptoms of uremia, or cerebral complications. It lasts two or three weeks or a few months.

Males and females are affected in about equal numbers. The disease usually terminates fatally in the fourth, fifth or sixth decade. Renal enlargement is rarely discovered before adolescence, and when the disease develops in infancy the child hardly ever lives till the tenth year, so that the disease has been rarely reported between the tenth and thirtieth years.

The symptoms noted during the second stage are a dull, aching pain in the region of the kidneys during both night and day, but usually worse in the daytime, especially if the kidney is movable. A large part of the pain, especially in the later stages, seems to be due to mobility of the kidney. There is tenderness on palpation or pressure, and occasionally the pain may be paroxysmal and very severe, with resulting prostration. Since many of the kidneys examined postmortem or removed at operation present cysts filled with blood under high pressure, it is reasonable to suppose that some of the pain may be due to hemorrhages into the cysts. Occasionally suppuration has taken place in one or more of the cysts and has required operation. Flatulence, headache, dyspepsia, vomiting, anorexia and constipation are frequently concomitant symptoms. It is an important and somewhat interesting fact that the examination of the urine often throws very little light on the diagnosis, a circumstance which contributes greatly to the difficulty of the latter.

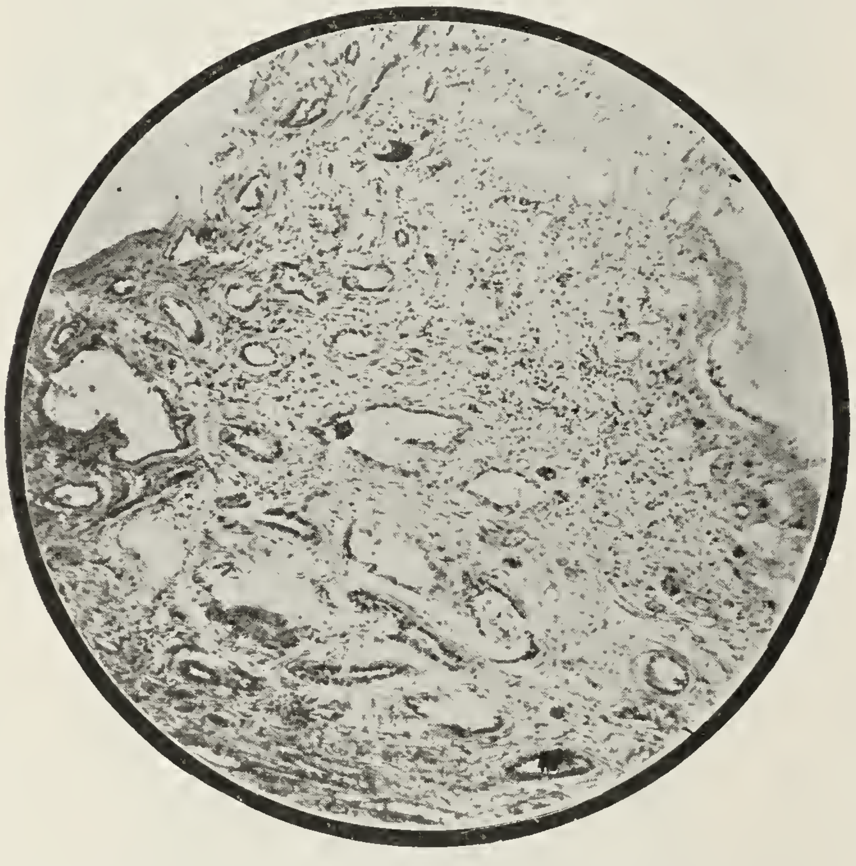

Fig. 3.—Cross section of the same specimen as Figure 2.

During the second stage, and until the deformation is far advanced, the kidneys are capable of continuing their functions almost perfectly. The specific gravity is usually low, below 110, and the amount passed is usually slightly increased, but may be diminished There is usually only a slight trace of albumin, and often albumin is entirely absent. In the second stage it is never present in large quantities, except when there is a great deal of blood. Casts are practically always absent; leucocytes are common and often occur in large numbers. Pus may be present in acid urine. Blood is usually present in traces, and when there is hemorrhage into the cysts may be poured out in such large quantities as to constitute attacks of hematuria. Bleeding may occur every few months or once a year, or may never be sufficient to tinge the urine. Some blood, however, is always present, and its presence is significant (Milward).

The elimination of urea may amount to from 250 to 350 grains until late in the second stage, and it is not infrequent when death occurs suddenly, as it often does in the third stage, for the physician after death to find, to his surprise, the large cystic kidneys.

The symptoms of the third stage are those of uremia or some allied complication, such as cerebral hemorrhage, due to arteriosclerosis, and consist of headache, dyspnea, drowsiness, convulsions, paralysis and coma.

Duration of the Disease.—Ritchie,[3] reporting on eighty-eight cases, found that in seventy-five the average age was 45.3.

Duration of Symptoms.—In the majority of cases the symptoms last from a few months to five or six years. Twenty-two and nineteen years respectively was the duration of symptoms in the longest cases noted.

Of seventy-eight cases in which the symptoms were analyzed, thirty had renal symptoms apart from albuminuria, twenty having pains in the loins and abdomen. Sixteen had hematuria at some time. Seven had no kidney trouble and no evidence of illness, but cystic kidneys were found postmortem. Eleven suffered or had suffered from edema; in ten the absence of edema was stated. In thirty-three the urine contained albumin, in nineteen a trace and in eleven a considerable quantity. Vomiting or intestinal symptoms, constipation or diarrhea were present in nineteen cases. Twenty showed anemia, cachexia or loss of flesh. Thirteen had dyspnea or some pulmonary affection. In twenty-one a tumor was discovered during life in one or both flanks.

A brief review of the literature will show us that these cases which come under the surgeon's care present themselves during the second stage for pain in the side, due either to the weight or mobility of the tumor; the surgeon, finding the tumor, operates, and if it is large and malignant looking not infrequently removes it. The patient lives or dies, according to the presence or absence in the other kidney of sufficient healthy tissue to attend to the elimination of urea.

TREATMENT.

Numerous operators have removed congenital cystic kidneys successfully; among them may be mentioned the following:

Bevan[4] performed a successful nephrectomy for hematuria and secondary anemia in a case of cystic kidney, with recovery.

Syms,[4] operating for floating kidney, found a cystic kidney, which he removed and the patient recovered.

Krönlein[5] removed a large cystic kidney in a patient three months pregnant, with recovery.

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[3] Laboratory Reports of the Colleges of Physicians of Edinburgh, 1892.

[4] Annals of Surg., Phila., vol. xxxix, 467.

[5] Beits. sur Klin. Chir., Tub., 1903-04, vol. xli, p. 170.

Stander performed nephrectomy on a cystic kidney for pain and hemorrhage. Infection and abscess ensued, requiring removal of the kidney, with recovery of the patient.

Schmid, Niemeyer, Bardeleben, Hayems and others, however, have performed nephrectomy for polycystic kidneys, but the patients have died of uremia, and at autopsy the other kidney has been found the seat of rather extensive disease.

The conclusion becomes evident that while from hemorrhage or suppuration in a cystic kidney, or from symptoms due to the size of the tumor, nephrectomy may be indicated, it should never be performed until, by exploratory incision or ureteral catheterization, the other kidney has been found to be healthy. Especially important is it in operating on obscure kidney tumors to have in mind the possibility of congenital cystic kidney and be prepared to deal with the condition if found.

In certain rare instances not over 2 to 3 per cent. (Bevan) congenital cystic kidney is unilateral, and occasionally, as in one of the cases found at autopsy at the hospital, compensatory hypertrophy of the other kidney is found. In such a case as this, if the symptoms justified it, nephrectomy would be obviously proper.

The question now arises, What are we to do in case the mobility or enlargement of a kidney is making life unendurable and the condition of the other kidney precludes nephrectomy?

Under these conditions Curtis and Kammerer[6] have practiced incision and breaking down of the walls of the larger cysts sufficiently to reduce the size of the kidney, and suture of the depleted organ to the lumbar muscles. In the two cases in which this was practiced the symptoms were relieved and the patients enabled to return to work. Curtis' patient was in good health and had gained in weight at the end of three years. The method of these surgeons consists in free incision of the diseased kidney and systematic opening of the larger cysts, which are packed with gauze to secure obliteration. By this[6] the size of the organ and tension of the capsule are markedly diminished, relieving the compression of the more or less healthy tubules. The kidney is thoroughly anchored in the loin and symptoms due to mobility disappear. Permanent fistula does not ensue unless there is some stricture in the pelvis. Such a procedure may be applied first to one kidney and then to the other as it increases in size, thus preserving as long as possible the functions of the diseased organs and prolonging the life of the patient. This procedure is far safer than nephrectomy, and accomplishes the desired result of diminishing the size and mobility of the tumor and relieving pressure on the remaining tubules in the simplest and safest way. It seems to me the only rational surgical treatment and is therefore advised.

Without knowledge of Curtis' and Kammerer's work, a similar procedure was adopted in Case 1 of this paper, a report of which follows.

REPORT OF CASES.

In Cases 2 and 3, which were kindly placed at my disposal by Drs. J. B. Blake and G. H. Monks, the only other cases operated on which I have been able to find in the records of the City Hospital, nephrectomy was performed, as the size of the tumor was so great and the symptoms so severe that this procedure alone seemed to promise relief. Death resulted apparently from uremia.

Case 1.—M. H., 26 years of age, single, a nurse, was admitted to the City Hospital in August, 1904. Two and one-half years ago she had felt a small tumor in the right upper abdomen, which had gradually grown larger and descended. At various intervals she had felt pain in the region of the tumor. The symptoms were much worse in the last eight months, and the tumor had fallen as low as pubes and been felt to go back on recumbency. She has suffered from headaches. There have been no urinary symptoms.

Examination.—Urine pale; specific gravity, 1018. Sediment normal, and abnormal blood, slight in amount. Numerous casts, hyaline and granular, with an occasional cell adherent. A few leucocytes. A few round cells. A mass the size of two fists, freely movable, was felt below the right costal margin. The left kidney was just palpable. There was no tenderness or spasm. A right lumbar incision showed a multilocular cystic kidney. The cysts were of various colors and the size from a hickory nut to an English walnut.

Operation.—The kidney was so greatly enlarged and there was so little renal tissue that a nephrectomy was considered, but before proceeding to do it it was thought wiser to ascertain the condition of the other kidney, which was accordingly done by a left lumbar incision. That kidney was also found to be somewhat enlarged and cystic, though not nearly so large as the right. After suture of the wound on the left, a number of the larger cysts in the right kidney were opened and the kidney sutured as well as might be to the lumbar muscles. During anesthesia and during the afternoon after the operation the patient was attacked with cyanosis and collapse, the symptoms requiring artificial respiration. These attacks occurred after the administration of one-sixth of a grain of morphin, and were apparently due to a particular susceptibility to that drug. Otherwise the convalescence was normal. The patient left the hospital in about six weeks, and up to January, 1905, was well, save for some gastric disturbance, and able to take care of a case. Seven weeks after the operation she says she was "really feeling well" and "fell the whole length of the schoolhouse stairs without pain," thus showing that the kidney was apparently fixed in place.

Subsequent History.—Nearly six months after the operation she was taken ill with pain in the side and tenderness over the kidney and a temperature rising to 101 in the latter part of the day. She had headaches, loss of appetite and bloody urine. This condition lasted for three weeks and then gradually wore away. She was well until early in October, fourteen months after the operation, when she had a week of weariness, with considerable sideache and headache. At this time she had a chill. A diarrhea accompanied this illness and the patient thinks it may not have been due to any trouble in the kidney. Ever since then up to the present time (May, 1906) she has been in good health, or, as she expresses it, "comfortably well." Walking more than a mile at a time always produces an ache in the side. Standing still for only a few moments will cause this ache. Standing hurts more than anything else. She has occasional dull headaches, which gradually wear away in the middle of the day, and every few weeks she has a severe headache. Before the operation she had complained of swelling of the ankles. This has not appeared since the operation. An examination of the urine, taken about three months after the operation, showed a trace of albumin, and another examination, about six months after the operation, showed also a trace of albumin, normal red-blood corpuscles and squamous cells, but no casts. During this week (May, 1906) a test for albumin, made by Dr. Thomas, showed no albumin at all.

About fifteen months after the operation the patient began to work steadily at her profession and has worked since not more than half the time, but doing any kind of work that offered. At no time has work seemed to cause any trouble. Her weight has been about ten to twelve pounds less than before the operation. The kidney seemed to the patient to feel smaller after the illness in January, 1905.

It will thus be seen that the operation, though I felt very doubtful of it at the time, succeeded in diminishing the size of the kidney and fixing it in position, so that the patient has since lived a useful and fairly active life. In another similar case I should incise a much larger number of the cysts and perhaps pack them with gauze in order to secure obliteration, but at the time this was done I was unfamiliar with this procedure.

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[6] Annals of Surgery, 1901, vol. xxxiv, 419.

CASE 2.—J. S., an Italian blacksmith, 45 years old, was admitted to the City Hospital on Sept. 11, 1903. No history was obtained.

Examination.—He was well developed and nourished. Abdomen full, somewhat obese. The left side of the abdomen contained a large mass, which was hard, rounded and apparently more than five inches in diameter. It was dull on percussion, did not move with respiration, and the fingers seemed to get between it and the spleen. It was not especially evident by palpation in the flanks. There were no symptoms except slight abdominal pain. The urine was pale, acid, specific gravity 1007, albumin slight trace, quantity not stated.

Operation.—A diagnosis was made of tumor of the left kidney, and on September 17 he was operated on by Dr. J. B. Blake. A five-inch incision was made outside of the left rectus. A mass made up of multiple cysts, the shape of the kidney but four times the size, occupied the position of the left kidney. Transperitoneal nephrectomy was performed. The right kidney was examined by palpation through the operation wound. Palpation showed it to be somewhat cystic and slightly, if any, larger than normal.

Subsequent History.—September 21, after the operation and recovery from the ether, the patient passed his own urine for twenty-four hours, followed by a period of suppression. After twenty-four hours a sudden rise in pulse and respiration took place. He was catheterized. The urine was pale, specific gravity 1010. Chest examination showed congestion at the right base, with râles and high-pitched respiration. The pulse continued to rise, and in spite of stimulation and salt infusions he died three days after the operation.

CASE 3.—M. J., a woman, 33 years of age, single, was admitted to the City Hospital in the gynecologic service of Dr. C. M. Greene, May 9, 1906. A diagnosis was made of pregnancy, with eclampsia. For the past few months menstruation had been irregular and profuse, and for the last five months she had not menstruated. There had been noticed a painless enlargement of the abdomen, which had aroused suspicion of pregnancy. The possibility of this the patient denied. The symptoms before she entered the hospital were enlargement of the abdomen and dull, general abdominal pain. When she entered the hospital she was unconscious, but could be partially roused.

Examination.—She was well developed but poorly nourished, skin pasty and yellow, respiration slow and labored, heart negative. Urine, May 10, was acid, pale, 1010. Albumin, ⅛ per cent. Much normal blood. Small amount of pus and cholesterin crystals. Two days later a few fine granular casts and many squamous cells were found. Blood count showed reds 2,200,000, whites 14,800. Hemoglobin 35 per cent. Differential count of 500 whites showed polynuclears 87 per cent., large mononuclears 10 per cent., small mononuclears 3 per cent. High color index. Marked diminution in number of blood platelets. Five monoblasts and four megaloblasts are seen in two smears.

Local examination showed the abdomen distended. A hard nodular, non-fluctuating, movable tumor could be felt in the right iliac fossa, hypochondrium and right lumbar region, extending over the mid-line to the left lower quadrant. The tumor was dull, not tender, and showed apparently a sulcus at the level of the anterior superior spine, running toward the gall-bladder region. A vaginal examination showed the os hard and the uterus not freely movable. The fundus could not be made out. A probable diagnosis was made of fibroma of the uterus, obstructing the ureter and causing a right hydronephrosis.

Operation.—Dr. George H. Monks operated by a median incision below the umbilicus. He found a mass which filled the entire abdomen, arising from the right kidney and covered with multiple, vari-colored cysts of varying size. The ureter was tied off and the tumor removed. The left kidney was also markedly enlarged and cystic. The uterus was normal. The patient was in a critical condition at the end of the operation and did not regain consciousness. Pulse 80 and soon became weaker. The patient passed a fair amount of urine, but in spite of stimulation failed and died at 3:50 o'clock of the morning of the day following the operation.

Examination of the tumor showed congenital cystic kidney.

This case is of interest as showing that enlargement of the kidney in the female, associated with amenorrhea, may cause suspicion of pregnancy. A review of the symptoms indicates that the partial unconsciousness at entrance was undoubtedly due to uremia. The necessity of relieving the patient of the weight and dragging, together with the possibility that the tumor was a sarcoma, led to the performance of nephrectomy. The fact that nephrectomy was performed did not, apparently, affect the ultimate result, as the patient was markedly uremic and in very poor condition at the time of the operation.

The following cases, taken from the autopsy records of the pathologic department, are appended as illustrating the fact that the condition frequently escapes attention until revealed at autopsy. The first case is also interesting as showing cystic disease of the liver, which is not infrequently associated with cystic kidney. Its bearing on the etiology of the disease is interesting, and, as mentioned above, is confirmatory of congenital origin:

CASE A.—A woman, 47 years old, was admitted to the City Hospital Feb. 3, 1896. She died of purulent bronchitis and bronchopneumonia. "The liver extends 5 c.m. below the border of the ribs. It is filled everywhere with cysts, which project somewhat above the surface of the liver in numerous places. They are lined with a smooth membrane, sometimes showing numerous projecting septa, which are filled with a perfectly clear, straw-colored fluid. The largest cysts are in the upper portion of the right lobe. They vary from 5 cm. in diameter to microscopic size. The consistency of the liver, apart from the cysts, appears normal.

"Both kidneys greatly enlarged. Weight of both, 700 grams. Capsule stripped off easily. Filled with innumerable number of cysts, ranging in size from pinhead to 3 cm. in diameter. They are in all parts of the kidney. Contain in part a perfectly clear fluid and in part a brownish, chocolate-colored fluid. On stripping off the capsule of the kidney numerous cysts are found. The fluid in them appears to be under considerable tension. None of these cysts communicate with the pelvis of the kidney. They are probably more numerous in the cortex than elsewhere. Both kidneys are equally affected. Both of same size. The renal tissue between the cysts is pale, reddish, somewhat granular and opaque. Markings can not be made out.

"Urine, 1026. Albumin, ¼ per cent. Much blood. Hyalin and fine granular and epithelial casts, with fat adherent. Compound granule cells covered with fat and epithelium. Large and small round cells. Casts of small diameter. Few pus cells.

"Clinical History.—Thirteen weeks of vomiting and diarrhea, swelling of legs and abdomen. Liver noted as enlarged, hard and irregular. Kidneys not noted as enlarged."

CASE B.—R. M., a man, 20 years old, was admitted to the City Hospital Nov. 25, 1898. Clinical diagnosis, malignant endocarditis. Anatomic diagnosis, endocarditis and acute lobar pneumonia. Kidneys.—Weight, 635 grams. Large. Surface shows everywhere cysts, varying in size from 1 mm. to 5 cm. in diameter. On section kidney appears to be made up of a series of cysts, which are found in both the medullary and cortical portions. In some places the cortex is entirely replaced by cysts. Cortex measures 7 mm., except over some cysts, where it measures as low as 4 mm. In other places it has entirely disappeared. In the cortex the glomeruli are seen as rather prominent grayish specks. Microscopically the kidneys showed very slight increase of connective tissue here and there in the cortex. Usually shows infiltration, with plasma cells. Some exudation of lymphoid and plasma cells in the intermediate zone.

Urine turbid, 1018. Albumin, slightest possible trace. Few hyalin and fine granular casts, some renal cells adherent and some of very large diameter. Numerous small round cells and considerable pus free and in clumps. Illness three weeks. No history of renal involvement.

Case C.—M. L., a woman, 36 years old, was admitted Aug. 26, 1900. Glossitis. Purulent bronchitis with edema of lungs. Diaphragmatic hernia.

Kidneys encroach greatly on peritoneal cavity. Weight of right kidney, 1,160 grams; left, 780 grams. Right kidney, 27x10.5x8 cm. Surface markedly irregular and distorted, due to multiple cysts, which have apparently, except as mentioned below, entirely replaced normal kidney substance. Cysts vary in size from 1 mm. to 4 cm., thin-walled for the most part, so that the cyst contents are visible in many as a straw-colored fluid. Other rounded masses scattered at irregular intervals over the surface and surrounded by cysts of a dark grayish-brown color and of considerable firmness, suggesting the remains of kidney substance. Left kidney 20.5x10.5x7.5 cm. On posterior surface a firm grayish mass, evidently kidney substance, measures 4x2.5 cm. No abdominal tumor or symptoms on account of kidneys were noted during life.

Urine, 1012. Albumin, very slight trace. Sediment very slight, consisting of pavement epithelium. Cells from neck of bladder, coffin-lid crystals, bacteria, a few normal blood globules and leucocytes.

Case D.—F. B., a man, 70 years old, was admitted to the hospital April 5, 1901. Death from double pneumonia.

Kidneys.—Right, 250 grams; left, 220 grams. From anterior surface of right kidney projects a thin-walled cyst, 4 cm. in diameter. At lower pole of same kidney a similar cyst, 6 cm. in diameter. Left kidney presents a similar cyst and seven smaller cysts. Contain clear straw-colored fluid. Specific gravity, 1010. Slight fatty degeneration. Glomeruli stand out as bright-red points. Microscopically the glomeruli are large and injected. Slight focal increase of connective tissue, with atrophy of adjacent tubules. In places are dilated tubules (?), in which is granular material. Certain tubules contain granular casts.

No symptoms due to cystic kidney.

Case. E.—M. K., a woman was admitted to the hospital May 8, 1901. Ischiorectal abscess. Bronchopneumonia. Edema of lungs. Congenital cystic degeneration of right kidney, with compensatory hypertrophy of left. Age 60 years. Right kidney, weight 40 grams, measures 9x2.5x2.5 cm. Made up almost entirely of cysts from 1 to 2 cm. in diameter and filled with clear fluid. These are separated by only a thin wall of kidney substance. At the upper pole, kidney tissue reaches its maximum thickness, being there 1 cm. Hilum of kidney dilated, but ureter patent, showing no evidence of obstruction. Right renal cortex about one-third size of left. Left kidney weight 235 grams, 14x6.5x4.5 cm. Smooth. Capsule strips easily. Pale on section. Glomeruli and markings of pyramids indistinct. Cortex 8 mm. thick. Many fat droplets in tubular epithelium.

No symptoms recorded in relation to kidney.

Urine, much pus. (Ischiorectal abscess.)

The case is evidently one of unilateral cystic kidney, with compensatory hypertrophy of the other.

Several other cases of cystic kidney in the autopsy records are not included, as a careful study showed that the cysts were secondary to interstitial nephritis, and the above cases are the only ones of undoubted congenital cystic kidney taken from a very large number of autopsy records. It is interesting to note that in none of them was a diagnosis of the condition made during life.

CONCLUSIONS.

From the above discussion we may draw the following conclusions:

1. If there be sufficient healthy tissue between the cysts to perform the normal renal functions the disease may never attract attention, and the patient may live a normal life and die of disease independent of the kidneys.

2. Under the same conditions as to renal tissue, while the renal excretion is normal, the cysts may cause pain and discomfort from their size and weight without dangerous symptoms for years. Mobility of the kidney, with its accompanying troubles, may result from this enlargement.

3. The growth and enlargement of the cysts may so strangulate and compress the normal kidney tissue between them as to throw it out of commission, so that stasis and uremia may result.

4. The normal tissue between the cysts may become affected by the various forms of nephritis, just as healthy kidney may, and this nephritis may be fatal in itself or by reason of the cardiac and arterial changes which accompany it.

5. These same cardiac and renal changes may and do accompany the compression of the intervening tissue by the cysts, and are not an infrequent cause of death in these cases.

6. The surgical aspects of the disease relate to the pain and discomfort due to the size of the tumors or mobility resulting from them, and in operating for these conditions it is all important to remember the pathology of the disease and more especially the fact that it is bilateral in 98 per cent. of the cases. A cystic kidney, while causing pain and disability by its enlargement, may still be performing so large a part in urinary excretion that its removal would be dangerous to life from renal insufficiency.

7. It, therefore, becomes important if possible to take some means to diminish the size of the offending organ and anchor it in place without interfering with its secreting functions. Such a procedure, which will be vastly safer than nephrectomy, consists of the free incision and puncture of the larger cysts, thus diminishing notably the size of the kidney, and suturing of the organ in position. If for any reason a nephrectomy seems desirable it should not be performed unless an exploratory incision or ureteral catheterization has demonstrated that the other kidney is healthy.

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OPHTHALMIC PRACTICE OF THE PRESENT TIME.*

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An extremely interesting paper by Dr. George M. Gould[1] on "A Study of Failures in Ophthalmic Practice" has called my attention to the subject of the work of the ophthalmologist of the present, and we may well ask the questions: What is it? What shall it be? Dr. Gould's candid acknowledgment of his failures and the reasons therefor will be readily accepted by most ophthalmologists, who will agree with the premises so well set forth in his paper. But I do not think, however, that the final word has been said as to the causes of our failures, nor do I believe that the present method of examination can not be improved. If we do have failures, such conditions must always exist, more or less, with all medical men, be they specialists or general practitioners. No one is infallible, even the most expert may be misled or fail by reason of conditions which the physician can not control. This subject can not be considered from any one standpoint; the work of all the investigators now working along these special lines in our profession must be included.

We may object to the statement: "By failures to cure I mean the failure to relieve those symptoms due to eyestrain," as we well know, and as Dr. Gould has shown, that we must not consider all "the ills that flesh is heir to" as due to eyestrain. I do consider, however, that in the present state of our knowledge of eyestrain, and the present advanced methods of examination of ocular conditions, our failures will compare very favorably with all other work in the medical profession. If so, then we may justly ask: What is or should be the essential practice of ophthalmology at the present time?

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Med. Rec., Sept. 30, 1905.

Before we take up the study of the advancement of ophthalmology during the past two decades, let us study some of the reasons for our failures as set forth in Dr. Gould's paper. I note, first, the "want of a good refraction school." In attempting to answer this I must start out with the assertion that I must differ very positively with the statement that "ophthalmology is most inaccurate and unscientific," because I believe fully in Helmholtz's statement: "Ophthalmology is by far the most accurate and scientific of all the specialities of medicine," and, furthermore, because we do agree in our examinations of the refraction and motility of the eye if these are properly and scientifically made. We can never agree on this subject if we do not study carefully the investigations of others who are equally as scientific as ourselves, but instead set up a little pedestal of our own and, standing on it, make the assertion that our work is alone correct, while that of others is all wrong. The investigations of Stevens, Risley, Savage and others surely deserve some consideration even if we can not accept all their teachings. Some of us will be proficient with one method of examination, others will succeed in some other way, but the refraction of the human eye must be a fixed condition, which by proper methods of examination must show the same results to all observers who are sufficiently expert in the use of the objective tests that should be found in every well-equipped oculist's office.

If this be true, we must have good refraction schools in this country, and I would venture the assertion that the refraction schools of this country are more fully advanced and more complete in their teachings than in any other country in the world. The reader of this article may ask: Where is this teaching that is so perfect? The answer is, In no one place nor is it given by any one teacher, but all combined furnish the result. We might say that Dr. Gould's teaching was all that could be desired, but yet I fear that if his methods only —as I understand them—were practiced we should have many failures. What, then, shall the student of ophthalmology do, and where shall he go? I would answer that in this way: Let him listen to the teachings of all the eminent men in this country who are constantly placing their views on ophthalmology before their students and the medical profession; not in a narrow way, by following the teachings of any one man, but by the true and honest way, of carefully studying the methods of all and then combining them in the way that seems best to himself.

Now let us consider what seems to me is Dr. Gould's teaching. "The day of the worship of the scissors or of the ophthalmometer is long in the past." If this implies anything, it is that we must put aside the use of these two instruments as useless and obsolete. Certainly such an assertion would seem an obsession to many well-advanced oculists, and I venture to say that no complete examination of the eye should be made without the use of the ophthalmometer, notably so in the prognosis of myopia. I shall speak of the scissors later, but the doctor can not deny that some cases have failed with glasses and have been relieved with the aid of the scissors.

"Incorrect diagnosis of ametropia" is said to be another reason for our failures to relieve eyestrain. This can not be denied, but is it not a personal fault? Is it not one that must exist in the physician himself and for which he must take the consequences? This almost goes without saying, yet it is not the fault of our teachings; if the examiner of refraction will not devote the necessary time to following out a scientific examination of the refractive condition he must fail in many cases, and if he does give the time to his patients he should be sufficiently expert to notice and to correct every small error either astigmatic or muscular.

Is it an error to recognize and to correct the condition known as heterophoria? Dr. Gould evidently admits that this condition may be present and speaks of certain conditions of heterophoria as esophoria, etc. He states that "esophoria of high degree is not usually curable and is rare." Just here we may find one of the causes of failure, for the proper operation for esophoria does and will cure many cases of this condition after the most careful examination and correct use of the glasses has failed to give any relief. I have seen these cases and have reported a number of them in which a proper operation has resulted in obtaining complete relief of symptoms that have existed for years, and this relief has been permanent, as my records will show. Hence, we have no right to accuse the physician who carefully operates for heterophoria of doing so from a "financial point of view"; the same accusation has been made regarding the operation for the removal of the appendix during the quiescent period, though that assertion has not altered the opinion of some of our best surgeons. Now we must not consider every physician who operates for heterophoria as a tenotomist—I decidedly object to the term, as I think that it is extremely unjustifiable even though it is one that seems to be freely used at the present time. Tenotomy has had its day, since the first operation was performed for the relief of exophoria associated with myopia. To-day this procedure is giving way to the more advanced theory that heterophoria is due to a primary essential weakness of one or more of the rotators of the eyes in relation to its antagonist, and the operation that will strengthen these weak muscles is gradually taking the place of the tenotomy of the stronger muscle. If, then, esophoria may exist, is it not a sufficient corollary that exophoria and hyperphoria may also exist and cause an imbalance and eyestrain that can not be relieved by glasses, even when we have eliminated the "patient's personal equation" and have given the glasses or prisms after a most careful and scientific examination?

As I understand the teachings of those who object to the operative correction of muscular insufficiency, we must examine the eyes under atropin, order glasses, if they do not relieve, repeat the same process and so on. It seems to me like "piling Pelion on Ossa" to reach the heavens, and how many failures do we have by trying to follow that method.

We may reasonably ask: Is heterophoria refractional in origin and innervational in nature? To my mind and from my experience I must answer that question in the negative. What evidence do we have that it is refractional? Some patients have been relieved of their reflex symptoms by the use of glasses. Only this and nothing more, and yet how many patients do not find the expected relief after the most careful correction of their refraction under the use of a mydriatic. There must be a reason somewhere for these failures. Perhaps all this may be infantile in argument, but, as the assertion in an affirmative sense is made over and over again, then the proper correction of that fault should bring about certain relief. Why does it fail in some cases? Because in the patients who fail to find relief there are other causes that are at fault besides the refraction, and chief of these is the imbalance of the ocular muscles. Perhaps this condition *per se* may not be great enough to cause all these many "ills that flesh is heir to," but associate this imbalance with a refractional error, and then we have the true cause of many reflex symptoms and the true reason why some patients who have had their imbalance corrected still have to wear the correction for their refractional condition. I do not think any one has yet claimed that the correction of an imbalance by an operation will at the same time correct an existing refractive error. *A priori* we might as well ask why does Dr. Gould advise his patients to wear prisms with their glasses if the imbalance is only refractive, or why shall we advise prism exercise? These are interesting questions that I trust may be answered at some future time. As to heterophoria being "innervational in nature" I am utterly unable to answer that question, as I have yet failed to find any reasonable explanation of that phenomenon in any writings of those who persistently advance the theory. To me it seems to be only an assertion completely wanting in proof. I shall be more than pleased when I can feel that "exophoria or subnormal adduction" is always curable by prism exercise and proper glasses. I have failed to be so successful with my cases if the imbalance is of any considerable degree. In those patients seemingly helped I fully agree with Winters that muscular tissue built up in this way is not nor can it be permanent. A child's muscular tissue may be developed by constant exercise, but unless that development is supplemented by a perfect metabolism from suitable food the tissues so built up will soon return to their former flaccid condition. It is so with the muscular balance of the eyes. We may improve the power of adduction by the constant exercise of the interni by the use of prisms—but this can not go on forever—and when we stop the exercise then we find the old imbalance returning with exophoria present. Esophoria—or subnormal abduction, if I may use that term—will not yield to the same exercise, and why? There is no answer to that question, nor will the procedure of prism exercise influence a vertical imbalance, yet the remedy for one should be the remedy for all.

Now if we earnestly seek for the true cause of these cases of imbalance, either with or without a refractive error, we must find it in the muscular structure of the eyes. Not in the refraction, a contributing cause, nor in the innervation, as the nerve impulse or the brain centers simply cause the muscles to act according to their functions and to the extent of their muscular development. (I do not think the prize fighter has any more innervation than myself, but I do know that he has more muscular power.) If, then, it is the muscle that is at fault, it must be in an essential weakness of an adductor or an abductor, in all cases of a lateral imbalance.

If these premises are correct, we may find some reason for the many diatribes against the tenotomists or the so-called muscle cutters, as it is a poor substitute for an operation that would strengthen a weak muscle at the expense of a strong one, but that does not prove that "operation cures nothing." If tenotomy is not indicated and exercise will not give a permanent cure, we must have some remedy for these cases, "our failures," and I think that is fully indicated from the very nature of the primary cause. In other words, if the essential cause of all cases of heterophoria is weakness of a muscular function, then the indications for the correction of that imbalance must be an operation that will enable that muscle to act normally. To this end we must turn to surgical means and an operation that will produce this effect can be found in the principle that if we shorten a muscle in its long axis then with the same degree of innervation we must have a greater action of motion on the peripheral part to which the muscle is attached. This stands without question, and reason should indicate to us that if we shorten the externus we must enable that muscle to increase the rotation of the eyeball outward and in this way correct the esophoria. Is this always successful? I can not say that it is always so, unless we could eliminate the personal equation, but I do state, without any reasonable contradiction, that we can restore the muscular balance by such an operation in a vast number of cases, so far as the objective and subjective tests will show. That we must have failures goes almost without saying, but I feel that the percentage of our failures with this operation, when it is fully indicated, will not be greater than the failures to relieve all cases of eyestrain by glasses when the refraction alone is at fault. For the purpose of study in reference to the statistics of refraction and motility, I have taken the last one hundred cases from my books at the date of this writing. These patients were all personally examined as to the refraction and the muscular balance. In three-fourths, or 76, I found no special evidence of any muscular imbalance; among the remaining 24 there are three cases of squint which may be omitted. The remaining 21 patients all presented some evidence of heterophoria of more or less degree, as shown by the Maddox rod test, the prisms and the tropometer. Nearly all had some refractive error that was carefully corrected and glasses ordered. It is fair to assume that, as they did not return, the relief from the symptoms afforded by the glasses had been satisfactory. This reduces the number of cases of heterophoria that need attention to only 2 or 3 per cent. These patients, after the glasses had been fairly tried without relief of their symptoms, were operated on, according to the imbalance indicated by the examination, by the shortening of the muscle with the catgut suture. The final result proved the necessity for the operation.

A new element has been introduced under the subject of eyestrain that should require some attention at the present time; this is called subnormal accommodation. It was mentioned in Dr. Gould's paper, to which I have previously referred, but, unfortunately, though beautifully alluded to, yet we find no explanation of the necessary tests by which an ordinary observer or even a scientific one can make a suitable diagnosis of this condition. To say that it is an "elusive mischief" may express the matter fully, and the rough rule that plus lenses over the distance ones will sharpen the images of ordinary print when held at eighteen inches is hardly a scientific explanation, and one that is simply and wholly subjective. Plus lenses will always sharpen the image of printed matter in the young as well as in the old, but Nature will not admit of such a correction in the young when the ciliary muscle is active and the lens elastic.

Theoretically, we should all use plus lenses for the near, so that the divergent rays may enter the dioptric system parallel and so place the focusing muscle at rest. But just as "Nature abhors a vacuum," so will she resent any artificial interference with her natural function of seeing. To see at the near point the ciliary muscle must contract—you may call it habit if you wish—even with the convex glasses before the eyes. Now if our patients can read the finest type—Jaeger No. 1—either without glasses or with the full correction of the static refractive condition at six inches or less, showing full reserve power for the usual reading distance, then I doubt very much if we can have any subnormal accommodation. Furthermore, if patients may accept the plus lenses the continued relaxation of the ciliary muscle will not be tolerated for any considerable time in young people. I always test my patients for the near point, and if I find it sufficiently near I do not think they will need or use convex glasses. It is true that exceptions will prove the rule, and that we do have exceptions I am willing to admit, but I think that the young persons who will use the convex lenses for any continuous work will not have a near point of six inches; they will have a large amount of uncorrected hypermetropia or some general physical condition that needs the services of the family physician more than that of the oculist. This leads us to the point which all oculists should realize: that we, as physicians, must work together; in other words, that the presence of subnormal accommodation is not really the indication for glasses, but shows, rather, that the general system is at fault and that under the care of the family physician, that best of all specialists, the patient will recover without the use of glasses.

Relief from the strain of the accommodation by outdoor exercise for the young, instead of passing the time reading books and papers, attention to hygiene and suitable foods to build up the bodily strength will soon restore a natural function that does not need nor should it ever have artificial aids to seeing. It is a difficult subject to decide impartially; we do not like to send our patients to others. We must consider that the practice of medicine is not a very lucrative one and financial reasons must intrude themselves—as one physician said to me when attempting an operation he should have referred to an oculist, "I wanted the money"—but if we had that true *esprit du corps* between the physician and the specialist, so that the physician could feel "my own shall come back to me," then he would more gladly seek the aid and counsel of one who may be more conversant with that special branch of medicine which the case demands. The same rule holds good on the part of the specialist. He also is a physician, but after he has completed his examination along his special lines and finding that the patient no longer needs his special services, should he not refer the case to the family physician? This is a golden rule that in the end would be productive of much benefit in a financial sense to physicians and to patients. I know that the specialist must treat certain of his patients in whom there are certain pathologic conditions that need his watchful eye and that these patients can not be referred back to the family physician if he considered their best interests. Diseases that involve the iris and the cornea should always be under the exclusive care of a specialist, but many others will do just as well under the care of the family physician after the diagnosis of the ocular condition has been made.

The teachings of ophthalmology of the present time present many changes from that of two decades ago. In my early work on refraction we were wholly dependent on the subjective tests of the visual power. We did not know if the patient's selection of the glass was the correct one, and if we were uncertain we were told to use the "crucial test," or the use of atropin for two or three days, when, the accommodation being paralyzed, the patient must accept the correct glass. It is true we had the ophthalmoscope in those days, by which we could decide the gross errors, as hypermetropia and myopia, but low degrees of astigmatism were not easily recognized. Such was the armamentarium of the oculist in those days, and when I read a paper before the New York State Medical Society at that time on "Our Refraction Cases" the vast majority of them were classed as simple hypermetropia, while imbalance of the ocular muscles was not thought of except in fixed squint and paralysis.

To-day, how different are the teachings of ophthalmology! Now the crucial test is not so often necessary, and in my own teachings the objective methods of investigation of the refractive media takes the first place. I am not a prophet, certainly not in my own country, yet I venture to say and I hope I am correct that the day will come when the physician is so advanced in his refraction work that the diagnosis may be made and the correct glasses given without consulting the patient.

Perhaps that day is far distant, but during the past decade the advances in objective methods have been very great. Javal's ophthalmometer is an exceedingly useful instrument in the diagnosis of astigmatism and has demonstrated that it is in the anterior surface of the cornea in the vast majority of cases. The same instrument enables us to measure the radius of the cornea, by which we have an indication of the refraction, and in myopia the differential diagnosis between benign and pernicious conditions; in other words, between axial and refractive myopia. Furthermore, the retinoscope has come to us in the past two decades, and with this instrument we have an excellent method for the diagnosis of the refractive condition of the entire dioptric apparatus and one that is particularly useful as an objective method with children and illiterate persons. These are scientific instruments conceived, and their uses elaborated in a scientific manner, and with proper study and constant use will fulfill all that can be required of them. Their use can not be mastered in a day nor in a month, but I know that when we have fully appreciated the principles on which the examination depends the application of these tests, even without the use of a mydriatic, will reveal the static refraction of the human eye in almost every case. I do not state that these instruments are infallible, but I do think that if associated with these instruments we employ a careful and systematic method of the subjective test the crucial test will be seldom used or found necessary.

A scientific examination should not end with the correct estimation of the refraction. We can not say that the fault, or, I might say, the cause, of all the phenomena of eyestrain exists in the refraction. Errors must be corrected carefully and scientifically, but after that has been done we still meet with failures in some of our cases, not many, perhaps 4 or 5 per cent. With proper glasses these patients are better for a time and then the old symptoms return. Why? If they have been carefully examined, then changing the glasses will do no good and the fair and honest oculist must extend his examination to the motility of the eyes.

We see by the action of the refractive media on the rays of light from the pages of our books, etc., but to make that vision perfect we must have binocular vision; in other words, the eyes must work together so that the image of the object may fall on corresponding regions of the retinæ. This is one of the most beautiful functions of Nature that can and must be adjusted by the action of the straight muscles of the eyes, assisted by the oblique, to keep the vertical meridians parallel. Now if there is an imbalance of any of the ocular muscles, not sufficient to cause squint, but that does require a constant effort of innervation of one or more muscles to keep up this constant fixation of the visual lines when the vision is in the distance or in the near, it seems to me that this constant effort of fixation, this work that calls forth the constant innervation of a muscle or muscles about the eyes, must cause some symptoms of eyestrain. Nature has certainly a fixed standard of vision; that is acknowledged by all oculists; and I can see no reason why we should not have a fixed standard of rotation that will equalize the necessary innervation of the ocular muscles. This is denied by some observers, even to the extent of saying that no case of eyestrain can be due to a want of balance between the opposing muscles, and others that a comparison between the action of one muscle and that of the opposing one has no foundation in fact and is useless as a test. But observers and investigators have opposite views, and why? Because the careful and repeated application of strictly scientific tests in their cases proved the correctness of their views.

If, then, we admit the existence of an imbalance of the ocular muscles—and no oculist can deny it if he will read what Seguin[2] taught some twelve years ago—it goes without saying that the teachings of ophthalmology must include this subject. When we consider how important these movements of fusion and of fixation are to the individual, how beautifully they are adjusted to the wants and the pleasures of the human race to-day, how essential they are to the preservation of binocular vision, then it becomes imperative that we should understand the normal function of fusion and of fixation. We can not see when the eyes are moving; they must come to a state of rest, so that the images may be formed on corresponding parts of each retina, and if the muscular apparatus that controls this function is at all in imbalance there must be certain symptoms of eyestrain with, perhaps, certain phenomena of reflex conditions. What, then, is the normal function of fusion or duction and of fixation or version? Do not the daily wants of the individual show it? The eyes are at rest when the visual lines are parallel and the look is in infinity, and when the look is directed to the near point the visual lines are convergent. These are the requirements of the visual act in our daily life, and Nature has provided for it, as we find that adduction must always be greater than abduction, as about three to one. The function is voluntary and is controlled by the lower brain centers. This is well shown by the prism test, and I believe that a comparison between these rotations under the stimulation for fusion is essential and necessary.

Furthermore, the function of orientation or the topographical sense—to see around us without moving the eyes—is the function of our field of vision; but to see clearly in any one particular region the eyes must be directed to that point. This is the function of binocular vision and depends on the conjugate movements of the eyes, controlled by the higher brain centers. Here we find the field of version or fixation, with its limits established at the points to which the eyes can be turned from that of the first position, with the head immovably fixed. This, again, is a clearly demonstrated field, in which the rotations of the eyes have certain limitations that can be scientifically measured by an excellent objective instrument, the tropometer of Stevens. It is found in the normal field to be about 55° inward and about 50° outward from the position of rest with the look in infinity and about 33° up and 50° down. If we consider these as normal or standard fields, will not an imbalance show a decided change in these limitations?

Is it not as necessary to teach the method of making these investigations in the study of eyestrain as that of the refraction of the dioptric media? It goes without argument that this must be so. This is my method of teaching ophthalmology, and I venture the assertion that an eye which has normal vision and normal fusion and fixation will not have any symptoms of eyestrain, either reflex or in the eyes themselves. I will not dwell on the correction of these cases of imbalance except so far as to say that the more I study this condition the more I feel convinced that all imbalance is primarily and essentially due to an abnormal anatomic weakness of some one or more of the straight muscles of the orbit. If this contention is correct, then I do not advise any muscle cutting, but I do advise the operation known as shortening, by taking a tuck in the muscles and with the use of the catgut suture. I will conclude with the words of Dr. Gould, whom I have quoted so freely: "But when all has been confessed, discounted and allowed for, the truth remains that in no department of medicine is practice so satisfying, in none is cure so much the rule, as in refraction work." But I would add to that assertion: If to our refraction work we also consider the possibility of an imbalance of the ocular muscles our failures may be less and our satisfaction may be greater.

DISCUSSION.

DR. A. E. PRINCE, Springfield, Ill., called attention to the closing paragraph of Dr. Valk's paper, which, if correct, he said, will inspire him with new zeal in the treatment of a class of cases which have hitherto been a source of discouragement to him. This resolves itself, he said, into two tangible propositions: 1, all asthenopia is curable; 2, no tenotomies are advisable. Dr. Prince finds so many cases of asthenopia, accompanied by small errors of refraction and little or no muscular imbalance, and asthenopia after careful correction had been made, that he has formed the habit of designating on his record cards this class of cases by the term, atonic asthenopia. He nearly always finds that these conditions are caused by an unwise use of the eyes. A person gets interested in a piece of fancy work or a novel and continues in spite of Nature's warning until forced to desist by symptoms of incapacity or discomfort. The clerk or shop girl is obliged to work the eyes a given number of hours, often at fine work, under unfavorable conditions, and breaks down. She goes to an oculist, who corrects the error of refraction she may have, she resumes work and breaks down again and is obliged to quit. The scholar in the lower grades lays the foundation of trouble by holding the book too close, thus often doubling the accommodation strain. The oculist finds a small error, which he corrects with glasses, and neglects to discover the cause; the child persists in this vicious habit of holding the book too close and permanent asthenopia is the result. The student with refraction corrected who is ambitious to do three hours' work in two taxes his visual powers by long hours of uninterrupted eyestrain, under faulty conditions, and develops photophobia and congestion, wears colored glasses, and persists, ultimately to find himself with permanent asthenopia. These cases, Dr. Prince calls atonic and he advises the patients to work at normal range and to interrupt every five minutes with ten seconds rest. They often get along and do a creditable amount of work, but are obliged to exercise care in the use of the eyes. Overtaxation results in a setback, which compels renewed rest and prudence. He asked Dr. Valk and the members of the section if they meet these cases, and if they discover refractive or muscular errors, the correction of which does not remove the symptoms of asthenopia. Regarding the second proposition, he said that he thinks Dr. Valk expresses the modern tendency of thought relative to tenotomies. Dr. Prince takes the middle ground. He first favors advancement, in all cases, either heterophoria or strabismus, and later performs tenotomy when indicated. This procedure is rational and the results are better.

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[2] Seguin: New York Med. Jour., Dec. 3, 1892.

Dr. Oscar Wilkinson, Washington, D. C., stated that three years ago he began a very extensive study of his series of asthenopic cases. He treated the patients first under homatropin, examined them before and after, its use giving the correction, eliminating muscular defects, and when they returned with still some symptoms he used atropin. Out of a series of fifty cases he has found what he terms astigmatic accommodation in five cases. This was usually found with the use of atropin after from 3 to 6 days. He has had these patients use atropin as long as ten days before the full amount of astigmatism was shown. These cases with full correction have been relieved entirely. Dr. Wilkinson believes that in our haste to get through with our work we often pass over our asthenopic patients without a sufficient number of examinations. He believes that the ordinary use of homatropin will not bring out the accommodation, if there is latent astigmatism with hypermetropia; we must use atropin. In Washington, where so many patients are clerks who go to school at night, there is an unusually large number of people suffering from eyestrain according to the population, and the loss of ability to use their eyes means more to them than to ordinary individuals.

Dr. G. M. Gould, Philadelphia, declared that we have come to a blind alley in this matter and that each one differs from the other. He asked if there are any two or ten prescriptions which agree for glasses independently given which agree in the diagnosis of one patient's error of refraction. He does not think so. He has hardly ever seen prescriptions which agree with each other or with his. Ophthalmologists must come to some sort of an agreement, he said, or make the specialty ridiculous. They must get down to a basis of truth and do away with this ever recurring disagreement with each other. The only way to do this is to have an endowed and recognized optical refraction school. By disagreements and neglect, he said, ophthalmologists are producing quack optical and refraction schools.

Dr. Leartus Connor, Detroit, said that he daily sees the work of fellow ophthalmologists with which he absolutely agrees, and that he has done so ever since he began the practice of ophthalmology. Therefore, he said, the practice of ophthalmology in Detroit and in that part of the country is not a bedlam. Further, he said that an increasing feeling of agreement comes with years of experience and with our appreciation of what the other fellow has done, but that it will never be brought about from *a priori* ideas; it must be founded on observation, proper deductions from such observations and practice based on that. It is simply carrying out the laws and principles taught by Morgagni more than a hundred years ago, on which all scientific medicine has been based. A special school to teach refraction from *a priori* reasoning is not needed, he said, but every fact must be accurately recorded and the efforts of one man placed in possession of others, and as they have the same eyes, the same reasoning powers, and the same desire to benefit patients, so will there be a unity. Dr. Connor thinks that there is a substantial unity in ophthalmology, as much so as in any other part of medicine or any other profession. He does not think that ophthalmologists need be afraid that they are not progressing, or progressing in the right way, or that they do not have the respect of intelligent men in and out of the profession everywhere.

Dr. G. C. Savage, Nashville, said that notwithstanding what Dr. Connor has said, he thinks that there is difference in results and that this depends on the difference in methods. When all can have the same methods all will have the same results.

Dr. Francis Valk, New York, said that he hopes the day will come when physicians will be so advanced in refraction examination that by objective methods they can fit glasses without asking their patients any questions whatever.

CONJUGATE LATERAL DEVIATION.*

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It seems a well-established fact that all the movements of the eyeball which are innervated from the cerebral cortex are associate or conjugate. It also seems well established that lateral conjugate movements of the eyeball can be effected through stimulation of the center for the sixth nerve, or on the floor of the fourth ventricle. Of the associate or conjugate movements of the eyeballs, the lateral ones are the most extensive; and this is consistent with the fact that the human being can move about on a plane surface to an extent which is limited only by physical obstruction or the deficiency of his motor apparatus.

Dangers which threaten the human being come, as a rule, in the nature of things, from some direction in the plane on which he stands. They rarely come from above, and more rarely still from below. The associated movements of the eyeball downward are much limited, and those upward still more so. All movements of the eyeball that are conjugate are assisted and supplemented by the movement of the head, and it is evident that the movements of the head to the right and left are greater than in other directions. These reflections bear directly on the importance of the conjugate movements in general, and particularly those to the right and left.

Prevost first pointed out the significance and importance clinically of conjugate deviations of the eyeballs as a symptom of apoplexy; but this is a fugacious symptom and passes in a few hours, because in the first place it is a distant symptom and, in the second, the sound side of the brain probably learns to perform the duty of the stricken side. As will be shown in a case later to be cited, localization from conjugate deviation is uncertain, both on account of its transitory character and because the position of the cortical center for associate movements is not yet established.

Landouzy, Wernicke and Henschen, from clinical and postmortem study, have located the center in the inferior parietal lobe. Munk arrived at the same conclusion from experimental study. Ferrier, on the other hand, observed conjugate deviation from electrical stimulation of the angular gyrus, but, as this experimenter at that time thought the angular gyrus the center of vision, he concluded that the reaction obtained was in the nature of reflex from the visual center to the oculomotor center. Ferrier, together with Horsley and Beevor, have placed the center in the second frontal convolution.

Schaeffer and Munk more recently found that faradization of one visual center caused conjugate movements of the eyes to the opposite side, and Munk showed that this occurred even though the association tracts between the visual and what he regarded as the oculomotor centers were cut. From this he concluded that involuntary fixation of the eyes on the stimulation of light is caused by a reflex to nerve nuclei from the visual center and through the optic radiations. Knies has also put forward some interesting views to show that the cortical center for vision is also the cortical center for voluntary conjugate motions in so far as they are caused by a conscious visual impression, and supports this view by an elaborate scheme. By the same scheme he also shows how auditory and tactile sensations likewise may produce voluntary associate motions. Even in the case of Wernicke, in which a lesion of the inferior parietal lobe caused conjugate deviation, Knies thought that the close proximity of the inferior parietal lobe to the visual cortex was sufficient to have produced the deviation. It appears that this amounts to subsidizing a fact to support a theory.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

It appears that conjugate lateral paralysis is the only form of associate paralysis which can be caused by primary nuclear disease. The vertical forms of conjugate paralysis have in the main been associated only with tumors of the corpora quadrigemina. Gowers, Thompson and Steffen have reported such cases. This symptom also is regarded as distant, and does not necessarily imply that a center exists in these bodies like to that in the nucleus of the sixth nerve for conjugate lateral movements; but it seems clear that tumors of the corpora quadrigemina in some indeterminate way act on the nuclei for associated upward and downward movements so that their power of innervation is eliminated or modified. These paralyses of the lateral associated movements of the eyeballs necessitate the existence of fibers passing from the nucleus of the third nerve to the other side, which fibers, of course, are destined only for the internal rectus of that side. It is interesting to know that this conclusion is justified by the findings of Graux, who has demonstrated the existence of these fibers. They are properly called associate fibers, for it is by means of them that the associated movements to the right and left are accomplished.

AUTHOR'S CASES.

I have observed two cases of lateral deviation. One, I believe, was the result of irritation; the other, of destruction.

CASE 1.—A man, aged 40, was attacked by an acute otitis media.

History.—He suffered great pain and the drum-head burst of itself within twelve hours. The pain in the ear was relieved, but the head pain not only did not lessen, but became worse and began to radiate over his forehead toward the opposite side. His symptoms increased in severity and his pulse gave indications of meningitis. After twelve hours of intense suffering he became unconscious and comatose, with puffing respiration. His right leg was flexed on his thigh, the thigh on the abdomen, and both were inclined toward the median line. His forearm was flexed on his arm and his hand was in the classical position of *La Main en Griffe*, his thumb pointing toward his palm. At the same time his eyes and head were turned toward the left, the right eye being turned inward further than the left eye outward.

I saw him twenty-four hours after the rupture of his drum; the mastoid was normal, and I was not able to convince myself that it was tender on pressure. There was a large opening in the drum downward and outward, from which pus slightly tinged with blood flowed freely. I was in a quandary as to the diagnosis. The contraction of the leg, arm, and hand pointed to an irritative lesion of the left cortex, and the deviation of the eyes to the left pointed to an irritative lesion on the right side or a destructive one on the left. Meningitis was diagnosed, but in view of the conditions of the mastoid and the rapidity of the attack I could not bring myself to believe that the middle ear was the cause. This view was strongly fortified by the contractions of the right hand, arm and leg. It was assumed that there was a lesion of the left cortex, indeterminate in character, and that a general meningitis was present. In several hours the deviation to the left had disappeared, and subsequently the eyes deviated to the right. At the same time his head no longer pointed toward the left, but did not point to the right. The possibility of infection from the mastoid was again entertained, but the quandary was not removed. In the meantime the man was moribund, and died about fifty-two hours from the time of his attack.

Postmortem.—The postmortem was most interesting. There was a general purulent pialmeningitis, most marked on the right side and over the frontal region, but absolutely general. There was no lesion in the left cortex, none in the right, nor any in the ventricles. There were, however, petechial hemorrhages, very fine in character, on the anterior aspect of each middle lobe. On removing the brain from the calvarium a red spot was seen on the tegmen tympani of the right temporal bone, just short of where the wall rose to form the parietal boundary. A hairpin thrust through this small opening entered the mastoid cells and could be pushed into the antrum. The petrous portion of the temporal bone was removed by a chisel and the cells of the entire antrum, though fresh and clean in appearance, were completely filled with thick yellowish pus. It seemed in the highest degree probable that this hiatus was a congenital one, because the process had not continued long enough to produce destruction of the bone.

This region must have been rapidly invaded by the pus after its entrance into the fossa, and it is my opinion that the primary deviation to the left was due to the irritation of the pus on the right inferior parietal lobe. When the pus passed over to the opposite side the fresh irritation not only relieved the original deviation but caused the eyes to deviate to the opposite side.

This at least is consistent with the view that the inferior parietal lobe is the cortical seat for conjugate lateral movements, and it is obvious that these reflections support the view of Landouzy, Wernicke and Henschen as to the location of the cortical center of the lateral conjugate movements.

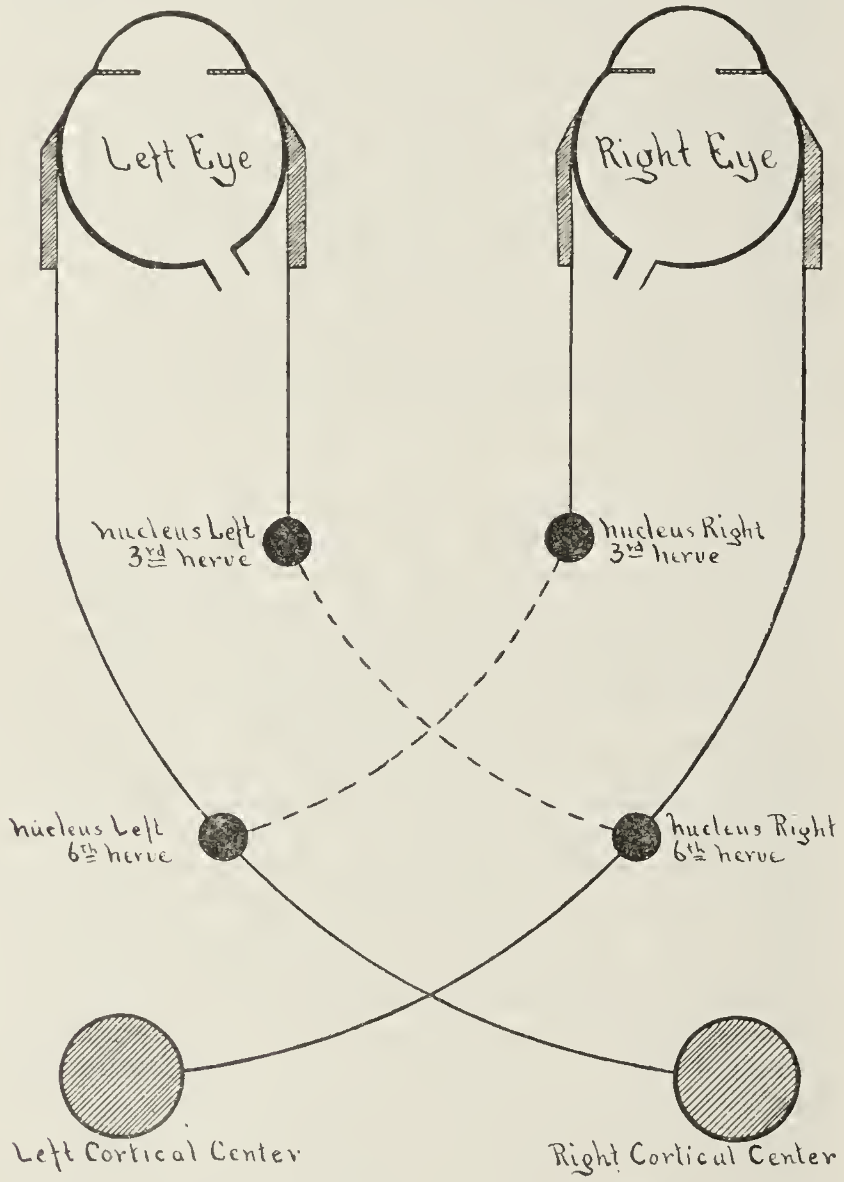
CASE 2.—This case is quite as interesting, though the drama has not yet been closed by a postmortem. A tall, heavy, strong South German, aged 37, had syphilis five years ago. He apparently recovered from all signs of it under treatment, and about a week before I saw him (Oct. 25, 1905) he suddenly noticed something peculiar about his eyes. On being questioned he stated that he did not see double, but noticed that his forearm, hand and leg seemed numb, and that he could not use his hand well in his work, which was that of a baker. These symptoms passed away rapidly. On being questioned further concerning the double vision, he said that he saw single except occasionally when he was returning from work at 8 a. m. He was accustomed to go to his work at 3 a. m.

Examination.—I examined patient on Oct. 25, 1905. His eyes stared, but there was no lagging of the lids and downward movement. Both eyes were turned distinctly to the left; at times this was more marked than at others. The right eye looked in further than the left looked out. The power of convergence was present and seemed to be normal, the convergence being equal in the two eyes for a given point. He could not be made to see double in any part of the field, even with the red glass test. The pupillary reflexes in the fundi were normal. The fields were normal, and the vision in each eye was practically normal, with the correction of a slight refractive error. In walking he habitually carried his chin toward the right shoulder. There was no difference in sensation to the prick of a pin in his hands, arms and legs, but his grip appeared to be a trifle weak. There was no Romberg and apparently no difficulty in orientation, although his walk suggested slight ataxia. The patella reflex on the left seems a trifle increased; on the right side, normal.

Treatment.—The patient was put on increasing doses of potassium iodid, but could take no more than 50 gr. three times a day. He has continued the iodid of potassium in the stated dosage to this date, Dec. 13, 1905. The eyes appear to be straighter in general than before, but when the left eye arrives at the median line the right eye still appears to incline inward. Patient says he feels much better and does not have to carry his head so much to the right in walking, but he is not yet able to carry his eyes beyond the median line to the right. He finds that the fingers of the left hand are still somewhat stiff and clumsy in his work. There is no difference in sensation between the two hands.

REMARKS.

It is evident that this case is one of conjugate lateral paralysis, the lateral movements to the right being paralyzed. Practically all the signs and symptoms of a classical case of conjugate lateral paralysis are to be seen here, and what is marked and distinct is that the paralysis of the external rectus of the right eye is more pronounced than the paralysis of the internal rectus of the left eye. This is entirely consistent with the generally recognized view that the center of the sixth nerve is the commanding one in lateral associated movements. That this is not a true paralysis of the internal rectus muscle is clear from the fact that the convergence is practically normal. This is eminently the fact in the case under discussion; therefore, none of the fibers for true convergence are influenced, but only those for associated movements to the right.



It is interesting and instructive to consider for a few moments the mechanism of spasmodic and paralytic deviation from the standpoint of the different locations of the lesion. By reference to Figure 1 it will be seen that in either case paralytic or irritative deviations may be due to a lesion either in the cortex or in the nucleus. If, for example, the lesion be destructive and lie in the left cortical center, it is obvious that there will be a deviation of the eyes to the left. If, in like manner, the lesion be a destructive one and in the right cortex, there will be a deviation of the eyes to the right, so that the eyes will look to the side of the lesion when it is destructive and cortical. If, however, the cortical lesion be an irritative one and lie in the left cortical center, the eyes will deviate to the right. If an irritative lesion lie at the right cortical center, the eyes will deviate toward the left. Therefore, in destructive cortical lesions the eyes look toward the lesion; in irritative cortical lesions the eyes look away from the lesion. When the lesion lies in the nucleus, it is clear that these conditions are reversed. Let us suppose a destructive lesion at the nucleus of the left sixth nerve. The external rectus of the left eye would thus be paralyzed, and the internal rectus of the right. The eyes will, therefore, look to the right; in other words, away from the lesion. If, in like manner, the destructive lesion be at the nucleus of the right sixth nerve, the external rectus of the right eye and the internal rectus of the left will be paralyzed and the eyes will look to the left; in other words, away from the lesion. An irritative lesion of the left sixth nucleus will cause a movement obviously to the left; the eyes in this case will look toward the lesion. An irritative lesion of the nucleus of the right sixth nerve will cause the eyes to look to the right, or toward the lesion.

It now becomes of interest to settle the probable position of the lesion in the case we have before us. The deviation here is to the left, and it is a paralytic deviation. It can not, therefore, be an irritative right cortical lesion, because there is paralysis; but it might conceivably be a destructive lesion of the left cortex; for, as we have seen, that lesion will produce deviation to the left.

It will be remembered that there was a transient left hemianesthesia and hemiplegia that would necessitate the existence of the lesion on the right; and, since the deviation in this case is to the left, it is obviously not a destructive lesion of the right cortex, for that would produce a deviation to the right. We are, therefore, forced to the inevitable conclusion that the lesion is a destructive one and lies at the nucleus of the right sixth nerve. The sixth nerve, or abducens, originated mainly from a mass of gray substance on the floor of the fourth ventricle near its widest part, at a point practically corresponding to the posterior border of the pons varolii. From this point the fibers pass downward and forward through the tuber annulare to the posterior edge of the pons varolii, where they may be seen on the base of the brain. Hence, it runs along the wall of the cavernous sinus and through the sphenoidal fissure to the eyeball. If the lesion in this case be not absolutely at the point of origin of the sixth nerve, at least it is somewhere in the immediate vicinity and is above the decussation of the pyramids. The hemianesthesia and hemiplegia, fugacious as they were, distinctly implied that the motor and sensory fibers for the left side were involved. Whether or not the hemianesthesia and hemiplegia were restricted to the left arm and leg and did not involve the rest of the left side is not obvious from the history; but that the lesion was syphilitic there can be no doubt in the face of the history given. It is a fact that there was no hemiplegia present, nor can I clearly see how it might have occurred, if the lesion be truly on the floor of the fourth ventricle. A cortical lesion associated with hemianesthesia and hemiplegia might have been accompanied by hemianopsia.

The following are the salient features of this case:

1. Conjugate lateral paralysis, with deviation to the left.
2. Fugacious hemianesthesia and hemiplegia.
3. The location by exclusion of the lesion at the nucleus of the right nerve.
4. The absence of hemianopsia.
5. The obvious predominance of the external rectus as opposed to the internal rectus.
6. The retention of normal convergence.

It has been said that simple abducens paralysis may be caused by a nuclear lesion, but if it be true that a lesion of the sixth nucleus causes conjugate lateral paralysis, then lesion of this same nucleus can not cause simple abducens paralysis, and the so-called nuclear paralysis of the sixth nerve must be due either to a lesion in the efferent fibers from the nucleus to the external rectus (Bennett and Saville) or to a lesion of the communicating fibers (Knies).

I think it unwise in describing the position of the eyes in cortical and nuclear lesions, whether irritative or destructive, to make any reference to the paralyzed side, since the paralysis is obvious. It is better to define the direction of the eyes by reference to the seat of the lesion. I suggest the following arrangement:

Irritative lesions { Cortical: eyes look away from lesion.
Irritative lesions { Nuclear: eyes look toward lesion.
Destructive lesions { Cortical: eyes look toward lesion.
Destructive lesions { Nuclear: eyes look away from lesion.

34 West Thirty-sixth Street.

DISCUSSION.

Dr. Mark D. Stevenson, Akron, Ohio, said that muscular spasms due to irritation, and paralysis due to destruction, point to the same local diagnosis. Paralysis may be due to a peripheral, nuclear or central lesion. Conjugate paralysis must be nuclear or central. In nuclear paralysis there is suspension of voluntary and involuntary movements, and the nerve and muscle degenerate at an earlier or a later period. In destruction of a part of the cerebral cortex every other part is more or less implicated apart from the destruction of the lower groups of ganglion cells, but certain voluntary and involuntary reflexes are retained. It is stated that the third nerve nucleus contains the nuclei of those muscles which turn both eyes to the opposite side, viz., internal, superior and inferior recti of the same side, and the inferior oblique of the opposite side, which is supplied by fibers passing over to the nerve of the opposite side. Convergence is supposed to be controlled by a central collection of nerve nuclei common to both sides, whereas the internal rectus in conjugate movements of both eyes is controlled by a collection of nuclei which are connected with the nucleus of the opposite sixth nerve. Central paralyses, Dr. Stevenson said, are not complete. The nerve fibers passing from the cortex to the nuclei do not run in bundles nor originate in any circumscribed part of the cortex, so that anatomic demonstration of their course is almost impossible. Optic and motor fibers freely intermingle in the cortex and cornea, but the motor fibers are more segregated near the nerve nuclei, and, therefore, lesions in this neighborhood readily cause motor symptoms. Knies states that cortical spasms affecting the eye muscles are always conjugate; that conjugate deviation toward the opposite side can occasionally be obtained by irritation of many parts of the cortex, especially from the visual sphere of the occipital lobe. Knies also says that the deviation of the eyes depends on the distance from that part of the visual cortex which controls the macula. The visual spheres are connected by associative fibers with the temporal, parietal and frontal lobes. These associate fibers pass through the inferior parietal convolution. Voluntary ocular movements and involuntary movements due to other stimuli—e. g., tactile and auditory—can take place, Dr. Stevenson said, when the associative fibers to the visual sphere of the motor cortex are divided; therefore there must be associative fibers not passing through the visual cortex or corona radiata. It is interesting and instructive, he said, to study the various sources of fibers to the nuclei of the ocular muscles and the various motor phenomena following destruction of the visual cortex.

Dr. William Zentmayer, Philadelphia, in referring to Dr. Claiborne's statement that conjugate lateral paralysis is the only form of associate paralysis which can be caused by primary nuclear disease, said that the vertical form of conjugate paralyses have in the main been associated only with tumors of the corpora quadrigemina. In a case recently reported by Dr. Zentmayer, in which there had been a paralysis of the upward movement of both eyes, diplopia manifested itself during recovery, and it was found to be due to the fact that the superior rectus of one eye remained palsied after the other muscles had recovered. This pointed to a nuclear lesion. Spiller has made a study of these cases and concludes that "all the pathologic evidence that he has been able to find in cases of persistent palsy of the associated upward and downward movements is indicative of a lesion near the aqueduct of Sylvius, i. e., in the vicinity of the oculomotor nucleus."

Dr. Alexander Duane, New York, said that Dr. Claiborne has adopted the theory of Graux that the fibers of the posterior longitudinal bundle decussate so that the abducens nucleus of one side is connected with the oculomotor nucleus of the other. As Bernheimer says, there is no anatomic foundation for this view of Graux's and the clinical facts are better explained by the actual anatomic conditions which Bernheimer has worked out and which are as follows: The fibers from the left abducens nucleus run to the left (not to the right) oculomotor nucleus and there are connected with a certain portion A of the partial nucleus for the internal rectus. The efferent fibers from A decussate, that is, pass from the left oculomotor nucleus into the right oculomotor nerve, and supply the internal rectus of the right eye. It is in this way, and not by any hypothetical decussation in the pons, that the action of the left externus and of the right internus are correlated so as to effect a left-hand rotation of both eyes. It must be noted, Dr. Duane said, that conjugate deviations may be simulated, the patient failing to move the eyes in the given direction, simply from lack of will. He has seen one such case which persisted for years. Such cases can usually be unmasked, he said, by using Graefe's test. Suppose, for example, a patient is apparently unable to move either eye to the right. The physician places before each eye a prism of say twenty degrees, with the apex of each directed to the right, and directs the patient to fix a small object straight in front of him. If the patient is, consciously or unconsciously, simulating, both eyes will be seen to turn to the right behind the prisms and will make a jump back to the left when the prisms are withdrawn. In true conjugate paralysis the eyes will make no attempt to move when the prisms are put on or taken off, and when they are put on the object will at once become indistinct because no longer seen with central vision.

ACUTE LYMPHATIC LEUKEMIA. SOME CLINICAL OBSERVATIONS IN A CASE SUGGESTING INFECTION AS AN ETIOLOGIC FACTOR.*

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Notwithstanding the great progress made in hematology in recent years, the etiology of leukemia still remains in doubt. A review of the rapidly accumulating literature on the subject affords but little more than the clinical observations to substantiate any claim which has been assumed to be the cause of this important disease. Stengel[1] has well stated that one who has seen a number of cases of acute leukemia will not wonder at the persistence with which investigators and clinicians hunt for a microbic origin. If we accept Löwett's theory of "protoplasm-like forms" as the etiologic factor of the disease, then we succeed in bridging the chasm which now exists between blood findings and clinical observations, but, unfortunately his investigations are as yet *sub judice*.

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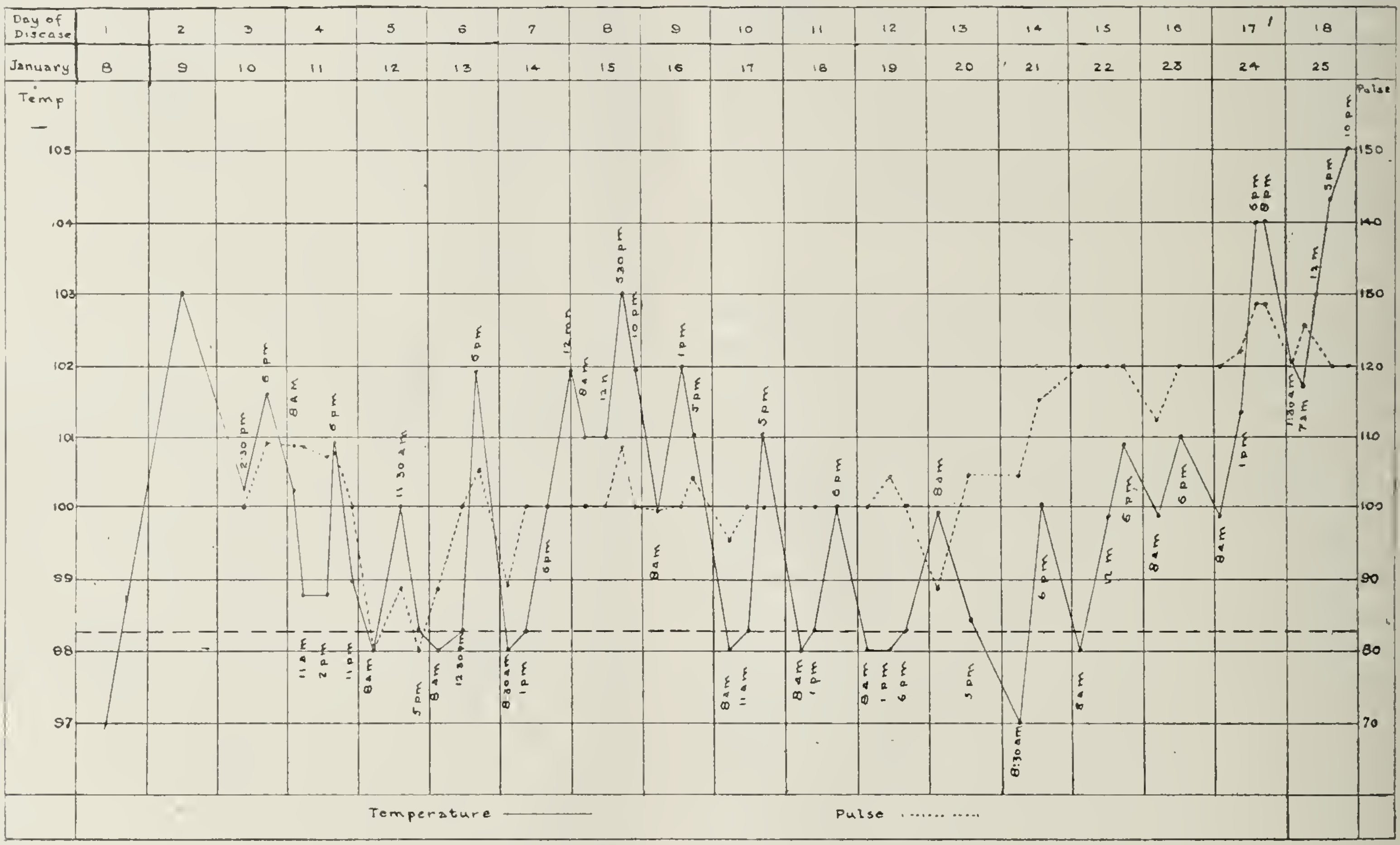
* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Nothnagel's "Encyclopedia of Practical Medicine," American edition.

The morbid phenomena of acute infectious disease, e. g., chill, rapid rise and fluctuation of temperature, accelerated pulse, cardiac irregularity, vomiting, diarrhea, diminished urinary secretion, toxic depression, cutaneous leakage, dyspnea, glandular enlargement, progressive anemia, general debility, hemorrhagic diathesis, etc., have impressed me with their strong resemblance to the clinical manifestations of the case of acute lymphatic leukemia or lymphemia which I have to report, and it is to this strong resemblance that I wish to call special attention; but before doing so, let me briefly refer to the anatomy and physiology of the faucial tonsils, which apparently were the chief, if not the primary points of attack in the case in question and which bear a relational comparison to the cases to which reference is to be made.



ANATOMY AND PHYSIOLOGY OF THE FAUCIAL TONSILS.

The tonsils, situated between the anterior and posterior pillars of the fauces, on each side of the pharynx, are analogous in most respects to the lymphatic glands and differ mostly in having furrows or crypts, which communicate with the buccal cavity. Their length and breadth are usually 20 mm. and from 12 to 15 mm. respectively, but vary greatly on account of the frequent inflammatory enlargements which occur. The activity of the faucial tonsils is said to precede the latter part or end of fetal life, which has been demonstrated by the multiplicity of lymphocytes in the follicles and by the infiltration of leucocytes into the overflowing epithelium.[2] The tonsils are largely developed by the end of the first, but do not reach complete maturity previous to the fifth year; the blood supply is unusually large and affords great activity. They are covered with mucous membrane and in early life are sparsely supplied with connective tissue; hence, when hypertrophied during childhood and early adult life, there is little or no increased resistance occasioned by the connective tissues, as contrasting with a growing immunity againt infections in advancing age by a thickening of the capsule.

The first fact which presents itself in the physiologic study of the functions of the tonsils, is that they are definite organs, actively engaged in the production of lymphocytes. The follicles contain germ centers in which lymph cells may undergo a mycotic change and also afford a free passing of the lymphocytes directly into the lymphatic circulation and through the mucous membrane into the mouth. These organs contain numerous efferent as well as afferent lymph vessels and are responsible for a large outflow of lymph. A large number of the cells which normally pass out are lymphocytes and form the salivary corpuscles. There are also varying numbers of leucocytes that pass from the blood at the same time. In examining secretions collected, even from the non-inflammatory mucous membrane of the tonsils, in addition to epithelium and micro-organisms, we find leucocytes as well as lymphocytes and not infrequently many bacteria in the former. Whether these secretions are to be regarded as physiologic or pathologic I am unable to decide, but from the foregoing it is obvious that their situation, anatomic construction and physiologic function predispose them to easy primary infection and very likely secondary transference of bacteria and toxins through the lymphatic and circulatory streams to other structures. It is not without interest in this connection that reference is made to the coincidence, that infections much more readily occur in childhood and early adult life than in advancing or mature age, which is equally true of leukemia, especially of the acute lymphatic form.

CASE REPORT.

In submitting this case for your study I wish to apologize for the minute detail which follows and for the omission of a more thorough and exhaustive study of the blood. The former is admitted that you may become acquainted with the symptoms in their probable relations to the disease manifestation, as they occurred, and the latter was unavoidable, because the patient and the aunt in whose charge she was were neither concerned in the scientific study of the disease and persistently refused to permit blood specimens to be taken. No family history of any importance was obtainable, as both parents died when the patient was quite young.

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[2] Stohr: Zur Physiologie der Tonsollin," Biol Cuitib, 1882, vol. ii. No. 12.

Patient's History.—The patient, a girl, aged 14, had been robust and healthy until four years previously, when she had pneumonia, complicated with acute nephritis. She was dangerously ill for a number of months, and owing to the severe toxemia, disturbed metabolism and profound debility which followed, her condition resembled idiocy during the greater part of her protracted convalescence. About a year later she was operated on for the removal of a portion of the faucial tonsils and for pharyngeal adenoids, after which her condition improved rapidly until she was again considered healthy and well developed.

On returning from school Nov. 27, 1905, after the usual exercises in the gymnasium, she complained of an acute pain in her left thigh. Her physician was consulted, but found no evidence of an injury and regarded the pain as a simple muscular one, possibly of rheumatic origin. The obstinacy with which this pain persisted at the time led him to regard it as arising from a different, yet unknown cause. A consultation was held with a neurologist, who also was unable to determine any evidence of a serious or well defined disease or important functional derangement. Owing to the absence of definite or pathologic evidence only general directions, including withdrawal from school, outdoor life and pleasurable recreation were prescribed.

She began regularly and normally menstruating at the age of 12, and had proceeded without irregularity until Dec. 10, 1905, when menorrhagia began and continued more or less profusely for five weeks.

Improvement having failed after withdrawal from school, she was sent to the seashore for tonic treatment. During the past month, coincident with the uterine hemorrhage, anemia had progressed rather steadily and was now sufficiently marked to be readily observed. When first seen, she had been at the shore for several days, spending the greater part of the time in the open air, with no evidence of disease, save that of the anemia above mentioned, which was easily noticeable.

Physical Condition.—On Jan. 8, 1906, I saw her shortly after the occurrence of a severe chill, followed by rapid rise of temperature, and observed that she was suffering from an acute tonsillitis, accompanied by a mild pharyngitis. The vault of the throat was red and the tonsils were enlarged and swollen with bacterial spots in and about the crypts. Temperature was 103, pulse 120, the cheeks were flushed. The patient complained of severe headache, with pains in the back and limbs, manifesting the ordinary symptoms often observed in follicular tonsillitis. There was no special mention of the pain in the left hip, except to refer to the incident. A smear was taken from the tonsillar surface and showed the absence of Klebs-Löffler bacillus, but numerous streptococci. No cultures were made.

Examination of the chest revealed nothing abnormal in the pulmonary sounds save a puerile breathing in the axillary line of the lower lobe of the right lung, a soft, systolic murmur was heard loudest over the base. Her appearance and symptoms were similar to those commonly observed in tonsillar involvement and apparently progressed favorably under treatment.

Course of the Disease.—On January 10 a blood examination was made with the following report: Hemoglobin, 45 per cent.; reds, 3,865,135; whites, 5,758; small mononuclear lymphocytes, 26 per cent.; large mononuclear lymphocytes, 8 per cent.; transitional, 0; polymorphonuclear, 66 per cent.; eosinophiles, 0; number counted, 500.

On January 11, at 8 a. m., 12 m., and 6 p. m., respectively, the temperature ranged 100, 98.4, and 99, and at the same hours the pulse was 99, 100, and 100. From this date until January 15 the temperature and pulse ranged very much the same and the excretions from the bowel and urinary tract continued about normal.

On January 12 the throat appearances were much better and the patient was comfortable. Examination of the urine showed the following: Acid reaction, specific gravity, 1012, trace of albumin, no sugar, increase in the quantity of uric acid, a few leucocytes, and a few large granular casts. Subsequent examinations, with the exception of an increasing amount of uric acid, were practically the same.

January 13: The patient complained of some pain in the back and abdomen, but made little account of it. She sat up both morning and afternoon, but was very restless and nervous toward evening. She slept rather poorly during the night and talked much in her sleep.

January 14: The patient sat up most of the day, was less nervous, and slept at intervals, in all, about three hours. The throat was better, though the right tonsil continued swollen and darkish-red in color, having much the appearance of a tonsil with an indolent quinsy or post-tonsillar abscess.

January 15: The patient complained of a feeling of extreme weakness and later in the day was greatly prostrated. She was very nervous and restless during the night, slept poorly, and awakened the next morning complaining of stiffness on the right side of the neck. Temperature at 8 a. m., 12 m. and 6 p. m., respectively, was 101, 101, and 103; pulse was 100, 100, and 108. Examination of the neck showed the cervical glands tender and slightly swollen. Bowel movements were constipated; urine passed was about 33 ounces.

January 16: The temperature ranged between 99.4 and 101, and pulse 100 and 104. The bowels were relaxed as a result of the administration of oil. Simultaneous with the swelling and tenderness of the glands of the neck an abnormally large quantity of mucoid secretion was discharged from the nose and mouth. The patient complained of left side of the neck being tender.

January 17: The patient had a good night, seven hours' sleep. She still complained of pain in the back; the left side of neck was stiff and sore. There had been no evacuation from the bowels; 29 ounces of urine were passed. The temperature ranged from 98 to 101, and the pulse from 90 to 100; respiration, 24.

This covered the maximum rise of temperature and pulse from January 17 to January 23, inclusive. Evacuations from the bowels continued normal in appearance each day until January 18, when they were semi-fluid, but were solid again on the following day. The cervical, submaxillary and subclavicular glands showed positive enlargement and were tender; mostly so on the left side.

January 18: The glands on both sides of the neck were more swollen and tender and were easily palpable. The patient complained of extreme weakness; she slept at short intervals and seemed restless.

January 19: The patient slept fairly well during the night and awakened feeling stronger. She sat up in the chair at intervals, for three hours during the day and enjoyed a sun bath.

January 20: The patient had a fairly good night, but awakened with an unpleasant taste in the mouth. She sat up a very little during the day. There was some evidence of gastrointestinal disturbance; vomited a quantity of mucus, and later in the evening undigested milk curds. She slept for short periods only, till after 2 a. m.

From this date until January 26 the gastrointestinal tract showed decided irritability and was but slightly if at all controlled by sedatives and astringents.

January 21: The glands of the neck remained swollen and enlarged; the parotids and lower lobes of the thyroid were perceptibly so; also the glands in the axilla and groin. Petechiæ were observed over the lower portion of the abdomen and on the outer sides of the thighs, as well as on the posterior portion of the trunk. The bowels were very much relaxed, with frequent movements. The patient complained of being very tired and extremely weak. Pulse was weak and easily compressed. She was frequently nauseated and occasionally vomited, but slept during the greater part of the night.

January 22: The patient awakened pale, and continued extremely weak. A second blood examination was made, with the following results: Number of cells counted, 1,000: lymphocytes, 98.6 per cent.; polymorphonuclear, .8 per cent.; eosinophiles, .3 per cent.; mononuclear, .2 per cent.; transitional, .1 per cent.

There were a number of normoblasts; the red cells were small and showed considerable poikilocytosis. The lymphocytes varied in size, but the majority were larger than normal. The number of reds and whites and the hemoglobin were not taken at this time, for after the spreads were made, the patient's aunt refused further specimens. However, the smears evidenced a very large relative increase in the number of white cells.

The bowels continued relaxed, with frequent watery movements; the urine passed at the time of stools was estimated to be about 20 ounces. The spleen and liver were enlarged and slightly palpable. The patient continued to vomit and had pain when at stool. She slept at intervals only, waking every hour or so during the night. The pulse continued weak and the girl was very pale and disinclined to be interested.

January 23: The bowel movements continued loose and contained a small quantity of blood. The abdomen was slightly distended in the lower third. The urine continued to be secreted in less amount than normal, though fair quantity. Vomitus contained blood.

January 24: The patient awakened very weak and sweating profusely, after a very disturbed and restless night, with little sleep. She had no appetite, constant blood-stained expectoration, some cough, and blood was oozing from the gums. Temperature ranged from 99.4 in the early morning to 101 at noon, and to 104 in the evening. The pulse at the same hours was 120, 120 and 128, and respiration 28. Bowel movements continued loose, with nausea and occasional vomiting in the evening. Both stools and vomitus contained a considerable amount of blood. Petechiæ increased over the abdomen and upper portion of the trunk, arms and limbs. There were some ecchymotic or purpuric areas on the thighs, abdomen and back. Both spleen and liver were now much enlarged and easily palpable, the former measuring two inches and the latter two and one-quarter inches below their normal marginal lines. The patient slept only at intervals, and was very restless and nervous; she complained of extreme weakness; the face was edematous and the features were distorted. Temperature at 8, 12 and 6 was 101.3, 103 and 104, and at 10 p. m., 105; pulse, 120, 126, 120 and 120; respiration, 26, 26, 36 and 40. Bowel movements continued frequent and fluid, with less evidence of blood. Vomiting continued occasionally and the vomitus still contained a small quantity of blood. There was oozing from the gums and mucous membrane of the mouth and hemorrhages had occurred in both scleræ. The girl was very restless and the mental agitation was followed by marked delirium. The pulse became very feeble and death occurred early on the morning of January 26, from pulmonary edema and asthenia.

REMARKS.

It is to be very much regretted that in this most interesting clinical case an autopsy was not obtainable. The special features to which attention may be drawn are first, the undefinable cause of the pain in the leg being the first noticeable evidence of the disease (if this is to be regarded as the primary involvement). Second, the slowly progressive anemia coincident with menorrhagia. Third, the acute attack of tonsillitis on January 8, and its relation to the subsequent enlargement of the lymphatic glands of the neck, face, axilla and groin, with the thyroids, liver and spleen. Fourth, the absence of pathogenic change in the blood cells as evidenced by the hemanalysis made on January 10 till some time between this date and January 22, when the second specimen was studied.

Clinically supporting the diagnosis are the following observations:

The rapidly progressing anemia, leucocytosis with conspicuous preponderance of lymphocytes, general debility, pathogenic change in the lymphatic glands, enlargement of the spleen, liver, and thyroids, early appearance of petechiæ, ecchymotic or purpuric areas, hemorrhagic dyscrasia, gastrointestinal irritation and, in the latter part of the illness, profuse sweating.

The clinical evidences pointing to infection in this case are striking similar to those recognized in scurvy (which of late is admitted by some authors to be an infectious disease), as well as in the sepses and other bacterial diseases, and a review of the cases of acute lymphatic leukemia previously reported shows a remarkably large percentage of tonsillitis associated with the earlier symptoms of the disease, though hitherto not considered important.

If we follow closely recent investigations in numerous systemic infections which have followed streptococcic tonsillitis immediately or very shortly thereafter, e. g., endocarditis, myocarditis, nephritis, arthritis, peritonitis, appendicitis, adenitis, pleurisy and a variety of conditions usually classified as rheumatism, we will acquaint ourselves with the fact that their probable relationship to the tonsillar infection is attracting more than ordinary attention, and if acute lymphemia (or lymphatic leukemia) be studied from the standpoint of a like relational involvement, which may and, I believe, does exist, this case becomes one of more than passing interest.

Reasoning *a priori*, the foregoing would seem strongly supportive of the position taken, viz., that following the acute streptococcic tonsillitis, occurring as the earliest definite manifestation in this case, if not the immediately causative factor, the streptococci or their toxins had much to do with the pathogenic change and subsequent behavior of the lymphatic and blood tissues and incidentally with the serious metabolic disturbance, functional failure and death which followed.

DISCUSSION.

Dr. Richard C. Cabot, Boston, asked Dr. Marvel if in the stained specimen there was a total increase of whites, or whether, as in the first count, it was apparently normal.

Dr. Marvel replied that there was a total increase.

THE RELATION OF EXCESSIVE GASTRIC ACIDITY TO GASTRIC SYMPTOMS.*

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It is a well-established fact that symptoms of gastric irritation similar to those of hyperacidity may occur not only when the acid of the gastric secretion is excessive, but often when it is normal or subnormal. Stockton[1] pointed this out in a paper read before this Association, in 1902, and explained the condition by assuming that there was a hyperesthesia of the gastric mucous membrane which caused it to be intolerant, not only of abnormally large amounts of acid, but often of a normal or subnormal amount, or, as he put it, persons without an excess of acid had symptoms of hyperacidity.

My object in presenting this communication is to confirm Stockton's observations and I propose going a step farther to show that excess of acid alone is not capable of producing the symptoms of gastric irritation seen in so-called hyperacidity. There must be some other condition present which renders the gastric mucous membrane more sensitive than usual, so that it can not stand an amount of acid that would be easily tolerated if the mucous membrane were in a normal condition. In order to determine what produces this hyperesthesia of the gastric mucous membrane I present an analysis of a series of cases with symptoms of hyperacidity.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] The Journal A. M. A., Jan. 11, 1903.

HYPERACIDITY: SYMPTOMS AND CAUSE.

Before going farther it may be well to state exactly what is meant by hyperacidity symptoms. The most characteristic of them is the discomfort or burning, often amounting to pain, which comes on about the height of digestion one or two hours after eating, and is relieved by food, alkalies, liquids, or vomiting. There are other less constant symptoms, such as sour eructations, belching, excessive appetite and nervous manifestations, but the most important and characteristic one is that mentioned first. The simplest explanation of the peculiar pain of hyperacidity is that it is caused by an excessive amount of HCl in the gastric secretion. The pain comes on sometimes after eating, because, while there is food present in the stomach the acid unites with it and there is no accumulation of free acid. But as soon as the food has taken up all the acid that it can, then free acid accumulates and irritates the gastric mucous membrane. The pain is relieved by more food or alkalies, because by them the acid is neutralized; liquids and vomiting relieve it, because they dilute or remove the excess of acid. This very simple explanation of the causation of pain in hyperacidity ceases to explain when we find that the acidity of normal stomachs varies within very wide limits under the influence of locality, diet and modes of living and as the number of observations of normal gastric juice multiplies, the wider do these limits become. Thus the percentage of HCl in normal persons may run far beyond what we formerly supposed to be the upper limit of health and the same thing is true in patients with other diseases without gastric symptoms.

I have had three patients, two with total acidities over 60 and one over 70, in which there was no gastric or abdominal distress whatever. Stockton has repeatedly found high acidity, even to 100, without symptoms.

Kaufmann[2] in nineteen cases free from gastric symptoms found that ten of them had a total acidity above 70, and two over 100. Kaufmann also found that he could give HCl to healthy persons, thereby much increasing the total acidity without the production of hyperacidity symptoms. Geigel and Blass[3] report eight cases in which the total acidity was between 60 and 95, without symptoms. Gintls[4] in Riegel's clinic, examined forty patients without stomach symptoms. Three had achylia without symptoms. In the remaining 37

27 constantly over 60 : 1 inconstantly.
17 constantly over 70 : 1 inconstantly.
8 constantly over 80.
4 constantly over 90.
1 constantly over 100.
For HCl :
31 constantly over 30 ; 3 inconstantly.
27 constantly over 40 ; 2 inconstantly.
14 constantly over 50 ; 3 inconstantly.
4 constantly over 60 ; 1 inconstantly.
1 constantly over 70.

Schüle[5] found acidities above 60 in ten normal cases. Meyer,[6] Sorensen and Brandenburg[7] and Illoway[8] have made similar observations.

These show quite clearly that an excess of acid in itself is not sufficient to produce the symptoms of irritation in the condition that we call hyperacidity, but there must be in addition an intolerance of the mucous membrane for acids. From this statement it must not be inferred that HCl plays no part in the causation of the pain. The acidity of the gastric contents is a very important factor, for it is the direct cause of the irritation, although it can not produce this irritation unless the mucous membrane is unduly sensitive.

ANALYSIS OF CASES AND DISCUSSION.

The following analysis of thirty cases with hyperacidity symptoms shows very clearly that the irritation occurs, not only when the percentage of acid is high, but often when it is within the middle or lower grade. This would indicate that the mucous membrane was so hypersensitive that it was intolerant not only to high grades of acid but often to middle or low grades.[9]

	Upper above 60.	Middle 30-59.	Lower 0-29.	Total.
Retention	5	3	3	11
Hypersecretion	1	2	0	3
Indiscretion in diet	2	0	0	2
Pronounced neurasthenia	2	2	0	4
Fatigue and worry	3	0	3	6
Unknown	2	0	2	4
Male	11	4	5	20
Female	4	3	3	10

In about one-half of my cases the cause of the irritation and pain lay in the existence of decided gastric motor insufficiency or of hypersecretion. Kaufmann also found that these two conditions were important factors in the production of the form of gastric pain that has been described. In both conditions the lining of the stomach is exposed to the action of the gastric juice longer than is normal, and it seems probable that this may make it intolerant of the acid in the retained contents. This would cause discomfort coming on after the height of digestion.

In my list three patients had undoubted signs of alimentary hypersecretion; namely, pain at night, aggravated symptoms of irritation and excess of fluid in the gastric contents after a test meal. No fluid was found in the fasting stomach over night, indicating that the hypersecretion was not continuous. Ten patients had decided retention, as shown by the presence of food in the stomach four or five hours after an ordinary meal and by the demonstration of dilatation. Kaufmann found dilatation of the stomach 35 times in 53 patients with hyperacidity symptoms, which is a considerably larger proportion than in my series. He found that the signs of irritation disappeared as the atony disappeared. In the remaining 14 patients of my list, no cause could be demonstrated for the hyperesthesia. In seven of them the acidity was of the higher grade and in the other seven of the lower and middle grades, including one case of achylia. In the case of achylia, even the ferments were absent from the gastric contents. The patient suffered much from pain, especially two hours after meals. No retention could be demonstrated. He was temporarily relieved by bromids and finally recovered and gained weight under a liberal diet and the rest cure.

In almost all of these cases the gastric symptoms were directly connected with over fatigue or worry or were a part of a general nervous irritability. In all of the patients the gastric symptoms improved and finally disappeared under a treatment directed toward relieving the nervous strain and raising the level of nutrition without paying much attention to the condition of the stomach. The result of the treatment, quite as much as anything else, would indicate that the hyperesthesia in these cases was a local manifestation of a general nervous irritability. That is, it was a sensory neurosis of the stomach. This is the view taken by Kaufmann, Stockton and Musser,[10] each of whom reports a series of similar cases.

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[2] Zeitft. f. klin. Med., vol. lvii, p. 491.
[3] Zeitft. f. klin. Med., vol. xx, p. 253.
[4] Archiv. f. Verdauungs krankheiten, vol. iv, p. 251.
[5] Zeitft. f. klin. Med., vol. xxviii.
[6] Archiv f. Verdauungs k., vol. vi, p. 299.
[7] Archiv. f. Verdauungs k., vol. iii, p. 377.
[8] Archiv f. Verdauungs k., vol. viii, p. 103.

[9] In speaking of the acidity of the gastric contents I have tried to avoid as much as possible the terms hyperacidity, normal acidity and subacidity. As I have shown, there is good reason to believe that these terms are misleading in that they assume that acidities above or below certain arbitrary limits are necessarily pathologic, whereas both very high and very low acidity may be compatible with perfect health. I have used the term acidities of the upper, middle or lower grades instead. The first would include all cases with total acidities above 60. The second between 30 and 60, and the third, under 30. I have assumed that the total acidity fairly represents the HCl secretion, provided it can be shown that there is no decided amount of organic acid present. Almost all of my patients were examined more than once and with different meals, and I have not attempted to draw sharp distinctions, but have tabulated each case in the place in which the general average of examination showed it to belong. Most of my records were taken before my attention was particularly called to the point I am discussing, and so I hope that suggestion has played little or no part in eliciting the character of pain from which patient suffered.

It is, of course, very hard to prove definitely the existence of a pure neurosis. One may question whether the neurasthenia, instead of being the cause, may not be the result of the gastric disturbance. The presence of a sensory neurosis seems to explain best the questions that we have been considering; namely, first, why acidity of a high grade may exist without symptoms; and second, why "hyperacidity symptoms" occur with acidity of the middle or lower grades in cases in which there is no retention, ulcer or hypersecretion.

The clinical lesson for us in this is that we must not be surprised or thrown off the track in such cases when with the clinical picture of hyperacidity we find normal or subnormal gastric secretion. Moreover, it seems probable that it is the hyperesthesia and not the acid secretion at all that we influence by our treatment when we relieve hyperacidity symptoms. This is almost certainly true in the cases where the acidity is of the middle or lower grade; for then we can not hope, nor would we wish permanently to reduce an acidity that is already low.

Indeed it seems doubtful whether we can expect to influence permanently the secretion of acid. When the acidity is of the higher grade it has always been the aim of the therapeutist to give remedies that will reduce secretion. Thus Riegel[11] and Pirone[12] have shown experimentally that atropin has a decided effect in reducing HCl secretion. Riegel and Walko say that this effect is only transient and that the secretion is not permanently affected. The same is true of the use of oil.[11] I do not know of any systematic series of observations on the question of whether the acidity is lowered permanently when an attack of hyperacidity symptoms is relieved. Riegel[11] infers that the secretion is not permanently affected; and Kaufmann[2] says certainly that it is not affected, but does not give figures. If it is true that treatment has no permanent effect on the acid then this is a very strong argument in favor of the view that it is the hyperesthesia and not the acidity that we influence by treatment. I can give no data on this point, but suggest the subject as a field for research.

If what I have said is true, namely, that the hyperesthesia rather than the acidity is the point of attack in our therapeutics, then considerable light is thrown on the treatment of the condition. In the first place, the necessity of correct diagnosis is made manifest and emphasized. Especially is it of great importance to determine whether the symptoms of irritation are due to ulcer, retention or hypersecretion on the one hand; or to a sensory neurosis on the other. The first three conditions have their own methods of treatment, which need not be considered here. When the hyperesthesia is due to a sensory neurosis, the treatment must consist in the removal of the general nervous irritability by improving nutrition, eliminating as far as possible the cause of worry and fatigue, and by rest, hydrotherapy and other methods usually employed for this purpose. In this manner alone can the gastric symptoms be permanently cured.

TREATMENT.

I have not the space to enter into the details of the treatment, but wish to consider briefly the following points: (1) The diet. (2) The use of sedatives, of alkalies and of nux vomica.

1. The Diet.—If hyperesthesia rather than the acidity is the point of attack, then the controversy that arose at one time concerning the proper diet for hyperacidity is explained. One school favored a carbohydrate diet, because it was supposed that carbohydrates did not offer as much stimulus to HCl secretion as proteids did. The other school used an almost exclusively proteid diet in order to take up and neutralize as much acid as possible by the power that proteids possess of combining with the free hydrochloric acid. Neither extreme was found to give very good results, and gradually experience has shown that the best diet is a liberal mixed one, containing rather a high proportion of fats and proteids and given in a form as unirritating as possible. Regarded from the standpoint of the treatment of hyperesthesia of a nervous origin, this liberal and unirritating diet would be the most suitable one. Its liberality would improve nutrition and in this way help general nervous irritability.

But, whatever is the composition of the diet, the all-important point is that it should offer no irritation to the already oversensitive mucous membrane. Whether proteids or carbohydrates predominate must be decided by the amount of acid secreted and by the state of the intestinal digestion, as shown by the study of the stools. But it is very necessary that all food be given in such a form as to produce the least possible irritation. The diet must be liberal enough to raise the general level of nutrition. Proteids and fats are excellent foods for this purpose, and this is probably the reason why the mixed diet is the one that has given the best results The diet that has proven to be the best for cases of irritation with high acidity gives nearly as satisfactory results with moderate or lower grades. This is not because it is best suited to neutralize the free acid or to inhibit its secretion, but because it is nourishing and non-irritating and helps to cure the sensory neurosis by raising the level of nutrition.

2. Remedies.—Much the same thing is true concerning the various remedies used to relieve the pain in cases of high acidity. As has been said, the acid of the gastric contents is directly responsible for the irritation, although it can not produce this irritation unless the mucous membrane is unduly sensitive. Therefore, to relieve pain the acid may be neutralized after the height of digestion. This applies not only to the cases with high grades of acid, but also to those with middle or low grades, although not to the same extent. The neutralization, of course, requires the use of alkalies at about the time that the pain would otherwise appear. In the same way in the high grades of acidity such drugs as atropin, which temporarily inhibit HCl secretion, relieve the source of irritation and help the hypersensitive mucous membrane to recover its normal resistance, may be used.

In my experience, the various nervous sedatives, such as bromids, valerianates or sumbul, have proven very useful in temporarily relieving the discomfort in these cases with irritative symptoms. Of course, in the lower grades of acidity, sedatives are relatively more valuable than the alkalies for obvious reasons. In the rare cases of achylia with hyperacidity symptoms, they are the only means of relief, since here, of course, the question of acidity plays little or no part in the production of symptoms. In cases of achylia the question of atony must be most carefully considered. In my patient the stomach emptied itself rather more promptly than normal, and the discomfort was apparently due to a true sensory neurosis.

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[10] Trans. Assoc. Amer. Phys., 1905, p. 193.

[11] Deuts. med. Wochft., May 12, 1904.

[12] Riforma Med., Aug. 12, 1903.

Finally, I wish to refer to Musser's[10] suggestion of nux vomica in doses ascending slowly to the physiologic limit as a remedy for these cases of hyperesthesia. He says that nux vomica is theoretically contraindicated in cases of hyperchlorhydria on account of its supposed action in increasing the secretion of acid and, as D. D. Stewart stated in the discussion, this has been the received opinion. Musser said that he has had uniformly good results from the use of the drug in those cases in which the symptoms of hyperacidity were apparently due to a sensory neurosis.

The beneficial effects of nux vomica, in spite of the apparent contraindication to its use in cases of hyperacidity symptoms, are perfectly explained when we consider that it is a sensory neurosis that we are treating and not a temporary increase in gastric acidity. My own experience has shown that nux vomica given as Musser suggests is an excellent remedy in these cases in which we are attempting to remove a local neurosis by increasing the general nervous stability of the individual.

DISCUSSION.

Dr. De Lancey Rochester, Buffalo, said that it was very important that numerous examinations of the gastric contents should be made and under different circumstances before coming to any conclusion as to the presence of superacidity. In reference to motor insufficiency of the stomach as a cause of pain he said that under these circumstances the pain is caused by the attempt of that organ, after it had become filled, to empty itself, a sort of colic of the stomach, as it were. In many cases that he had studied in which there was pain and superacidity there had been a certain amount of irritation of the bowel and an inactivity of the colon; in these cases the best results were obtained by paying attention to the colon and washing it out. The value of nux vomica is in stimulating peristalsis and so permitting the stomach and colon to empty themselves. Many of these cases, he said, when carefully studied would present pain, referred rather to the colon than to the stomach, and particularly to the transverse colon; when this is washed out thoroughly the pain will cease. Often the administration of strontium bromid is of value in relieving the gastric pain.

Dr. Charles G. Stockton, Buffalo, said that it seemed to him that the most important thing to bear in mind is the uncertainty and the variations of the manifestations connected with the act of digestion in disease; when pathologic conditions arise they cause symptoms which may be readily misunderstood and lead us into a maze unless this fact is kept in mind. There is no doubt, he said, but that hyperchlorhydria is a very important reality; and after further observation it still seems to him that this question of hyperesthesia is also of great importance. One certainly sees more cases now of hyperesthesia than of hyperchlorhydria, and the former would certainly not be cured, no matter how much relieved, by any treatment addressed locally to the stomach, and could only be really benefited by attention paid to the general condition. It is a matter of general hyperesthesia. In Dr. Stockton's opinion this is a most important feature and should be insisted on, and it is time that the medical profession should recognize the fact that local treatment is not so important as the general treatment in gastric hyperesthesia. Again, sometimes acute symptoms, exciting suspicion of the presence of ulcer, may arise merely from some disturbance of the nervous system which can be relieved only by general measures.

Dr. Hobart A. Hare, Philadelphia, said that the points in Dr. Steele's paper that impressed him the most were what he related from his personal experience, namely, that the patients who suffered from gastric pain, from hyperacidity or hyperchlorhydria, did better on a plan of treatment directed to the nervous system and the nerves supplying the stomach. It seems to him that the giving of drugs for the purpose of quieting the stomach and relieving the pain is after the homeopathic form of treatment, not in the sense of *similia similibis curantur*, but in the endeavor to treat the symptoms instead of trying to treat the cause producing the pain. Most of the drugs recommended in the text-books and in the discussions have been classified as nerve sedatives. They not only do no good, but often do harm. This is a matter that he has had repeatedly impressed on his mind, and he has seen many patients treated for months by diet and drugs who did not improve until a proper rest cure was carried out. In much the same way we know that many cases of mucomembranous enterocolitis can not be cured without a rest cure. This is rather a sweeping assertion to make, but he believes it to be true. These patients can have all sorts of treatment without benefit; then rest in bed, a characteristic rest cure, will be followed by a rapid recovery. Another point that interests him very much is the relationship between those cases of hyperchlorhydria with pain and those cases that had no pain, but only discomfort; the patients suffered from other symptoms, usually associated with attacks of hyperchlorhydria, and at times had no gastric discomfort whatever. He said that a thing that has impressed him very much is the folly of endeavoring to reach any definite conclusions regarding the true activity of the stomach by making only one or two examinations of its contents; such an endeavor is absolutely futile unless one is careful to see that the examinations are made at the identical time of day, when the identical kind of food has been taken, under the same identical conditions, etc. For instance, he has seen a case examined on a Monday morning after a comfortable day and a half of rest, that is, Saturday afternoon and Sunday; on the Monday a very severe nervous strain in business caused a tremendous hyperchlorhydria. For proper results, he reiterated, the tests should be made at the same time of day, the same kind of food should be taken and the same man should make the examinations. In closing he repeated that to his mind the most important thing to do is to treat the patient with remedial measures other than drugs. Apart from the employment of the rest cure, special attention should be paid to the nervous and mental strain under which the patient may be laboring if successful results are to be attained.

Dr. Charles H. Hughes, St. Louis, in referring to the dyspeptic feature of this disease, said that for the last meeting of the American Medical Association, which he had failed to reach in time, he had prepared a paper on the subject, "Dyspepsia Considered as a Brain Disease," calling attention to the original news on this subject of Dr. Brigham. Three quarters of a century ago Brigham's book was written and in it many of the views later enunciated by Ewald and other medical men were anticipated. If one considered the neural relation between the stomach and the brain, Dr. Hughes said, it would be of considerable value in the management of dyspepsia and of apepsia and it would not be difficult to discover the most satisfactory method of treating these conditions; treat the individual as well as the stomach; treat the conditions arising from the stomach, but also the conditions behind the dyspepsia, the conditions in the nervous system that contribute to develop the disease manifested through stomach symptoms. The peptogenic glands of the stomach, like other organs in the body, are so intimately related to the nervous mechanism, especially with the vagus nerve coming from the floor of the fourth ventricle, and with the ganglionic system, that the highest success will not follow any treatment or management of dyspepsia without considering the neural relations of the individual. The sustenance of the nervous system, the rest and rebuilding of the exhausted neurons and blood corpuscles are the essential points; therefore, treat the whole man.

DR. JOHN A. WITHERSPOON, Nashville, Tenn., confessed to experiencing a little doubt regarding neurosis of the stomach. He believes that it is not only necessary to examine the contents of the stomach to determine the amount of acidity, but also to examine to determine its size and particularly its capacity for drainage. The majority of the patients coming under his care have impressed him with the fact that the pylorus is not draining the stomach contents because of inactivity of the muscular structure; in other words, it is unable to empty itself. This is either because of some nervous influence, spasm of the pylorus, or possibly because of cicatricial contractions resulting from an old ulcer which had healed in the neighborhood and produced faulty drainage from the stomach. The treatment should be addressed to the nervous system, but attention should be paid to the drainage as well. A plan of dietetics, a general building up, with rest or possibly some surgical interference, should be considered in the treatment of these cases. The best results he has obtained, and this is a point the internist would come to in time in the treatment of cases of hyperacidity, was by treating the condition not as a neurosis but as a mechanical affair; and sooner or later this will be forced to the attention of the surgeons who, in many cases, would perform a gastroenterostomy.

DR. MAX EINHORN, New York, said that he had pointed out years ago the points expressed in Dr. Steele's paper. With regard to the normal acidity, he believes that this can best be determined by taking, for instance, ten people and finding that the average acidity is so and so, and let this average be taken as the normal. Then it would not matter so much if one or two had a higher or lower acidity. The people who apply for aid are those who have a high degree of acidity, accompanied by subjective symptoms. Years ago Leube read a paper on nervous dyspepsia, in which he designated as nervous dyspepsia the condition in which the stomach was found empty six hours after a big meal, and HCl was encountered in the gastric contents. But at that time the methods employed were not so accurate; quantitative analysis was not used. Later, when the clinicians had begun to use qualitative analyses then they began to separate from nervous dyspepsia those cases in which there was too much acidity. This group was designated as hyperchlorhydria, alkalies were administered, and many patients recovered. There was found some actual palpable lesion, or symptom which could be alleviated. It was in the same way with many other things. Thus we often get a clew as to how to manage these cases.. We may call it hyperchlorhydria, or brain disease, and so on and so on, but often we can find palpable symptoms which can be alleviated and a cure will result.

DR. B. SIPPY, Chicago, said that a complexity of symptoms are designated as hyperchlorhydria and the general practitioner is often called on to treat them. He directed attention particularly to the fact that pain is not a common symptom of hyperchlorhydria; in most cases the patient complains of a feeling of discomfort rather than of pain. When pain is present as a constant symptom, and this point he emphasized very strongly, it almost always means the presence of an ulcer. To be sure there may be a number of cases of hyperchlorhydria in which there is a great sensitiveness of the nerves and in which pain follows after meals; but if the pain is constant suspicion of ulcer should always be aroused.

DR. J. DUTTON STEELE, Philadelphia, emphasized the fact that he attempted to draw a sharp distinction between the cases with decided motor insufficiency in which the discomfort was probably due to the retention of gastric contents and the cases in which a sensory neurosis is the only condition that could explain the symptoms satisfactorily. However, we have no way to measure the minor grades of gastric motor insufficiency. None of the methods that have been proposed have stood the test of time. When a satisfactory and clinical test for gastric insufficiency is discovered then much new light may be thrown on just such relatively obscure conditions as that under discussion.

ANTITETANIC SERUM IN FOURTH OF JULY INJURIES.

[A record of 291 injuries caused by toy pistols, etc., immunized by the antitetanic serum without a single case of tetanus, with a comparison of the results with those obtained in a year when no serum was used, and in which nearly one-third of the injured succumbed to tetanus.]

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ST. LOUIS, MO.

For the last few years I have published the results of my work along the line of immunization of patients who applied to us with wounds which occurred about the Fourth of July, caused by the indiscriminate use of the toy pistol, dynamite canes, giant crackers, etc. While the fact has been well established that for immunizing purposes antitetanic serum is absolutely a positive preventive against the development of tetanus, yet I deem it of sufficient importance to publish my results for this year in order that the use of the serum as an immunizing agent may become universal throughout the civilized world.

Benefit of Press Aid.—This year very nearly twice as many cases as last year were handled by the city dispensaries of St. Louis, and the credit for this large increase must again be given to the daily press of our city who gave great publicity to the excellent work accomplished on previous occasions and directed all those who might be injured to call at once at one of our various city dispensaries. The result was extremely gratifying, since we were able to observe that the patients applying at the city dispensaries gave, as their addresses, locations in nearly every portion of the city. A large number of physicians of St. Louis were aware of the arrangements that we had made to handle a large number of patients, and not a few of the cases were referred to our clinic directly by the various physicians.

Modus Operandi.—A few days prior to the Fourth a large supply of serum was obtained and was placed in the ice box at a suitable temperature. Each package contained 10 c.c. of immunizing serum, which is conveniently put up in a syringe package, having everything complete and thoroughly sterilized. Orders were issued to assistant dispensary physicians to the following effect:

1. That a careful list must be kept of the name, age, address, and description of wound of each patient applying.
2. That after treatment, each patient should be instructed to apply daily, in order that the temperature might be recorded and the wound be dressed. In nearly all cases this was cheerfully complied with.

In so far as the surgical handling of each case was concerned the following instructions were issued:

1. To incise freely every wound.
2. Carefully and thoroughly to remove from the wound every particle of foreign matter.
3. To cauterize the wound thoroughly with a 25 per cent. solution of carbolic acid.
4. To apply loosely a wet pack of 2½ per cent. solution of carbolic acid.
5. To inject into the cellular tissues of the abdominal wall the contents of a package of immunizing serum containing 10 c.c. Before injecting this serum, however, they were thoroughly to scrub the skin with soap and water and wash the same off with alcohol; after the injection, the wound inflicted by the needle was to be carefully sealed with cotton, painted over with collodion.

Beginning about the Fourth and extending until about the seventh, 170 cases were treated as explained above. In this report follows a list, giving data of all the cases. Those who did not apply at the dispensary after the first treatment were seen at their residence by one of my staff. We can repeat the statement that in not one single case treated by us in the foregoing manner did tetanus develop. In my opinion, this speaks in the most positive terms as to the efficacy of the antitetanic serum as a positive preventive against the development of the disease.

Good Work Accomplished.—In the report of the last two years I gave a careful account of the work accomplished. A list of 121 cases treated in the same manner was shown, and at that time I reported that not one of these patients thus treated developed tetanus. I compared this result with the result obtained after the 4th of July, 1903, at which time fifty-six patients were treated in the city dispensaries, among which there were no less than 16 deaths. Comparing this percentage without the treatment adopted this and last year, we could have reasonably expected to have had about 40 deaths.

Cases Treated in City Dispensaries.

Year.	No. cases.	Antitetanic serum.	Deaths from tetanus.
1903	56	No	16
1904	37	Yes	none
1905	84	Yes	none
1906	170	Yes	none

This statement of facts, in my opinion, speaks more eloquently than any words on the necessity and duty of every physician to immunize this class of wounds, as past experience has taught us that they are so often followed by this dread disease.

Experimental Tests.—In order to test experimentally the efficacy of the serum, I requested the late Dr. Snodgrass, city bacteriologist, to make some laboratory experiments for me. He did the following work: I furnished him with some toxin that was labeled 1:40,000,000 of toxin as the M. L. D. for a gm. of guinea-pig. The commercial serum was labeled 100,000 immunizing units a cubic centimeter. The special serum was labeled 200,000 immunizing units a cubic centimeter. The antitoxic serum had been standardized so that one unit would protect 1 gm. of guinea-pig against 100 of its M. L. D.

He inoculated four guinea-pigs, each, with 100 times its M. L. D. of toxin. Pig No. 1, which weighed 310 gm., was kept as a control, receiving no antitoxin. Pig No. 2 weighed 400 gm. Four hundred units of the special serum was given, which was the exact amount necessary to protect it against the 100 M. L. D. which it had received. Pig No. 3 weighed 460 gm. To this were given 460 units of the commercial serum, the same that we had been using on the patients. This amount was the exact quantity necessary to protect it against the 100 M. L. D. which it had received. Pig No. 4 weighed 430 gm. To this pig were given 1,720 units, which was four times the amount necessary to protect it against the 100 M. L. D. which it had received. Dr. Snodgrass used this large amount so that if the serum had been standardized wrongly or it had deteriorated in strength it would have four times the advantage in protecting the animal which had received it.

The results were most gratifying; the unprotected pig, at the end of 16 hours, which was the earliest time at which observation was made, showed symptoms of tetanus on the side wherein the inoculation was made. It died at the end of 24 hours. None of the other pigs showed the slightest symptoms of tetanus at any time after these experiments. These experiments proved: 1. The extreme virulency of the toxin. 2. The exact standardization of the same. 3. That the antitoxin protected the animal exactly according to the standardization.

Conclusion.—In the tabulated list I have made no note of the temperatures following the injection of the serum, which was done for 10 days. In a few cases there was a slight rise of temperature on the succeeding day, which gave place to a normal run of temperature. No patients complained of urticaria. Other than this there was no reaction perceptible following the injection. In a few cases the serum was not injected until from two to four days after the infliction of the injury, and even at this late date it has proved prophylactic. Most of the injuries were inflicted by the careless use of blank cartridge pistols, and the majority of the wounds occurred on the left hands of the patients, the larger part of whom were males.

I sincerely trust the publication of the foregoing facts will cause the treatment of this class of cases with the immunizing serum to become general throughout the United States and thus save many lives which are annually sacrificed to overenthusiasm incident to the celebration of our nation's birthday.

Patients Immunized at the St. Louis City Dispensaries During the Early Part of July, 1906.

Case.	Patient.	Age.	Color.	Sex.	Date of injury: July.	Description of wound.*
1.	L. M.	13	W.	F.	1	Blank gunshot, right calf.
2.	F. E.	11	C.	M.	1	Blank cartridge, left hand.
3.	F. O'H.	13	W.	M.	1	Blank gunshot, left hand.
4.	R. S.	5	W.	M.	1	Blank cartridge, left index finger.
5.	R. B.	12	W.	M.	1	Blank cartridge, palm left hand.
6.	M. G.	8	W.	M.	1	Bl. ctg., index finger, l. hand.
7.	A. H.	9	W.	M.	1	Blank cartridge, palm left hand.
8.	W. L.	7	W.	M.	1	Gunshot, face and neck.
9.	M. L.	14	W.	M.	2	Gunshot, left hand.
10.	F. A.	16	W.	M.	2	Gunshot, left hand.
11.	P. G.	9	W.	M.	2	Gunshot, left index finger.
12.	G. B.	14	W.	M.	2	Gunshot, palm left hand.
13.	W. W.	7	W.	M.	2	Punctured foot.
14.	G. C.	13	W.	M.	2	Burn, giant cracker, chest, chin and left hand.
15.	G. McK.	10	W.	M.	2	Gunshot, l. ind. and mid. fingers.
16.	B. B.	10	W.	M.	2	Gunshot, index finger, left hand.
17.	J. F.	9	W.	M.	3	Gunshot, palm left hand.
18.	K. M.	14	W.	M.	3	Gunshot, left leg.
19.	W. C.	15	W.	M.	3	Bl. ctg., index finger r. hand.
20.	H. F.	8	C.	F.	3	Gunshot, palm left hand.
21.	A. J.	14	W.	M.	3	Gunshot, hand.
22.	L. P.	13	W.	M.	3	Powder burn, prem. expl., pistol.
23.	M. F. W.	22	W.	M.	4	Burned by skyr., left hand.
24.	C. D.	13	W.	M.	4	Gunshot, finger.
25.	J. W.	17	W.	M.	4	Gunshot, palm right hand.
26.	J. K.	7	W.	M.	4	Gunshot, finger.
27.	J. C.	8	W.	M.	4	Blank cartridge, palm l. hand.
28.	D. G.	14	W.	M.	4	Giant cracker, burn, face.
29.	W. D.	10	W.	M.	4	Gunshot, palm left hand.
30.	W. L.	16	W.	M.	4	Burn, face.
31.	L. C.	12	C.	M.	4	Gunshot, finger left hand.
32.	G. B.	12	W.	M.	4	Burns, finger of right hand.
33.	J. S.	15	W.	M.	4	Burn, leg.
34.	G. W.	32	W.	M.	4	Cannon cracker burn, left eye.
35.	V. M.	18	W.	M.	4	Face, burn, cannon cracker.
36.	G. D.	12	W.	M.	4	Gunshot, second finger left hand.
37.	H. H.	12	W.	M.	4	Gunshot, middle finger left hand
38.	W. L.	19	W.	M.	4	Powder burns, face, hands, feet.
39.	J. H.	15	W.	M.	4	Burn, cannon, face.
40.	J. B.	18	W.	F.	4	Gunshot, index finger, r. hand.
41.	H. R.	8	C.	M.	4	Gunshot, index finger, left hand.
42.	A. S.	15	W.	M.	4	Gunshot, palm left hand.
43.	A. H.	18	W.	M.	4	Burn, torpedo, left cheek.
44.	O. H.	14	W.	M.	4	Gunshot, right forefinger.
45.	F. L. H.	17	W.	M.	4	Burn, cannon, face.
46.	L. McP.	8	W.	M.	4	Gunshot, palm left hand.
47.	J. S.	12	W.	M.	4	Gunshot, finger.
48.	E. E.	16	W.	M.	4	Burn, finger, cannon cracker.
49.	E. D.	12	W.	M.	4	Gunshot, index finger, left hand.
50.	T. H.	13	W.	M.	4	Gunshot, left forefinger.
51.	J. H.	10	W.	M.	4	Gunshot, left forefinger.
52.	L. G.	14	W.	M.	4	Gunshot, palm left hand.
53.	E. K.	12	W.	M.	4	Gunshot, second finger, left hand.
54.	W. C.	10	W.	M.	4	Burn, left hand, torpedo.
55.	E. D.	11	W.	M.	4	Gunshot, left hand.
56.	C. D.	13	W.	M.	4	Gunshot, palm left hand.
57.	C. D.	8	W.	M.	4	Gunshot, left index finger.
58.	E. K.	15	W.	M.	4	Gunshot, palm left hand.
59.	F. J.	13	C.	M.	4	Burns, chest, blank cartridge.
60.	G. W.	10	W.	M.	4	Gunshot, left hand.
61.	M. D.	9	W.	M.	4	Gunshot, second finger, left band.
62.	J. W.	12	W.	M.	4	Burn, face, cannon.
63.	G. J.	16	W.	M.	4	Gunshot, left hand, palm.
64.	B. T.	11	W.	M.	4	Gunshot, palm left hand.
65.	W. M.	8	W.	M.	4	Gunshot, palm left hand.
66.	W. W.	12	C.	M.	4	Burn, r. side chin, bl. ctg.

Case.	Patient.	Age.	Color.	Sex.	Date of injury: July.	Description of wound.*
67.	S. S.	11	W.	M.	4	Gunshot.
68.	G. B. ...	9	W.	M.	4	Blank cartridge, left hand.
69.	F. T. ...	12	W.	M.	4	Gunshot, little finger.
70.	T. B. ...	10	W.	M.	4	Gunshot, third finger, left hand.
71.	M. T. ...	8	W.	M.	4	Gunshot, left hand.
72.	R. B. ...	6	W.	M.	4	Gunshot, index finger, left hand.
73.	S. B. ...	9	W.	M.	4	Gunshot, left hand.
74.	J. McK. .	12	W.	M.	4	Gunshot, left hand, little finger.
75.	J. McL. .	14	W.	M.	4	Gunshot, left hand.
76.	J. McC ..	10	W.	M.	4	Gunshot, left index finger.
77.	A. M. ...	14	W.	M.	4	Gunshot, left hand.
78.	V. M. ...	10	W.	M.	4	Gunshot, palm left hand.
79.	J. D.	12	W.	M.	4	Lac., thumb and palm, r. hand, giant firecracker.
80.	G. S. ...	10	W.	M.	4	Gunshot, left index finger.
81.	C. M. ...	10	W.	M.	4	Gunshot, middle finger, l. hand.
82.	R. R. ...	12	W.	M.	4	Gunshot, left hand.
83.	A. M. ...	13	W.	F.	4	Burn, face, cracker.
84.	P. R. ...	14	W.	M.	4	Gunshot, palm left hand.
85.	C. F. F..	19	W.	M.	4	Abras. and contus. forearm, cr.
86.	C. F. ...	70	W.	F.	4	Shot with 22 cal. in l. arm.
87.	B. B. ...	13	W.	M.	4	Gunshot, left palm.
88.	F. J. ...	12	C.	M.	4	Bl. ctg., l. hand, index finger.
89.	J. J. ...	16	W.	M.	4	Gunshot, palm left hand.
90.	L. C. ...	25	C.	F.	4	Gunshot, left index finger.
91.	F. G., ...	28	W.	M.	4	Burn, left side.
92.	W. A. ...	38	W.	M.	4	Gunshot, right hand.
93.	E. H. ...	23	W.	F.	4	Lac. and burn, hand, giant cr.
94.	K. R. ...	8	W.	M.	4	Gunshot, middle finger, l. hand.
95.	E. M. ...	38	W.	M.	4	Lac. and burn, hand.
96.	F. W. B..	11	W.	M.	4	Burns, face.
97.	C. C. ...	15	W.	M.	4	Burn, face and left hand.
98.	L. M. ...	10	W.	M.	4	Blank cartridge, right hand.
99.	E. P. ...	10	W.	M.	4	Burns, gluteal region and r. hand.
100.	H. M. ...	15	W.	M.	4	Burn, left hand, little finger.
101.	H. H. ...	8	W.	M.	4	Gunshot, palm left hand.
102.	G. M. ...	15	W.	F.	4	Burns, face, eyes.
103.	E. B. ...	13	W.	M.	4	Blank cartridge, left hand .
104.	G. L. ...	12	W.	M.	4	Burn, face, right eyeball.
105.	V. D. ...	14	W.	M.	4	Expl., cannon, r. thigh and leg.
106.	A. Y. ...	12	W.	M.	4	Lac. palm left hand, dyn. cane.
107.	C. S. ...	18	W.	M.	4	Burns, face, both eyeballs, cannon.
108.	L. Y. ...	15	W.	M.	4	Burns, both eyes, face and neck.
109.	C. W. ...	3½	W.	M.	4	Burn, r. side face and right ear.
110.	T. S. ...	10	W.	M.	4	Lac. forehead, dyn. cane.
111.	H. S. ...	14	W.	M.	4	Burn, right hand, palm.
112.	W. R. ...	12	W.	M.	4	Gunshot, index finger, left hand.
113.	G. N. ...	15	W.	M.	4	Lac. little finger, bl. cartridge.
114.	W. M. ..	9	W.	M.	4	Gunshot, lac. little finger, l. hand.
115.	C. K. ...	18	W.	M.	4	Bl. ctg., lac. second finger, l. hand.
116.	C. K. ...	14	W.	M.	4	Lac. finger and thumb, l. hand, torpedo.
117.	T. H. ...	11	W.	M.	4	Bl. ctg., index finger, toy gun.
118.	J. H. ...	12	W.	M.	4	Punct. and contus., inner side r. ankle, dyn. cane.
119.	J. C. ...	10	W.	M.	4	Lac. leg, dyn. expl.
120.	P. C. ...	14	W.	M.	4	Gunshot.
121.	M. G. ...	15	W.	M.	4	Gunshot.
122.	H. A. ...	13	W.	M.	4	Gunshot.
123.	W. B. ...	10	W.	M.	4	Gunshot.
124.	R. N. ...	11	W.	M.	4	Gunshot.
125.	V. B. ...	14	W.	M.	4	Gunshot.
126.	W. S. ...	2½	W.	M.	4	Burn, leg, dyn. cane.
127.	H. M. ...	14	W.	M.	4	Blank cartridge, palm right hand.
128.	C. McG...	10	W.	M.	4	Lac. l. hand, toy pistol.
129.	J. F. ...	12	W.	M.	4	Lac. left hand, blank cartridge.
130.	H. B. ...	11	W.	M.	4	Lac. finger, left hand, toy pistol.
131.	F. G. ...	27	W.	M.	4	Lac. 3rd finger, l. hand, R. can.
132.	L. C. W..	30	W.	M.	4	Lac. palm, r. hand, cannon crk.
133.	W. L. ...	17	W.	M.	4	Bl. ctg., lac. l. forefinger.
134.	N. L. ...	17	W.	M.	4	Gunshot, left forefinger.
135.	C. P. ...	16	W.	M.	4	Gunshot, left index finger.
136.	J. B. ...	13	W.	M.	4	Gunshot, left forefinger.
137.	W. H. ...	9	W.	M.	4	Gunshot, palm left hand.
138.	J. R. ...	12	W.	M.	4	Gunshot, left forefinger.
139.	E. R. ...	11	W.	M.	4	Gunshot, second finger.
140.	J. H. ...	11	W.	M.	4	Gunshot, left index finger.
141.	W. S. ...	5	W.	M.	4	Burn, l. arm, expl. "flower pot."
142.	W. S. ...	5	W.	M.	5	Burns, l. arm, expl. "flower pot."
143.	A. C. ...	10	W.	M.	5	Gunshot, left hand.
144.	A. G. ...	14	W.	M.	4	Gunshot, 2d finger, left hand.
145.	J. L. ...	12	W.	M.	5	Gunshot, left hand, 3rd finger.
146.	A. K. ...	8	W.	M.	5	Gunshot, thumb, left hand.
147.	W. S. ...	14	W.	M.	5	Burn, thumb, left hand.
148.	J. W. ...	11	W.	M.	5	Gunshot, 2d fingers, l. hand.
149.	W. M. ...	12	W.	M.	5	Gunshot, palm left hand.
150.	W. C. ...	13	W.	M.	5	Gunshot, index finger.
151.	I. V. ...	12	W.	M.	5	Bl. ctg., l. forefinger.
152.	V. S. ...	19	W.	M.	5	Burn, r. hand, expl. cannon.
153.	G. S. ...	16	W.	M.	5	Gunshot, l. 3rd finger.
154.	J. M. ...	9	W.	M.	5	Burn ,left arm, Roman candle.
155.	W. L. ...	9	W.	M.	5	Gunshot, l. middle finger.
156.	K. N. ...	17	W.	F.	5	Gunshot, l. index finger.
157.	B. O. ...	12	W.	M.	5	Gunshot, l. index finger.
158.	E. W. ...	10	W.	M.	5	Blank cartridge, right hand.
159.	J. M. ...	12	W.	M.	5	Gunshot, palm left hand.
160.	A. D. ...	12	W.	M.	5	Gunshot, palm left hand.
161.	L. S. ...	2	W.	F.	5	Gunshot, index finger.
162.	J. P. ...	9	W.	F.	5	Gunshot, palm left hand.
163.	F. F. ...	9	C.	M.	5	Gunshot, left hand.
164.	F. S. ...	19	W.	M.	6	Gunshot, palm and middle finger, left hand.
165.	G. F.	9½	-W.	M.	6	Gunshot wound, palm and wrist, right hand.
166.	I. J.	12	W.	M.	7	Burned and lac. r. hand, dyn.
167.	C. R. ...	17	W.	M.	7	Lac. r. hand and finger, giant crk.
168.	H. G. ...	10	W.	M.	7	Gunshot wound, right thumb.
169.	W. L. ...	11	W.	M.	8	Gunshot, hand.
170.	C. H. ...	10	W.	M.	11	Burn, index finger, right hand, Roman candle.

* Bl., blank; ctg., cartridge; dyn., dynamite; punct., puncture; lac., lacerated or laceration; contus., contusion; abras., abrasion; expl., explosion; crk., cracker; l., left; r., right.

ETHYL CHLORID AS A GENERAL ANESTHETIC IN MINOR OPERATIONS.

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As early as 1848, Heyfelder used ethyl chlorid as a general anesthetic, and in 1880, the British Medical Association, after experimenting with the drug, condemned its use as being too dangerous, producing convulsions and arresting respiration. About 1895-6 it was again brought to the front by Carlson and Thursing, and was soon used extensively in dental work.

Seitz of Konstanz, in 1892, reported 16,000 cases, with but one death, and that in a very unfavorable subject. With the exception of nitrous-oxide gas, he considers it the safest of all anesthetics. Opisthotonos was observed in three cases, all three, however, were addicted to the use of alcohol.

Burnett[1] considered ethyl chlorid an ideal anesthetic. He used it in a concentrated form, and found it caused more relaxation than bromid of ethyl, though not so much as chloroform. McLennan[2] places it on a par with laughing as for safety. The stage of anesthesia is longer than with ethyl bromid. H. Gerard[3] published an elaborate study on the subject, but the report of his cases hardly justifies his conclusion. In 78 cases, there were four failures to come under its influence. In 19, the pre-anesthetic period ran from five to thirty-eight minutes. In the majority of cases, the anesthetic period was not continued more than ten minutes. The pupils dilated in 85 per cent., corneal reflex was absent in 49 per cent. and excitement, which at times was quite violent, was noticed in 65 per cent. of the cases. In 14 cases there was arrest of respiration, lasting fifteen seconds, vomiting occurred in 39 per cent., sweating in 26 per cent. and increased rapidity of the pulse, running up to 160 a minute. Albumin is generally present, sometimes found twenty-four hours after the use of this drug.

Golden[4] classes chlorid of ethyl with internal poisons, and says that it must be used with the greatest care, and only in brief operations. For this reason, it can not be compared with either ether or chloroform in prolonged operations. In short operations, however, he considers it safer than chloroform, but not so safe as ethyl bromid. Both should be used with the patient in a recumbent position and with a free accompaniment of air. T. O. Allen[5] reports one death, but does not state the number of cases in which this drug was used. The patient was a colored man, aged 28, an epileptic, who was to be operated on for inguinal hernia at the Pennsylvania Hospital. Anesthesia was started with ethyl chlorid and was used until near narcosis when ether was substituted. At that moment the patient gagged, and vomited enormous

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1. Med. Press, Dec. 10, 1902.
2. Glasgow Med. Jour., October, 1902.
3. Glasgow Med. Jour., October, 1902.
4. New York Med. Jour., Dec. 14, 1901.
5. Amer. Journal Med. Science, December, 1902.

quantities of a clear watery liquid, which seemed to flow from his mouth without any apparent retching. Both respiration and heart action ceased, and all efforts to restore them were fruitless. This death in my opinion, however, can not justly be laid to the use of ethyl chlorid.

In 24 cases of minor operations reported by McCardic,[6] the longest lasting fifty-four minutes, no unpleasant effect was produced by the use of ethyl chlorid, except in one case, in which the patient died an hour afterward from heart disease, the autopsy showing advanced disease of the heart and other organs.

The whole number of cases collected by McCardie was 16,000, with but one death, and 12,436 are reported by M. W. Ware,[7] with but one death. Such men as Pfister,[8] Erdmann[9] and Craig[10] place ethyl chlorid above either chloroform or ether as to safety in its use, and consider it only surpassed by nitrous oxid gas. Ethyl chlorid gives a longer narcosis. is less unpleasant to take, induces narcosis more quickly, and (which sometimes is quite an item) is cheaper. The greatest objection offered is the rapidity with which the patient frequently passes out from under it. Like gas, the anesthesia caused by ethyl chlorid can be continued by means of chloroform or ether. Ethyl chlorid should not be crowded for if the vapor is too concentrated it may produce asphyxia. Vomiting which sometimes occurs is not so marked as with chloroform or ether.

In gynecology both E. C. Montgomery[11] and P. P. Bland[11] place ethyl chlorid in the front rank of anesthetics, as being inferior to none and equaled by few, from the fact that it produces very little if any irritation of the respiratory mucous membrane, thereby causing none of those distressing symptoms resulting from excessive secretion. This anesthetic they advise in pelvic examination, in hysterectomy, and in other operations about the pelvic viscera. They especially recommend it for feeble patients requiring vaginal incision for pelvic drainage, as one need not begin its use until everything is prepared and the surgeon is ready to operate.

John McKay[12] reports 48 operations about the head under ethyl chlorid, 27 of these being on the turbinates and sinuses, four for adenoids and two for septum deformities. He reports it as being highly satisfactory causing not the slightest uneasiness.

Lotheisen,[13] after carefully considering all the reported cases of death from ethyl chlorid, claims that statistics show that it stands next to chloroform as to mortality; the latter giving one death to every 2,075, while ethyl chlorid presents one death to every 2,550. Lotheisen reports the death of a patient aged 41, while the surgeon was performing skin grafting. When narcosis had lasted three minutes the patient became cyanosed and the muscles of the limbs and jaw became spasmodically tense. The breathing soon became irregular and suddenly stopped. Autopsy showed fatty degeneration of the heart and marked sclerosis of the coronary arteries. He believes the patient would have died under chloroform had it been used.

In June, 1905, Chaldecott, before the Society for the Study of Diseases in Children, after speaking of the many advantages possessed by ethyl chlorid, ended by saying: "It is very clearly laid down that the agent in question is a very powerful anesthetic and except under circumstances of extreme urgency, should only be administered to patients who have been properly prepared."

LePage and LeLorier[14] give the following as their experience with ethyl chlorid during parturition: "Ethyl chlorid possesses many advantages: 1. It is easily administered. 2. Anesthesia is obtained in from 30 to 60 seconds and lasts for about 4 minutes without renewal. 3. The return to consciousness occurs very rapidly without headache, and is accompanied only occasionally by slight vomiting. 4. It can be employed under the following conditions: In course of labor when it is urgent to extract the fetus by forceps, when an internal version is practiced, or when the anterior foot is pulled down in complete presentation of the buttocks. In the latter case the anesthesia by ethyl chlorid has this advantage: It allows the patient to awaken rapidly and thus enables her to complete the expulsion of the fetus by her own efforts. During delivery ethyl chlorid may be used when the accoucheur is obliged to remove the placenta from the uterine cavity, and after delivery, when insertion of sutures into the perineum is required, as well as during pregnancy to diagnose pelvic deformities."

When we consider the various diametrically different opinions herein given, regarding the safety and non-safety of ethyl chlorid as a general anesthetic, we are forced, I believe, to the conclusion, that other elements, independent of the anesthetic itself must have been present in many of these cases to produce death. It is not always easy to assure oneself that death is due solely to the anesthetic given, whatever that anesthetic may be. It is difficult to eliminate the many elements which may be present at the time, any one of which may be the cause of death, instead of that particular anesthetic used. Improper use and impurity of the drug, surgical shock, or some idiosyncrasy on the part of the patient himself, are a few of the causes of death independent of the character of the anesthetic selected. It is impossible, judging simply from the statistics herein given, to state positively which of the two anesthetics now frequently used in short operations, namely bromid and chlorid of ethyl, is the safer, each possessing distinct advantages. Although the patient may yield to the influence of the bromid quicker than to that of the chlorid, and while a sudden awakening from an apparent narcosis may sometimes occur under the use of the chlorid, we must still consider the ease with which the patient passes through the various stages of unconsciousness, when acted on by the chlorid, the length of time it can be used, (fifty-four minutes being recorded) and the preponderance of evidence as to its safety, "before we hesitate to consider ethyl chlorid par excellence"— as an anesthetic in all short operations, especially on the ear, nose and throat.

After several years of more or less constant use of ethyl chlorid, both in clinical and private practice, I have still to see the first case in which it has caused me the slightest fear or uneasiness. This I can not say of the bromid, as only recently a death occurred in this city during its use. I do not hesitate, therefore, to say, that when used with care and understanding and in proper and selected cases, I prefer ethyl chlorid in short operations to all other anesthetics, except perhaps nitrous oxid gas. As in all anesthetics certain precautions must be taken in administering ethyl chlorid: (1) The patient should be prepared as for chlorform or ether; (2) whatever mask is used it should fit the face snugly; (3) a graduated tube with a large aperture should be used;

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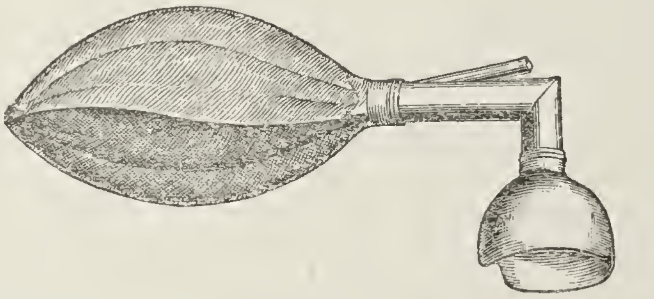
[6] Lancet, April 4, 1903.
[7] Med. Record, April 6, 1901.
[8] Wis. Med. Jour., January, 1904.
[9] Med. News, May 28, 1904.
[10] Amer. Med., Oct. 1, 1901.
[11] Jour. Amer. Med. Assn., April 2, 1902.
[12] Jour. Rhinol., Laryngol. and Oto-Laryngol., October, 1901.
[13] Münch. med. Wochschr., Nov. 18, 1900.
[14] Amer. Med., Feb. 14, 1903.

(4) the anesthetic should be well supplied with air and as little given as possible; (5) care should be taken not to present it at first in too large a quantity, frequently a dram is quite sufficient for short operations; (6) the patient should rest a while after its administration, as faintness sometimes supervenes; (7) a mask should be used which does not receive the drug close to the patient's face; otherwise one is liable either to freeze the face of the patient or to cause asphyxia by the moisture from the expired air freezing on the gauze in the mask and thus preventing the free passage of air to the patient. For this reason I much prefer the Apperson inhaler.

This inhaler consists of a face piece of soft flexible rubber, a connecting metal tubing, an inlet tube for the ethyl chlorid, and a flexible rubber bag holding about one quart. The whole can be folded into small compass for the obstetrical or surgical bag. With this apparatus and the employment of the following simple directions, general anesthesia can be produced with absolute safety, and the patient is not only rapidly and perfectly narcotized, but he recovers in a remarkable short time and presents no after effects:

Place the face-piece over the patient's mouth and nose. Spray a small quantity of ethyl chlorid into the opening of the inner tube, and place the thumb over the aperture (use the right hand for spraying and the left hand for holding the inhaler in such a manner that the thumb is free to cover and uncover the opening of the tube).



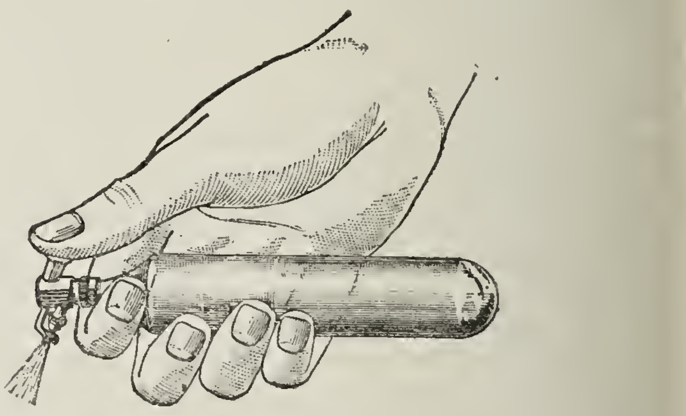
Allow the patient to take several (about half a dozen or so) inhalations; this will get the patient accustomed to the odor and effect of the drug slowly, without shock. Repeat this operation at intervals, each time using more and more ethyl chlorid and having the patient take more and more inhalations. Three to five grams is the usual quantity required for an anesthesia of short duration or preliminary to the use of ether or chloroform. By repeating this method and allowing the patient to breathe air occasionally by removing the thumb, an indefinite, safe anesthesia may be maintained. When the patient becomes narcotized a gentle snoring will be heard; the operation can then be begun. Should admission of air be desirable, take the finger off the tube for a few minutes.

The ethyl chlorid for general anesthesia is specially prepared, and when ordering, mention should always be made of the fact that it is desired for narcosis.

The use of ethyl chlorid, especially with the above apparatus, has the following advantages: 1, Safety in administering; 2, ease of administration; 3, it rapidly produces surgical anesthesia; 4, it can be used where chloroform or ether would be contraindicated; 5, the patient can be kept in any position during anesthesia, upright or prone; 6, no cyanosis need occur during administration; 7, the patient recovers promptly without after-effects; 8, it is inexpensive; 9, it can be used for long or short operations with equal success; 10, it is especially useful as a preliminary to other anesthetics, decreasing the time required for the production of anesthesia and avoiding shock and discomfort to the patient.

The apparatus will be found of great utility by practitioners or surgeons who are called on to do emergency surgical work. Its advantages will be apparent.

Many preparations of ethyl chlorid are impure and unreliable. An examination of fifty specimens showed thirty to be unfit for use. In all my short operations, while administering the anesthetic, I generally have the patient hold up one arm. When it falls, I wait a short time before removing the mask, to assure myself that the patient is sufficiently under its influence to operate. If the patient becomes materially excited the mask is removed at once. Narcosis is reached when the pupils begin to contract, the muscular contraction to abate and when the breathing becomes slightly stertorous. The contraction of the pupils, however, is never so great as under chloroform; they will frequently first dilate followed by a slight contraction. If the anesthetic is pushed too far, however, the pupils will again dilate. For continuous anesthesia 2 or 3 c.c. is sprayed every two or three minutes. It is especially recommended as a preliminary to ether.



The inhalation of ethyl chlorid on the whole is pleasant. It has a sweet taste, like that of chloroform, and is unattended by strangulation or by salivation. The intense cold produced by its evaporation, is not perceptible to the patient, and it is taken, as a rule, without difficulty, except by alcoholics and neurotics. Alcoholics show marked excitation and require large quantities of the drug before they succumb, and even then they generally remain more or less rigid. Neurotics must be treated with care. One must obtain their confidence, and their surroundings must be free from all noise and confusion. According to Ware ethyl chlorid acts on the sympathetic nerve, as shown by the accelerated pulse, transiently dilated pupils and flushed face. Next it acts on the spinal cord and finally on the brain, all being acted on in rapid sequence.

According to Benjamin W. Richardson an anesthetic is dangerous in proportion to the chlorin it contains; therefore, whatever danger is present in the use of ethyl chlorid, must be due to the one atom of chlorin it contains. If this be true, somnoform, an anesthetic produced by Rolland of Bordeaux and at present receiving much attention by the profession, possesses, not only the same danger as ethyl chlorid, but an additional danger due to its liability to decompose and to form bromin. Its advantages depend entirely on the 60 per cent. of ethyl chlorid it contains, while of the remaining 40 per cent., 35 per cent. is methyl chlorid, a liquid which evaporates at 20 degrees below zero and is used only to hasten the anesthetic action. The remaining 5 per cent. is ethyl bromid, which though small in quantity nevertheless is an additional danger to the use of this compound. Ethyl chlorid is gradually supplanting laughing gas, as a preliminary anesthetic to chloroform and ether, abroad. Malherbe says that by the use of this drug as a preliminary anesthetic, the danger of primary syncope is suppressed. The shock is much lessened, as well as the quantity of chloroform administered, thereby diminishing subsequent gastric troubles.

One is generally governed in the selection of an anesthetic by his own experience in its use. If he is so unfortunate as to witness the death of an individual, while under the influence of an anesthetic, that anesthetic will ever afterward be shunned, or used with fear and trembling, in spite of the fact that death may have been due to causes acting independently of the drug. Conclusions are formed and statistics given which are often misleading from this very fact. All conclusions and statistics, therefore, should be taken *cum grano salis* if we wish to arrive at any correct and positive understanding of this subject. A careful study of all deaths occurring while under the influence of anesthetics must be made, and a scientific knowledge of their physiologic action on lower animals, as well as on man, must be obtained by experimental research, conducted along lines similar to those presented in a paper read by Drs. Large and Brown before the Rhinologic and Oto-Laryngologic Society at Buffalo last summer, before we can positively answer the question: Is ethyl chlorid the safest anesthetic to be used in minor operations?

Special Article

FOURTH OF JULY INJURIES AND TETANUS.

For the fourth consecutive year THE JOURNAL publishes statistics regarding injuries received during the celebration of the Fourth of July, with special reference to tetanus resulting from these injuries. The total number of cases this year is 89, or 15 less than last year, when there were 104 cases. In 1904 there were 105 cases and in 1903, 415. This shows a considerable reduction, there being 326 less than in 1903. To compare the totals of accidents caused by blank cartridges in the different years is interesting, and also shows a decrease until this year, when there is an increase. In 1903 there were 1,672 injuries due to this cause, compared with 1,005 in 1904, 809 in 1905, and 979 this year. (See Table 4.)

The figures this year are from the same source as heretofore and treated in the same manner, so that any comparisons between the figures of this and either of the preceding years may be on a presumably like basis. The list of tetanus cases is as follows:

TABLE 1.

Name.	Age.	Cause of Wound.	Site of Wound.	Duration in days.	Result.
CALIFORNIA.					
1. McKean	Boy.	Fireworks.	....	..	D.
2. Manchester	Boy.	Blank cartridge.	Hand.	10	D.
3. Steiner	15	Blank cartridge.	Hand.	7	D.
DELAWARE.					
1. Loughlin	..	Blank cartridge.	....	8	D.
ILLINOIS.					
1. Rietz	15	Giant cracker.	Hand.	9	D.
2. Bryson	Adult	Giant cracker.	Hand.	15	D.
3. Bajarski	34	Blank cartridge.	....	19	D.
4. Heil	10	Gunshot.	....	17	D.
5. Pural	8	Gunshot.	....	17	D.
6. Strauss	16	Giant cracker.	....	14	D.
7. Bacla	13	Cannon.	...	4	D.
8. Willlams	17	Blank cartridge.	Hand.	6	D.
9. Hamilton	Adult	Giant cracker.	Hand.	10	D.
10. Erdman	15	Firecracker.	....	7	D.
11. Laverick	Adult	Fireworks.	....	..	..
12. Aken	Adult	Blank cartridge.	....	13	D.
13. Reeder	..	Gunshot.	Hand.	6	D.
14. Staab	Boy	Fireworks.	....	..	D.
15. Gerardo	9	Blank cartridge.	Hand.	..	D.
16. Lundgren	11	Blank cartridge.	Hand.	20	D.
INDIANA.					
1. Browning	12	Blank cartridge.	Hand.	6	D.
2. Pressley	13	Blank cartridge.	Hand.	10	D.
3. Thomson	7	Blank cartridge.	Hand.	10	D.
4. Blaney	7	Blank cartridge.	....	20	D.
5. Van Hoke	6	Gunshot.	....	4	D.
6. Bokowski	15	Gunshot.	....	10	D.
7. Gustafson	11	Gunshot.	Hand.	8	D.
8. Markland	11	Blank cartridge.	Hand.	10	D.
IOWA.					
1. Moss	..	Giant cracker.	Hand.	5	D.
2. Kakish	17	Blank cartridge.	....	9	D.
3. Strode	26	Giant cracker.	....	20	D.
4. Baker	10	Blank cartridge.	Hand.	..	D.
KENTUCKY.					
1. Deibel	16	Blank cartridge.	....	12	D.
MAINE.					
1. McAleer	14	Blank cartridge.	....	9	D.
MARYLAND.					
1. Wrightson	..	Blank cartridge.	....	..	D.
MASSACHUSETTS.					
1. Johnson	22	Blank cartridge.	Hand.	..	D.
2. Sullivan	12	Blank cartridge.	Hand.	..	D.
3. Dodd.	11	Blank cartridge.	Hand.	..	R.
MICHIGAN.					
1. Koppeich	16	Giant cracker.	Hand.	8	D.
2. Clark	13	Blank cartridge.	....	11	D.
3. McNaughton	12	Fireworks.	....	5	D.
4. Goodsell	13	Blank cartridge.	Hand.	10	D.
MINNESOTA.					
1. Maslon	11	Giant cracker.	Hand.	6	D.
2. Johnson	26	Gunshot.	Hand.	14	D.
MISSOURI.					
1 Nifford	16	Giant cracker.	....	13	D.
2. Bracy	13	Blank cartridge.	Hand.	..	..
3. Sadler	11	Torpedo.	Head.	..	..
NEBRASKA.					
1. Wilbourn	9	Blank cartridge.	Finger.	4	D.
NEW HAMPSHIRE.					
1. Johnson	..	Blank cartridge.	Hand.	10	D.
NEW JERSEY.					
1. Hamilton	11	Blank cartridge.	Hand.	8	D.
2. Sholtz	13	Blank cartridge.	....	9	D.
3. Shelton	17	Fireworks.	....	..	..
4. Palmer	18	Giant cracker.	Hand.	..	..
5. Meyer	13	Blank cartridge.	Hand.	..	D.
6 Malady	13	Blank cartridge.	Hand.	..	..
7. Murphy	11	Blank cartridge.	Hand.	9	D.
8. Hughes	..	Blank cartridge.	Hand.	8	D.
9 Mallo	29	Blank cartridge.	Finger.	..	D.
10 Sheehan	8	Blank cartridge.	Hand.	6	D.
NEW YORK.					
1. Romleski	13	Blank cartridge.	Hand.	10	D.
2. Woodard	..	Giant cracker.	Leg.	14	D.
3. Delancy	13	Blank cartridge.	Hand.	..	..
4. Lester	67	Giant cracker.	Leg.	15	D.
5. Davis	9	Blank cartridge.	....	17	D.
6. Townsend	38	Firecracker.	Hand.	..	..
7. Celestino	7	Giant cracker.	Hand.	..	D.
8. Walters	Boy	Giant cracker.	Hand.	9	D.
OHIO.					
1. Leibcnboach	15	Blank cartridge.	....	10	D.
2. Wise	..	Blank cartridge.	Leg.	..	D.
3. Reddington	..	Blank cartridge.	....	7	D.
4. Powers	16	Blank cartridge.	Thumb.	..	R.
5. Troxler	18	Blank cartridge.	....	6	D.
6. Stevens	16	Giant cracker.	Hand.	..	R.
7. Frinkey	9	Fireworks.	....	13	D.
OKLAHOMA.					
1. Shreck	8	Blank cartridge.	....	10	D.
OREGON.					
1. Willey	2	Blank cartridge.	Hand.	..	D.
PENNSYLVANIA.					
1. Shultz	13	Blank cartridge.	Hand.	9	D.
2. Liebenguth	15	Blank cartridge.	Leg.	4	D.
3. Rose	12	Blank cartridge.	Finger.	8	D.
4. Morris	8	Fireworks.	Hand.	..	..
5. Guldin	Adult	Giant cracker.	....	..	..
RHODE ISLAND.					
1. McCabe	12	Blank cartridge.	Hand.	9	D.
VERMONT.					
1. Delaney	13	Blank cartridge.	Finger.	..	..
2. Prince	14	Blank cartridge.	Hand.	9	D.
WEST VIRGINIA.					
1. Lannon	12	Blank cartridge.	....	..	D.
2. Giffen	12	Blank cartridge.	....	10	D.
WISCONSIN.					
1. Lama	8	Blank cartridge.	Hand.	..	D.
2. Thiel.	Adult.	Giant cracker.	Hand.	..	R.
WYOMING.					
1. Parnell	13	Blank cartridge.	Hand.	8	D.

Tetanus cases occurred in 25 different states, 2 more than last year, 4 more than in 1904, but 5 less than in 1903. Illinois leads this year with 16 cases, New Jersey comes next with 10, while Indiana and New York tie for third place, with 8 cases each, and Ohio comes next with 7. New Jersey, Oregon, Indiana, New York, Ohio, Vermont and West Virginia have an increase of two or more cases, while Wisconsin, Pennsylvania, Michigan, Illinois and Connecticut show a marked decrease. Table 2 shows a comparison of the number of cases in each state for the four years.

TABLE 2.

	1903.	1904.	1905.	1906.
Alabama	..	..	1	..
Arizona	..	..	..	..
California	2	4	4	3
Colorado	4	..	1	..
Connecticut	3	..	3	..
Delaware	..	..	1	1
District of Columbia	1	..	..	..
Florida	..	..	..	..
Georgia	..	..	..	..
Idaho	1	..	..	..
Illinois	49	15	20	16
Indiana	11	6	3	8
Indian Territory	1	..	..	..
Iowa	14	2	3	4
Kansas	11	1	..	..
Kentucky	4	2	..	1
Louisiana	..	..	..	..
Maine	2	4	1	1
Maryland	1	..	1	1
Massachusetts	16	5	7	3
Michigan	29	7	9	4
Minnesota	15	2	2	2
Missouri	29	1	3	3
Montana	2	1	1	..
Nebraska	4	3	3	1
New Hampshire	2	..	..	1
New Jersey	8	9	3	10
New York	36	9	6	8
North Dakota	..	..	..	..
Ohio	67	9	5	7
Oklahoma	..	..	1	1
Oregon	2	..	..	1
Pennsylvania	82	17	12	5
Rhode Island	3	..	..	1
South Carolina	..	..	..	..
South Dakota	..	..	..	..
Tennessee	..	..	..	..
Texas	..	..	..	..
Utah	..	1	1	..
Vermont	3	2	..	2
Washington	2	1	..	..
West Virginia	3	..	..	2
Wisconsin	10	4	13	2
Wyoming	..	..	..	1
Total	415	105	104	89
No states having cases	30	21	23	25

While it seems that restrictions against toy pistols were somewhat relaxed this year and more accidents resulted from their use, still the number of tetanus cases was less. Table 3 shows a comparison between the causes of tetanus cases this year and the three previous years.

TABLE 3.—Causes of Tetanus Cases.

	Blank. cartridge.	Giant cracker.	Cannon.	Firearms.	Powder, etc.
1903......	363	17	5	3	27
1904......	74	18	5	1	7
1905......	65	17	4	5	13
1906......	54	17	1	7	10

Besides the lockjaw cases directly due to Fourth of July accidents, 60 cases were reported this year which were due to other injuries as pentrating wounds from nails or splinters, from crushing injuries in falls or otherwise, a decided increase over the 32 cases reported last year. Of this class there were 55 cases reported in 1904 and 15 in 1903. The distribution this year was as follows:

California 2, Illinois 9, Indiana 5, Iowa 8, Kansas 3, Kentucky 2, Massachusetts 1, Michigan 2, Missouri 1, Nebraska 1, New Jersey 2, New York 2, North Dakota 1, Ohio 11, Pennsylvania 3, South Dakota 1, Texas 5, Virginia 1 and Wisconsin 1. Cases therefore occurred in 19 states, Ohio, Illinois and Iowa leading, respectively, with 11, 9 and 8 cases. It is interesting to compare this list with the cases due to Fourth of July celebration.

DEATHS AND INJURIES ASIDE FROM TETANUS.

In Table 4 will be found a summary of all injuries, including tetanus, as well as of all the causes. The arrangement, as heretofore, is by states, so that comparisons may be made. Beneath the totals at the bottom of this table we have inserted for comparison the totals for the other three years. Table 5 is arranged to show a more ready comparison by states of the total accidents and deaths for four years.

Pennsylvania, the birthplace of independence, still remains far in the lead with 969 casualties, followed by New York with 681, Illinois with 598, Ohio with 490, New Jersey with 398, Michigan with 329 and Missouri with 325.

As heretofore all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July, have been carefully omitted. For instance, while a crowd was assembled on a pier watching a display of fireworks, the pier gave away injuring a number of people. At another place a grandstand likewise fell. These accidents would have happened from any crowd gathering on them and are therefore omitted.

Besides 75 deaths from tetanus, there were 83 from other accidents, a total of 158, or 24 less than last year, 25 less than in 1904 and 308 less than in 1903.

Of the 83 killed aside from tetanus, 38 were killed by gunshot wounds, of which 14 were caused by stray bullets from the reckless use of loaded firearms on the part of others; 18 persons, mostly young children, were burned to death by fire resulting from fireworks; 18 persons were killed by explosions of powder, dynamite and railroad torpedoes; 3 were killed by giant crackers; 3 were killed by cannon; 1 by a misdirected skyrocket; 1 by a fall in an effort to avoid a giant cracker, and 1 in a runaway where the horses were frightened by the explosion of a large cracker. Probably the worst instance was the explosion of powder which killed 6 boys who were preparing to celebrate near Wilkesbarre, Pa.

The non-fatal accidents, while more numerous, were not quite so severe as last year, the increase coming among milder injuries. There were 22 blinded as compared with 25 last year; 72 lost one eye as against 106 last year, and 56 lost a leg, arm or hand as compared with 80 last year. Of those losing one or more fingers, however, there was a slight increase, the total being 227 as against 221 last year.

Almost invariably these mutilating wounds were caused by giant crackers, other causes being firearms, cannon and powder. The giant cracker, although far more dangerous than the smaller sizes, has a shorter fuse and this fuse in many instances burns in the central pith, leaving the outer part which has apparently ceased to burn. The reports in regard to this point are even more emphatic this year than last. Authorities should certainly condemn the giant cracker.

Firearms rank second as a cause for mutilating wounds, causing 532 injuries, 187 of which were caused by stray bullets. As before stated, 14 people were killed outright through this reckless use of loaded firearms and 173 others more or less seriously injured. Toy cannon occupy third place, although the results, while not so fatal, were usually more mutilating than those from firearms. Even canes and caps, which at first were her-

TABLE 4.—Summary by States of July Fourth Casualties.

State.	Deaths.			Injuries.							Causes of Tetanus Cases.		Causes of All Cases Aside from Tetanus Cases.						
	From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Legs, Arms or Hands.	Loss of Fingers, One or More.	Other Injuries.	Total Non-fatal Injuries.	Total Persons Dead or Injured.	Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Firearms.	Stray Bullet.	Canes and Caps.	Powder and Fireworks.
Alabama	..	1	1	..	..	..	..	1	1	2	..	..	1	...	..	1	..	..	...
Arizona	..	2	2	..	..	..	..	3	3	5	..	..	...	...	..	1	..	1	3
Arkansas	..	..	..	1	..	..	1	2	4	4	..	..	1	3	..	..	..	..	...
California	3	2	5	2	1	3	4	81	91	96	2	1	15	28	15	3	3	1	29
Colorado	..	..	..	..	..	..	2	21	23	23	..	..	1	17	1	..	..	..	4
Connecticut	..	..	..	..	2	4	4	159	169	169	..	..	57	46	22	12	7	..	25
Delaware	1	..	1	..	..	..	1	6	7	8	1	..	2	4	..	..	1	..	...
District of Columbia	..	..	..	..	..	..	..	5	5	5	..	..	...	2	1	..	..	..	2
Florida	..	..	..	..	..	..	..	...	...	...	..	..	...	...	..	..	..	..	...
Georgia	..	..	..	..	..	..	..	4	4	4	..	..	1	1	2	..	..	..	...
Idaho	..	..	..	..	..	..	..	3	3	3	..	..	...	1	..	..	..	..	2
Illinois	15	8	23	2	8	9	38	518	575	598	1	11	129	296	47	39	25	20	116
Indiana	8	8	16	2	4	3	12	213	234	250	5	3	41	72	24	16	5	5	79
Indian Territory	..	..	..	..	..	..	..	2	2	2	..	..	...	1	..	1	..	..	...
Iowa	4	3	7	2	4	..	10	232	248	255	2	2	25	115	13	8	6	6	78
Kansas	..	1	1	..	2	..	2	56	60	61	..	..	7	19	10	2	1	2	20
Kentucky	1	..	1	..	..	..	1	19	20	21	1	..	7	5	2	2	1	1	2
Louisiana	..	4	4	..	..	..	1	2	3	7	..	..	...	3	..	..	..	..	4
Maine	1	..	1	1	..	..	1	12	14	15	1	..	1	7	1	..	..	1	4
Maryland	2	..	2	1	..	..	..	7	8	10	2	..	2	5	..	..	1	..	...
Massachusetts	2	5	7	..	3	..	11	308	322	329	2	..	54	143	12	11	6	6	95
Michigan	4	4	8	..	4	4	15	162	185	193	2	2	32	62	15	10	6	9	55
Minnesota	2	2	4	1	2	..	4	84	91	95	..	2	14	32	11	5	2	4	25
Mississippi	..	..	..	..	..	..	..	2	2	2	..	..	...	2	..	..	..	..	...
Missouri	1	2	3	..	3	..	7	312	322	325	1	2	136	63	24	36	2	12	49
Montana	..	..	..	..	..	..	1	2	3	3	..	..	...	2	..	..	..	..	1
Nebraska	1	2	3	1	2	..	3	38	44	47	1	..	15	18	3	..	4	1	5
Nevada	..	..	..	..	..	..	..	...	...	...	..	..	...	...	..	..	..	..	...
New Hampshire	1	..	1	..	..	..	2	26	28	29	1	..	1	13	6	1	..	..	7
New Jersey	7	2	9	1	3	5	5	375	389	398	8	2	101	92	34	36	21	3	101
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	...	1	..	..	..	..	...
New York	6	6	12	1	7	9	39	613	669	681	3	5	107	204	55	49	35	41	182
North Carolina	..	..	..	..	..	..	..	1	1	1	..	..	...	...	..	1	..	..	...
North Dakota	..	1	1	..	..	..	..	1	10	11	..	..	...	1	..	2	..	2	6
Ohio	5	4	9	1	6	9	27	438	481	490	5	3	58	156	39	36	20	26	148
Oklahoma	1	..	1	..	..	..	2	9	11	12	1	..	2	6	..	1	..	..	2
Oregon	1	1	2	1	..	..	..	8	9	11	1	..	...	3	1	..	..	..	6
Pennsylvania	3	12	15	5	11	6	19	913	954	969	3	2	81	240	44	55	36	12	496
Rhode Island	1	..	1	..	1	..	1	18	20	21	1	..	2	11	2	..	..	..	5
South Carolina	..	..	..	..	..	..	..	1	1	1	..	..	...	...	..	1	..	..	...
South Dakota	..	4	4	..	..	..	..	1	1	5	..	..	...	...	1	..	..	..	4
Tennessee	..	3	3	..	..	..	1	2	3	6	..	..	...	1	1	..	..	1	3
Texas	..	..	..	..	..	1	1	9	11	11	..	..	...	1	4	1	..	..	5
Utah	..	..	..	..	..	..	..	18	18	18	..	..	...	6	..	..	..	..	12
Vermont	1	..	1	..	..	1	..	12	13	14	2	..	4	2	..	1	..	..	5
Virginia	..	..	..	..	..	..	..	8	8	8	..	..	1	4	1	..	1	..	1
Washington	..	..	..	..	1	..	1	23	25	25	..	..	5	7	1	1	1	..	10
West Virginia	2	2	4	..	2	1	4	53	60	64	2	..	7	32	2	4	..	..	17
Wisconsin	1	4	5	..	6	1	7	136	150	155	1	1	15	52	15	9	3	8	51
Wyoming	1	..	1	..	..	..	..	2	2	3	1	..	...	1	..	..	..	..	1
1906 totals	75	83	158	22	72	56	227	4931	5508	5466	54	35	925	1690	408	345	187	162	1660
1905 totals	87	95	182	25	106	80	221	4562	4994	5176	65	39	744	1775	474	265	139	171	1504
1904 totals	91	92	183	19	61	61	208	3637	3986	4169	74	25	931	1268	508	406	†	‡	1056
1903 totals	406	60	466	10	75	54	174	3670	3983	4449	363	29	1309	1152	397	236	†	‡	731

†Figures for accidents caused by stray bullets included with "gunshot" wounds in 1903 and 1904.
‡ Figures for accidents caused by canes aud caps included with "powder and fireworks" in 1903 and 1904.

alded as a safe means of noise making, are not proving to be as harmless as at first supposed. The noise element is certainly a success, but the exploding cap often causes penetrating wounds of the ankles or legs—usually the most unprotected part of those who use them, the boy with knee pants. Then, overcharging the cane caused it to explode in many instances, the particles of iron doing considerable damage.

TABLE 5.—Total Deaths and Accidents by States During Four Years.

	1903.	1904.	1905.	1906.
Alabama	2	7	1	2
Arizona	1	...	4	5
Arkansas	...	...	3	4
California	100	138	142	96
Colorado	39	44	26	23
Connecticut	162	133	132	169
Delaware.	1	5	14	8
District of Columbia	2	10	24	5
Florida	1	2	2	...
Georgia.	...	...	...	4
Idaho	4	4	3	3
Illinois.	366	423	542	598
Indian Territory	1	...	...	2
Indiana	160	211	217	250
Iowa.	168	137	328	255
Kansas	63	88	56	61
Kentucky	30	72	17	21
Louisiana	...	2	3	7
Maine	31	32	29	15
Maryland	21	22	13	10
Massachusetts	637	193	467	329
Michigan	144	157	288	193
Minnesota	157	102	174	95
Mississippi	...	...	...	2
Missouri	147	84	218	325
Montana	5	17	40	3
Nebraska	46	63	43	47
Nevada	...	1	2	...
New Hampshire	37	23	9	29
New Jersey	228	204	350	398
New Mexico	...	4	5	1
New York	522	549	566	681
North Carolina	...	...	1	1
North Dakota	10	8	29	11
Ohio	443	327	329	490
Oklahoma	...	3	7	12
Oregon.	16	13	9	11
Pennsylvania	533	744	721	969
Rhode Island	64	30	11	21
South Carolina	...	...	...	1
South Dakota	4	10	15	5
Tennessee	4	1	5	6
Texas	2	2	4	11
Utah	23	22	25	18
Vermont	45	14	10	14
Virginia	...	11	5	8
Washington	21	25	15	25
West Virginia	19	16	34	64
Wisconsin	190	215	230	155
Wyoming	1	2	8	3

As to preventive measures, antitoxin was more generally used than ever before, and results in one large city may be seen from an article published elsewhere in this issue of The Journal. It was used quite generally in all tetanus cases, although its value is still questioned after the serious symptoms have set in. In one cases which recovered, antitoxin was given as frequently as ten injections daily.

While there seemed to be some relaxation as regards ordinances regulating fireworks, there was on the whole a stronger effort made at their enforcement. List of those arrested were in some instances nearly as large as those of the injured. There is need for stronger ordinances. These should be passed and proclaimed before local dealers have purchased their stock, then both seller and purchaser of prohibited fireworks should be vigorously prosecuted. If those who use these methods of celebration were the only ones injured there might be less reason to object; but the large number of injuries to innocent persons and to children inexperienced as to the use and danger of firearms and explosions—as well as the noise and hubbub which at present mars the day for those who prefer more enlightened means of celebration, certainly demand that opposing efforts should not be relaxed.

Clinical Notes

IMPOTENCE CAUSED BY THE EXCESSIVE CONSUMPTION OF BROMO-SELTZER.

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The case herewith reported possesses a double interest. It demonstrates the hitherto, I think, unreported injurious effect of the coal-tar derivatives on the sexual sphere and the danger of permitting the indiscriminate sale to the laity of dangerous drugs and nostrums.

Patient.—Mr. S. J., teacher, married, father of three children, consulted me Feb. 2, 1906, for loss of sexual power. For over a year he had been noticing a gradual diminution of the *libidio sexualis,* together with *ejaculatio præcox.* He has been generally running down, losing flesh, etc.

Examination.—His complexion was sallow, dingy, cachectic. He tires very quickly, and gets out of breath on walking up stairs, or on running after a car. His tongue was heavily coated and breath was offensive. He had no appetite, bowels were constipated. He had had gonorrhea twelve years ago, but is apparently perfectly cured, there being no shreds in the urine and the prostatic secretion being normal. Uranalysis showed absence of albumin, but the presence of a trace of glucose (by the phenyl-hydrazin test). Pulse varied from 90 to 96 in the recumbent position, immediately jumping to 104 or 108 on standing up. Every sixth or seventh beat the heart would skip a beat. He had recently made application for life insurance and had been rejected.

My efforts to elicit any possible or probable cause for his present condition proved fruitless. All he knew was that he was working very hard, day and night, and had been suffering with severe headaches. And here he stopped.

Treatment.—I treated him for about two weeks, locally and generally; there was some improvement, but it was not so positive and unmistakable as could be desired.

Additional History.—At that time his wife, who had found out that her husband was under my treatment, came and asked me if her husband had told me that he was using daily a large bottle of bromo-seltzer, in fact that he was a "bromo-seltzer fiend." He was very touchy on the subject, she said, and would resent it very much if he knew that she "told on him," but she considered it her duty to do so. This put an entirely different aspect on the case. On his next visit I told him that it was useless for me to treat him further, that he must be the victim of some bad habit or drug which was undermining his constitution, and that unless he gave me his full confidence I would have nothing to do with him. He then told me that about a year and a half previously he had taken, for the first time, a dose of bromo-seltzer to relieve a slight headache; the headache was relieved, but returned the next day in a worse form. The headaches gradually became more frequent and more intense, and the doses of the bromo-seltzer had to be increased. He was taking on the average two dollar-size bottles a week. He tried to break off, but his headaches then became so intense that he was unable to do any work or to sleep, and he felt forced to return to the powder. He did not make any very great efforts to overcome the habit, he said, for he did not think that the bromo-seltzer was injuring him or had anything to do with his present miserable condition. He did not think that a medicine which might injure people would be permitted to be sold freely. (Blessed innocence. Even cocain-containing catarrh powders are sold indiscriminately).

Treatment and Result.—I explained to him that the bromo-seltzer would not only injure him, but would eventually kill him, and got him to promise to give up the stuff entirely. And he did. His wife told me that he hasn't touched it since. He suffered at first with agonizing headaches, but he bore them stoically, being determined to get well. His insomnia was absolute and I was obliged to give him a hypnotic for three or four nights. His headaches gradually improved. He followed the treatment faithfully, and he is now a well man. An irritable, despondent, tired-of-life hypochondriac four months ago, he is now hopeful, energetic, full of plans for the future, and a great enemy of bromo-seltzer and nostrums in general.

I have not the slightest doubt that a further continuance of the consumption of bromo-seltzer would soon have resulted in a fatal issue in this case. The nostrum vendors often ask for proofs of the deadly or injurious action of their products. Sudden deaths are rare; an immediate death from any nostrum would, of course, drive the latter out of existence at once. It is the slow, insidious effect of these nostrums that is so dangerous, because so difficult to recognize and to treat. At the same time, there is no doubt in the minds of those who have given the subject some study that the self-administered nostrum contributes considerably to the mortality rate, though it does not appear as one of the causes of death on the death certificates. Had this man died, the cause would have been given by attending physician as heart disease or kidney disease. He would never have been informed—and he would never have suspected—that the original cause of the man's untimely demise was the "harmless" bromo-seltzer.

MARKED ALBUMINURIA FROM A PROSTATIC ABSCESS.*

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Abscesses of the prostate are sufficiently frequent and this source of albumin sufficiently neglected to justify the following report:

Patient.—Mr. X, aged 34, single, general health excellent, for ten years had a chronic gonorrheal urethritis, with slight involvement of the prostate.

Course of Disease.—April, 1906, he developed an acute attack of gonorrhea, which ran a moderately severe course, and at the end of a month the section of the prostate along the deep urethra became involved. It was tender on pressure, but gave no subjective symptoms. The hard, swollen segment appeared to be about the size of an index finger, and was about 2 inches in length. The urine passed after massage contained less débris, albumin and pus cells than were obtained before the acute prostatitis began, probably because the prostatic ducts were encroached on by the inflammatory swelling, and prevented the expression of the secretion.

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* Read before the Fulton County Medical Society, Atlanta, Ga., July 19, 1906.

Massage five days later showed about the same condition, except the part had become more swollen. Patient felt as well as usual and his urine was free from casts and albumin. There was no urethral discharge, but shreds were present in the urine. When he urinated two hours after massage a drop of blood and about a teaspoonful of pus followed the urine. No pain was felt.

For several days there was considerable purulent discharge from the urethra. The urine in all 3 glasses contained much pus and sufficient albumin to give a precipitate, when boiled, and citric and picric acids were added, equal in volume to the entire amount of 4 ounces of urine voided. After massage of the prostate about a teaspoonful of creamy pus escaped from the meatus, and 2 oz. of urine then passed was so albuminous that it completely solidified when boiled. For a week this condition remained about the same, except that the amount of albumin and pus gradually diminished. The discharge became intermittent, but appeared after straining at stool. The urine passed into 3 glasses would as a rule show more pus and albumin in the first and third glasses than in the second, while there was always a distinct increase of both after massage.

An effort was made to obtain urine free from proteid by washing out the bladder and urethra after massage, and having the patient void his urine within ten or fifteen minutes. This failed, as the proteid material secreted by the abscess cavity was so great that the urine passed within ten minutes contained enough albumin to give a precipitate of one-eighth the urine which was scanty, although it contained no casts nor had there been any symptoms of kidney disease. At no time did the patient suffer from the abscess and would not have known of its existence but for the examination. At the end of four weeks there was only a trace of albumin before massage, but a considerable amount of deutero-albumose after expressing the secretion.

Merely an examination of the urine in this case, without reference to the history or the prostate, would have been misleading and inclined one to the conclusion that the large amount of pus and proteid came from a pyonephritis. So high was the percentage of serum albumin that, in spite of the fact that I knew an abscess cavity gave off large quantities of proteid material and that he had an abscess of the prostate which had ruptured into the urethra, I was at first alarmed, thinking perhaps his kidneys were also involved. The subsequent history proved they were unaffected. After three weeks urine could be obtained free from albumin if voided within ten minutes following massage and complete irrigation.

In former papers I have called attention to the fact that prostatic albuminuria might be a source of error in the diagnosis of orthostatic, cyclic, or the so-called harmless or physiologic albuminuria, and also that the presence of prostatic albumin and albumose[1] indicate inflammation and are of value in reaching a diagnosis in mild, obscure cases of chronic prostatitis.

The presence of such a large quantity of pus and proteid in the urine of this patient without any subjective symptoms of prostatic trouble suggests the importance of eliminating abscesses of the prostate along with other conditions in which urinary findings simulate a pus kidney, before making a positive diagnosis of such conditions.

I know of no method of determining with accuracy whether or not some of the albumin does not come from the kidneys in patients of this kind, as it would, of course, be inexpedient to attempt the use of a catheterizing cystoscope or any of the urine segregators. Very significant are the history, the larger amounts of albumin in the first and third glasses with a decided increase after massage of the prostate and the fact that there were no casts or symptoms of kidney disease.

The lesson to be drawn from this patient is that in the past we have devoted too much time making delicate urinary tests and that we have made too little effort to determine the sources of its ingredients. We have too long taken for granted that proteid in urine is necessarily of renal origin.

1004 Century Building.

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[1] Recent observations have shown that a large part of the proteid from chronically inflamed prostates is deutero-albumose. This reacts with nearly all the tests like serum albumin, except with the heat test, the precipitate clearing up when boiled.

POISONING FROM OIL OF TANSY.

NELSON M. WHITEHILL, M.D.,
BOONE, IA.

The maximum dose of oil of tansy is given by most authorities as about eight minims.

Considering the small size of the dose required and the frequency with which it is used by women as an emmenagogue and abortifacient, it is surprising that we do not more often hear of poisoning resulting therefrom. I have watched the literature closely for reports of cases of this kind, but have seen only one reported by Dr. Leipziger[1] of Burlington, Iowa.

From druggists I learn that it has a reputation among the laity as an emmenagogue and that it is used frequently by women and girls who suspect and wish to avoid pregnancy. The two cases which have come to my notice are very similar, and one of them I wish to report.

Both cases occurred in young, unmarried women who, not having menstruated as usual, suspected pregnancy. Later developments proved their diagnoses correct.

The pregnancy was not interrupted.

Patient.—L. C. W., aged 18.

History.—I was called to see her at 10 p. m., and saw her a few minutes after the beginning of a convulsion which must have lasted fully five minutes and came without warning, except a slight nausea. The convulsion resembled very much an ordinary epileptic seizure. Her muscles were all contracted and the jaws so firmly set that it was impossible to use the stomach pump until apomorphin one-tenth grain had been given hypodermically. This produced vomiting and relaxed the muscles. The diagnosis then became easy from the odor of tansy in the vomitus. During the convulsion opisthotonos was marked, the muscles were strongly contracted and respiration was shallow and suspended; pulse was 110 and strong. The pupils were dilated and did not react. She tried to talk, but seemed unable to use her tongue. Large quantities of mucus collected in the throat and bronchial tubes. The face was flushed and seemed swollen. As many as eight or ten convulsions occurred and probably lasted three or four minutes each.

Treatment.—Treatment consisted of chloroform to control the convulsions, apomorphin to produce vomiting, and the vigorous use of the stomach pump followed by salines.

Result.—The patient was unusually drowsy the next day, but the day following she was all right, except that she felt a little weak. She said that she had taken two or three doses of half a teaspoonful each during the evening.

The pregnancy was not interrupted.

Giving Digitalis.—Colbeck is quoted in the *Denver Medical Times* to the effect that the administration of digitalis or any of its allies should always be preceded by a purge, preferably in the form of two or three grains of calomel or blue pill, with half a dram or more of compound jalap powder.

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[1] Iowa Med. Journal, February, 1906.

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SATURDAY, AUGUST 18, 1906.

POLYCYTHEMIA VERA.

There has been described within recent years a symptom-complex characterized especially by cyanosis, enlarged spleen and increased number of red blood corpuscles. Although cases had been reported and the subject had been referred to in the literature previously, it was not until Osler, in 1903, published the results of a thoughtful study of the disorder that it received the attention its importance warranted. Since that time additional cases have been recorded and the clinical account has been supplemented by the pathologic findings in a few cases that have come to autopsy. An admirable description of the clinical and pathologic features of the disorder is given by Dr. John H. Watson[1] on the basis of personal observation in conjunction with a study of the literature of the subject.

The disorder in question continues for many years. It has been observed most commonly at the middle period of life, and the largest number of cases have been in males. The cyanosis is most conspicuous in the face, particularly over the malar eminences, and on the nose, lips and ears. It is present at times also on the upper part of the chest and on the hands and feet. In most cases the spleen is obviously enlarged. Anemia and debility develop gradually. The urine usually contains a trace of albumin. Its color is heightened and an increase in urinary pigments has been found. Headache and vertigo occur early; mental torpor and impairment of memory later.

The blood presents a dark purple, almost black, color. Its viscosity is heightened, while the coagulation time is lessened. The number of red blood corpuscles, the percentage of hemoglobin, the total volume of the blood and the specific gravity are all increased. The number of white cells is relatively diminished, while the percentage of polymorphonuclear leucocytes is notably high. The red corpuscles vary in size, shape and staining capacity, and there appears to be an increased number of nucleated cells. The pulse is full and tense and the blood pressure is raised.

On postmortem examination the minute vessels are found greatly distended with blood. The medium-sized arteries are sclerosed, with thickening of the muscular coat. The left ventricle is generally hypertrophied. In the case specially studied by Dr. Watson the medullary marrow in the long bones was completely transformed from the yellow, fatty to a vivid purple variety. The compact bone was slightly encroached on and the shaft was more brittle than usual. Histologically the fat cells of normal marrow were largely replaced by nucleated red cells in great profusion, myelocytes, eosinophilous nucleated cells and giant cells. The entire tissue was permeated by thin-walled vessels distended with blood. The splenic enlargement was uniform, and, apart from intense vascularity, the structure of the spleen exhibited no abnormality.

In differential diagnosis valvular disease of the heart, especially of congenital origin, also myocarditis, adhesive pericarditis, emphysema and other diseases of the lungs and heart, as well as poisoning with coal-tar products and primary tuberculosis of the spleen, must be excluded, but in all these conditions, as a rule, the number of red blood corpuscles is actually diminished. Treatment has thus far been unavailing and must be essentially symptomatic.

From the clinical picture and the postmortem findings it seems legitimate to conclude that the disorder under consideration is a definite clinical entity whose origin is to be sought in disease of the bone marrow resulting in the production of an increased number of red corpuscles.

MEDICAL HISTORY.

As commonly understood, the special function of the medical historian is to trace the growth of medical knowledge in general. Frequently the historian concerns himself more or less exclusively with the great and epochal achievements in medicine, achievements that often mark the crest of a large wave of progress, and he usually dwells with special fondness on the work and the life of the great masters. Now it is generally believed that biography must ever be one of the main sources for historical material. Events group themselves easily about the chief actors at any stage of progress. And certainly biography is a most interesting and inspiring form of reading; our medical historical literature, with its schedule of facts, dates and names, we fear would seem rather dry and of limited interest were it not that so much of it is biographical.

There seems to be a growing conviction, however, that medical history writing in the past has been too exclusively medical and that the relations of medicine to general culture have been neglected too long. In this country William Browning[1] recently called special attention to the desirability of a departure from the chronology of great medical men and brilliant episodes in medical investigation and discovery as the standard type of medical history. A much more comprehensive conception of medical history is needed. The relations of medicine to things outside of itself, to other sciences and arts, to the general progress of culture; the social and public relations of medical men at various times and in various parts of the world; the life and customs of the practitioner in former days; the development of medical education, especially in our own country at different epochs and under different auspices, these are some of the items in the outline sketched by Browning for the new departure in medical history writing. Browning emphasizes the fact that in the past medicine has held itself more or less apart from the general public, and this attitude is reflected, perhaps, in the fact that medical history in the past has been dealing so largely with things purely medical. The newer history would tend to show a "more open medical life, a closer relation of medicine to the public, an enlargement of the cultural side."

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[1] Liverpool Medico-Chirurgical Journal, July 19, 1906, p. 33.

[1] The Medical Library and Historical Journal, 1905, vol. iii, p. 217.

Last year also saw the publication of a systematic treatise along the lines just indicated, namely, Pagel's *Grundriss eines Systems der medicinischen Kulturgeschichte*,[2] which deals more particularly with German conditions and in which the relations between medicine and other activities are discussed by special topics, e. g., "Theology in Medicine," "Medicine in Theology," "Law and Medicine," "Medicine and Natural Sciences," "Social Medicine," "Medicine and Poetry," etc. It would seem as if this mode of treatment would tend to awaken a more general interest in the historical aspects of medicine. Now, whether it be necessary or desirable to separate this kind of medical history from general medical history may be questioned. Be that as it may, in the future this new or enlarged theory of medical history no doubt will influence medical historical work in various ways. The expression in these two different ways in America and Germany of the same general trend of thought indicates that there is a growing tendency to amplify the scope of medical historical work in the directions outlined and that results of much interest will develop.

THE CALCIUM TREATMENT OF THE SERUM DISEASE.

The peculiar pathologic phenomena, such as urticaria and articular pains, which may occur after the introduction of foreign serum of any kind, have been grouped together under the convenient name of the serum disease. We recently[3] discussed the theories as to the causation of this remarkable condition. Many efforts have been made to prevent this disease, which constitutes an annoying disadvantage incidental to serum therapy of all kinds.

Some ten years ago Wright[4] showed that as the symptoms of the serum disease develop there occurs a diminution in the coagulability of the blood and that calcium salts appeared to have a preventive effect. Hence he suggested that calcium salts should be administered in order to forestall urticaria, etc., and that they should be given also to remove more rapidly these troubles when they have supervened.

Recently the good effects of the calcium salts in these directions, especially the first, appeared to have been realized very satisfactorily in a series of systematic observations by Arnold Netter[5] in Paris on patients injected with diphtheria antitoxin. In one series of 258 cases calcium chlorid was given by the stomach in one-gram doses on the day of the injection and for the two following days. Of those so treated, 12 patients had eruptions, while of the 258 controls who received no calcium 35 had eruptions. The calcium had no harmful effect whatever on the action of the antitoxin proper, as the mortality of the two groups of cases was the same.

It would seem desirable to make further studies on this line in order better to determine the dosage of the calcium in proportion to the age of the patient and the quantity of serum used, and also the most desirable time for its administration with reference to the time of the injection of the antitoxin. Thus from the sixth to the tenth day after the injection would seem to be a favorable period for the calcium treatment. Either the chlorid or the lactate of calcium may be used. There is abundant opportunity for the thorough testing of this matter in our hospitals for acute infectious diseases, and it is to be hoped that attending physicians will take it up in a proper manner.

VENEREAL DISEASES AND THE PUBLIC HEALTH.

The homely adage, "An ounce of prevention is worth a pound of cure," is rapidly acquiring new and stronger significance. If it is true that "there is no such thing as science for the million," it does not follow that society in general can not be greatly benefited by being enlightened on matters regarding hygiene and the prevention of disease.

The work done this year in the Section on Hygiene and Sanitary Science was of great value, and much good is to be expected from the deliberations of the committee appointed by the Association to outline a plan of organization of a department of public instruction. Already societies of social hygiene have been formed in New York, Philadelphia, Chicago and elsewhere, here and abroad, for the purpose of checking the spread of venereal diseases.

No ailments are more common than these, yet there is none more insidious and pestilential. The number suffering from them can not be accurately determined. Some one has estimated that five million people in this country are or have been tainted with syphilis; this is probably an overestimate, but the number is enormous. The number of those affected with gonorrhea is undoubtedly much greater than of those suffering from syphilis. Yet the subject has, until recently, received little attention as compared with its far-reaching consequences.

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[2] Berlin, S. Karger, 1905.
[3] The Journal, A. M. A., April 7, 1906, p. 1034.
[4] Lancet, Jan. 18, 1896, and Sept. 19, 1896.
[5] Compt. rend. Soc. de biol., 1906, vol. lx. p. 278.

No statistics can measure the destructiveness of these diseases. Death rates indicate but a fraction of their results, but every medical man knows the terrible consequences that too often follow them. The horrible mutilation and disfigurement of neglected syphilis is not less dreadful than the later outcropping of the disease after the interval of hope and forgetfulness, nor less disastrous than its perpetuation in the lives of another generation.

Gonorrhea, often considered proper subject for jest and ridicule, fills our institutions of the blind with its victims and brings to the operating table of the gynecologist the largest proportion of his patients, the innocent sufferers from the "indiscretion" and ignorance of youth. The effect of this festering mass of disease on the future welfare of our race is more than a subject for speculation. Its destructiveness has been observed in the past, and there is reason to believe that it is even now threatening that enormous vitality which has given supremacy to the Anglo-Saxon peoples.

Perhaps one reason why this subject has not received the attention it deserves is its very extensiveness. It touches every rank and grade of society; it goes into the home and drags out the family skeleton. It involves more than a scientific or even an economic question; it brings in, wholesale, the problem of social morality and the controllability of sexual passion. It is excused on the ground of natural impulse or the violence of human affection. It is part of a condition to be recognized but not discussed; it is "taboo" in good society; only to be jested about over the wine or hinted at, with bated breath, over the teacups. Venereal diseases are most insidious. They are born of the night and go through life hidden. The consumptive carries his brand on his forehead, and though still bound by ties of love and affection to those dear to him, he must be shunned like a leper and segregated as dangerous to the welfare of society. The sufferer from "private disease" is usually, to outward appearance, sound of body, though he may be physically and morally rotten. His appearance, therefore, does not create apprehension and society accepts him without question.

The nature and results of venereal afflictions should be made common knowledge. Ignorance is the nursery of vice and suffering, and there is no class of diseases whose awful consequences the public comprehends less than these.

The remedy lies in education in the broadest meaning of the word.

FOURTH OF JULY INJURIES AND TETANUS.

In this issue appears our fourth annual analysis of the results of the celebration of Fourth of July. With it appear summaries of the analyses of the three previous years, and by a comparison of these sets of figures can be obtained a valuable estimate of the results of the agitation which has been kept up since 1903, when The Journal published the statistics of the cost of our Independence day celebration.

We may fairly divide the casualties of the Fourth into two classes, tetanus and injuries not associated with tetanus. The medical profession can be considered directly responsible only for some of the cases in the first class, while the responsibility for the injuries that cause the tetanus, as well as for all the other calamities, may be justly charged to popular ignorance and carelessness and to official incompetence and legislative indifference.

When we study the figures of cases in these two classes, we find a most striking difference. Tetanus cases, which numbered 415 in 1903, dropped in 1904 to 105, in 1905 to 104, and in 1906 to 89. This improvement is not due to lessened opportunity for tetanus infection, for the total number of Fourth of July injuries reported has risen steadily from 4,449 in 1903 to 5,466 in 1906. We have the best of grounds for believing that this great decrease in tetanus and the saving of over three hundred lives yearly is due chiefly to improved care of the dangerous blank cartridge wounds. Proper cleansing and drainage have prevented many cases of tetanus; prophylactic use of antitoxin, the only certain safeguard, has prevented many more. In this issue we publish most conclusive figures showing the value of antitoxin prophylaxis, compiled by the Chief Dispensary Physician of the St. Louis City Health Department, Dr. H. J. Scherck, which support fully the attitude we have long maintained concerning the absolute necessity for the prophylactic use of antitoxin in all severe injuries caused by explosives. It will be noticed in our statistics that the number of cases of tetanus from wounds other than blank cartridges, of which the cannon cracker is the worse offender, has remained practically constant, so that this year these cases exceeded, for the first time, the number due to blank cartridges, whereas in 1903 they formed but about one-eighth of the total. Evidently the agitation concerning the blank cartridge has borne fruit, but the danger of tetanus from other causes has not been so fully appreciated. There is room for improvement along this line.

As to the eighty-nine cases of tetanus that did develop this year, we note with pleasure, on reading the newspaper reports, an absence of the once familiar expression: "The wound was dressed by a doctor, who said it was not dangerous." Nearly all of the eighty-nine cases, so far as we can ascertain, developed in persons who had received no medical attention until after the onset of the tetanus. On this feature of the year's statistics the profession may look for just congratulation. The chief work that lies before us is in the direction of encouraging popular education and municipal activity. If each medical society would take it on itself to see that everything possible in the way of legal restriction of dangerous methods of Fourth of July celebration is accomplished in its district, and would assist local editors in warning the public of the consequences of such methods of celebration, the improvement in the figures for injuries and death following the next Fourth might be as greatly improved as the figures for tetanus have been improved since 1903.

THE ETIOLOGY OF ECZEMA.

Despite the prevalence and the frequency of eczema, and notwithstanding the vast amount of study that has been given to the subject, it must be admitted with chagrin that the etiology of this disease is as yet far from settled. As a matter of fact, differences of opinion exist, even among experts, as to the precise limitations of the disorder, and, although by the majority it is considered a clinical entity, by a few it is looked on as merely a symptomatic manifestation. In a discussion of this subject Dr. J. M. H. MacLeod[1] points out that, according to prevailing views as to the nature and causation of eczema, it is variously thought to be (1) of parasitic origin, (2) due to a variety of irritants, internal or external, acting in a predisposed individual, (3) the result of nervous derangement in a predisposed person. It is almost universally agreed that the primary essential is a special predisposition or idiosyncrasy on the part of the individual. Age, sex, race and climate are without apparent influence in the etiology. Heredity may be a predisposing factor, in so far as it is responsible for delicacy of the skin, while states of enfeebled health, resulting from derangement of alimentary, renal or nervous function, may operate in a similar manner by lowering the resisting power of the skin and rendering it more susceptible to the action of irritants. Various pathologic conditions of the skin, such as xerodermia, ichthyosis, senile skin, likewise predispose to attacks of eczema. When the predisposition, whether congenital or acquired, is present, the disease may be excited by divers irritants acting either from within or from without.

MICHIGAN CHECKS DISREPUTABLE ADVERTISING.

The Michigan Legislature, in 1903, passed an act giving to the State Board of Registration the power to revoke the license of any physician publishing any disreputable or offensive advertisement. This law has been declared constitutional by the Supreme Court of Michigan. This is the end of a long contest against the law by the disreputable advertisers and affords a precedent which we hope will be extensively utilized. In the present reform enthusiasm it would be well if the advertisements of quacks attracted some share of the public attention. These vampires work on the ignorance and credulity of their victims first, and later, after they have got them in their power, they finish up the job by working on their fears. From first to last these individuals are frauds, and it is certainly not good public policy to permit the free exercise of their criminal talents. Revoking the license will only go a little way, however. It only hits those who have a license. A law similar to the Michigan one should be passed in every state in the Union, but further than this, there should be enactments making not only disreputable advertisements, but any other kind of quack advertisement intended to defraud, a statutory criminal offense.

HEALTHFULNESS OF THE LAKE REGION.

Many years ago, in the pre-aseptic days, a prominent Chicago surgeon published a paper showing that better results in surgery were obtained in the lake region than in other parts of the country. This paper was the subject of some dispute and discussion at the time. Now comes Chicago's assistant health commissioner, Dr. F. W. Reilly, with figures comparing the death rate of the five principal lake cities, Chicago, Cleveland, Buffalo, Detroit and Milwaukee with the other principal cities of the country situated on the seacoast and on rivers, and showing a decided advantage in favor of the former. From his figures it appears that the death rate of the river cities, Philadelphia, St. Louis, Pittsburg, Cincinnati, New Orleans and Washington, is 35 per cent. higher than the rate of the lake cities mentioned, and that the four great seaports, New York, Boston, Baltimore and San Francisco, is 31.4 per cent. higher. While these facts may be questioned by some and do indeed seem rather striking, there are certain conditions that may help to explain them. Every one of the five lake cities mentioned is situated directly on the shores of a large body of fresh water; Detroit is the only apparent exception, but it is practically on the shore of Lake St. Clair, which washes its northern portion. All these cities obtain their water supply from these lakes, and though it may be to some extent locally polluted, the risks of such pollution are, at the worst, less than those in the river cities and those on the seaboard which have to obtain their supply from inland sources. San Francisco alone of the seaboard cities can be said to be situated almost on the ocean shore. The others all have more or less deep inland running harbors, but the conditions here and at New Orleans, which is also situated near a considerable body of fresh water, are somewhat special and may modify the death rate unfavorably in one way or another. One thing also appears reasonably probable: The lake climate, while somewhat irritating in certain portions of the year, is on the whole a healthy one. The diseases it favors are not those that most increase the mortality rate, and the effect of a large body of practically sterile water, much more sterile indeed than ocean water, can not but be favorable to health.

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[1] Practitioner, July, 1906, p. 98.

Medical News

ARIZONA.

Personal.—Dr. William Duffield, Phoenix, Superintendent of Health of Arizona, is about to move to Los Angeles, Cal.

State Hospital Filled with Mexicans.—Arizona for several years has been reported to have the highest percentage of insane of any subdivision of the United States. It is notable, however, that although the Mexican population of the territory is only one-sixth of the total, more than one-half of the insane of the territorial asylum are Mexicans. An investigation is now being made of the charge that Mexicans have been smuggled across the border simply for the purpose of securing treatment in the territorial asylum. It is understood that this work will be continued in the county poorhouses and hospitals, and the Mexican government, after representations made through diplomatic channels, has signified its entire willingness to receive the Mexican insane, and is acting through its consul at Nogales.

ARKANSAS.

Medical Society Will Protect Visitors.—The Hot Springs Medical Society proposes to take up a fight against "drummers," not by attempting to secure legislation, but by causing the enforcement of the laws on the statute books of the city and state.

Hospital News.—A contract has been let for the erection of a four-story building for the medical college and hospital for the College of Physicians and Surgeons, Little Rock, to cost $50,000.——The ladies of Helena have organized an association for the purpose of establishing a free hospital in that city.

How Drummers Work.—The "drummers" of Hot Springs have now instituted a system which makes it more difficult for the officers of the law to proceed against them. In the old days a man would approach a visitor and "drum" him to the doctor by whom he was employed; but now one drummer meets the visitor at the train and takes him to a boarding-house, another recommends a doctor, a third, usually introduced by the second drummer, introduces him to a doctor, and a fourth may persuade him to take a few baths before consulting the doctor. In this way the bath houses can not be held responsible and it is exceedingly difficult to make a case against the drummers.

To Secure Enforcement of Gantt Law.—The Garland County-Hot Springs Medical Association has devised a plan to secure the proper enforcement of the anti-drumming law by making it a remunerative business for the officer or officers who are instrumental in securing the conviction of violaters of the law. This society offers and agrees to pay a reward of $500 for the conviction of any physician or surgeon violating the law, to be divided as follows: $125 for each conviction in the Hot Springs police court; $175 for each conviction in the Circuit court of Garland County or in any county to which the case may be brought on a change of venue, and $200 additional for the affirmation of each and every conviction by the Supreme Court of the state. The society further agrees to pay a reward of $1,000 for the convicition of any person convicted of perjury committed in giving testimony as a witness at any trial for the violation of this law.

Faculty of University Medical Department.—The twenty-eighth annual session of the Medical Department of the University of Arkansas, Little Rock, will open October 1. The following officers and faculty have been elected for the coming year: Edwin Bentley, M.D., president; James H. Lenow, M.D., Edwin R. Dibrell, M.D., Frank Vinsonhaler, M.D., and Frank L. French, M.D., secretary of the board of directors; Professors—Claiborne Watkins, M.D., emeritus professor of medicine; Edwin Bentley, M.D., dean and professor of principles and practice of surgery; James H. Lenow, M.D., professor of diseases of genitourinary organs; Louis R. Stark, M.D., professor of gynecology; Edwin R. Dibrell, M.D., professor of medicine; Frank Vinsonhaler, M.D., professor of ophthalmology and otology; Thomas N. Robertson, A.B., LL.B., professor of medical chemistry and toxicology William H. Miller, M.D., professor of obstetrics; Frank L. French, M.D., secretary and treasurer, and professor of general descriptive and surgical anatomy; Carle E. Bentley, M.D., professor of principles and practice of surgery and clinical surgery; John R. Dibrell, M.D., professor of clinical microscopy and bacteriology; William C. Dunaway, M.D., demonstrator of anatomy; Anderson Watkins, M.D., professor of principles and practice of surgery and adjunct to chair of clinical surgery; Caleb E. Witt, M.D., professor of materia medica, therapeutics, hygiene and botany; Morgan Smith, M.D., professor of physiology, and E. E. Moss, A.M., LL.B., professor of legal medicine. Lecturers—Morgan Smith, M.D., lecturer and clinical instructor on diseases of children; R. L. Russell, M.D., lecturer and clinical instructor on practice of medicine; O. K. Judd, M.D., lecturer and assistant to chair of anatomy; Mahlon D. Ogden, M.D., lecturer on gross and microscopical pathology; Alexander E. Harris, M.D., lecturer on clinical medicine and physical diagnosis; James L. Dibrell, M.D., lecturer and instructor in electrotherapeutics. *x*-ray therapy, and dermatology; Oscar Gray, M.D., assistant to chair and clinical instructor of gynecology; John G. Watkins, M.D., assistant to chair of otology and ophthalmology; Arthur R. Stover, M.D., assistant to chair of practice of medicine; James C. Cunningham, M.D., assistant to chair of obstetrics; James L. Dibrell, M.D., assistant to chair of bacteriology; M. D. McClain, M.D., assistant to chair and clinical instructor of diseases of genitourinary organs;; Milton Vaughan, M.D., assistant to chair of materia medica and therapeutics; C. V. Scott, M.D., assistant to chair of clinical surgery; Aaron L. Carmichael, M.D., assistant demonstrator of anatomy; Oscar Gray, M.D., assistant demonstrator of anatomy; M. D. Ogden, M.D., assistant demonstrator of anatomy; S. Smith Stewart, M.D., assistant demonstrator of anatomy; W. M. McRae, Ph.G., instructor in chemical laboratory, and William Goodwin, M.D., prosector of anatomy.

CALIFORNIA.

Board of Health Praised.—At a meeting of the San Francisco Board of Health, August 2, a letter from the secretary of the State Board of Health was read, congratulating the Health Commission of San Francisco on its efficient work during and since the great calamity, and stating its belief that the good health of the city and freedom from contagious diseases was largely due to the scientific and indefatigable work of the commission.

ILLINOIS.

Personal.—Dr. Franklin E. Wallace, Monmouth, left for Europe August 15.——An operation was performed at St. Louis, August 3, on Dr. J. Bernard Carey, Donnellson, for vesical disease.

Judgment Rendered Against Phenomenal Kraus.—The State Board of Health has filed 31 suits of $200 each against "Phenomenal" Kraus, the head of an advertising medicine concern. Judgment was rendered against him for $1,000, in Peoria, two weeks ago.

Public Bathing Beach for Moline Assured.—The free public baths, the establishment of which the health officer of Moline, Dr. R. C. J. Meyer, has urged for a long time, are now assured. A building is to be constructed to cost more than $1,000, which will contain a department for men and one for women, and will in addition be used as headquarters for the Moline ship's crew of the Illinois Naval Reserve.

Phthisis Camp at Dunning.—A resolution was passed unanimously, August 13, by the county board, granting the Chicago Tuberculosis Institute the privilege of establishing a camp for the benefit of consumptives in the grounds of the Cook County Institutions, Dunning. The camp will be kept open until November 1, and the first inmates will be twenty female patients. Drs. Harry B. Favill, Ethan A. Gray and Theodore Sachs will be the attending physicians.

Prompt Action Checks Epidemic.—The Health Commissioner of Moline, Dr. Robert C. J. Meyer, informs us that in the case of the family afflicted with diphtheria, in which the father wished to depend on divine healing and witch hazel, as noted in The Journal of July 28, he at once placed a physician in charge. By good care and the liberal use of antitoxin, not a death occurred from the disease, although seven children in the family were infected, and furthermore, no new case of diphtheria developed outside of the family, in spite of the lack of preliminary precautions.

Chicago.

Loan for Hospital.—The Swedish-American Hospital Association, located at Green and Sixtieth streets, has obtained a loan for $35,000, for ten years, at 5 per cent.

Personal.—Dr. Samuel R. Slaymaker has gone to Europe.——Dr. and Mrs. Edson B. Fowler have returned after a year in Europe.——Dr. Ira Frank, who recently received severe injuries in an automobile accident, is reported to be slowly improving.

Decrease in Communicable Diseases.—There was a decided decrease in the number of contagious and infectious diseases reported last week. There were 21 fewer cases of diphtheria and 19 fewer cases of scarlet fever, and the total of 96 is 45 fewer than the total for the week ended August 4.

Hospital Report.—The seventeenth annual report of Wesley Hospital shows that since 1901 the hospital has grown from an institution of 28 to one of 150 beds, and that now more than 3,000 patients are cared for annually. The total number of operations performed during the year was 2,082, and 691 or 22 per cent. of the total number received help from the free bed fund.

Deaths of the Week.—The number of deaths for the week ended August 11, was 603, 102 more than for the preceding week, and 64 more than for the corresponding week of 1905. The excessive humidity was undoubtedly responsible for this increased mortality, which has been more among the young and those suffering from chronic diseases. The death rate for the week is equivalent to an annual mortality of 15.34 per 1,000. Of the deaths reported 192 were of infants under 1 year of age; 56 of children between 1 and 5, and 103 of individuals over 60. There were 14 more deaths from nephritis, 5 more from consumption, 34 more from acute intestinal diseases, 13 more from nervous diseases, 4 more from sunstroke, and 27 more from violence than in the preceding week. The chief death causes were: Acute intestinal diseases, 150; consumption, 63; violence, including suicide, 51; nephritis, 48; pneumonia, 29; cancer and heart diseases, each 26; and nervous diseases, 23.

INDIANA.

Hospital Dedicated.—The Lutheran Hospital, Fort Wayne, was dedicated August 6.

Smallpox.—Two cases of smallpox are reported from Kendallville, and the infected houses are under strict quarantine.

Personal.—Dr. T. Henry Davis, city health officer of Richmond for 34 years, has resigned, and Dr. Charles S. Bond has been appointed to succeed him.——Dr. Milton S. Hopper, Lafayette, was operated on for appendicitis, August 3.——Dr. Thomas A. Kearns, Muncie, has returned from Europe.

Sanitary Regulations of Schools.—The State Board of Health has directed that the following regulations be complied with before the schools in the state are opened: Windows are to be so arranged that the sashes will move easily in either direction; blinds of some dark color are to be placed around the windows, galvanized iron guards are to be placed around the stoves, separate closets for both sexes are to be erected, kept in sanitary condition, and wood walks built to them from the school buildings. The board also recommends that the basement of the school buildings be enclosed with solid walls and have a cement floor, but this is not mandatory.

Inspection of Slaughter Houses.—The Secretary of the State Board of Health has prepared printed forms to be sent to the health officers of the different cities and towns of the state in connection with the inspection of the slaughter and packing houses. Among the points covered by these questions are the following: "Location—Is it near to habitations; how far from corporation, etc.? Building—Is it wood, brick, etc.? Describe the immediate surroundings and approach. Are hogs fed on the offal? If so, are they killed for food or sold? Describe condition of hog yard. Are animals for slaughter properly cared for and inspected? Is tallow or lard rendering done cleanly and skillfully? Are flies excluded, and is the meat cooled in cold storage? Are tanking operations carried on? If so, are they sanitarily conducted, and is an open or closed tank used? Are sausages and chopped meats prepared, and if so, is the work cleanly and properly done? Are chemical preservatives used? Is the meat well protected from flies when hauled away, and is it handled in a cleanly manner?"

KENTUCKY.

Proposed Sanitarium.—In accordance with the action taken by the general association at the recent conference in Richmond, the Southern Baptist Church of Kentucky has taken the initial steps toward establishing a Baptist Sanitarium in Louisville.

College Commencement.—The annual commencement exercises of the Medical Department of Kentucky University, Louisville, were held July 31, when a class of 84 received diplomas from President Jenkins. The address of the evening was delivered by Rev. Charles J. F. Anderson, M.D., of Virginia.

Personal.—Dr. A. D. Park, Rockport, is ill with typhoid fever.——Dr. Ap. Wright, Fox Creek, who was operated on early in July for appendicitis, has returned home.——Dr. Jouett Menefee, an interne of the City Hospital, Louisville, has resigned.——Dr. Henry H. Duke, Louisville, has been appointed assistant surgeon general of the United Sons of Confederate Veterans.

MAINE.

Graduating Exercises.—At the graduating exercises of the Medical School of Maine at Bowdoin College, Brunswick, the address to the class was delivered by Rev. Raymond Calkins, Portland, and President Hyde conferred diplomas on a class of 17.

Maine Sanatorium.—The Maine Sanatorium Association, Hebron, for the reception of people infected with incipient tuberculosis, opened its first building in the latter part of 1904. This building had accommodations for only 18 patients. At a recent meeting of the trustees it was voted to have a new building, costing about $13,000, to accommodate 24 additional patients. This will bring up the capacity of the institution to about 50 patients.

MARYLAND.

Baltimore.

Violent Deaths.—During the two weeks ended August 11 there were 54 deaths reported from violence in Baltimore.

Accident.—Dr. William C. Kloman fell from a street car August 4 and dislocated his right shoulder and cut his head.

National Guard Changes.—Major St. Clair Spruill, surgeon Fifth Maryland Infantry, has resigned, and Captain S. Griffith Davis, assistant surgeon, will be commissioned major and surgeon in his place.

Eminent Chemist Dead.—Dr. Gustavus W. Lehmann, chief of the Chemistry Department of Baltimore and United States Government chemist for the port of Baltimore, a graduate of the University of Wiesbaden, Germany, died at his home in Baltimore, August 5, aged 61.

Baltimore Travelers.—Dr. Arthur M. Shipley has sailed for Europe.——Dr. Eugene McE. Van Ness is in England.——Dr. Ira Remsen is spending the summer at Trout's Neck, Maine.——Dr. Charles W. McElfresh is taking a trip to Pittsburg, Chicago, and Rochester, Minn.

Library Report.—The report of the library of the University of Maryland shows that 1,080 volumes were added during the last year, making a total of more than 6,280. The largest addition was the Miltenberger collection. There are now 46 medical periodicals on the subscription list. The library is open during the year free to all readers, but a small fee is charged to outsiders for borrowing the books.

MASSACHUSETTS.

Hospital Dedication.—The dedicatory exercises of the Woronoco surgery, connected with Noble Hospital, Westfield, were held August 29.

Reorganization of Sanatorium Staff. — The trustees of the State Sanatorium for Tuberculosis, Rutland, have agreed on a plan for the reorganization of the staff. It is proposed that the visiting physicians be dropped and that the immediate management of the institution be vested in a single resident medical expert as superintendent, who will have under him assistants representing the homeopathic school of medicine as well as the regular profession.

Disposal of Boston Garbage.—The Boston Board of Health recently received a petition from business men relative to a change in the manner of handling the garbage of the city. For many years it has been brought in wagons to the wharf, transferred to scows, and then carried out to sea and dumped. The neighboring business men complain that the odor from the garbage on the wharf is extremely offensive. The board expressed its desire to remedy or abate the nuisance.

Personal.—Dr. William R. Lyman, Worthington, has been nominated as associate medical examiner of the second Hampshire district, vice Dr. William J. Parmalee.——Dr. George A. Bancroft, Natick, has been nominated associate medical examiner for the eighth Middlesex district, vice Dr. William T. Richardson, resigned.——Dr. J. F. Alleyne Adams, Pittsfield, has been appointed a trustee of the State Sanatorium for Tuberculosis, Rutland.——Dr. Edward H. Place, Boston, suffered amputation of a finger for septicemia, due to the bite of a child suffering with diphtheria.

MINNESOTA.

Sanitarium Established.—The Rochester Sanitarium Company has organized and purchased a building which will be converted into a sanitarium for the convenience of the patients of St. Mary's Hospital. The building is to be enlarged and remodeled at an expense of $35,000.

Association Meets.—The Southern Minnesota Medical Association held its annual meeting at Winona, August 10, and elected the following officers: President, Dr. Amos L. Baker, Kasson; vice-presidents, Drs. George J. Tweedy, Winona, and Milan J. Hart, Le Roy; and secretary and treasurer, Dr. William T. Adams, Elgin (re-elected).

State to Inspect "Patent Medicines."—The State Dairy and Food Department has announced that a careful examination and analysis of all "patent medicines" on the market will be made, that the contents of each medicine will be published in the weekly *Bulletin*, and the presence of opiates, alcohol, or other deleterious substances made known.

Supreme Court Confirms Decision.—By an order of the Supreme Court, July 27, concerning Dr. Theron H. Bly, Minneapolis, convicted of having performed a criminal operation, the decision of the lower court was sustained. Dr. Bly must, therefore, serve his sentence of imprisonment for three and one-half years in the state penitentiary unless the Supreme Court allows an appeal.

MISSOURI.

Smallpox at Walker.—At Walker, near Nevada, eight cases of smallpox are reported in two houses. Both houses are under quarantine.

Roof Promenade for Hospital.—The roof of the new addition to the Emergency Hospital, Fourteenth and O'Fallon streets, St. Louis, 34 by 44 feet, is to be used as a promenade for the patients.

St. Louis Deaths.—During the week ended July 28, 182 deaths were reported. Diseases of the digestive tract caused 24 deaths; tuberculosis, 21; violence, including suicide, 15; and heart disease, 14.

Personal.—Dr. Willard Bartlett, St. Louis, was operated on July 5, at St. Anthony's Hospital, Peoria, and is making satisfactory recovery.——Dr. H. R. Lucas has been appointed assistant surgeon for the C. and E. I. R. R., at Chaffee.

Free Diphtheria Antitoxin.—The Health Department of St. Louis will furnish free of charge to patients who are financially unable to pay, diphtheria antitoxin. The patient may remain under the care of his physician, but a dispensary physician will administer the antitoxin.

Sanatorium Corner Stone Laid.—The corner stone of the State Sanatorium for the Treatment of Incipient Tuberculosis was laid at Mount Vernon with appropriate exercises August 15. Drs. William Porter and George Homan of St. Louis, the governor, attorney general, and secretary of state, delivered addresses.

Personal.—Dr. Albert H. Hamel, De Soto, has been appointed a member of the State Board of Health for a term of four years.——Dr. M. T. Ricketts, St. Joseph, has been elected president and Dr. William S. Carrion, St. Joseph, secretary of the Interstate Medical Society, which was organized in Kansas City, July 27, by the colored physicians of Kansas and Missouri.

Free Clinic.—The Health Department of St. Louis has opened a clinic for communicable lung diseases, and all physicians of the city have been requested to refer patients among the worthy poor to this clinic for treatment. It is held at the City Dispensary, Eleventh and Chestnut streets, and is open from 7 to 10 a. m., from 4 to 6 p. m., and from 7 to 8 p. m. week days, and from 9 to 10 a. m. Sundays. Dr. Louis M. Warfield is assistant dispensary physician in charge.

NEBRASKA.

Personal.—Dr. Orville Rockwell has been appointed assistant physician in the Nebraska Sanitarium, College View.

Asylum News.—Dr. Frank S. Nicholson, assistant superintendent of the Norfolk Hospital for the Insane, vacated that position July 30, and Dr. H. Douglas Singer has assumed the duties of the position.

New Hospitals.—Ground has been broken at Broken Bow for a new $10,000 hospital to be erected under the supervision of Dr. George F. Bartholomew.——Work on the new Methodist Hospital, Omaha, which was stopped two years ago on account of lack of funds, was resumed July 27.

NEW YORK.

Personal.—Dr. Jacob Fisk, Canajoharic, has gone to Europe.——Dr. John Van Duyn, Syracuse, was recently injured in a collision between a street car and his automobile, and suffered severe scalp wounds.

Deaths and Their Causes.—During June 9,937 deaths were reported in the state, which is equivalent to an annual death rate of 14.5 per 1,000. Of the decedents, 1,836 were under one year of age, 1,940 between one and five years of age, and 2,839 sixty years and over. Epidemic diseases caused 656 deaths, of which 173 were due to diphtheria, 128 to measles, 72 to cerebrospinal meningitis, 71 to typhoid fever, 69 to whooping cough, 65 to scarlet fever, 40 to erysipelas, 22 to influenza, 13 to malaria, and 3 to smallpox. Among the principal death causes were, tuberculosis, 1,141; pneumonia, 868; nephritis, 635, and infantile diarrhea, 441.

New York City.

Summer Home Burned.—The summer home of Dr. James M. Winfield, Brooklyn, at Hampton, Conn., was struck by lightning and burned July 10. The loss was about $5,000, covered by insurance.

Polyclinic Clerk Sentenced.—In the Court of General Sessions, George W. Curtis, defaulting finance clerk of the Polyclinic Medical School and Hospital, was sentenced to imprisonment for three years and six months at the state penitentiary, Sing Sing.

Hospital Dedicated.—With appropriate exercises, the new hospital building in connection with the sanitarium for Hebrew children at Rockaway Park, was dedicated July 28. The chief address was made by Dr. Samuel Kohn, president of the Hebrew Sanitarium. The building is frame, two and a half stories high, and has accommodation for about 75 patients.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 4, 406 cases of tuberculosis, with 157 deaths; 159 cases of diphtheria, with 17 deaths; 144 cases of measles, with 10 deaths; 133 cases of typhoid fever, with 17 deaths; 57 cases of whooping-cough, with 12 deaths; 56 cases of scarlet fever, with 4 deaths; 14 cases of cerebrospinal meningitis, with 6 deaths, and 8 cases of varicella, a total of 977 cases, with 223 deaths.

No Typhoid Epidemic.—There has been some alarm because of an increase in the number of typhoid cases, but the health department sees no need for alarm, as typhoid is an autumnal disease. Last year there were only 172 cases reported in July in Manhattan, while in the three succeeding months the figures rose to 313, 359 and 210, respectively. All persons are advised to boil the water coming from faucets and used for drinking purposes until there is adequate filtration.

Personal.—At the annual meeting of the American Laryngological, Rhinological and Otological Society, held in Kansas City, Dr. Wendell C. Phillips was elected president.——Dr. William E. Beardsley, Brooklyn, accompanied by his wife and daughter, is preparing to take a vacation trip through British Columbia.——Dr. William Adler, a sanitary inspector, was assaulted during the performance of his duties by a janitor who resented what appeared to him to be undue interference.

Victory Over Mosquitoes.—Under the direction of Dr. Doty, who secured an appropriation from Mayor McClellan of $17,000, Staten Island has been practically rid of mosquitoes. An area of salt marshes equal to twenty square miles has been drained and transformed into solid ground. It is estimated that 230 miles of ditches, ten inches wide by two feet deep, have been dug this summer. Literature giving directions for the care of private premises directed toward the prevention of the propagation of mosquitoes has been distributed.

OHIO.

Typhoid Fever.—Typhoid fever is increasing to such an extent in Cincinnati that the use of two additional wards for the overflow in the City Hospital has been rendered necessary.

Health Board Abolished.—The City Council of Hamilton has abolished the Board of Health and vested its rights, powers and duties in a Board of Public Service.

Hospital News—The Crawford County Hospital, Bucyrns, was opened August 1. The hospital is in charge of Dr. W. C. Gates, is open to all physicians, and has accommodations for twenty patients.

Smallpox.—The Secretary of the State Board of Health, in his annual report, states that since 1899, there have been 29,457 cases of smallpox in the state, and 890 deaths, or a mortality of about 3 per cent.

Ill and Injured.—Dr. Lewis M. Early, Columbus, is convalescent after amputation of his left index finger.——Dr. John H. Lowman, Cleveland, who was operated on for appendicitis July 23, is making a good recovery.——Dr. Francis W. Johnson, Cincinnati, is seriously ill at his home.

Personal.—Dr. Charles D. Hauser, Youngstown, returned from Europe July 31.——Drs. Oral Tatge, Columbus, and Dr. J. R. Montgomery, Steubenville, have been appointed to the medical staff of the Massillon State Hospital, vice Drs. Harry

F. Vaughan and James M. McGeorge, resigned.——Dr. H. S. Rochester, Columbus, left August 9 for the Philippine Islands, where he will enter the government service as an interne in the Manila General Hospital.

OKLAHOMA.

Hospital Addition.—Dr. Joseph B. Rolater, Oklahoma City, announces that he will soon make an addition to his hospital, to cost $10,000.

Personal.—Dr. Gregory A. Wall, Oklahoma City, recently suffered a severe injury of the ankle in a runaway accident.——Dr. L. Haynes Buxton, Oklahoma City, is taking a trip to New York and Toronto.——Drs. Archa K. West and H. Coulter Todd have been re-elected dean and secretary, respectively, of the faculty of College of Medicine of Epworth University, Oklahoma City.

Hospital Corps Transferred.—The Hospital Corps of the National Guard has been transferred, by order, from Woodward to El Reno. Captain Floyd H. Racer, Woodward, assistant surgeon, has been commissioned major and surgeon and Lieutenant Fred H. Clark, assistant surgeon, El Reno, has been made captain and assistant surgeon. Dr. Hugh Scott, Waukomis, has been appointed assistant surgeon with the rank of lieutenant.

PENNSYLVANIA.

Personal.—Dr. Jackson Taylor, Coatesville, is suffering from a fractured arm, the result of the overturning of his automobile.

Donation to Library.—Major James Evelyn Pilcher, Carlisle, has donated 25 cases of books to the Harrisburg Academy of Medicine.

Hospital Struck by Lightning.—The Good Samaritan Hospital at Lebanon was struck by lightning August 7. The ceiling in the men's ward was torn down and every room was filled with sulphurous smoke. The patients were panic-stricken, but none was injured.

Smallpox.—More than 20 cases of smallpox are reported from Newton, and the county board of health has closed two streets and quarantined the portions of the town where the disease exists.——Smallpox has also been reported to the state medical inspector, Dr. Michael W. Raub, Lancaster, from Columbus, Creswell and near Mountville.

Diphtheria and Antitoxin.—Reports of the antitoxin division of the State Department of Health show that the death rate of diphtheria for all cases treated with antitoxin was 3 per cent. No deaths were reported where the instructions of the commissioner as to the liberal use of antitoxin twenty-four hours after the beginning of the attack were followed.

Physicians Ill.—Dr. George Noonan, Meadville, is seriously ill in St. John's Hospital, Pittsburg.——Dr. John J. Cannan, Bradford, who has been seriously ill, is convalescent.——Dr. William H. Lauman, Mount Holly, who has been critically ill with heart disease, is improving.——Dr. Horace B. Heysham, Norristown, who has been confined to his house for several months, has recovered sufficiently to go out.

Typhoid Fever.—Typhoid fever is reported to be increasing in Allegheny and the health officer is devoting his entire energy to reducing spread of the disease to the minimum.——During the first six months of the year, 2,491 cases of typhoid fever in Pittsburg were reported and during the corresponding period of last year, 858 cases. The greatest increase occurred during the first four months of the year. The water supply of Pittsburg and Allegheny is said to be contaminated by the sewage and the surface waters

Personal.—Dr. Charles A. O'Reilly has resumed practice at Strafford.——Dr. Wiliam R. Thompson has been elected president, Dr. R. S. Stewart vice-president, Dr. Thomas F. Cashman secretary, and Dr. David H. Lewis treasurer of the City Hospital Association of Washington.——Dr. Horace E. Westhaeffer, medical examiner for the Pennsylvania system at Williamsport, has been put in charge of the Monongahela division, with headquarters at Monongahela City.——Dr. Lee B. Woodcock, Scranton, has sailed for Europe.

To Fight Tuberculosis.—At a meeting held in Wilkesbarre, July 6, the Wyoming Valley Association for the Prevention and Treatment of Tuberculosis was organized. Dr. Charles H. Miner, Wilkesbarre, was elected secretary; and Drs. Frederick C. Johnson, and Walter S. Stewart, Wilkesbarre, and Dr. Charles P. Knapp, Wyoming, were elected the medical members of the board of directors. It has been decided to open a dispensary in Wilkesbarre and to give especial attention to the education of the people in regard to tuberculosis.

Philadelphia.

Upper Air.—Drs. Samuel J. Ottinger and T. Chalmers Fulton made a balloon ascent July 22 to make experiments of the effect of high altitudes on the human body.

Money for Hospital.—Under the provision of the will of Dr. Ferguson, who died July 10, a large proportion of his estate, which amounts to more than a million dollars, will eventually go to the Presbyterian Hospital.

Personal.—Dr. J. William White, securely convalescent from his recent operation, sailed for Europe, August 1.——Dr. Richard S. Davis is seriously ill with appendicitis.——Dr. Richard P. Wilkinson narrowly escaped drowning at Atlantic City.——Dr. and Mrs. John S. Wentz sailed for Europe August 9.——Dr. William C. Drein was successfully operated on for appendicitis August 8.——Dr. William W. Keen had the honorary degree of LL.D. conferred on him by the Greifswald University, Prussia, at its 450th anniversary, August 7.

Health Report.—The total number of deaths reported for last week aggregated 519. This shows an increase over the number reported the previous week and a decrease of 71 as compared with the corresponding period of last year. The principal causes of death were: Typhoid fever, 16; diphtheria, 4; consumption, 58; cancer, 16; heart disease, 22; acute respiratory disease, 35; pertussis, 8; apoplexy, 15; enteritis, 108; hepatic cirrhosis, 7; Bright's disease, 38; accidents, 10; suicide, 2; sunstroke and heat, 13; appendicitis, 4; and marasmus, 14. There were 154 cases of contagious disease reported, with 24 deaths, as compared with 165 cases and 16 deaths reported in the previous week.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTION.		
Gass, H. W., Suubury, Pa	$	2.00
SOCIETY CONTRIBUTIONS.		
Bradford County (Pa.) Medical Society		25.00
Columbus Academy of Medicine, Columbus, Ohio		11.00
Matson, G. M.....$1.00 Rankin, T. W....$10.00		
Cumberland County (N. C.) Medical Society		5.00
Fayette County (Ky.) Medical Society		102.00
New Mexico Medical Society		100.00
Shamokin County (Pa.) Medical Society		10.00
Total	$	255.00
Previously acknowledged	$	13,648.19
Grand total	$	13,903.19

GENERAL.

Health Conditions on the Isthmus.—Acting Assistant Surgeon Mohr reports that there has been an unprecedentedly heavy and continuous rainfall during the past month and that in consequence malarial fever is on the increase. Cases of this disease occurring on vessels in port are kept under close observation.

Tri-State Meeting.—The Tri-State Medical Association held its thirty-third annual meeting at Put-in-Bay, Ohio, July 31 and August 1 and 2. Dr. Charles D. Aaron, Detroit, Mich., was elected president; Dr. Theodore F. Wood, Angola, Ind., vice-president; Dr. William F. Shumaker, Butler, Ind., secretary, and Dr. Joseph A. Weitz, Montpelier, Ohio, treasurer.

Obstetricians to Meet.—The nineteenth annual meeting of the American Society of Obstericians and Gynecologists will be held at Cincinnati September 20-22. The subjects announced in the preliminary program include Porro-Cesarean section, fixation of the kidney, intestinal obstruction, diffuse peritonitis, abuse of purgatives in surgical patients, vaginal celiotomy, reflex dyspepsias, peritoneal adhesions and kidney suspension. Dr. John Young Brown, St. Louis, is president, and Dr. William Warren Potter, Buffalo, secretary. Dr. C. L. Bonifield, 432 West Fourth street, Cincinnati, is chairman of the committee on arrangements and will furnish further information to those who write for it.

Harvey Society Lectures.—The second annual course of lectures, to be given in New York City under the auspices of the Harvey Society, will be opened Oct. 20, 1906, by Prof. A. E. Wright, of London. Ten lectures are to be given during the year, as follows:

October 20	Prof. A. E. Wright.
November 3	Prof. C. A. Herter.
November 17	Professor W. T. Porter.
December 1	Prof. J. G. Adami.
December 15	Prof. George Huntingtou.
January 12	Prof. F. G. Benedict.
January 26	Prof. E. B. Wilson.
February 9	Prof. S. J. Meltzer.
February 23	Prof. W. T. Councilman.
March 9	Prof. Friedrich Müller.

The officers of the society for the coming year are: Graham Lusk, president; Simon Flexner, vice-president; F. S. Lee, treasurer; George B. Wallace, secretary; and C. A. Herter, S. J. Meltzer and James Ewing, council.

Cholera in the Philippines.—Chief Quarantine Officer Heiser reports from Manila that after cholera had disappeared, with the exception of a few isolated cases, it suddenly made its appearance in a number of widely separated towns. At Tanay, one of the small towns situated in the province of Rizal, bordering on Laguna de Bay (Lake of Bay), the disease has assumed epidemic proportions, nearly 100 cases being reported within ten days. The disease also appeared at Camp Stotsenberg, Angeles, Guagua, and San Luis, in the province of Pampanga; at Malolos, in Bulacan Province; at Pila, Siniloan, and Santa Cruz, Laguna Province; and at Pasig and Cainta, province of Rizal. One noteworthy feature of the outbreak is that the appearance of the disease in the places mentioned above, occurred almost on the same day. So far, no satisfactory explanation has been offered for the outbreak. Those who believe in the theory of Pettenkofer, namely, that outbreaks of cholera depend on certain conditions of the soil, which occur when certain meteorologic conditions are present, are proclaiming that this is a vindication of his theory. Dr. Heiser also reports that another case of cholera was detected at Mariveles, June 22, 1906, on the steamship *Ban Yek*, at the outgoing quarantine inspection, which is made of vessels bound for ports in the Philippine Islands. The patient was promptly removed to the station hospital. The vessel and the effects of the crew and passengers were thoroughly disinfected. So far there has been no further outbreak.

Fiftieth Anniversary of the Coal-Tar Industry.—The year 1906 marks the fiftieth anniversary of the discovery by William Henry Perkin of the dyestuff mauve by which the foundation was laid for the coal-tar industry, and which at the same time stimulated the study of chemistry. An interesting ceremony was held in London July 26, when scientists gathered from near and far to congratulate the discoverer. He was only 19 at the time of the discovery, and he was conducting research for an entirely different purpose, his aim being to discover some means for the synthetic production of quinin. During his attempts to oxidize anilin with chromic acid a brilliant purple dye was produced, to which he gave the name of mauveine, mauve being the exact shade of purple produced. Our British exchanges in commenting on the jubilee remark that the importance of the discovery was not recognized in Great Britain at first, and the coal-tar industry and the application of the anilin dyes in histology and morphology are largely the work of other lands. To commemorate the event a movement was originated in England by the appointment of a committee, which is now supported by similar organizations in Germany, France and Switzerland, and an appeal has been made for subscriptions to carry out the following objects: 1. Presentation to Dr. Perkin for his life time of an oil portrait of himself, executed by an eminent artist, the portrait to become the property of the nation at his death. 2. The execution of a marble bust of Dr. Perkin, to be placed in the rooms of the Chemical Society. 3. The establishment of a "Perkin Research Fund" for the promotion of chemical research, to be administered through the Chemical Society. The committee organized in the United States for this purpose believes that Americans in general are not duly impressed with the achievements of chemistry, and therefore do not appreciate the importance of Perkin's discovery, and that in consequence they will not contribute liberally to the fund for the memorial. In order, therefore, to make the occasion a public tribute to Dr. Perkin for the immense services he has rendered to chemical industry and science it has been decided to hold a separate American celebration at a date in the late fall in which the whole American nation may join. With this object in view the committee submitted the following program: 1. To invite Dr. Perkin to attend the American celebration. 2. To present him with some personal token. 3. To found a medal, to be awarded annually to an American chemist for distinguished work in applied chemistry. 4. The establishment of the nucleus of a fund for the foundation, at the Chemists' Club, in New York City, of a reference and circulating library, covering the entire field of theoretical and applied chemistry, to be in charge of a salaried librarian, and to contain duplicate sets of books, one to be used for circulation among American chemists. It is estimated that $5,000 will be amply sufficient to cover the expenses of the personal token and the Perkin medal, while the sum of at least $50,000 will be necessary to place the library on a permanent basis.

The Leper Case.—In the *West Virginia Medical Journal* for August appears a letter from Dr. J. C. Irons, of Elkins, West Virginia, in regard to the case of leprosy to which we have referred in our news columns, and on which last week we commented editorially. The letter shows that while the man was in no sense a citizens of West Virgina, he was well cared for while he was there. The following is Dr. Irons' letter:

> In view of the notoriety of the case of leprosy which has caused so much newspaper comment and such embarrassment to the several railroads, we deem it of sufficient interest to the profession to give a true history of the case of Marron John Rashid, aged 21, a native of the town of Surha, Sidon County, State of Beireuth, Syria, who came to America about four years ago. He first engaged in peddling in the state of Maine, after which he was employed in a cotton factory in Waterville, Maine, where he remained about one year. He was married a few years before leaving his native country and left his wife in Syria, she following to America about eighteen months later, joining him at Waterville. A few months after she came, and about two years after Rashid's arrival, he developed some sores about his face which became so serious that he was compelled to quit his work in the factory. Soon after this he went to Uniontown, Pa., where he remained a few months, living among his Syrian friends, while his wife peddled from place to place. They then came to Enterprise, W. Va., and remained a short time. Then they came to Clarksburg, W. Va., and Rashid was in one of the hospitals there about three weeks. From there they went to Richwood, W. Va., and spent some time there. Thence they came to Philippi and after remaining there for a time they reached Elkins on June 5. About the 15th Dr. W. W. Golden saw Rashid, he having expressed a desire to enter Davis Memorial Hospital, but on examination Dr. Golden, surgeon in charge of the hospital, diagnosed the case as leprosy and declined to receive him. I saw him June 25 and was puzzled to diagnose the case, never having seen a leper, but after consulting with Dr. Golden and reading up the history of leprosy, I was convinced that this man has a true case of tubercular leprosy.
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> As the meeting of our local medical society (Barbour-Randolph-Tucker) was to meet just at this time, we decided to say nothing of the case publicly and to present it before the society, which was done July 28. At the meeting the fifteen physicians present concurred in the diagnosis, and the patient was turned over to the board of health, which at once took charge of him, preparing a tent for him, where he remained till the 18th, when he took "French leave."
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> During the discussion of this case at the society the fact that the disease was only very mildly contagious was emphasized, and as a consequence when the news that a leper was in town became known, but little excitement was manifested, thereby demonstrating the practical utility of a county medical society in moulding public opinion. It may be interesting to know that our board of health and the city authorities did all they could to make the patient comfortable. After furnishing him with tent and cot with sufficient clothing, they allowed the Syrian friends one dollar per day to supply him with provisions, etc. Besides, many friends visited him from time to time and gave him many delicacies to make his isolation as agreeable as possible.
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> During this period efforts were in progress by the local board of health, through the state and national authorities, to make a permanent disposition of the patient. Since his leaving Elkins the public has been informed of his every movement.
>
> As a helpful factor in the diagnosis of this case the leper admitted that there were two similar cases in his native village at the time of his departure from it. Thus far neither his wife nor his friends, so far as we can learn, have leprosy, and the fact that he had been in this country two years before its appearance demonstrates the long incubation period of leprosy. Though his wife was with him constantly through the two years of the disease she shows no sign of infection. The rarity of this disease in this country no doubt accounts for the failure of an earlier diagnosis, notwithstanding the fact that this man was under the care of several physicians in different states. In addition to the leprosy, Rashid is also suffering from an advanced valvular lesion of the heart.

The latest advice is that the United States Public Health and Marine-Hospital surgeon who was sent to examine the leper now occupying a tent on a hillside in Randolph County, West Virginia, has stated that he can not be deported. The public of the district where the leper is now sojourning was panic stricken, and he has been much neglected, but the county has now taken him in charge, and will, it is said, build a house and provide for him.

FOREIGN.

Alvarenga Prize of Berlin Hufeland Society.—The prize this year was awarded to C. Hart, assistant at the Friedrichshain Pathologic Institute, with high commendation. The topic appointed was "Importance of Stenosis of the Upper Opening of the Thorax for the Development of Apical Tuberculosis."

Postponement of Fifth International Congress of Gynecology.—This congress was to have been held in 1905, but was postponed to 1906, and another postponement has been announced. The congress was to convene at St. Petersburg this fall, but on the wish of many members and with the approval of the committee of organization the postponement was agreed on. The date now appointed is September 11 to 18, 1907.

Clinic for Occupation Affections.—As a result of the recent International Congress for Professional Diseases, the city of Milan has appropriated funds to establish a clinic for occupation affections and professional ailments. Professor Devoto, of Pavia, is to have charge of the clinic. A private subscription of about $80,000 has been received and the city agrees to supply $1,200 annually toward its support. It will have a capacity of sixty beds and will be the first special establishment of the kind in Europe or elsewhere. The congress was held in Milan this spring.

Second Course in Social Medicine.—The local branch at Berlin of the *Leipziger Verband* recently organized a course of post-graduate lectures on some of the social aspects of the practice of medicine, as mentioned in detail in these columns at the time. The course met with unexpected appreciation and success and a second course has been organized. The subjects to be discussed are those connected with the diagnosis, prognosis, treatment and certificates of accidents in relation to accident insurance. Hoffa will discuss "Treatment of Injuries from Accidents and Their Consequences by the Surgeon," and Schuster the same "by the Neurologist."

Koch in Africa.—The *Wien. klin.-therap. Wochschr.* for July 15 contains a brief account of the Koch scientific expedition which is at present at Muanza, near the Victoria Nyanza. As there are only six Europeans living at this "military station," the Koch party will have to live in tents and huts set up by themselves. This region has suffered frightfully recently from sleeping sickness, fully 1,500 natives having died. The party intends to visit later the islands in the Victoria Nyanza, which have been entirely depopulated by the scourge. When Meixner joins the party, as soon expected, there will be six physicians. The rains have been almost continuous of late, they write.

International Congress of Life Insurance Examiners. — We have announced the International Congress of Life Insurance Examiners in Berlin, September 11 to 15. The minister of state, Dr. Studt, is the honorary president of the congress, and Kraus, Florschütz and Unverricht are in charge and will preside. The principal topics to be discussed are pulmonary tuberculosis, syphilis and obesity in respect to life insurance. Accident insurance will have a place on the program for the first time at such an international gathering. The special subjects are the aggravation of internal diseases by traumatism, with special regard to functional neuroses and organic affections of brain and spinal cord. The subscription entitling to the transactions is covered by a fee of 16 marks, about $4. Further details can be obtained from Dr. Manes, Spichernstrasse 22, Berlin.

Lunacy Reform in Victoria, Australia.—As a result of the report of the Inspector-General of the Insane in Victoria, the government of the province has authorized several important works to be carried out. The most important of these is the approval of the erection of a hospital for acute mental cases for the metropolitan district. This hospital is to contain 125 beds and will cost about $150,000. According to the *Australasian Medical Gazette* only cases in which there is reasonable hope for recovery will be admitted. All the existing county institutions are to be renovated and a sum of $40,000 is to be expended in providing reception houses at Ballarat, Warnambool, and Sale, as well as improving the one at Bendigo. Another reform promised is an alteration in the existing arrangements for nursing. At present there is a large staff of untrained attendants temporarily employed in the various asylums; this is to be replaced by a permanent staff of fully-trained attendants who are to enter the service as probationers.

Jubilee of the Greifswald University. — Greifswald is the oldest university in Prussia and is now celebrating, with great ceremony, the 450th anniversary of its foundation. The dean compiled a *Festschrift* on the occasion, which is published as a special souvenir number of the *Deutsche med. Wochenschrift*, August 2. It contains an historical sketch of the university and twenty-one articles from the various clinics and institutes. Many of the writers are of world-wide fame. The list includes Grawitz, Loeffler, Uhlenhuth of the biologic blood test, Sauerbruch, A. Martin, Jung and Friedrich. The medical department was in the hands of a single professor until the close of the eighteenth century, and several times since it lapsed into the same condition again, until 1824, when a medical faculty may be said to have sprouted. Berndt, Schultze (father of the Bonn anatomist, Max, and the Jena gynecologist, B. S. Schultze), H. Ziemssen and Adolph Bardeleben were the special luminaries in the history of the Greifswald medical school in its early days.

Meat Inspection in Queensland.—According to the *Australasian Medical Gazette*, the following is the method of inspection of meat in Queensland: All meat for home consumption is inspected under the slaughtering act, and all export meat is inspected under the live stock and meat export act. In both cases, the meat can be traced back to the station from which it came; there is no possibility of diseased meat being consumed. Heavy penalties are provided for using meat which has been condemned. Each case of preserved meat carries a label certifying to its wholesomeness, while each carcass carries a tag. In addition to this, the inspectors see that all condemned meat is consigned to the boiling down pots. It is officially stated that there has never been an attempt to evade the provisions of the act, and that on the contrary, the companies are glad to coöperate with the government in putting a good article on the market in the full assurance that any cause for complaint would react disastrously on their business.

French Law Compelling Sunday Rest.—A bill has been before the French parliament for fifteen years and has finally been passed which imposes Sunday rest. Compulsory closing of shops on Sunday is now required, and cessation of week-day work is imperative on all employés or workmen in a manufacturing or commercial establishment or its dependencies, whatever its nature, public or private, lay or clerical, even if it has a character of professional instruction or benevolence. There are numerous exceptions provided for. Whenever it is evident that the Sunday rest for all the personnel of an establishment would be prejudicial to the public or would compromise the normal functioning of the establishment, the day of rest can be given on some other day than on the Sunday or divided among several days, or the personnel of the establishment may take turns in the Sunday rest. A special permit is necessary to have a right to these exceptional privileges of remaining open all or part of Sunday, except in the case of hospitals, dispensaries, drug stores and saloons. The *Semaine Médicale* laments this special favor granted to saloons, stating that there is one saloon in France for every fifteen adult males, and their closing on Sunday would be a national blessing.

Success of the Campaign Against Malaria in Italy.—The expensive sanitation of the malarial regions in Italy by means of drainage, etc., had comparatively little effect in reducing the amount of malaria in the regions involved. Matters have been revolutionized now by the simple quinin and screening prophylaxis, which has reduced most remarkably the malaria morbidity during the last four years, while the sale of guaranteed pure quinin by the government has brought in a revenue of 230,000 lire—that is, nearly $50,000—above expenses. The amount of quinin taken in the prophylactic doses varies in different regions from one tablet or part of one to three or four tablets. Each tablet contains 20 cg. A letter from Galli in the *Münch. med. Wochsch.* states that the government is now seriously contemplating the making of chocolate-coated tablets of quinin tannate for children. Researches undertaken for the purpose have established that the absorption and action of the tannate is on a par with those of the other salts of quinin, while it is much more palatable and will not be so disliked by children. Gaglio and Cervello have announced that the results of their experimental work have fully established the assimilation of this salt, although they have not had sufficient clinical experience to date to pronounce a final judgment. The mortality from malaria has dropped 50 per cent. and is still going down.

Fourteenth International Congress of Hygiene and Demography.—Germany is making elaborate preparations for the approaching International Congress of Hygiene and Demography which is to be held in Berlin from September 23 to 29, 1907. The chairman of the committee of organization is Professor Bumm, president of the Imperial Board of Health, and the preparatory work is so well advanced that the invitations will shortly be issued. The meetings of the congress will probably be held in the parliament buildings. The work has been divided into eight sections: Section 1, hygienic microbiology and parasitology; section 2, dietetic hygiene and hygienic physiology; section 3, hygiene of childhood and schools; section 4, professional hygiene and care of the working classes; section 5, combating infectious diseases and care of the sick; section 6a, hygiene of dwellings and communities; section 6b, hygiene of transportation; section 7, military, colonial and naval hygiene; section 8, demography. A scientific exposition is to be held in connection with the congress, in charge of Professor Rubner, privy medical councilor, Hessischestrasse 4, Berlin N. 4. The business affairs of the congress are in the hands of the secretary-general, Dr. Nietner, retired surgeon-major. The bureaux of the congress are at the address Eichhornstrasse 9, Berlin W. 9. The position and character of the men in charge of this congress guarantee its official nature and its success.

Improved Sanitation for Mecca.—According to the Constantinople correspondent of the *Lancet*, the Ottoman government is considering plans for the improvement of sanitary conditions at Mecca. It is intended to build a hospital of 300 beds, while the existing dispensary will be supplied with the necessary drugs for gratuitous distribution. Lodging houses are also being planned for the poorer class of pilgrims who flock from every quarter of the globe to the sacred city, and who are often obliged to spend the nights under the open sky. The water reservoirs, which at present are exposed to every sort of contamination, are to be covered, and the number of street fountains is to be increased. It is reported that several other charitable and sanitary institutions are to be erected and endowed. The most important plan under consideration, the *Lancet's* correspondent states, is the proposed thorough improvement of the water canalization of Aini-Zubeid, which supplies the sacred city with drinkable water. The works are to be executed under the supervision of a special commission, presided over by the governor-general of the Hedjas Province, and will be directed by two engineers sent from Constantinople. The sultan, it is said, has offered from his private purse a large sum to defray the initial expenses, and it has been decided to open a list of subscriptions and to invite the Mussulman population to contribute, while the revenues of the ministry of the so-called Evkaf (religious institutions) will be drawn on should the expenses exceed the contributions.

Congress of Professional Medicine in Belgium.—The Medical Federation of Belgium organized a second conference to discuss matters materially affecting the profession, and it convened at Ghent, July 15. The *Gazette Méd. Belge* brings reports of the proceedings, which are said to have been unusually interesting and fruitful. Delegates from the various local branches attended in large numbers, and several resolutions were unanimously adopted on subjects in which concerted action of this kind can not fail to lead to results in time. Merveille, president of the federation, did not hesitate to maintain that "society is unjust to the medical body, that the time has come for it to cease calling incessantly on the medical profession for devoted services without ever any practical recognition of the value of its services; that the time has come to apply the pickax to all the barriers that wall in and hamper the growth and prosperity of the most benevolent of all professions." He continued: "We can face the future with confidence. Let us group ourselves more and more in the close union which our Ghent confrères have adopted as their motto, and let us press closely together around the time-honored banner of the *Fédération médicale belge*, which will lead us surely to the victory which is the reward of bravery, justice and perseverance." Among the principal subjects discussed was the hospital treatment of patients able to pay, and a resolution was adopted to the effect that pay rooms should be done away with in the public hospitals and that all patients should be treated on an equal footing.

LONDON LETTER.

(From Our Regular Correspondent.)

London, July 28, 1906.

Suit for Certifying to Gonorrhea.

The annual report of the London and Counties Protection Association contains, as usual, an account of various actions taken or threatened against physicians, which as a rule the association was successful in defending. One case, which was unsuccessfully defended, is of particular interest. A physician wrote on a certificate the fact that a member of a sick club was suffering from gonorrhea and gave this certificate to the secretary of the club. The member brought an action for libel and slander. The physician pleaded that the communication was privileged, but the jury decided against him and awarded $750 damages to the plaintiff. The case shows that a physician should never give his opinion of the nature of an ailment to any one but the patient without the latter's consent in writing, or in such form as to be capable of legal proof. The solicitors of the association state, in commenting on the case, that when a physician, in the course of his duties has to fill up a club certificate, and the ailment is one the disclosure of which would constitute a libel, he ought to give the certificate to the patient (not to a third party, as in this case). Then any responsibility for disclosure to others would rest entirely with the patient.

Purity Label for Meat.

As a consequence of the Chicago packing-house scandals, Dr. Collingridge, Health Officer for the City of London, has made a report on the inspection of meat. He states that examination for the detection of disease can be properly made only at the time of slaughter and that such examination to be of value must cover the inspection of the animal while alive by a veterinary surgeon and an examination after slaughter by a recognized expert. The inspectors at the central markets are at a great disadvantage in dealing with meat, as it is brought there in the form of dressed carcasses, so that the organs are not available for the detection of disease. The obvious remedy is the compulsory use of abattoirs. Freedom from disease being ascertained, this should be guaranteed by an official label. In order to perfect the system, the requirement of a label should apply to both home and foreign meat. In the case of home-killed meat there would be no difficulty in the acceptance of the label, but in the case of foreign countries this would not be so easy. The government, he states, should immediately investigate the system adopted in other countries.

The Condition of Ireland.

The annual congress of the Royal Institute of Public Health was held recently at Cork. The president of Queen's College, Prof. Bertram Windle, delivered the presidential address, in which he gave a deplorable picture of the condition of Ireland. If there is a country in the world, he said, which should be healthy and prosperous, filled with strong men and women, lusty children, and smiling homesteads, it is Ireland. But it is far from so. While the death rate from tuberculosis is steadily declining in England and Scotland, it is as steadily increasing in Ireland. Moreover, there is an alarming increase in the number of the insane. Many attempts had been made to explain why Ireland suffers from these terrible scourges. Drink and bad housing may be factors, but they do not explain everything. Emigration year by year drains away the lifeblood of the race in the shape of its youngest, most promising and most valuable members. It had been well said that what is happening in Ireland is the survival of the unfittest. Professor Windle thinks that the health authorities are not keeping up with the advances in the sciences of hygiene.

Boric Acid in Food.

The question whether or not the use of boric acid as a preservative of food has any injurious effect still provokes conflicting opinions from experts. A firm of army contractors was summoned for selling potted ham containing .74 per cent. of boric acid and colored with oxid of iron. Dr. Sykes, health officer for the borough of St. Pancras and lecturer at Guy's Hospital, said that the continuous eating of food treated with boric acid is injurious. The boric acid arrests putrefaction in meat, but the ptomains remain. It makes food less digestible. There are several safe ways of preserving—smoking, salting, drying, refrigerating and sterilizing. Dr. Wilcox of St. Mary's Hospital gave instances of two children suffering from malnutrition after living on food containing boric acid. On the other hand, Dr. Otto Hehner, a past president of the Society of Public Analysts, and Prof. Tunnicliffe, a member of the departmental committee on food preservatives, gave evidence for the defense. Dr. Hehner said that boric acid is the least objectionable form of preservatives and that a mild cured ham can not be otherwise obtained. Boric acid has been in use for fifteen years in Great Britain without any conclusive case of injury to the consumer. In cross-examination, Professor Tunnicliffe admitted that although a person in strong health might take such foods without ill effects, injury might occur in children and in weak persons. A penalty of $25 and $250 costs was imposed.

London, Aug. 4, 1906.

The British Pharmaceutical Conference.

The annual meeting of the British Pharmaceutical Conference was held in Birmingham. The president, Mr. W. A. H. Naylor, London, delivered an address, in the course of which he affirmed that the medicines supplied through qualified chemists are of a quality that was unobtainable less than a quarter of a century ago, particularly preparations capable of assay by chemical process. The rubric of the conference, to which every member tacitly subscribed, namely, to maintain uncompromisingly the principle of purity in medicine, is observed more generally and intelligently now, he said, than in the past. It can not be denied that second and third quality drugs are marketable and that preparations are made from them bearing official names. But, despite all temptations to conduct their business on commercial lines, there are a large number of individuals engaged in the craft who practice high-class pharmacy and who, with praiseworthy zeal, devote their little leisure to the prosecution of pharmaceutical research.

The Dangers of Cheap Bedding.

Dr. Leo Taylor, public analyst of Hackney, in a report submitted to the health committee of the borough, has given some startling information regarding the flock used in stuffing cheap mattresses and pillows. He made a comparison between the analysis of a sewage effluent, decided by the magistrates to be too bad to turn into a water course, and the analysis of water in which the flock had been washed. One gram of flock was found to yield 7,590,000 colonies of bacteria, while the same quantity of sewage yielded 6,400,000. The flock was made from old and filthy rags, which were too bad to be remade into cloth, collected from dust heaps. A preliminary sorting of rags into clean and dirty was performed and some underwent a certain washing, but these commanded higher prices and could not be used in the cheaper bedding. Subsequently the doctor had an opportunity of visiting a flock factory. He found that the process followed is extremely simple and devoid of sanitary precautions. Old rags of every description, but consisting largely of old clothing in the most filthy condition and stinking horribly, are received at the factory in bundles and without preliminary treatment are placed in machines which tear the cloth to pieces, rejecting the buttons and metallic substances. The shredded cloth then passes under cover to a revolving "devil," where the long teeth further break it up and where, by a current of air exhausted through a flue into a settling chamber, the dust is removed. Owing to the friction a certain amount of heat is evolved, so that in addition to being freed from dust the flock, which the material has now become, is dried and leaves the machine free from odor. This is the whole process and no attempt is made to cleanse the material beyond agitation in a current of air. Although this removes the foul odor, it can not remove the filth with which much of the cloth is impregnated and which only awaits favorable conditions of moisture and warmth to prove a kind of hotbed. The doctor concluded his report by stating that flock so prepared is a serious danger to public health and that steps are urgently needed to compel purification of the material either before or after preparation.

Tuberculosis in Irish Cattle.

Mr. R. T. Houston, secretary to the Armaugh Agricultural and Technical Instruction Committee, gave some remarkable evidence before the commission appointed to inquire into the working of the Irish Department of Agriculture as to the prevalence of tuberculosis in Irish cattle. He subjected over 200 cattle to the tuberculin test and found that over one-fourth were tuberculous. No wonder the death-rate in Ireland from tuberculosis is so high. Much of the meat was diseased and the milk swarmed with tubercle bacilli. He held that tuberculosis in cattle should be a notifiable disease. Every stud bull should be licensed by the department after an examination which leaves no doubt that the animal is absolutely free from disease.

A Remarkable Oversight.

At Wolverhampton the coroner remarked at an inquest: "This is the most remarkable case I have been called on to investigate in an experience of fourteen years." The deceased was a cigar merchant, who six or seven weeks before death was found one morning by his housekeeper "all smothered in blood," which he explained by saying he had had a fall. A physician was called and next day the man had six fits. Later he went to the Wolverhampton Eye Infirmary because he had lost the sight of one eye. He was afterward transferred to the general hospital and seemed practically cured. He was treated as an out-patient until his death. The revelations of the necropsy were startling. There were a small scar in the right temple, a bullet in two fragments, a fracture of the base of the skull and an abscess of the brain. One fragment of the bullet had lodged in the brain, where it had produced the abscess. The other had destroyed the optic nerve. But how came the bullet in the brain? It was shown that the deceased was a heavy drinker and that on the morning when he was found covered with blood a revolver had been taken out of the bed. The jury returned a verdict that he had committed suicide while temporarily insane. The scar on the temple was about half an inch in diameter, white "with a black mark." It was partly hidden by the hair and might readily escape observation. The extraordinary fact was that a man suffering from extensive traumatic cerebral injuries was under the care of several physicians and treated in two hospitals without any suspicion of the real nature of the case, which must rank among the curiosities of medical literature.

Workman's Claim for Compensation for "Dropped" Kidney.

The workman's compensation act, which amply insures compensation for injuries received in his occupation has greatly increased the number of actions for damages. A novel claim for "dropped" kidney has just failed. The judge dismissed it on the ground that, assuming the plaintiff was suffering from "dropped" kidney, in his opinion it was not caused or aggravated by the alleged accidental strain.

A New Industrial Danger.

Some months ago a new kind of wood was introduced to replace the boxwood shuttles used in Lancashire workshops. After a few days the workmen who handled the shuttles began to show signs of illness and some of them died. An investigation was undertaken by Professor Gibson, dean of the faculty of science in the University of Liverpool. He identified the wood as West African satinwood and found that it contained a considerable quantity of alkaloid, which, being soluble in salt solutions, would be readily absorbed by the perspiring skin. The alkaloid proved to be a powerful cardiac poison, causing rapid death when injected into the animals. The symptoms of poisoning in man were headache, sleepiness, coryza, chronic sneezing, giddiness, faintness and dyspnea.

The Medical Inspection of School Children.

A deputation representing the British Medical Association, supported by representatives of the Manchester and Salford Sanitary Association, of the Medical Committee on the Teaching of Hygiene and Temperance, and Incorporated Society of Medical Officers of Health, waited on Mr. Birrell, president of the board of education, with reference to clause 35 of the education bill, which gives the local education authority "power to make such arrangements as may be sanctioned by the board of education for attending to the health and physical condition of the children educated in the public elementary schools." Sir Victor Horsley, speaking on behalf of the British Medical Association, said that he is convinced that the control of the matter should be entirely under the education department and not left to the local authorities to act as they thought fit. The department should take as an example the action of the local government board in preventing the spread of zymotic diseases. They asked for a medical official, with perhaps one or two assistants, who should correlate the reports that came into the education department from the local authorities and also correlate the opinions derived from other countries. Mr. Birrel made a sympathetic reply and informed the deputation that it is proposed to add another medical officer to the staff of the central education department. He agreed that proper inspection and proper record of the facts would be of great utility, but, remembering that there are 5,000,000 children in some 21,000 schools, he does not think that $500,000 a year (a sum mentioned by one of the deputation) would even touch the expense of properly inspecting children on really scientific principles. He does not believe that compulsion would effect the object that the deputation had in view; they must be content to strengthen the medical side of the board and stimulate the local authorities by every feasible method.

The London School of Clinical Medicine.

The London School of Clinical Medicine, the foundation of which has been described in The Journal, has completed its first term of work. It was attended by forty-two practitioners. These comprised men engaged in general practice in the provinces and physicians in the army, navy, Indian and other public services, and some from the British colonies and America. The amount of clinical material available has been abundant and there has been a large number of cases of exceptional interest.

VIENNA LETTER.

(From our Regular Correspondent.)

Vienna, July 27, 1906.

Regulations Governing Coloring of Foods and Breadmaking.

The ministry of the interior, as a central board of health, has recently turned its attention to the colors added to various articles of food and has adopted regulations in conformity with the present status of chemistry. In the latter part of the last century all the coal-tar dyes were pronounced dangerous to health and their use was forbidden for the above-mentioned purposes. Since the progress of chemistry has enabled absolutely pure products to be placed on the market, a change of this obsolete ordinance was inevitable. The substances prohibited were: All dyes containing arsenic, antimony, mercury, zinc, picric acid and its compounds and lead and its compounds. These will all remain on the list; other colors and dyes may be used if they are harmless and if they are not designed to conceal the bad quality of the goods. The dyeing of meat and sausages is strictly forbidden; coffee may be dyed. Furthermore, the new regulations name numerous substances which may be used in the production of cosmetic preparations and toys, while the colors of furniture and wall coverings must be absolutely free from arsenic and copper salts. Several cases of lead poisoning have lately come to the notice of the medical registrar which were traced to dyed stockings and other underwear. The other regulation deals with the means of preventing the spread of actinomycosis. Each bakery house is required to post in some prominent place a placard in which the symptoms of the disease are enumerated and a means of avoiding infection made clear. The present mode of baking bread necessitates twice moistening the dough; for this purpose short bundles of dried straw are used, and by means of this straw the parasite can be conveyed to the bread; after describing the mode of infection and its consequences the placard continues by requiring all such brushes to be disinfected by boiling them in water, drying them well and shaking them well before using.

Vacation Courses.

The time of three months between the summer and winter semesters has been used by the medical faculty to establish a series of classes and courses for such physicians as are unable to attend the ordinary postgraduate courses during the year. Each class is expected to consist of at least four physicians, while the number of students will be limited so as to enable thorough and efficient practical work. The duration of each course will not exceed from four to six weeks. The fees vary from $10 to $25, and the subjects include instruction in the latest physical methods of diagnosis, surgery and microscope work. Apart from these classes, special courses will be delivered for the members of the Vienna Medical Association at a nominal fee of $1, which sum will go to the funds of the Widows and Orphans' Aid Society of the association. If these latter classes, lasting from eight to fourteen days, find approval it is planned to throw them open to non-members, but at a higher fee. All these classes will be conducted by the professors and their assistants, and they afford a rare opportunity to keep posted in the progress of medicine, which is only too often so difficult when one is occupied in general practice.

The Conflict Between Dental Surgeons and Dentists.

For several years a conflict has been raging between the dental surgeons and dentists of the empire which needs some explanation. The dental surgeons are required to pass the whole curriculum of the doctor; in fact, they must obtain their degree of M.D. before they are entitled to practice. The dentists, on the other hand, generally have not had medical education, but are more or less technical assistants to the dental surgeon, making for him the artificial parts, such as crowns, bridges, etc. The purely surgical work remains entirely in the hands of the physician. Of late the technical assistants have endeavored to turn legislation in such a way as to prevent the dental surgeon from doing any work except the purely medical and surgical, leaving the artificial teeth and the more technical parts for the "assistants." The surgeons naturally resented this and tried in their turn to prevent the technical assistants from practicing independently, as the mouth is an important organ, in which danger may result from non-medical procedures. The conflict has been the subject of several bills in parliament, without any definite understanding being arrived at. The parliamentary conditions of the last years have not been very favorable to medical reforms, and national differences have occupied all its time. But a short time ago the government laid before the house of representatives a bill, in which a sort of compromise was effected between the two views. While the dental surgeons will be entitled not only to all medical but also to all technical operations in the mouths of the patients, the technical assistants will be allowed to perform certain small operations, such as the polishing and shortening of teeth for the purpose of fitting in of technical appliances, the straightening of irregular dental arches by means of India rubber or metal bands and similar minor, not surgical, contrivances.

Limitation of Experiments in Hospitals on Patients.

The directors of the principal hospitals have received an intimation from the government to closely inspect all experiments made in their respective hospitals on human beings. The authorities had been informed that in many wards such experiments had been going on, in which harm had resulted to the patients. Therefore all doctors practicing in the hospitals will be held responsible for such experiments. Exact minutes of the proceedings must in future be furnished, if required, together with the names and the object of the experiment. The chief of the ward has to be present at such experiments, and under no circumstances must any harmful proceeding be encouraged. The main object of the hospital authorities must be the desire to cure the patient as quickly and as permanently as possible. Only if a new method has to be tried after having proved harmless or useful in animals, it may be tried on the patient, if he gives his written consent. The main feature of this intimation is solicitude for the patients, but a secret anti-medical trend can not be overlooked. If carried out too literally this new regulation may prove a serious handicap to medical research in the wards.

Four Well-Known Professors Reach the Age Limit.

The system of age limit which is in force at present at the Vienna University requires all professors to retire at the age of 70 years. It was introduced some seventy years ago in order to make room for the younger scientists. Although 70 years is a good old age in Europe, especially for the hard-toiling medical men, several physicians have found means not only to attain that age, but to attain it in first-class condition. The names of those who, by the inexorable law, will be lost from official teaching are: Professor Benedikt, the well-known neurologist, whose "Comparative Anatomy of the Mammalian Brain" proved that there is no qualitative difference between human and animal brain matter. Professor Winternitz, the next one to resign his chair, is the chief propagator of hydrotherapy in Europe. Professor Stoffella is also regarded as an authority on internal diseases. His name came to the front when Koch's tuberculin appeared in the medical world. Professor Stoffella then showed, in a series of indisputable experiments, that the new preparation did not possess curative power strong enough to justify its general application. Perhaps the best known man about to retire is Professor Politzer, the famous otologist. For more than thirty years he has been the director of the ear clinic at the Vienna General Hospital. His name is well known in American medical circles by his excellent manual and atlas of the ear, and his courses on otology, delivered in English, are still crowded by American surgeons. All these men are entitled to perform their duties for another year, called the "honorary year," after which they must definitely leave the clinics. It is believed that all, without exception, will make use of this opportunity.

A Heroic Surgeon.

The fact that a clinical teacher of surgery diagnosed an acute attack of appendicitis on himself and operated on patients waiting for him just before lying down on the same table aroused great interest in our city. Professor Eiselberg, whose name was mentioned a short time ago in regard to certain official honors paid to him, a few days ago was attacked by the "modern" disease. Without mentioning it to any one, he went, in spite of pain and suffering, to the clinic where three urgent cases were waiting to be operated on by his skillful hand. After finishing the operations, which required something upward of three hours, he ordered the operating room to be prepared for another patient, and while this was being done he asked his own assistants to examine him. They concurred in his diagnosis and operated immediately on their chief and teacher.

Diphtheria Mortality in Vienna Hospitals.

In all the Vienna hospitals strict records are kept of diphtheria, and the patients seeking help are classified in the following manner: (1) Patients with sore throat and small patches on the tonsils and vulva; (2) complications with nose and throat diphtheria; (3) grave cases with laryngeal and descending croup; (4) adult patients, coming under (1), (2) or (3), respectively. The mortality has been reduced constantly from about 40 per cent. before 1895 (the year when the serum treatment was begun) to 30 per cent., 27 per cent., 15 per cent., 12 per cent., 10 per cent., 11 per cent., 9 per cent., 5 per cent., 5.3 per cent., 3.5 per cent. and 3.3 per cent. of those treated with the serum. It has been found that if the injections are given within the first twenty-four hours the disease may be practically checked. Only patients coming under observation after twenty-four hours are endangered. Intubation is seldom practiced here, as there is rarely a necessity for it. As regards adult diphtheria patients, the results from serum treatment are perhaps better still. Only the after-effects are more marked in the grown-up patients, perhaps due to the larger doses of serum injected (?). These after-effects have, curiously enough, in some cases yielded to a repeated dose of the serum, which would indicate that they were of the nature of true diphtheritic lesions. Especially in paresis of the faucial muscles or in paralysis of the motor nerves of the legs good results have been obtained. The doses used with us are 500 to 2,000 units for infants and 1,000 to 3,000 for adults. The serum is tried on rabbits and horses before it is placed on the market. Repeated attacks in the same patient have been noted in several cases. In one lad there was fourfold recurrence. This was the largest number of recurrences noted. The shortest interval before recurrence after dismissal was seventeen days.

Vaccination Under Red Light.

By order of the board of health a number of babies will, during the next vaccination period, be vaccinated "under red light," according to the views of Dr. Goldmann, who has systematically worked out the method and whose results are very encouraging, as mentioned previously in The Journal. The vaccination office is furnished with glass windows of a dark-red hue, like those for a photographer's dark chamber, and the small aseptic bandages will also be dyed red with fuchsin. The mothers will be cautioned against undoing the bandages, and to insure absolute absence of any other light than red falling on the wound a red sleeve will be provided for the vaccinated arm. It is planned to compare the results obtained thus with those of the ordinary method. Dr. Goldmann claims for his method the advantage of freedom from unpleasant swellings, the absence of fever, very flat, not disfiguring scars and a milder and shorter course of the infection.

Correspondence

Disinfection with Formaldehyd.

Springfield, Aug. 13, 1906.

To the Editor:—In The Journal, July 28, page 288, under the above caption, Dr. Henry Albert refers to an article appearing in The Journal, July 14, page 139, concerning experiments made by the Illinois Board of Health. Dr. Albert says of the potassium permanganate method of liberating gas: "It is impossible to evaporate a pint of the 40 per cent. solution of formaldehyd with 3½ oz. of potassium permanganate. To do this it will require from 6 to 6½ oz., and with the use of any less the disinfection, I am sure, will not be satisfactory."

I have not found this to be the case. In many experiments conducted by the Illinois State Board of Health during the past year with this method of disinfection it has been found that while 3½ oz. of the permanganate would not fully evaporate 16 oz. of the 40 per cent. solution of formaldehyd, a satisfactory disinfection could be obtained when these amounts were employed for every 1,000 cubic feet of room space.

There is no doubt, however, that almost complete evaporation can be obtained with the quantities recommended by Dr. Albert, namely, from 8½ to 20 oz., or practically 7 oz. of the permanganate to a pint of the formaldehyd solution, and doubtless it would be better to use these quantities.

The apparatus employed in the experiments and in the practical disinfection work of the Illinois State Board of Health is the tin, asbestos-covered vessel, recommended by the Maine State Board of Health. In this connection, I desire to say that I am unable to find any advantage in heating the vessel in which the disinfecting agents are placed if the vessel used be covered with asbestos or otherwise prepared for the retention of the heat generated by the agents in combination.

I fully agree with Dr. Albert that the potassium permanganate method of liberating formaldehyd gas is the best method now available. In fact, it is the only method of aërial disinfection now recommended to health authorities and physicians by the Illinois State Board of Health.

James A. Egan,
Secretary, Illinois State Board of Health.

Hay-Fever Treatment by Dunbar's Remedies (Pollantin).

Buffalo, N. Y., Aug. 6, 1906.

To the Editor:—In regard to Dr. Ingals' letter in The Journal, August 4: I used pollantin to some extent last year, with very satisfactory results. In every case the symptoms were relieved and could be kept away by repeated insufflation. One patient who had a severe type of hay fever, involving eyes, nose, throat and bronchi, wrote me from out of town that the drug was no good, his cure only lasted while he was using the powder. All that can be claimed for the antitoxin is amelioration, which is a great deal, and will enable a man to stay at home while using the powder.

George F. Cott.

Atlanta, Ga., Aug. 5, 1906.

To the Editor:—I note with interest the letter from Dr. Ingals in The Journal, August 4, in reference to the results obtained from the use of pollantin in hay-fever cases. Hay fever seems to be just as frequent in the south as it does in other portions of our country, and I doubt not that it is dependent on the same line of causes. I have used pollantin now for two seasons in a limited number of cases, but must say that I have experienced no decided results one way or the other. I have heard of one or two hay-fever sufferers in our city who have used the remedy with good results, but this I have not been able to verify personally. One or two of my patients thought they at first received some benefit, but later said that it did no more good than other remedies experimented with. Dr. Fitzgerald of Hartford, Conn., claims to cure his hay-fever patients, and so stated at the meeting of the American Medical Association at Atlantic City in 1904, by simply forcing patients to become absolute nose breathers. After a thorough trial of this method, with the hearty coöperation of my patients, I have not been able to secure the results claimed by Dr. Fitzgerald, but I am still waiting for "the light which will lead us out of the darkness and gloom."

Dunbar Roy, M.D.

Denver, Aug. 8, 1906.

To the Editor:—Dr. Ingals' communication in The Journal, August 4, is very timely, and it is refreshing to read an apparently honest report, even though relating unsuccessful results.

Being a hay-fever subject myself, I hailed with delight Professor Dunbar's remedy, especially after it was endorsed by several of our leading American rhinologists. My first experience, about two years ago, was a dismal failure, and, although I persisted in its use, both for myself and for my patients, I was finally obliged to acknowledge its uselessness. I could not, however, dismiss it entirely, but concluded to investigate for myself at headquarters. With this end in view I visited Hamburg during the month of May, 1905, at which time it was my privilege to witness at Professor Dunbar's hands conclusive experiments. These were the more convincing because of the subject experimented on—myself. (Experience reported in *Colorado Medicine*, April, 1906).

Professor Dunbar convinced me that not only had we been using unsuitable antitoxin, but that our dosage and our method of application were not accurate. On my return from abroad it was late in the hay-fever season and the results then obtained, while encouraging, could not be definitely attributed to the pollantin because of the natural disposition for the disappearance of hay fever without treatment at that time of the year.

I was impressed with several important details in the application of this remedy.

First, the antitoxin applicable to spring cases should not be used in the treatment of autumnal cases.

Second, the value of pollantin is increased if it can be used as a prophylactic for several weeks prior to the expected attack.

Third, the dosage must be accurate, governed according to the effect on each individual case and the amount and character of the exposure.

Fourth, it must be accurately applied, and if it is impossible to use the powder as a snuff after the manner of snuff-takers, it should be insufflated by a proper powder blower, or its use preceded by adrenalin.

Bearing these thoughts in mind I began the use of pollantin this year and have at the present time fifteen patients under my care. In not less than twelve has the result been more than gratifying, and although I began its use with the same feeling of skepticism that my past experience had warranted, I am compelled to admit that the results to date have not only been encouraging, but in some instances remarkable. It is true that the season is still young, and I may have occasion to alter my views, but this year's experience up to the present writing is extremely satisfactory. In my own case it has been possible for me to continue my daily routine, even indulging in long automobile rides into the country and in other outings with little more discomfort than during other seasons. It is necessary to use the remedy, not only when the slightest irritation in the eyes or nose presents itself, but if possible to anticipate these symptoms by using it before exposure.

Pollantin can not be said to be a cure for hay fever, except in the sense that it is an antidote to the pollen toxins, which antidote must be applied in sufficient quantities, and sufficiently often to overcome the repeated exposures to the toxins.

Concerning the editor's note as to the proprietary nature of the remedy, it is unfortunate that this is true. Professor Dunbar himself deplores the necessity for this, but in a personal communication to me stated that without some such safeguard, remedies purporting to have the same virtues would be, and in fact had been, placed on the market to the detriment of a valuable agent and his own reputation.

Robert Levy, M.D.

Fall River, Mass., Aug. 8, 1906.

To the Editor:—I have read with interest the letter from Dr. Ingals in The Journal, Aug. 4, 1906, touching the question of the treatment of hay fever with pollantin. I have no contribution to make on the subject of the use of pollantin except reports which have been made to me by my private patients, for I have not personally administered it to them, but as hay-fever patients tell one another everything new in the way of remedies, and usually try them all, whether the physician prescribes them or not, I have found a number of my own patients to have used pollantin without regard to any advice from me, and so far as I know, with entirely negative results.

Hay fever seems to me to be a vasomotor neurosis, with a good many causative factors, as it appears all the way from early May or June until frost. I have found the discharge or the condition fairly well controllable by some simple measures adapted to the individual case. If possible, previous to the attack, I get the nose in as good condition as possible, so that the resulting swelling will be less troublesome than it would be if occurring in a naturally very narrow naris. I do not think, however, that in a susceptible patient, nasal surgery necessarily prevents the attack, and do not so promise patients. When the attack is on, remedies which lessen the nasal congestion with the least amount of subsequent reaction, are the best for local use. I have found adrenalin or powdered suprarenalin useful, adrenalin, however, in no such strong doses as is advocated in the literature of the various houses who make it or similar compounds. Solution of adrenalin chlorid I have found most useful in strength of about 1/14,000 in some neutral diluent, as normal salt solution, or some one of the alkaline antiseptic nasal washes. Aristol has seemed to me par excellence, the best nasal astringent I have used. It can be used straight in a powder blower by the physician or the patient, or combined with small doses of powdered suprarenalin or with small doses of stearate of zinc, or one of the compounds of stearate of zinc and menthol, according to the discretion of the individual physician.

As an internal remedy I think nothing equals belladonna, given in the form of either an extract of belladonna or of atropin in dosage sufficient to produce a sense of dryness in the nose or throat, and then the dose diminished or given at much longer intervals.

For the suffusion and itching of the eyes, argyrol (I regret to say that this is also a proprietary remedy, but it seems to work well; possibly other silver compounds would do as well) in from 10 to 20 per cent. solution, a drop or so in the corner of each eye, seems to work remarkably well.

Under the above plan of treatment, individualized for the particular case and carried out strictly under the supervision of the physician, I find that my patients get through the hay-fever stage with a considerable degree of comfort, and can be treated at their work without the need of going away from home.

George L. Richards.

A New Phenomenon in Color Conversion.

Minot, N. D., Aug. 1, 1906.

To the Editor:—I wish to make some suggestions in connection with the Stevens' phenomenon, inasmuch as no entirely satisfactory explanation has been given, and with the hope that some element in them will lead to a further understanding of these color changes. I make the following observations on the figures illustrating Dr. George T. Stevens' article in The Journal A. M. A., July 21, 1906:

1. Fix the eye on one of the red corner blocks in Figure 1, and as the red band disappears the block on which the eye is fixed will be the last to be turned green.

2. While carrying out No. 1 another phenomenon may be obtained, namely, that all the green squares inside the red band may be converted to red.

3. It will be found easy to suppress the red band in Figure 1 if the eye is fixed on one of the outer green squares.

4. The red inside of the green band in Figure 2 can be converted into green, but it is more difficult than a similar trial with Figure 1.

5. Make a square opening in a sheet of paper so that it will just inclose the red band in Figure 1 and cover the green field outside. Fix the eye on either a red or a green square and all will become red.

6. Place a lead pencil dot in the outer third of the green in Figure 3, and fix the eye on or beside the dot, and the entire field will be made green. I could not accomplish this completely if the dot was on the red.

7. Place a dot midway between Figures 1 and 2 on the page and fix one eye on it. The phenomenon may be observed in both figures at the same time.

The above observations contain some points of interest which it may be well to note. Fixation on some particular point in the field aids in producing the changes. I was unable to accomplish a result with Figure 3 until a point of fixation was added. In No. 5 it is demonstrated that the colored band is enough predominant over the inclosed squares to produce the phenomenon and in No. 2 it is seen that this may be obtained before it is overshadowed by the greater predominant field of color with the production of the typical phenomenon. It will be most easily recognized at the moment the band begins to change, or just as it is coming back. In the seventh an interesting point comes to notice and would suggest the falsity of Stevens' principles of explanation. We here see the phenomenon present in both figures, at the same time eliminating the red from Figure 1 and the green from Figure 2, and a clear green and a red field persisting.

To see if the accommodation could play any part in the phenomenon, the following experiments were made: *a.* I paralyzed the muscle of accommodation in one of my eyes with atropia and the phenomenon was observed as before. A plus lens was used. *b.* A patient was taken who had one eye under atropia for three weeks, and the lens added. He had observed the phenomenon with the good eye previously, and at once induced it with the paralyzed one. *c.* As a final test I took a patient whose cataractous lens had been removed five weeks before, and with a correcting glass could read large print. He said he could obtain the phenomenon in Figure 1, but not in Figure 2.

From these experiments and observations the conclusion may be drawn that accommodation is not a factor in the production of the phenomenon, and with its elimination we may also exclude the difference in refraction of the various colored rays as an element in its explanation.

C. A. Klemer.

License of Physicians Practicing in Two States.

Jefferson, Wis., July 30, 1906.

To the Editor:—I wish to thank you for the thoughtful courtesy which prompted you to ask me to use your columns to present the medical examiners' side of the question regarding licensure as applied to those who are practicing in cities situated near to state boundary lines. There are some earnest, honorable men who seem to think that medical examining boards are likely to be very unjust and arbitrary in their action in such cases. We are always willing to answer any questions that are asked concerning our work and glad to have this opportunity to place the matter before your readers in its proper light, as the paragraph on page 2007 of The Journal, June 30, 1906, is based on erroneous information.

We have recently issued six licenses to as many physicians, all of whom reside in Stillwater, Minn., and who have been in continuous practice in that city and across the St. Croix River in Wisconsin since and prior to July 1, 1897, on exactly the same requirements and for the same fee that resident physicians of Wisconsin pay under similar circumstances, viz., $5.00. If a doctor is not properly qualified to avail himself of the interpretation of our law thus placed on it by our board, it may be necessary for him to secure a reciprocal license, which he can easily do if he is a reputable practitioner, and which I think every reasonable person would be willing to do, inasmuch as it applies to his competitor across the state lines the same as it does to him. I can not see as it is a matter that can be limited to a certain given distance from the boundary lines of any state, but must be administered on general and equitably broad principles that will not leave any cause for complaint. In the case cited it is admitted by the Minnesota physicians that they practiced in Wisconsin the same as though there were no boundary line. If a physician were located and licensed on the Wisconsin side of the river and had complied with all the requirements of the Wisconsin medical law, is he sure that he would relish active competition from those who had not done so?

A national plan is proposed that provides for certain boundaries. Would those boundaries be on wheels, also, to be moved as desired by the individuals or to be ignored entirely by them?

I am not prepared to favor the cumbersome machinery of a national examining body with the many component subordinate parts that would be necessary to conduct its affairs properly. I should expect it naturally to resolve itself into about the same condition of affairs as exists to-day. I prefer to agree with those of my colleagues on examining boards who are and have been consistently working to secure as nearly universal reciprocity as possible and practicable. I have attended most of the meetings that the American Confederation of Reciprocating Examining and Licensing Medical Boards has held in the past five years, but many of the states have not been represented by any one for the purpose of securing information on this very important problem of the many that are constantly presenting themselves to medical boards for solution.

All physicians will acquit the members of the Wisconsin board from being governed by mercenary motives, I think, when they consider that the members receive the munificent salary of $5.00 a day and actual expenses while engaged in performing their duties as members of the board.

I would not have any one imagine that I am averse to criticism, because I think that just and well-considered criticisms, based on facts and correct premises, ought to be and usually are a help to those who are making honest endeavors. I am sure that all true physicians are as earnestly trying to help as I or any one else, and, with my best wishes for the success of every one thus engaged, I am,

Very truly yours, J. V. Stevens,
Secretary of the Wisconsin Board of Medical Examiners.

[This letter is in response to an inquiry sent to the secretary of the Wisconsin Board of Medical Examiners, which was prompted by a letter from a physician who protested against the requirements of the Wisconsin Board of Medical Examiners making it necessary for a physician living and practicing in Minnesota near the border line to obtain a Wisconsin license before he can practice in Wisconsin.—Editor.]

Book Notices

Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IV. Gynecology edited by E. C. Dudley, A.M., M.D., Professor of Gynecology Northwestern University Medical School, and C. V. Bachelle, M.S., M.D., Gynecologist to the German Hospital, Chicago. Series 1906. Cloth. Pp. 227. Price, $1.25. Chicago: The Year Book Publishers, 1906.

This is a summary of new and useful additions to the literature of gynecology and shows evidence of careful compilation. The book is well illustrated.

The Eye and Nervous System, Their Diagnostic Relations. By Various Authors. Edited by W. C. Posey, A.B., M.D., Professor of Ophthalmology in the Philadelphia Polyclinic; Surgeon to the Wills Eye Hospital, etc., and W. G. Spiller, M.D., Professor of Neuropathology and Associate Professor of Neurology in the University of Pennsylvania, etc. Illustrated. Cloth. Pp. 988. Price, $6.00. Philadelphia: J. B. Lippincott Company.

This work, which is a unique one in the English language, is the result of the combined labor of twenty-two contributors, each of whom is a specialist in either ophthalmology or neurology. That two such specialties should be represented in a work of this kind is not to be wondered at when the intimate relations which exist between the eye and the nervous system are considered. Diseases affecting the nervous system produce symptoms connected with the eye perhaps more frequently than with any other organ, and on the other hand abnormal conditions of the eye underlie many symptoms associated with the nervous system. While the intricacies of ophthalmology and of neurology belong to the specialists, the general practitioner should at least be familiar enough with the methods of examination to enable him to recognize the symptoms when present and to correctly interpret their significance. These points are all well presented from the viewpoint of the ophthalmologist, as well as from that of the neurologist, and the interdependence of the two specialties clearly shown. This is not only of great value to the general practitioner, but also to many specialists who at times are inclined to take too narrow a view of diseases which affect their particular field. The chapters on the so-called functional disorders or neuroses are especially interesting and instructive, and show a great deal of work on the part of the authors. The work as a whole is an excellent one and it can be warmly commended, not only to specialists, but particularly to the general practitioners.

A Handbook of Climatic Treatment, Including Balneology. By W. R. Huggard, M.A., M.D., F.R.C.P. Cloth. Pp. 536. Price. $4.00. New York: The MacMillan Company, 1906.

Our author says in his preface that the chief aim of this book is to place the therapeutics of climate on a secure foundation. He offers a new classification of climates, which he believes is especially fitted for the needs of the physician. The effects and sources of the mineral springs of Europe are considered very fully. Especial attention is given to the physiologic effects of the elements of climate. Chapters are devoted to these effects under such headings as temperature, humidity, atmospheric pressure and light. The reaction of individuals to climate is not forgotten—what may be called the idiosyncrasies of individuals to climate. The author considers this for the most part an inherited influence and one which makes it impossible for man to change to extreme climates successfully and to maintain permanent good health. This point he considers at length and lays down a general rule—and, by the way, not a new one—that a race can be directly and at once acclimatized only in cases where the mean temperature is not far removed from that of its native land, though by gradual movements through successive generations perfect acclimatization may be attained even in countries widely differing in temperature from the original home of the race. No mention is made of acquired immunity to diseases peculiar to climates and of the probability of overcoming these diseases. Two races apparently are exceptions to this general rule: the Jewish and Gypsy races, both of whom approach to the cosmopolitan type.

In classifying climates he adopts a principle of division according to the demand made by the climate for the production of heat. It is evident that temperature is the chief governing factor in this classification. Although at one end of the scale the degree of humidity is an important factor, and at the other end of the scale the presence or absence of wind is important. Approximately 120 pages of this volume are devoted to the description of health resorts. A fair amount of this space is given to descriptions of resorts in the United States, but the list is very limited. The next section of the volume, amounting to a little more than 100 pages, is devoted to balneology. In this the mineral springs of the United States are entirely neglected, but the description of those of Europe is accurate and will be found useful. The last section of the volume is devoted to therapeutics, and in it the effects of climatology and balneology on the treatment of such diseases as obesity, anemia, gout, rheumatism, rickets, diabetes, syphilis, tuberculosis, chronic catarrhal diseases of the respiratory tract, diseases of the nervous system, of the kidney and bladder, uterus and its appendages and skin.

The book is an interesting one and yet not so complete or so valuable as to be calculated to displace the very good treatises on this subject now in our libraries.

Medical and Pharmaceutical Latin, By Reginald R. Bennett, Pharmaceutical Chemist, with an introduction by Henry G. Greenish, F.I.C., F.L.S. Cloth. Pp. 442. Price, $2.40. Philadelphia: P. Blakiston's Son & Co., London, J. & A. Churchill, 1906.

The introduction comments on the growing tendency in Great Britain to abandon the use of Latin in prescription writing and states that it is regrettable. In these days of rapid and easy traveling foreign prescriptions are often seen, and Greenish thinks that if all prescriptions were written in Latin which would be intelligible to the pharmacists all over the world a step would be made in obviating the inaccuracies in the dispensing of these prescriptions. The book starts with some elementary exercises in the Latin grammar. Part II deals with the reading and writing of prescriptions and takes up some syntactical rules. Part III consists of a very full vocabulary, while an appendix gives translations of French and German prescriptions.

Introduction to General Inorganic Chemistry. By Alexander Smith, Professor of Chemistry and Director of General and Physical Chemistry in the University of Chicago. Cloth. Pp. 780. Price, $2.25. New York: The Century Company. 1906.

Current text-books on chemistry may conveniently be divided into three classes: One class, the most numerous, is composed of those which were written ten, twenty or more years ago, and which have been patched up from one edition to the next in a more or less serious attempt to bring them in accord with modern chemical thought. One of these, a rather pretentious volume on "medical and pharmaceutical chemistry," of nearly a thousand pages, in its last edition devotes a single page to the modern solution theories, but subsequently does not again refer to them in a single instance. Another class contains the books which are hastily and crudely compiled from standard works by their authors, usually overworked teachers, for use by their own classes. Their preparation has its inception in the prospect of financial gain, in prestige to be gained, or because of a desire to present the subjects in the teacher's own way. In so far as they are a medium of communication of the teacher to his students they perform a definite function. but their general exploitation is not called for. Thus a text-book prepared for use in medical schools is also exploited for use in schools of pharmacy; but within its pages the author betrays woeful ignorance of everything pharmaceutical. To the third class of text-books belong those that are written by teachers who, after many years of preparation, find time to write down their own ideas of a proper course in chemistry. It is needless to say that the number of such newly written text-books which appear annually are few, but Professor Smith's text-book belong to this class. In the preface the author says: "This book, the first draft of which was written six years ago, is the outgrowth of the introductory course in chemistry which the author has given for fifteen years," and every chapter indicates that it is written by one who is both teacher and chemist.

The following, taken from an introductory chapter on "Simple and Compound Substances," illustrates the broad plan of the book:

> Until recently a body made up of one or more specific elements had never been found to yield any simple substance different from those used in preparing it. In other words, one element had never been turned into another. And this is still true so far as the familiar elements are concerned. Experience with radium (*q. v.*) which seems to decompose and give helium, however, may lead to a revision of the conception of an element. Indeed, even the more radical hypothesis, that all the so-called elements are made of one fundamental material, has never lacked supporters. Perhaps the recent discoveries in regard to electrons will lead to a conclusion, already formulated by J. J. Thomson, that the kinds of simple matter differ only in the number and arrangement of the corpuscles constituting their atoms.

The book fuses modern views and recent advances with the older, standard material, in such a way that the former are not excrescences, but become integral parts of one carefully digested system. Physicians who wish to keep in touch with modern chemical ideas will find no better work that this of Professor Smith.

The Examination of the Function of the Intestines, by Means of the Test-Diet, Its Application in Medical Practice and Its Diagnostic and Therapeutic Value. By Prof. Dr. Adolf Schmidt. Authorized Translation from the Latest German Edition, by Charles D. Aaron, M.D. Cloth. Pp. 88. Price, $1.00 net. Philadelphia: F. A. Davis & Co., 1906.

This little book should be studied by every practitioner who is not fully informed of the latest methods of examining patients suffering from diseases of the intestines. The book is well written and well translated; the statements are clear and it is full of ideas that are fresh. The author attempts to do for diseases of the intestines by the study of the feces what has been done for diseases of the stomach by the study of its content after a test meal has been administered. He insists that the test meal is as necessary to standardize the content of the intestine as it is in studying diseases of the stomach. He describes the test meal which he has found best and the number of simple chemical tests which throw light on the pathologic condition of the intestinal tract, and also describes fully the results of microscopic examinations which are quite as necessary for drawing conclusions from such investigations. The first three chapters are devoted to the test meal and methods of examination; the fourth to the significance of symptoms, particularly the presence of mucus, unchanged bile pigment, and variations of the content of bile pigment; to the significance of insufficient fat digestion and of meat remains and starch remains, and also the significance of putrefaction of the contents of the intestines. Another chapter is devoted to intestinal disturbances due to the stomach, liver and pancreas; and the last to the independent disturbances of the intestines, such as organic diseases like ulcer, catarrh, and atrophic diseases, and also the functional disturbances of various kinds.

Prontuario di Posologia Dei Rimedi Più Usati Nella Terapie Infantile. By A. Conelli. Cloth. Pp. 64. Price, L. 2. Milan. Italy: Ulrico Hoepli, 1906.

This is an up-to-date Italian dose-book of the remedies used in children's diseases.

I. Principi Fondamentali della Antropologia Criminale Guida Per I Giudizi Medico-Forensi Nelle Questioni Di Imputabilita. By G. Antonini. Cloth. Pp. 64. Price, L. 2. Milan, Italy: Ulrico Hoepli, 1906.

The Lombrosian ideas as regards criminality and degeneracy have been rather pervasive of late years, though not every one who adopts them has studied them intelligently. This little work by a follower of the distinguished Italian criminologist is intended to give in a concise form the general principles of the positive school of penology. In Chapter I a historical sketch is given of the use of the theories on which are based the tenets of the Italian school, and this is followed in order by chapters on the anthropologic theory of crime and the biologic phenomena of atavism, the medicolegal theories of imputability, and their connection with the defense of society and the disposition of the criminal, and the work concludes with a rather more lengthy chapter on mental disorders with reference to their relations to responsibility, etc. This last chapter is not so specially connected with the theories of the work, but supplements them, inasmuch as questions of mental disease and responsibility are so closely connected with those of criminality in practical social conditions.

Miscellany

Lay Self-Medication and Counter-Prescribing.—The *Medical Fortnightly* says: "The recently inaugurated campaign against 'patent medicines' and secret nostrums has emphasized as the really important factor for danger, not so much the poisonous character of the drug or combination used, as the fact of lay self-medication and counter-prescribing in drugstores. These pernicious customs allow drugs which are perfectly safe in safe hands to be administered blindly and often in the presence of definite physical contraindications which a qualified physician would determine before prescribing. This has led to the classification as poisons of some of our most useful drugs—drugs which are safe and harmless under normal conditions and in proper doses. The state has safeguarded the public by exacting of those who would treat the sick a demonstration of their ability safely and scientifically to do so. Not alone is a knowledge of drugs a requisite, but the physician must know their action in the presence of any condition the patient may exhibit and be quite as ready to withhold intelligently as to administer. Yet the average corner drug-store will prescribe for more patients in a day than will the average qualified physician. The druggist may know drugs, but he does not know patients! By what right does he prescribe for even the commonest of bodily ills? Does a license as pharmacist include the right to practice medicine? True, it is only just to state that there are druggists and druggists, and that the evil of counter-prescribing is not universal. Unfortunately, however, it is so general as to be an acknowledged fact. This is borne out by the published list of fatalities from acetanilid and compounds containing acetanilid. This list may be very inaccurate and greatly exaggerated, as has been claimed, yet it tells a tale of self-medication and druggist-medication, and the coal-tar derivatives are suffering where a system is really at fault. Were it possible to have the coöperation of the druggist, lay self-medication would soon be ended, and to the ultimate benefit of the druggist. This is a habit which can but be condemned, as it means the employment of medicines in absolute blindness. The habit is nothing less than pernicious, and criminal where drugs are so administered to infants and the helpless. In this day of free dispensaries and excessive gratuitous treatment, even the poorest in any section of our country need not lack competent medical advice if they will have it. Much has been said pro and con concerning the coal-tar derivatives and compounds containing acetanilid. It is not our purpose to enter into the controversy deeply. We believe, as we have stated above, that a good and useful agent is being calumniated while the real evil is overlooked. Acetanilid is not a poison in the ordinary acceptance of that term; few doctors believe that it is. It is a good and useful friend which will serve well, if intelligently employed, but it is not intended to be eaten by the teaspoonful or taken in the presence of cardiac disease. These products were never built for the use of any but a learned profession, and this brings us back to censure of the system of self-medication and prescribing by the incompetent. We do not believe that acetanilid can be so combined as to be a "safe household remedy." The exploitation of any compound containing it to this end may well be looked on with serious apprehension. It may be that no harm will result for a long time, but the chance is there, and it is an evil chance. Let us hope that the day may soon come when physician, manufacturer and druggist will combine to have the practice of medicine conducted in safe, scientific and legitimate channels, and it is no selfish belief that the best interests of all three, and that of the patient as well, will be promoted by the new régime."

Dangers of Asparagus.—W. Gross, of Dresden, relates that a patient always had hemorrhage from the lungs after eating asparagus. On one occasion when visiting away from home this man noticed the odor of asparagus before dinner and informed his hosts of his idiosyncrasy. They assured him that no asparagus would come on the table and none was to be seen, but some had been used in preparing the soup before it was strained. After eating half a plate of the soup he was seized with a severe hemoptysis almost at once. In another case, in an elderly woman, acute nephritis followed free ingestion of asparagus during several days, and in a third case renal dropsy was very much aggravated by it. In his communication to the *Allg. med. Ct. Ztg.*, 1906, lxxv, 496, Gross warns that persons with a tendency to hemoptysis, kidney trouble or dropsy should be cautious in eating asparagus.

The Pituitary Body.—E. A. Schäfer and P. T. Herring, at the meeting of the Royal Society, London (*Nature*, June 21, 1906), read a paper on "The Action of Pituitary Extracts on the Kidney," the principal points of which were as follows: Intravenous injections of saline extract of the infundibular portion cause dilatation of the kidney vessels, accompanied with increased flow of urine. With the first injection this result is accompanied by a rise of blood pressure and the contraction of systemic arteries. With subsequent injections a fall instead of a rise usually occurs, indicating that the diuretic action is independent of the blood pressure, and this leads one to conjecture that it is due to a special constituent of the extract. Certain reagents tending to abolish the blood pressure were also found to leave the diuretic effect unaltered. The diuretic, as well as the pressor and depressor constituents of the extract, are not destroyed by boiling. They dialyse through parchment paper and are insoluble in absolute alcohol and ether. Extracts of the anterior lobe exhibit no physiologic activity. The conclusion deduced is that the infundibular portion produces a secretion which passes into the blood, and which both indirectly by its general action on the vascular system, and directly by its special action on the renal vessels and epithelium, assists in promoting and regulating the secretion of urine; in other words, the internal secretion of the gland is ancillary to the renal functions.

Importance of Hydrochloric Acid for Infantile Digestion.—J. Schütz recently announced at a meeting of the Vienna local medical society that important information can be obtained from chemical analysis of the stomach content of infants. The reason why so few practical results have been realized to date is because no uniform opinion prevails in regard to the biologic importance of the various constituents of the gastric juice, and further research is needed in this line. He believes that the total acidity is the main differential point. His tests demonstrated that in cow's milk the power to bind the hydrochloric acid after the milk has been acted on by the rennet declined by 80 and even 100 per cent., according to the completeness of the rennet action. Such a difference does not exist in human milk. The findings in regard to free hydrochloric acid, consequently, depend not only on the amount of the acid secreted but also on the energy of the rennet action. He remarked that pediatrists have hitherto entirely overlooked, it seems, the influence of the hydrochloric acid on pancreatic secretion, and yet this is probably of great importance. From this point of view the capacity of various foods to bind the hydrochloric acid will well repay study. The *Wien. klin Wochschr.* for July 12 contains a brief summary of his communication.

Nostrums.—The tendency with many in practice is entirely too much toward routine and it can only be eliminated by work. Knowledge is not unconsciously absorbed, and to keep up with the knowledge of medicine one must use new texts and good journals. If legislation should suddenly prohibit the sale of nostrums, within 24 hours the leaves would be turned and the dust brushed from thousands of texts on therapeutics which for years have been shamefully neglected. Is this not enough to cause the progressive, energetic element of the profession to rise en masse against nostrums? Let us remove the temptation.—*Am. Jr. of Clinical Medicine.*

Attendance at Medical Meetings.—The following remarks are printed on the program of the thirty-third annual meeting of the Northern Tri-State Medical Association: "The man who does not attend medical meetings should be classed with the quacks. If he is above the average he should give society the benefit of his wisdom. If he is below, he should go and learn. If you have a good idea bring it with you. If you have a fallacy the sooner you get it knocked out of you the better for suffering humanity. The public would do better to inquire 'Do you attend medical societies?' than 'Where did you graduate?'"

Association News

Date of Next Session of the American Medical Association. The next annual session of the American Medical Association will be held at Atlantic City, New Jersey, Tuesday, Wednesday, Thursday and Friday, June 4, 5, 6 and 7, 1907.

ATLANTIC CITY, Aug. 9, 1906.

To the Members of the American Medical Association:—A joint meeting of the executive committee of the American Congress of Physicians and Surgeons and of a committee of the Board of Trustees of the American Medical Association was held at Atlantic City, August 8, for the purpose of arranging the dates of the meetings of the two associations so that one should immediately follow the other. After considerable discussion various reasons became known which would seriously interfere with the attendance of the members of either one or the other. It was, therefore, decided that the meeting of the Congress of Physicians and Surgeons should remain as already fixed by the executive committee, namely, in May, and the date for the next meeting of the American Medical Association in Atlantic City was named as June 4 to 7.

WILLIAM H. WELCH,
E. E. MONTGOMERY,
PHILIP MARVEL,
Committee of the Trustees of the American Medical Association.

Marriages

VICTOR PACYNA, M.D., to Miss Ethel Friend, both of Chicago, August 7.

C. MAURICE STAFFORD, M.D., to Miss Fannie S. Cotton, both of Detroit, June 26.

EULER JONES CALDWELL, M.D., to Miss Annie M. Tryon, both of Rio Vista, Cal., July 16.

HARRY G. FRIDGE, M.D., Sanford, Miss., to Miss Emma Sharp, of Seminary, Miss., August 5.

F. A. RENNER, M.D., St. Jacob, Ill., to Miss Della May Midgley, of Lebanon, Ill., August 4.

H. L. CASTLEMAN, M.D., to Mrs. Rose Lovejoy, both of Sylacauga, Ala., at Birmingham, Ala.

GEORGE ALLEN STAPLES, M.D., to Miss Brownie Wadley, both of Dubuque, Iowa, August 2.

OREL A. KIBBE, M.D., Harmony, Minn., to Miss Corinne Broughton, of Minneapolis, August 8.

DAVID H. KELLER, M.D., Philadelphia, to Miss Ella Garis Phillips, of Stroudsburg, Pa., August 4.

MCCLURE SCOTT, M.D., Wheeling, W. Va., to JESSIE M. THORNTON, M.D., of Staunton, Va., several months ago.

Deaths

Thomas Dudley Wooten, M.D. University of Louisville (Ky.) Medical Department, 1853, one of the most prominent practioners of Austin, Tex.; local surgeon for the Houston and Texas Central Railroad; formerly president of the board of regents of the University of Texas; a member of the State Medical Association of Texas, Seventh District Medical Society, and its first president; Travis County Medical Society and the Southern Surgical and Gynecological Association; a delegate to the International Medical Congress; a surgeon in the Confederate service during the Civil War, during which he served successively as surgeon of the Second Regiment, Seventh Division, Missouri state troops, chief surgeon of McBride's division, surgeon-general of the Missouri forces, medical director of the Division of Tennessee, of the Division of Arkansas and of the Western Army Corps, died at Eureka Springs, Ark., August 1, from gastritis, after a brief illness, aged 77.

William J. Class, M.D. Rush Medical College, 1894, since 1897 a medical inspector of the Chicago Department of Health, who has been ill and on leave of absence for several months and living on a cabin launch in pursuit of health; one of the most earnest students of bacteriology in the middle west, who has already made himself famous by his research work on cerebrospinal meningitis and scarlet fever, with especial reference to serum therapy, died in Mercy Hospital, Benton Harbor, Mich., from cerebral thrombosis, August 9, aged 32. For mo than two years he had suffered from arteriosclerosis and val ular heart disease. He was a member of the American Med ical Association.

Benjamin Franklin Hamilton, M.D. Charity Hospital Med cal College, Cleveland, 1867, a member of the American Medica Association, Medical Society of the State of Pennsylvania an Venango County Medical Society, and president of the latte society in 1878; one of the best known practitioners of Wester Pennsylvania, died August 3 at his home in Emlenton, after a illness which began while he was on his way to attend the Bos ton meeting of the American Medical Association, aged 68.

James C. Harmon, M.D. University of Vermont, Medical De partment, Burlington, 1866, a veteran of the Civil War an one of the oldest and best-known practitioners of Champaig County, Illinois, a resident of Rantoul for more than thirt years, died in the Burnham Hospital, Champaign, August 1 after a protracted illness, aged 66.

Charles D. Mackey, M.D. Baltimore Medical College, 188 health officer of the Borough of Montrose, Pa.; from 1901 t 1905 coroner of Susquehanna County, Pennsylvania; from 188 to 1901 a member of the Susquehanna County Medical Society died at his home in Montrose, July 31, from cerebral hemor rhage, after an illness of one day.

Martin Ludwig Lauber, M.D. Pennsylvania Medical College Philadelphia, 1850, a surgeon in the Navy during the Civi War, and after its close surgeon for many years on the Pacifi Mail Steamship Line, died at his home in West Earl, Pa. Dec. 24, 1905, from locomotor ataxia, after an illness of twelv years, aged 74.

Albert C. Johnson, M.D. College of Physicians and Surgeon of Chicago, 1901, a member of the Æsculapian Medical Society of the Wabash Valley and of the Vermilion County (Ill.) Medical Society, died at his home in Sidell, Ill., June 10, from tuberculosis of the spine, after an illness of one year, aged 34.

Edward E. Womersley, M.D. Medical Department of Columbia University, Washington, D. C., 1883, for five years in the regular Army and for the last twenty-two years a resident of Omaha, Neb., died at his home in Omaha, August 3, from dropsy, after an illness of several months, aged 56.

Thomas Brennan, M.D. New York University, New York 1877, prominently connected with the St. Vincent de Paul Society, physician to the Actors' Fund, and at one time connected with the Board of Health, died at his home in New York City July 21.

Calvin DeFord Snyder, M.D. University of Maryland School of Medicine, Baltimore, 1898, contract surgeon United States Army since 1900, was killed at Julita, Island of Leyte, Philippine Islands, August 9, in a fight with Pulujanes, aged 28.

Abraham Jobe, M.D. Medical Department of Transylvania University, Lexington, Ky., 1849, one of the oldest practitioners of Carter County, Tennessee, died at the home of his daughter in Elizabethton, July 30, after a brief illness, aged 89.

William G. Houtz, M.D. Philadelphia, 1851, for twenty-five years a practitioner of Troy Grove, Ill., and thereafter a resident of Lincoln, Neb., died at his home in Lincoln, June 30, from septicemia, after an illness of seven days, aged 75.

George W. Jones, M.D. Cleveland Homeopathic Medical College, 1901, and a member of the faculty of that institution, died at the Huron Street Hospital, Cleveland, August 6, a few hours after an operation, aged 35.

James Gillard, M.D. American Eclectic Medical College of Ohio, Cincinnati, 1887, died at his home in Sandusky, Ohio, August 2, after an illness of seven months, which began with pleuropneumonia, aged 63.

Mary E. Stark, M.D. Woman's Medical College of the New York Infirmary, New York City, 1880, formerly of Rochester, N. Y., died at her home in Los Angeles, Cal., July 31, after a long illness.

Charles M. Showman, M.D Starling Medical College, Columbus, Ohio, 1897, of North Baltimore, Ohio, was drowned while bathing in the Maumee River, near Grand Rapids, Ohio, August 2, aged 34.

Benjamin Charles Bentley, M.D. Cooper Medical College, San Francisco, 1893, of Bakersfield, Cal., died at the home of his parents in Woodbridge, Cal., July 22, from paralysis, aged 38.

Ithiel Silsby Stevens, M.D., Cincinnati College of Medicine and Surgery, 1880, of Peoria, Ill., died August 1 from acute spinal disease, after an illness of one day, aged about 55.

Isaac Lemon Hughes, M.D. Medical College of Georgia, Augusta, 1856, died at his home in Fort Worth, Tex., May 30, from nephritis, after an illness of two months, aged 75.

Stanton Blake Drew, M.D. University and Bellevue Hospital edical College, New York City, 1902, died at his home in cksonville, Fla., July 28, after a brief illness.

Thomas J. Gerron, M.D. Medical Department of Vanderbilt niversity, Nashville, Tenn., 1893, died at his home in Argo, ex., April 30, from pulmonary tuberculosis.

Henry Rauch, M.D. Tulane University of Louisiana Medical epartment, New Orleans, 1893, died at his home in Herod, Ga., ugust 3, after a prolonged illness.

Charles W. Isaminger, M.D. Cincinnati College of Medicine nd Surgery, 1891, died at his home in Alpena, Mich., from rebral hemorrhage, August 4.

George M. Zimmerman, M.D. Jefferson Medical College, Philadelphia, 1870, died at his home in Butler, Pa., from cerebral emorrhage, August 6, aged 61.

James Weir, M.D. University of Louisville (Ky.) Medical epartment, 1878, of Owensboro, Ky., died at Virginia Beach, a., August 9, aged 50.

Williams A. Wilson, M.D. Trinity Medical College, Toronto, ntario, 1886, died at his home in Junction City, Kan., July 31.

George W. Mason, M.D. Medical College of Ohio, Cincinnati, 873, died at his home in Stafford, Ohio, July 30.

Henry R. Shacklett (Years of practice, Tennessee, 1889) ied at his home in Nashville, June 20, aged 73.

Death Abroad.

Paul C. H. Brouardel, M.D., LL.D., professor of legal medicine t Paris, and one of the most prominent medical men of his ime, died at Paris, July 24, aged 69. His works on medicogal questions have become classics, and as an official delegate international gatherings and president of innumerable soieties and congresses he was a familiar figure. Not unlike irchow in appearance, his position in France was like Virhow's in Germany in his pioneer work and leadership. He on equal eminence in forensic medicine and in public hygiene. he legislation of the last 25 years in regard to official medolegal experts and matters affecting the public health was rgely due to Brouardel. His wise counsels aided in interational sanitary conferences and the more recent international ntituberculosis congresses and in matters affecting military ygiene. He presided at the recent antituberculosis congress t Paris. The records of his work and teachings as director f the laboratory at the Paris morgue are as interesting as oe's stories. Since 1878 he has been one of the editors of he *Ann. d' hygiène publique et de médecine légale* now in its eventy-eighth year. Almost his last work was the planning f an institute for research on criminal psychology.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for his column must be accompanied by the writer's name and adress, but the request of the writer not to publish name or address ill be faithfully observed.

EXAMINATION OF SCHOOL CHILDREN.

PLAINFIELD, N. J., Aug. 3, 1906.

To the Editor:—Will you please publish a list of articles of value physicians doing school work; that is, the examination of public chool children? F. J. HUGHES.

ANSWER.—The following is a partial list of articles published on chool inspection, etc., in the past five and a half years, and indexed the INDEX of THE JOURNAL:

TITLE.	JOURNAL AND DATE.
edical School Inspection. G. Emerson.	Brooklyn Med. Journal, May, 1904.
iseases of School Children. P. H. Bryce.	Canada Lancet (Toronto), April, 1904.
edical Inspection of Schools. A. Friedlander.	Lancet-Clinic (Cincinnati), May 28, 1904.
edical Inspection of Schools. H. MacMurchy.	American Medicine (Philadelphia), May 21, 1904.
uties of Medical School Inspectors.	THE JOURNAL A. M. A., May 7, 1904, page 1243. (Abst.)
edical Inspection of Schools. Adelung.	Southern Calif. Pract. (Los Angeles), November, 1904.
anitary Inspection of Schools. H. Surmont.	Presse Médicale (Paris), No. 25, March, 1905.
ducational Influence of Medical Inspection of Schools. Axmann.	Deutsche med. Wochenschrift (Berlin), XXXI, No. 5, Jan. 31, 1905.
elation of School Methods to School Diseases. W. J. Herdman and J. H. McBride.	THE JOURNAL, A.M.A., April 15, 1905, page 1175.
Test of Public School Children. G. L. Leslie.	Southern Calif. Pract., June, 1905.
Plea for National and Local Boards of School Hygiene. A. M. Smith.	THE JOURNAL A. M. A., Sept. 30, 1905, page 978.
Medical Inspection of School Children.	THE JOURNAL A. M. A., Dec. 30, 1905, page 2017.
Medical Supervision of Schools, etc. C. G. Jennings.	Detroit Med. Jour. and Archives of Pediatrics, July, 1905.
Medical Inspection of Schools. G. L. Kiefer.	Jour. Mich. State M. S. (Detroit), November, 1905.
Medical Inspection of Schools. E. v. Adelung.	Calif. State Jour. of Med. (San Francisco), June, 1905.
School Life in Relation to Health. P. Zenner.	Lancet-Clinic, October, 1905.
Why School Children Should Be Examined. T. A. Frazier.	Am. Practitoner and News (Louisville), May, 1906.
Annual Systematic Examination of School Children. J. P. McMahon.	Wisconsin Med. Jour. (Milwaukee), December, 1905.
School Medical Inspection in Chicago. W. D. Byrne.	THE JOURNAL A. M. A., Nov. 23, 1901, page 1385.
Necessity for Annual Systematic Examination of School Children. F. Allport.	Calif. State Journal of Medicine, February and March, 1904.
Eyes and Ears of School Children. F. Allport.	Vermont Med. Monthly (Burlington), June 15, 1906, and Medicine (Detroit), April, 1906.
Systematic Examination of the Eyes of Defectives. F. P. Lewis, Buffalo.	American Medicine, August, 1905.
Observations Made on Inspection of Schools. L. M. Powers.	Southern Calif. Pract., July, 1903.
Medical Inspection of Schools. S. R. Towne.	Western Med. Review (Lincoln, Neb.), July, 1903.
Medical Inspection of Schools. L. S. Somers.	Medical News (N. Y.), Jan. 17 and Jan. 24, 1903.
Medical Inspection of Schools. H. P. Johnson.	Medical Mirror (St. Louis), May, 1903.
Medical School Inspection in New York. C. Herrman.	New York Med. Jour., March 7, 1903.
Medical Inspection of Schools. DeL. Rochester.	Buffalo Med. Jour., July, 1902.
Medical Inspection of Schools. J. Lee.	New York State Jour. of Med., August, 1902.
Medical Inspection of School Children. M. D. Hoge, Jr.	Atlanta Jour.-Record of Medicine, April, 1902, and Virginia Medical Semi-Monthly (Richmond), April 11, 1902.
Medical Inspection of Schools. M. Anderson.	Illinois Med. Jour. (Springfield), February, 1902.
Daily Medical Inspection of Schools. D. S. Lamb.	New York Med. Jour., Nov. 30, 1901, Dec. 7, 1901, and Dec. 14, 1901.
Medical Examination of School Children. E. M. Greene.	Philadelphia Med. Jour., Feb. 16, 1901.

REGISTRATION REQUIRED BEFORE PRACTICING MEDICINE.

———, OHIO, Aug. 10, 1906.

To the Editor:—I am a graduate from a medical school in good standing, and have an Ohio state license to practice medicine. Is there any law prohibiting me from practicing my profession in *another state* until that state board holds its examination at which time I would take the examination? T. C.

ANSWER.—As the laws of all states specifically require registration before a physician can begin practice, this must certainly be complied with. In a few states, however, viz., Arkansas, Florida, Louisiana, Mississippi and North Carolina, a temporary permit may be secured pending the next examination. Possibly one might be secured in some other states.

TREATMENT OF BURNS.

YONKERS, N. Y., Aug. 4, 1906.

To the Editor:—Will you kindly inform me, through THE JOURNAL, your opinion of (1) the best treatment of extensive burns of the body, first and second degree, involving large area and threatening life of patient? (2) What are the objections, if any, to use of creolin? I used it here in a case, child 2 years, burns involving about one-third body surface, and in twenty-four hours found phenol in the urine and feces and child showing grave septic symptoms. Stopped its use and applied boro-salicylic ointment; child recovering. Any information will be greatly appreciated.

H. H. STEVENS.

ANSWER.—1. Nothwithstanding the amount of experimental and clinical work which has been done recently on extensive burns, the cause of early death in these cases remains unsolved. Undoubtedly, however, shock, such as exists after any severe injury, is always present and demands the same general treatment, namely, morphia hypodermically for the relief of pain, adrenalin given in the same manner to hold up the blood pressure, application of warmth to body, dependent position of head, friction to unburned portions of skin, etc. Owing to the tendency in some cases to the development of stupor and coma, only sufficient morphia should be given to ease the pain, when it should be discontinued. The question of the formation of toxic substances, of hemolysins and of the changes which take place in the blood corpuscles need not be discussed here. All, however, recognize the desirability of favoring elimination so soon as reaction has taken place, and to this end the introduction of physiologic salt solution per rectum or subcutaneously is desirable. Concerning the local treatment of the burned area, the tendency at present is to the open-air method. The uncovered skin is left exposed to the air, blebs are removed, the areas gently dried, dusted with stearate of zinc or other bland dusting powder, and fanned to hasten drying and the formation of crusts. Contrary to early ideas the pain under this line of treatment soon subsides and healing is more rapid than under moist dressings. The unburned portion of the surface should be bathed and cleansed often and the temperature of the room should be maintained high in order to favor the action of the skin. The air must be kept as pure as possible and the utmost cleanliness maintained about the bed linen and everything else that comes in contact with the patient. A liberal supply of pure water should be provided, and only liquid nourishment allowed until the dangers of intestinal complications have passed. It should be understood that these remarks apply to the particular class of burns mentioned in the question, namely, extensive burns of the first and second degrees threatening life. Of course, there are many local applications of value for the treatment of more circumscribed burns, and other methods of treatment more suitable to burns of particular regions and of greater degree.

2. Creolin is a coal-tar product. It is not a definite substance, but consists of a mixture of several substances which pass over in the distillate at a temperature of from 180 to 220 degrees. Some of its constituents, such as the pyridin-like and phenol compounds, are highly toxic. The percentage of phenol present has been found to vary from 3.4 per cent. in some of the German preparations to 22.6 per cent. in some English preparations. A number of deaths have occurred from its use locally, as in uterine and vaginal injections in 2 per cent. solution. In children, even a 1 to 1,000 solution applied externally, has produced acute eczema with fever. As it is an indefinite compound containing a number of toxic substances, it should be used in extensive burns only with the greatest circumspection.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Aug. 11, 1906:

Keefer, Frank R., surgeon, left Presidio, Monterey, Cal., en route to Camp of Instruction at American Lake, Wash.

Hartnett, E. H., asst.-surgeon, left Fort Hancock, New Jersey, on ten days' leave of absence.

Reed, Howard A., asst.-surgeon, assigned to temporary duty, Presidio, Monterey, Cal.

Webb, W. D., asst.-surgeon, arrived at Camp of Instruction, Austin, Texas.

Richards, R. L., asst.-surgeon, reports departure from Vancouver Barracks, en route to Fort Columbia, Wash., for temporary duty.

Flagg, Charles E. B., asst.-surgeon, left Vancouver Barracks en route to Camp of Instruction, American Lake, Washington.

Corbusier, William H., deputy surgeon general, left Vancouver Barracks en route to Camp of Instruction, American Lake, Washington, for duty as chief surgeon.

Tefft, William H., asst.-surgeon, arrived at Camp of Instruction, Fort Benjamin Harrison, Ind.

Baker, David, asst.-surgeon, left Fort Bliss en route to Camp of Instruction, Austin, Texas.

Wolfe, E. P., asst.-surgeon, granted 30 days' leave of absence.

Newgarden, George J., surgeon, relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with the order, and will proceed on the first available transport sailing after Nov. 1, 1906, from Manila, P. I., to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Heysinger, James D., asst.-surgeon, assigned to duty as surgeon of the transport *Sherman*.

Vedder, E. B., asst.-surgeon, relieved from further duty as surgeon of the transport *Sherman*, and assigned to duty in Philippines Division.

Crosby, William D., surgeon, assumed the duties of Chief Surgeon, Headquarters, Department of the Columbia, in addition to his present duties as surgeon, Vancouver Barracks, Wash.

Shook, Jay R., asst.-surgeon, arrived at Camp of Instruction, Fort Riley, Kansas.

Clayton, J. B., asst.-surgeon, unexpired portion of leave revoked and to proceed to Camp of Instruction, Fort Riley, Kan.

Hansell, H. S., asst.-surgeon, left Presidio, San Francisco, en route to Camp of Instruction, American Lake, Wash.

Lambert, Sam E., asst.-surgeon, reports arrival at Camp of Instruction, American Lake, Wash.

Purnell, Harry S., asst.-surgeon, granted leave of absence for one month.

Lynch, Charles, surgeon, General Staff, detail to attend Ohio National Guard encampment revoked.

Palmer, Fred W., asst.-surgeon, ordered to report in person Oct. 16, 1906, to Lieut. Col. George H. Torney, deputy surgeon general, president examining board, Army General Hospital, Presidio, San Francisco, for examination to determine his fitness for advancement.

Monerief, W. H., Little, W. L., asst.-surgeons, ordered to report in person to Major William H. Arthur, surgeon, president examining board, Army Medical Museum, Washington, D. C., for examination to determine their fitness for advancement.

Pyles, Will L., asst.-surgeon, leave extended fifteen days.

Gray, W. W., deputy surgeon general, granted leave of absence for ten days, to take effect on the expiration of his present sick leave.

Ford, Clyde S., asst.-surgeon, relieved from duty at Medical Supply Depot, New York City, and ordered to Philippines Division for duty.

Lewis, William F., asst.-surgeon, ordered to report in person on Oct. 16, 1906, to Major William H. Arthur, surgeon, president examining board, Army Medical Museum Building, Washington, D. C., for examination to determine his fitness for promotion.

Rhoads, Thomas L., asst.-surgeon, left West Point, N. Y., en route to Camp of Instruction, Fort Riley, Kan.

Millikin, John D., dental surgeon, left Fort Leavenworth, Kan., and arrived at Camp of Instruction, Fort Riley, Kan., for duty.

Mason, George L., dental surgeon, left Fort McPherson, Ga., and arrived at Fort Screven, Ga., for duty.

Daywalt, George W., contract surgeon, left Fort De Soto, Fla., on sick leave of absence for one month.

Rebert, Michael A., contract surgeon, left Fort Totten, N. Y., and arrived at West Point, N. Y., for temporary duty.

Brown, Ira C., contract surgeon, left Fort Niobrara, Neb., on sick leave of absence for two months.

Reagles, James, contract surgeon, left Fort Keogh, Mont., for temporary duty at Fort Assinniboine, Mont.

Kelly, John P., contract surgeon, ordered from Sequoia National Park, Cal., to temporary duty at Presidio of San Francisco.

Greenwell, Samuel A., contract surgeon, left Fort Barrancas, Fla., for duty with Coast Artillery from Fort De Soto, Fla., at Tampa, Fla., encampment of Florida National Guard.

Stuckey, Harrison W., contract surgeon, arrived at Camp of Instruction, Fort Benjamin Harrison, Ind., for duty.

Chase, Alpha M., contract surgeon, arrived at Camp Mabry, Austin, Texas, for duty.

Pinquard, Joseph, contract surgeon, left Fort Leavenworth, Kan., for Camp of Instruction at Fort Riley, Kan.

Ashburn, James K., contract surgeon, returned to Fort Lincoln, N. Dak., from duty with troops en route to camp at Islay, Wyo.

Pomeroy, William H., contract surgeon, returned to Springfield Armory, Mass., from leave of absence.

Richardson, William H., contract surgeon, left Fort Sheridan, Ill., and arrived at Camp of Instruction, Fort Benjamin Harrison, Ind., for duty.

Macy, Frederick S., contract surgeon, reports arrival at Fort Ethan Allen, Vt., from leave of absence.

Public Health and Marine-Hospital Service.

List of changes of stations and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 8, 1906:

Kerr, J. W., asst.-surgeon general, granted leave of absence for fourteen days from Aug. 9, 1906.

Guiteras, G. M., surgeon, directed to proceed to Ceiba, Honduras, for special temporary duty.

Stiles, Ch., W., Chief Division Zoology, Hygienic Laboratory, granted leave of absence for nineteen days from Aug. 6, 1906.

Cheney, E. L., acting asst.-surgeon, granted leave of absence for ten days during month of August.

Foster, J. P. C., acting asst.-surgeon, granted leave of absence for twenty-four days from Aug. 3, 1906.

Gustetter, A. L., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 16, 1906.

Hicks, W. R., acting asst.-surgeon, granted leave of absence for six days from Aug. 7, 1906.

Keatley, H. W., acting asst.-surgeon, granted leave of absence for two days from July 18, 1906, under paragraph 210 of the Regulations.

Kennard, Karl S., acting asst.-surgeon, granted leave of absence for thirty days from Aug. 27, 1906.

Slaughter, A. W., acting asst.-surgeon, granted leave of absence for five days from Aug. 11, 1906.

Maguire, E. D., pharmacist, granted leave of absence for thirty days from Aug. 6, 1906.

Allen, G. C., pharmacist, granted leave of absence for twenty-three days from Aug. 4, 1906, and excused for further period of one month from Aug. 27, 1906.

Troxler, R. F., pharmacist, relieved from duty at Chicago and directed to report at Bureau, Washington, D. C., for temporary duty.

BOARD CONVENED.

A Board of Medical Officers convened to meet at Port Townsend, Wash., for the purpose of making physical examination, under immigration laws, of certain persons who shall appear before the board. Detail for the board: Passed Assistant Surgeon J. H. Oakley, chairman; Acting Assistant Surgeon L. T. Seavey; and Acting Assistant Surgeon R. Lyall, Recorder.

Public Health.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Aug. 10, 1906:

SMALLPOX—UNITED STATES.

Florida: July 28-Aug. 4, Duval County, 1 case; Escambia County, 1 case.

Illinois: Galesburg, July 21-28, 3 cases.

Louisiana: New Orleans, July 21-28, 12 cases.

Maine: July 30, Blaine, present; Mars Hill, present.

North Carolina: General, June 1-30, 172 cases.

North Dakota: General: May 1-31, 24 cases; June 1-30, 36 cases.

Ohio: East Liverpool, July 1-31, 2 cases.

Oklahoma: Oklahoma City, July 21-August 4, 3 cases.

Tennessee: Knoxville, July 21-28, 1 case; Memphis, July 28-August 4, 1 case.

Wisconsin: Appleton, July 21-28, 3 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, June 23-30, 2 cases.

Chile: Antofagasta, June 10-24, 27 cases, 9 deaths; Iquique, July 7, present.

Gibraltar: July 8-22, 2 cases.

Great Britain: Hull, July 7-14, 1 death.

India: Calcutta, June 16-23, 8 deaths; Karachl, June 24-July 1, 2 cases, 1 death; Madras, June 23-29, 2 deaths; Raugoon, June 16-23, 5 deaths.

Nicaragua: Bluefield, August 6, 1 case.

Panama: Colon, July 18-21, 5 cases.

Russia: Odessa, July 7-14, 9 cases.

Siberia: Vladivostok, June 10-14, 2 cases.

Spain: Barcelona, July 10-20, 12 deaths.

YELLOW FEVER.

Cuba: Matanzas Province, August 2, 1 death.

Mexico: Vera Cruz, July 21-28, 1 case, 1 death.

CHOLERA—INSULAR.

Philippine Islands: June 9-23, Manila, 23 cases, 17 deaths; Provinces, 100 cases, 58 deaths.

CHOLERA—FOREIGN.

India: Calcutta, June 16-23, 31 deaths; Madras, June 23-29, 8 deaths; Rangoon, June 16-23, 2 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, August 7, 1 death.

PLAGUE—FOREIGN.

Australia: Brisbane, July 9, 1 case; Fremantle, May 27-July 9, 2 cases, 1 death; Sydney, June 9-16, 1 case.

Chile: Antofagasta, June 10-24, 10 cases, 2 deaths.

India: June 16-23, General, 1,130 cases, 952 deaths; Calcutta, 29 deaths; Karachi, June 24-July 1, 21 cases, 21 deaths; Rangoon, June 16-23, 94 deaths.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

(Continued from page 299.)

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.
CHICAGO.

Salisbury, Mashonaland, June 8, 1906.

GERMANY'S BATTLE WITH TROPICAL DISEASES IN EAST AFRICA.

Since Germany has become interested politically and commercially in the future welfare of Africa by acquiring possessions, one on the west and the other on the east coast, she has entered earnestly and systematically in the battle against disease by contributing her lion's share to the elucidation of the nature of tropical disease and to the discovery of ways and means for their prevention and cure. If she had done nothing else in getting her modest share in apportioning and redistributing the continent, she would be excusable in taking such an active part in the stupendous struggle of the nations of the Old World for supremacy. Under the pretext of bringing the untutored savage tribes of Africa under the influence of civilization and christianization, the geography of the country has been entirely changed, and nearly all the influential European powers have acquired more or less of the spoils gained, not by conquest, but by agreement and consent among themselves.

Germany has set a good example in East Africa of what should be done for the black subjects who were not consulted when it came to the adoption of a new government and the hoisting of a strange flag. She has established in her possessions a system of public schools and has built railroads so as to reach natives in the interior, and has expanded commerce and established new industries which will give employment to the natives who are willing to work. She is protecting and aiding missionary work on the coasts and in the interior.

But her greatest work has been, and will continue to be, to give her scientific men every possible facility, encouragement and aid for the study of the etiology of tropical diseases and thereby to open up new avenues toward their prevention and cure. Germany is better prepared and better able to undertake and carry out this stupendous task successfully than any other nation which has taken part in the fragmentation of old Africa.

Germany has a higher estimate of scientific medicine and contributes more toward its advancement than any other country in the world. She has an army of scientific men well trained for this kind of work and anxious to risk their lives, if need be, in the fever-stricken jungles in order to contribute their share to the glorious victory of preventive medicine in Africa, as well as in all other tropical countries. She has commenced her philanthropic work in earnest and it is progressing with astonishing speed. A number of her best bacteriologists are now in the field and hard at work with their well-known enthusiasm and thoroughness. All this work is being done under the general direction of Professor Koch, Germany's ablest and most famous bacteriologist. He knows the East Coast of Africa, and more especially German East Africa, where he is now for the third time, better than any other scientist. At present he is located at Amani, two hours by rail from Tanga, where he is expected to remain for several months before he will go to Uganda as the head of a commission appointed by the imperial government for the special purpose of discussing ways and means of getting rid of German East Africa's greatest pest, the tsetse fly, the most formidable enemy of man and the domestic animals. It is expected that he will remain in Uganda, in the neighborhood of Lake Victoria Nyanza, at least a year for this special purpose and it is to be hoped that he will crown the work of his life by winning a victory over this terrible scourge that hangs over the country like a dark, motionless cloud. Germany's determination to improve the sanitary conditions of her African possessions is apparent in all of the hospitals in the German part of the coast. In all of them there are well-equipped laboratories and competent bacteriologists, who are assisted by trained nurses, women especially educated for this kind of work.

PROFESSOR OLLWIG'S RESEARCHES ON MALARIA IN DAR-ES-SALAAM.

As chief of a small commission appointed by the imperial government to investigate the causes of malaria in Dar-es-Salaam, Professor Ollwig, as the result of his researches, came to some very important conclusions. Malaria prevailed to an alarming extent in the city, for which he found a very satisfactory explanation by the existence of numerous breeding-places for the anopheles in the many low, marshy places and pools of stagnant water. He at that time suspected that the culices, which were very numerous, might also, like the anopheles, serve as intermediate hosts, but a very careful examination proved that this was not the case and left the only logical conclusion that the anopheles were the sole and only direct cause of the disease. He next took up the subject of the prevention of malaria. Two methods suggested themselves: (1) The removal or destruction of the carriers of the disease, the anopheles, as suggested by Ross, and (2) the destruction of the plasmodium parasites in the patient's blood by the quinin treatment proposed by Koch. Everything was done by the city authorities to remove or render harmless the breeding-places of the anopheles by filling up of holes and pools in which water accumulated during the rainy season, but the results of these efforts were disappointing. Next a trial was made, but only on a small scale, to kill the mosquitoes in their breeding-places by the employment of petroleum, but this measure again failed in reducing to any appreciable extent the prevalence of the disease. Koch's quinin prophylaxis was then given an extensive trial. It became necessary to ascertain the location of persons infected with the plasmodium. This was done by systematic blood examinations on a large scale. At first the natives could be induced only with difficulty to subject themselves to this ordeal, but gradually they got rid of the suspicion that the proceeding was a kind of sorcery, and made no further objections to it. The specimens of blood from women and children who dwell in a separate part of the huts were at first always obtained by trained women nurses, a consideration which was very much appreciated by the natives. The large percentage of persons infected with the malaria became apparent from the following tables:

	Number.	Parasites Present.	Percentage.
1. *Hindus.*			
Children less than 1 year old.......	27	8	29.6
Children from 1 to 5 years old......	83	27	32.5
Children more than 5 years old......	650	105	16.1
2. *Negroes.*			
Children less than 1 year old........	66	25	39.0
Children from 1 to 5 years old......	137	56	40.8
Children more than 5 years old......	790	159	20.1
Adults	3338	238	7.6

The apparently low susceptibility to malaria of infants as compared with children more than 5 years old is due to the fact that children born during the dry season are exempt from infection until the rainy season sets in. These blood examinations were made during the dry season. If they had been made during the rainy season, the percentage of infected persons would have been much larger. The tables are also interesting in showing that the susceptibility to malarial infection diminishes with advancing age. These blood examinations for diagnostic purposes, and made with a view of ascertaining the location and extent of infected districts, are now the rule and have yielded most satisfactory scientific and practical results.

The results of these examinations are in direct contrast with those of Koch in New Guinea, who failed to find the parasite in the adults, a circumstance explained by Ollwig, who believes that in that most malarial of all countries the anopheles, always present, gradually create an immunity which can not be established in localities like East Africa, where these mosquitoes are present only during the wet season. This explanation again comes in conflict with the observations made by A. Plehn in Kamerun, where he found the parasite in a larger percentage of adults, the climate being almost identical with that of New Guinea. The presence of basophilic cells Ollwig regards as suggestive of malaria. The slides are prepared without cover. The blood smear, rather thickly applied, is dried by immersion in alcohol with the legend on the side of the slide which is not immersed. The specimen is stained with Manson's fluid (borax 5, methyl blue 2, water 100). In the examination of blood from people representing different nationalities and living in different places in the city, it was found that out of 171 adults the blood contained malarial parasites in 16 instances, while in children a much larger proportion was found. Persons infected with the parasite had to continue the quinin treatment for two and a half to three months before the blood was free from plasmodia. The mortality of malaria in young children who are neglected is very large, and the parents very often rather let them die than make the necessary exertion to go to the hospital for the quinin. Ollwig accused a man of inexcusable neglect, who, notwithstanding his request, had failed to bring his child for treatment. The child died and the only reply the father made, on being told that he was the cause of its death, was that it mattered little, as his wife was soon to become a mother again. The negro appreciates paternal bliss only after the child is old enough to run about and in doing so becomes a source of amusement to him; the babe has little attraction for him.

The quinin in prophylactic doses of 15 grains was administered every ninth and tenth day and continued for two months. It was soon ascertained that the time of treatment was not long enough, and it was then extended to two and a half to three months. The drug is best given either early in the morning or late in the evening on an empty stomach. To improve the results still more, the quinin days were increased to three, and, while the two days' treatment left a smaller percentage in which the parasites could still be found at the end of treatment, the three-days' treatment improved the results materially, leaving only one-half of one per cent. of cases in which some parasites could be found in the blood at the end of treatment, and these were always small children who often rejected the quinin by vomiting or were suffering from diarrhea, thus diminishing in both instances the absorption of the drug. The quinin is administered to adults in tablet form, to children in solution, and experience has shown that the administration in solution has had the best effects and that method has since been employed exclusively. To reduce the bitterness of the drug each patient is given a piece of sugar each time he takes the medicine. In very young children the quinin is well diluted and poured in the mouth while the child is held on the back and the nostrils are closed by pressure. If it is rejected by vomiting, the dose is repeated at once. Adults suffer for some time from buzzing in the ears, dizziness and trembling of the hands when they are under the full influence of the drug. In children, somnolence is often observed. Euquinin was tried in doses twice as large as those of quinin, but without any advantage over the latter.

Black-water fever was found only in neglected cases of malaria. The attack appears without exception a few hours after the administration of quinin. Effective treatment of malaria with quinin is the surest protection against this disease. As Koch's prophylactic quinin treatment is becoming more general, malaria has greatly diminished in frequency. Hindus and negroes are almost, if not entirely, immune to black-water fever.

The period of incubation of malaria, as determined by accurate observation, is from ten to twelve days. Europeans returning home to recover from malaria often come back in a worse condition than when they left, in the meantime only taking quinin when they suffered from attacks, but never subjecting themselves to the thorough quinin treatment, relying on the change of climate to effect a permanent cure. The results of prophylactic treatment of malaria with quinin in three years reduced the malaria cases in Dar-es-Salaam one-half. The prophylactic treatment is advised as a general rule only in cases in which patients have suffered an attack, or in whose blood the presence of parasites has been demonstrated by microscopic examination, with the exception of people who, either on business or visiting tours, must spend some time in localities where the danger of infection is very great. In such instances the prophylactic treatment is recommended and should be continued for at least a month after return from the trip.

I have given here a brief sketch of the work and results of Ollwig's malaria, which is, in reality, the basis on which Koch's prophylactic treatment of malaria is founded. The treatment, as it is carried out now by physicians, assistants and trained women nurses, consists in making blood examinations of persons who have been exposed to infection to ascertain the existence of parasites in the blood and to determine, as far as can be done, the locality where the infection occurred, and in carrying out in infected cases the radical quinin treatment. This treatment as now generally practiced consists in administering every eighth or ninth day 1 gram of quinin in solution on an empty stomach. This prophylactic treatment corresponds with that recommended by Manson. Others have recommended smaller and more frequently repeated doses. For myself I am satisfied, from my own personal experiences in the most dangerous localities, including Central America, Cuba and Porto Rico, that persons who have not suffered from this disease will create a partial, if not a complete, immunity by taking daily a 5-grain dose of quinin with the juice of a lemon, at least two weeks before exposure to infection, and as long as they reside in a malarial district, or, if the residence is a prolonged one, until the drug has produced an immunity to the infection.

PREVALENCE OF MALARIA IN EAST AFRICA.

Dr. Fischer, an African traveler, says that the continent is infected everywhere, where it is fertile and unfertile, even where it is healthy. Buchner is still more pessimistic in his opinion of the extent of malarial diseases in Africa when he makes the statement that there is not a square meter in the country without fever miasm, and many other travelers and authors are in accord with these statements. Professor Koch has traveled all over German East Africa and the adjoining countries and has made most painstaking observations and researches, and has found in the German possessions a number of subalpine regions absolutely free from anopheles and consequently free from malaria. He mentions more particularly the Usambara and Ukebe mountain plateaus and recommends these two localities as favorable for European settlers. In the lowlands, and especially along the coast, malaria prevails everywhere to an alarming extent. Of this I have had abundant opportunity to satisfy myself in visiting the various hospitals, as in all of them the patients suffering from malaria and its consequences occupied at least two-thirds of all the beds. It is one of the laudable intentions of the scientific men of Germany who serve their country in Africa to rid their possessions of this pest by destroying or rendering harmless the breeding-places of the anopheles on the one hand, and on the other, by depriving them of the parasite derived from malarial patients by prophylactic and curative treatment with quinin and by isolation of patients suffering from the acute form of the disease. The results thus far obtained are encouraging, and it is only a question of time before the country will be made safe for Europeans so far as malaria is concerned. The present topographical limit of the disease, according to Koch, is an altitude of 3,000 feet above the level of the sea.

(*To be continued.*)

State Boards of Registration

COMING EXAMINATIONS.

California State Board of Medical Examiners, San Francisco, August 21. Secretary, Chas. L. Tisdale, San Francisco.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B Harvey, Boston.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Maine July Report.—Dr. William J. Maybury, secretary of the Maine Board of Registration in Medicine, reports the written and oral examination held at Augusta, July 10-11, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 41, of whom 39 passed and 2 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Medical School of Maine	(1906)	79, 80, 81, 82, 82, 84, 85, 87, 87, 87, 88, 89, 89, 91, 92, 93.
Boston University	(1889) 85; (1906)	85.
Harvard Medical School	(1904) 87; (1906)	83.
College of P. & S., Boston	(1904) 78; (1906)	85, 87, 92.
Tufts College Med. School	(1906)	85.
Baltimore Med. Coll	(1906)	78.
University of Maryland	(1906)	80, 83.
Johns Hopkins Med. School	(1906)	95.
Columbia University	(1903)	92.
Jefferson Med. Coll.	(1900) 91; (1906)	87.
University of Pennsylvania	(1906)	80.
University of Vermont	(1905)	88.
McGill University	(1902) 84; (1906)	84.
Laval University, Canada	(1904) 88; (1906)	81, 89.

FAILED.

College.	Year. Grad.	Per Cent.
Baltimore University	(1905)	69.
College of P. & S., Boston	(1905)	62.

Michigan's New Schedule.

Dr. B. D. Harison, secretary of the Michigan State Board of Registration, sends us the following revised schedule of preliminary requirements for admission to medical colleges. There are, at the present time, too many different terms being used by colleges and examining boards to designate credits and the step taken by the Michigan board toward uniformity in this direction is certainly commendable. Dr. Harison's explanatory letter follows the schedule.

MINIMUM STANDARD OF PRELIMINARY EDUCATION AS REQUIRED FOR ENTRANCE TO RECOGNIZED MEDICAL COLLEGES.

In Force Since Sept. 16, 1903. As Amended June 13, 1906.

A certificate of graduation from a recognized and reputable high school, academy, college or university, issued after four years of study of at least eight months in each separate year (or an equivalent recognized qualification), with the following minimum requirements:

Group I.—English Language.

(a) English grammar; (b) rhetoric and composition.

Group II.—History.

(a) History of the United States, as presented in McLaughlin's History of the American Nation, Johnston's History of the United States, or equivalent text.

(b) General History, as presented in Meyers' General History, or equivalent text. Greek and Roman history or English history will be accepted as a substitute for general history.

Group III.—Mathematics.

(a) Algebra—fundamental rules, fractions, simple equations, involutions and evolution, the calculus of radicals and quadratic equations, as given in Olney's Complete School Algebra, or Beman and Smith's Elements of Algebra, or some equivalent text.

(b) Geometry—plane geometry, as given in Beman and Smith's Plane and Solid Geometry, or equivalent text.

(c) Plane trigonometry, as given in Wentworth's Trigonometry, or equivalent text.

Group IV.—Natural Sciences.

(a) Physics, as presented in Carhart and Chute's Elements of Physics, or an equivalent text.

(b) General biology, or botany and zoology, as presented in Sedwick and Wilson's General Biology, or Spalding's Introduction to Botany and Kingsley's Comparative Zoology. These courses will be accepted only when accompanied by laboratory work.

(c) Chemistry, as presented in Freer's Elementary Chemistry, or an equivalent amount of work in Remsen's Introduction to the Study of Chemistry.

(d) Physiology and hygiene, as presented in Colton's Briefer Course, or an equivalent text.

(e) Physical geography, as presented in Tarr's First Book of Physical Geography, or equivalent text.

Group V.—Modern Languages.

(a) German, French or Spanish—The applicant must be able to read German, French or Spanish.

Group VI.—Classics.

Latin grammar.
Latin prose composition.
Reading—four books of Cesar's Gallic War.
Greek grammar.
Prose composition.
Xenophon or Homer.

Note.—An applicant for endorsement of preliminary education presenting a recognized literary diploma or certificate for entrance to medical schools of a minimum standard of not less than nine (9) major units, or twelve (12) minor units, in accordance with the minimum standard of preliminary education adopted by the board, may be conditioned in three units and must remove such conditions before the Michigan Board of Preliminary Examiners, or other recognized authority (course and examination in an authorized literary college or attendance and examination in a recognized secondary or high school) before beginning the second course in a recognized medical school, counting toward the degree, otherwise the applicant will be held as not having complied with the requirements of the board relative to its standard of preliminary education; provided, that if at the time of seeking endorsement the applicant, in addition to the nine (9) major units or twelve (12) minor units required in the recognized diploma or certificate as a qualification for conditions, presents a recognized supplemental certificate of course and examination in necessary studies not covered in the presented diploma or certificate, of a date prior to registration, or matriculation in a medical school, such supplemental certificate may be made a part of and included in the original diploma or certificate on which endorsement is sought in accordance with the method of standard adopted by the board.

DR. HARISON'S LETTER.

August 2, 1906.

Dear Doctor:—I enclose schedule of standard of preliminary education recently adopted by this board.

An attempt in this schedule has been made to harmonize the methods of measure adopted in the past by the New York Board of Regents and the Michigan State Medical Board.

New York demanded 48 counts, or 12 Michigan units; and Michigan demanded 15 units, a unit representing four recitation periods a week on a subject throughout a year.

By the new arrangement a count represents one recitation period a week throughout a year; a major unit, five recitation periods or five counts, and a minor unit four recitation periods or four counts.

The New York secondary course is a uniform five recitation or count periods a week, while Michigan has four recitations or count periods a week in English and history, the remaining studies being five recitation or count periods a week.

By the old system, in qualifying for the Michigan standard, the applicant from New York lost 20 per cent. of actual qualification, and the Michigan applicant, approximately, 15 per cent. This loss also affected other states.

Under the new schedule, the former 12 units of New York multiplied by five recitations or counts weekly equals 60 counts, or 12 major units, the former 15 units or Michigan multiplied by four counts weekly, equals also 60 counts, or 15 minor units. Michigan applicants, however, by converting 3 minor units, or 12 counts, into 2 major units, or 10 counts, make it possible to qualify in the major unit column with a minimum total of 12 major units, thereby receiving credit for five recitation a week subjects, which was not possible under the old method. The former standard of preliminary education adopted by the board has not in any sense been lowered, but the system of measure has been made flexible.

The ultimate result aimed at through the new schedule is the adoption of the count system in the near future, the present schedule being a combination of the unit and count systems.

The educational value of a detailed standard and its exact administration can not be overestimated, resulting as it does in a large percentage of increase over the apparent standard and absolutely preventing the official recognition of a defective qualification incident to a standard expressed in general terms with the impossibility of its exact administration.

B. D. Harison, Secretary.

Michigan May Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports the written examination held at Detroit, May 14-16, 1906. The number of subjects examined in was 14; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 88, of whom 87 passed and 1 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Kentucky School of Med	(1905)	76.
Grand Rapids Med. Coll	(1906)	94.6
Michigan College of Med. & Surg.	(1906)	83.4, 85.1, 87.5, 88, 89.1, 89.3, 91.4, 93.3.
Detroit Homeo. Med. Coll.	(1906)	85, 85.4, 87.4, 87.7, 87.7, 87.8, 90.8.
Detroit Coll. of Med.	(1905) 91.5, 92.6; (1906)	79.3, 80.5, 81.5, 83.6, 84.4, 85, 85.3, 85.5, 85.5, 86.5, 86.8, 86.8, 86.8, 86.7, 87, 87, 87.1, 87.2 87.2, 87.4, 87.4, 87.6, 87.7, 87.7, 87.7, 87.9, 87.9, 87.9, 87.9, 88, 88.1, 88.3, 88.3, 88.3, 88.4, 88.4, 88.5, 88.5, 88.6, 88.9, 88.9, 89.1, 89.3, 89.3, 89.3, 89.4, 89.6, 89.6, 89.6, 89.7, 89.8, 89.9, 90, 90, 90.4, 90.6, 90.8, 90.9, 90.9, 91.1, 91.1, 91.1, 91.2, 91.6, 91.8, 92, 92.4, 92.4.

FAILED.

College.	Year. Grad.	Per Cent.
Detroit Coll. of Med	(1906)	69.5

The following questions were asked:

GYNECOLOGY.

1. What can you say of acquired atrophy or superinvolution of the cervix and body of the uterus? Does the condition remain permanently? Give its etiology. 2. What is menorrhagia? Give its causes and treatment. 3. What is amenorrhea? Its varieties and causes? Give treatment. 4. What are the varieties of vicarious menstruation? Give its causes and treatment. 5. How should general anesthetics be used in operations following childbirth. What are the dangers in their use? Which the least dangerous?

HISTOLOGY AND EMBRYOLOGY.

1. What is adipose tissue? How distributed? 2. Name the coats of the arterial wall and describe the intima. 3. How is the colloid material of the thyroid gland produced? 4. Explain the development of the hair follicles. 5. Describe the tactile corpuscles and the Pacinian bodies.

BACTERIOLOGY.

1. What are bacteria; saprophytic bacteria; pathogenic bacteria; non-pathogenic bacteria; toxins and albumins? 2. State local and general effects of bacteria and the conditions necessary to produce infection. 3. State methods for the recognition of bacteria, methods of cultivation. Why do you stain bacteria, and name three of the most commonly used stains? Give composition of each. 4. Give the details for the examination of a sample of sputum for the tubercle bacillus. 5. What conditions, including temperature and time, are required for the destruction of spores, and on what conditions does immunity from bacteria depend?

ANATOMY.

1. Describe temporal bones and give the articulations. 2. Describe the femoral artery and give its branches. 3. Describe the thoracic duct. 4. Describe the medulla oblongata. 5. Describe the brachial plexus with its branches. 6. What are the ductless glands? Give the blood supply of each. 7. What is the foramen of Winslow? 8. Describe the structure of the kidney. 9. What are the ligaments of the uterus? What is a corpus luteum? 10. Give the nerve supply of the ocular muscles.

PHYSIOLOGY.

1. Define metabolism. Give classification. 2. Describe, how, respectively, the intracranial, arterial and venous blood pressure are regulated. 3. What is glycosuria? Give in detail a reliable test for albuminuria; also one for diabetes mellitus. 4. What do you understand by muscular co-ordination and on what does it depend? 5. Describe the sympathetic nervous system. What are its functions? 6. What is lymph? Give mode of its reaching the lymphatic vessels and glands and finally the venous circulation. 7. State the function of the aqueous humor of the eye. 8. Give entire process of digestion, beginning with mastication of albuminous food, of fatty food, of starchy food. 9. Explain the function of bile and the glycogenetic function of the liver. 10. What is meant by the systole and diastole of the heart?

PATHOLOGY.

1. What pathologic conditions are frequently found in the pancreas? Discuss the relation of the pancreas to diabetes. 2. What is retrograde metastasis? How does it occur? 3. Mention and give causes of pigmentary changes occurring in various chronic diseases. 4. Name the connective tissue tumors. Name the epithelial tumors. Draw a cross-section of the most common epithelial tumor. 5. What is known of the pathology of yellow fever? 6. Is immunity a pathologic condition? On what does it depend? 7. Describe the pathologic condition of the kidneys due to chronic inflammation. Give the four principal causes. 8. What is meant by the umbilication of cancer? Give causes. 9. What is the difference between a general disease and a constitutional disease? 10. Give the process of repair of an incised wound of the skin united by suture. What parts are not replaced? Explain the apparent contraction of the cicatricial tissue.

HYGIENE AND PUBLIC HEALTH LAWS.

1. What are the requirements and responsibilities of a practicing physician in cases of contagious and infectious diseases as required by our statutes? Name the diseases to be reported to the board of health. 2. What measures are essential for the restriction of smallpox, diphtheria and scarlet fever? State time of quarantine for each. 3. Describe best method of cleansing a room that had been occupied by a case of smallpox, and what precautions would you take to prevent extension of the disease. 4. What are the provisions of the law in this state relative to vaccination? 5. What are the essential qualities of drinking water and what tests would you use to determine its purity? Also state best method of purifying water.

PRACTICE.

1. Describe and give the causes that produce fever, and name the ordinary antipyretic measures used. 2. Describe typhoid fever, how diagnosed, and your treatment of it. 3. Describe pernicious anemia, how diagnosed, clinical picture, treatment. 4. Describe myocardial degeneration, give causes that produce it and treatment. 5. Describe acute lobar pneumonia, give physical signs. What micro-organisms are present. Differential points. 6. Name the different forms of motor disturbances. (Paralysis, spasm, etc.) Give the lesions that produce them. 7. Describe the different forms of epilepsy. Differentiate epilepsy from hysteria. 8. Give your idea of the proper care of artificially fed babies; kind of food, method of preparation, necessary changes. 9. Describe acute otitis media in children. How would you treat it? 10. Describe erysipelas. Cause, forms, treatment.

MATERIA MEDICA AND THERAPEUTICS.

1. What are the important dietetic, medicinal and pharmaceutical uses of water? 2. Acidium arsenosum? What can you say of its taste? Its medicinal effects, internal and local? Its uses as an irritant and escharotic. Give symptoms of its poisonous effects. 3. Define the term oxytocic. What is ergot? What are its preparations? Its physiologic effects? Its uses and abuses as a medicine? 4. Give the physiologic and medicinal effects of pilocarpus. 5. What is turpentine? What can you say of its physiologic effect and its use as a medicine?

HOMEOPATHIC MATERIA MEDICA.

1. By what law do potentized drugs act? Do crude drugs obey a different law? 2. Enumerate and differentiate the symptoms of the various salts of mercury used in homeopathic practice. 3. What is arsenicum album? Give an epitome of its symptomatology. 4 Give the guiding symptoms of phosphorus. 5. Give the guiding symptoms of sulphur.

HOMEOPATHIC PRACTICE OF MEDICINE.

1. Describe the symptoms, objective and subjective, which appear during the incidence of lobar pneumonia. Differentiate it from other diseases presenting similar symptoms. 2. Give the physiologic and medical treatment of pneumonia. 3. To what does malarial fever owe its origin? How may it be prevented? Describe the full course of a typical case of this disease. 4. What is jaundice? Name the various forms. How caused. 5. Give etiology and treatment of pneumothorax. 6. What is the prognosis, in combined valvular lesion of the heart, as to age, sex and conditions of life? 7. Give the treatment of Bright's disease in its various stages. 8. Secondary anemia—what is it? Give treatment. 9. What are the symptoms, prognosis and treatment of tabes dorsalis? 10. Give the sensory, motor and psychic stigmata, or signs of hysteria.

SURGERY.

1. Give causes, symptoms and treatment of gonorrhea. 2. What is the true significance of leucocytosis? Is its presence a proof of pus? 3. Define shock and its treatment. 4. Define hyperemia, inflammation, infection. 5. What are the indications for circumcision? Describe the operation. 6. What is varicocele and how would you treat it? 7. Give the uses of heat and cold in surgical affections. 8. Give the uses of the different kind of ligatures. 9. Amputation of the breast. Describe each step in the operation for a malignant growth. 10. Give the manner of feeding after a surgical operation.

CHEMISTRY AND TOXICOLOGY.

1. What are lunar caustic, calomel, corrosive sublimate, blue vitrol, Epsom salts, Rochelle salts, tartar emetic? 2. Marsh's test is a test for what? Give test. 3. Classify carbohydrates. Give formula for each group. 4. Give the mercurial test. 5. Give the different kinds of tests for albumin in the urine. 6. Give equations and how would you make chlorid of zinc. 7. What is amido acid and where principally found? 8. Define a poison. 9. Classify poisons according to their action. 10. Give symptoms and treatment for strychnia poisoning.

EYE, EAR, NOSE AND THROAT.

1. What do you understand by the terms hypermetropia, myopia, astigmatism? 2. What treatment do you recommend in cases of ophthalmia neonatorum—in what way can you prevent its occurrence? 3. What is the treatment for acute periostitis of the mastoid process? 4. What is croupous laryngitis, its causes and pathologic anatomy? 5. What is acute tonsillitis, its causes and pathologic anatomy?

OBSTETRICS.

1. What are the signs of pregnancy? 2. Name the most common presentation, and describe the mechanism of labor in that presentation. 3. What conditions must be present before forceps can be applied with safety? 4. Laceration of cervix and perineum: Describe the various forms of laceration and time, manner and materials of repair. 5. What complications may appear after completion of labor and what measures should be taken to prevent their appearance?

MEDICAL JURISPRUDENCE.

1. Define mania, giving its prognosis, and, briefly, its treatment. 2. Wherein does lunacy differ from idiocy? 3. What is paranoia, and how would you treat it? 4. Under what conditions might the medical attendant be justified in producing abortion? 5. Discuss the evidences of live birth, subsequent to respiration.

Pennsylvania June Examination.—The report of the State Medical Examining Board of the examinations held in June shows that 355 persons obtained the required general average of 75. Four hundred and five candidates were examined at this time. The report shows, therefore, that there were 50 failures. This is a few less than the failures of last year. The general average attained was reported good. Thirteen of the new licenses will be issued to women, and among the candidates examined were 25 who failed in the examinations held in 1905; 10 of these 25 passed this year. Nine men did not qualify and one was expelled from the examining room for cheating.

Tennessee May Report.—Dr. T. J. Happel, secretary of the Tennessee State Board of Medical Examiners, reports the written examinations held at Memphis, Nashville and Knoxville, May 2, 1906. The number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 246, of whom 150 passed and 96 failed, including 54 non-graduates. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent
Atlanta Med. Coll.	(1874) 75; (1899)	75.
Georgia Coll. of Ecl. Med. & Surg.	(1906)	75.
College of P. & S., Atlanta	(1899)	81.
George Washington University	(1905)	78.
College of P. & S., Chicago	(1902)	91.
American Med. Miss. Coll.	(1900)	80.7
Illinois Med. Coll.	(1906)	85.
University of Iowa	(1903)	87.5
Louisville Med. Coll.	(1902) 84; (1905)	75.
Kentucky University	(1903)	83.
University of Louisville	(1885) 75; (1905) 87.3, 88.5,	90.
Hospital Coll. of Med., Louisville (1903) 85.5; (1904) 77.7, 86; (1905) 76.		
Tulane University	(1901) 82; (1903)	75.
Johns Hopkins Med. School	(1903)	95.5
College of P. & S., Baltimore	(1886)	86.
Grand Rapids Med. Coll.	(1901)	91.
University of Michigan	(1870) 75; (1905)	84.
New York University	(1894)	88.
University & Bellevue Hosp. Med. Coll.	(1905) 88.2; (1906)	78.
Long Island Coll. Hosp.	(1898)	84.
Leonard Med. Coll.	(1905)	86.
Memphis Hosp. Med. Coll. (1903) 92.5; (1904) 76, 88.5; (1906) 75, 75, 75, 78, 78.2, 81, 82, 82.5, 83, 84.5, 85, 85.2, 87.5, 87.5, 93.5, 98.5.		
University of Nashville (1872) 78; (1905) 83, 88; (1906) 75, 76.6, 77, 78, 78.2, 80, 80, 81, 84.5.		
University of Tennessee (1899) 85; (1904) 75, 89.5; (1905) 78; (1906) 75, 77.3, 85, 86.		

Meharry Med. Coll........(1905) 75; (1906) 75, 75, 77, 81, 90.
Vanderbilt University ....(1903) 80; (1906) 76.5, 80, 90, 90.2
Tennessee Med. Coll. (1904) 75; (1905) 75; (1906) 75, 78, 78, 79.8, 83, 85, 85.3, 87, 90.6, 92, 92.
Chattanooga Med. Coll. (1898) 75; (1901) 75; (1903) 75; (1905) 77; (1906) 75, 75, 77, 79, 82, 82, 83, 84, 86, 87, 87.
University of Virginia ....(1904) 75.
Royal Coll. of Surg., Edinburgh..................(1899) 90.
Non-graduates, 75, 75, 76.3, 77.2, 77.6, 78.3, 78.5, 80, 80, 80, 80, 81, 81, 81, 81, 91.5, 81.5, 82.5, 83, 83, 83, 83.5, 84, 84.6, 85, 85.5, 85.5, 86.2, 87, 87, 87.1, 90, 90, 91, 92, 92.5, 92.5, 95.

FAILED.

Georgia Coll. of Ecl. Med. & Surg..............(1901) 52.
Kentucky University ....(1906) 65.
Louisville Hosp. Med. Coll....................(1905)*
Maryland Med. Coll. ....(1900) 58.6
Miami Med. Coll.........................(1879) 60.
Meharry Med. Coll. (1904) 71.7; (1905) 60, 65; (1906) 50, 50, 65, 65.
University of Nashville (1905) 49, 65; (1906) 57, 65, 65, 68, 70, 71
University of Tennessee ....(1906) 61, 63, 68.5, 70
Chattanooga Med. Coll (1897) 67.3; (1904) 65; (1906) 61.5, 64, 67, 70.5.
University of the South ....(1905) 69, 71.3
Tennessee Med. Coll.....................(1906) 63.3, 64.5, 70, 73
University of West Tennessee ....(1906) 65.
Memphis Hosp. Med. Coll....................(1903) 51.5
Vanderbilt University ....(1881) 48.5
Gate City Med. Coll., Texarkana ....(1903) 62.5; (1906 46.
American Med. Miss. & Training School for Nurses† (Atlanta) ....(1906) 74.

* Rejected for copying.
† Said to grant medical degrees.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Burns.

The following combination is recommended by E. D. Piper, of Chicago, in the treatment of burns:

℞.	Zinci stearatis	ʒiss	6
	Lanolini	ʒiii	12
	Petrolati, liq., q. s. ad	℥i	30

M. Ft. unguentum. Sig.: To be applied locally to the affected surfaces.

According to Piper, this combination prevents the odor, quiets the pain and tends to stimulate the tissues to rapid healing. It prevents the dressings from sticking and thus foregoes a great deal of suffering on the part of the patient. He reports good success with this ointment, even in burns extending over a great part of the surface of the body, and prefers it to powder dressings because of the ease of removal.

Smithwick, in *Med. Exam. and Pract.*, states that there are three indications for the treatment of burns: (1), relieve pain; (2), combat shock; and (3), cleanse the lesion and keep it clean.

The pain and suffering accompanying burns and scalds are the most severe of any injury and demand prompt attention. He recommends, in severe cases, that a hypodermic injection of morphin be given, followed by the inhalation of chloroform until the morphin has had sufficient time to act. Compression by means of bandages to the limbs should be applied to give support to the relaxed blood vessels. Subcutaneous injections of warm normal saline solution should be given in order to raise the vascular tone by filling the relaxed and dilated blood vessels.

In severe cases, strychnin or digitalis may be required to raise arterial tension. According to Crile, atropin, nitroglycerin and alcohol should be interdicted on account of their tendency to lower blood pressure.

Smithwick states that all burns and scalds should be treated as infected wounds, consequently as soon as the patient recovers sufficiently from the shock the injured parts should be as thoroughly cleansed as possible. In such cases, he states that it is advisable to administer an anesthetic in order to apply a thorough cleansing by washing the parts with sterilized water and mild soap, followed by a douche of warm saline solution. Mercuric chlorid and like antiseptics are not advised because of their irritating properties. All blebs and vesicles should be clipped open, allowing the skin to fall back in its original position as a protection to the denuded surfaces. The surface should then be gone over in order to remove all moisture remaining before applying the dressing.

In applying the dressing three cardinal principles are emphasized: (1), The dressing must be absolutely clean; (2), it should be made comfortable to the patient; (3), it should be so arranged that the dressing will not stick to the wound and can be easily removed without causing pain. Smithwick recommends, therefore, an oily mixture as a dressing, and mentions the lime water and linseed oil combination as an efficient one, when rendered aseptic. The dressings should be changed frequently, as they soon become dry on account of the great amount of discharge present.

Treatment of Severe Vomiting in Infants.

Variot announces that he has been almost invariably successful in arresting apparently uncontrollable vomiting in breast-fed infants, by the use of sodium citrate, combined as follows:

℞.	Sodii citratis	gr. lxxv	5
	Syrupi simplicio	℥iss	45
	Aquæ dest:	℥viii	240

M. Sig.: One tablespoonful just before the infant is given the breast.

Recent radioscopic researches have shown that the stomach in infants contracts, after the ingestion of milk, differently from the contraction in adults. In infants it contracts throughout its entire expanse, not merely in the pyloric region, leaving an almost round space in the center. This reflex contraction is more intense at some times and with certain milks than with others. The contact of certain milks, even breast milk, seems to induce hyperexcitability in the stomach mucosa, with intense reflex action and uncontrollable vomiting. It is probably sometimes erroneously attributed to spasm of the pylorus or to congenital stricture. This hyperexcitability is controlled by the sodium citrate, and even without changing the milk the vomiting is arrested within a day or so and the infant begins to thrive normally.

In cases rebellious to the sodium citrate, he feeds the child exclusively, in case a wet nurse is not obtainable, with ordinary sterilized milk, to which sodium citrate has been added.

In a communication to the Paris Société méd de Hôp. on July 6, he related a number of examples to prove the efficacy of the sodium citrate, although in conclusion he quoted an eminent chemist to the effect that probably that which is most important in the composition of milk is something of which we are still ignorant.

Simple Elixir as a Wrongly-Used Vehicle.

In an article read before the Penn. Pharmaceutical Assoc., as noted in the *Apothecary*, E. F. Heffner calls attention to the fact that not a few physicians prescribe the simple elixir and the medicinal elixirs of which it forms the basis, as vehicles, not knowing that they contain alcohol. Among these preparations may be mentioned elixir calisaya, elixir gentian, etc. He cites the following prescription for a child of four months as an example:

℞.	Sodii bromidi	gr. viii	|50
	Elix. simplicis	℥i	30|

M. Sig.: One teaspoonful every half hour or one hour as needed.

No physician, as Heffner states, would give a child of four months a quarter of a teaspoonful of alcohol every half hour, yet that is the amount called for in the foregoing prescription, which is equal to half a teaspoonful of whisky or a teaspoonful of brandy.

Another example he gives as follows, for a child six years old:

℞.	Kalii bromidi	gr. xlviii	3|20
	Elix. valerian ammon	ʒiv	15|
	Elix. simplicis, q. s. ad	℥iii	90|

M. Sig.: One or two teaspoonfuls in water every one to two hours as needed.

In this instance the child of six years would obtain with each two or four grains of bromid an equivalent strength of one-half or one whole teaspoonful of whisky, which would very effectively counteract the effect of the bromid. Another instance he quotes of a combination prescribed by the physician as follows:

R.	Sodii bromidi	ʒiv	15|
	Chloralis hydratis	ʒiv	15|
	Elix. simplicis, q. s. ad	℥iv	120|

M. Sig.: Two teaspoonfuls in water every half to one hour.

On standing the foregoing will contain chloral alcoholate on top, consequently unless patients are particularly instructed to shake the bottle well they will receive the entire amount in two doses. He suggests the use of aromatic water or simple syrup instead of the simple elixir, in order to obviate danger.

Medicolegal

Reputability of College.

The Supreme Court of Wisconsin holds, in the case of State vs. Chittenden, that the meaning of the word "reputable" as used in the law regulating the practice of dentistry is, "worthy of good repute;" it relates to real character, not to mere reputation in that regard. Reputability, as the term is used in the dental law, relates to that which will enable the college to do good work and the actual accomplishment thereof; it is separate and distinct from other requisites as to a diploma being a passport to the favor of the official board as regards the issuance of a license. It may or may not exist, and all the other requisites be present. It is proper, in administering the law regulating the practice of dentistry, for the official board, of its own motion, or on petition of a college of which it has jurisdiction, to adjudicate its status as regards reputability. The adjudicated status of a college is presumed to continue till the presumption shall have been reasonably rebutted, under the general rule that "when the existence of a person, a personal relation or a state of things is once established by proof, the law presumes that the person, relation or state of things continues to exist as before until the contrary is shown, or until a different presumption is raised from the nature of the subject in question."

Death from Puerperal Septicemia One Arising from Pregnancy.

The Supreme Court of Indiana says that in Knights and Ladies of Columbia vs. Shoaf, an action on a benefit certificate, that the insured executed a release whereby she waived all benefit under the certificate in case of her death arising from pregnancy. It was conceded that she died of puerperal septicemia, but it was contended that this was not a death arising from pregnancy. It was said that her pregnancy was terminated naturally in childbirth, and subsequently a disease set in which produced her death. The court does not agree with the contention. It says that this disease (puerperal septicemia) is generically and inherently associated with parturition, and cannot exist in its absence. It is immaterial whether the disorder is incited by infection from without the subject, or whether it is autogeneric, it is always incidental to childbirth, and its terrors are as old as the human race. If the insured, apprehending danger from her condition, had secured insurance against death arising from pregnancy, the court thinks there could have been no reasonable ground for disputing liability for her death resulting from puerperal septicemia. The same rule of construction applied to the contract in suit, and not the strict doctrine in abhorrence of forfeitures. The undisputed evidence and admissions of the parties enabled the court to say that the death of the insured arose from her pregnancy, within the meaning of the contract of insurance.

No Recovery for Suicide of Patient at Hospital.

The First Appellate Division of the Supreme Court of New York says that the complaint in the case of Duncan vs. St. Luke's Hospital alleged, among other things, the removal of the plaintiff's wife to the hospital; that she became delirious, and was at times insane; that he contracted for a consideration of $7 a day to have a careful and continuous guard kept over her, and that at a time when there was no attendant in the room she jumped from the window of the hospital building and was killed by the fall on the pavement below. It was admitted that the case did not come within section 1902 of the New York Code of Civil Procedure, which provides that "the executor or administrator of a decedent, who has left him or her surviving, a husband, wife or next of kin, may maintain an action to recover damages for a wrongful act, neglect or default by which the decedent's death was caused, against a natural person who, or a corporation which, would have been liable to an action in favor of the decedent, by reason thereof if death had not ensued." But the plaintiff contended that his was an ordinary action for breach of contract; that this contract was entered into, having for its object the preservation of the wife of the plaintiff from injury, and there was a breach which resulted in her death; that this was a special contract, requiring the hospital to do more than its legal duty, for which it was paid a special price; and that, having broken its contract, it should pay the damages which naturally flowed from the breach and which might reasonably have been within the contemplation of the parties when the contract was made. The court, however, does not accept of the distinction sought to be made. Besides, it says that the contract was to keep a constant watch and guard. It was not to prevent the unfortunate patient from committing suicide. Nor could it fairly be held within the reasonable intendment of this contract that the hospital agreed to pay to the husband the value of his wife's life to him in case she did commit suicide. There was no case cited to the court, neither was it able to find one, allowing a recovery on such a complaint or such a state of facts. Nor can the court see any reason why there should be any difference in the rule where the tortious (wrongful) act which caused death is alleged to be a breach of an express contract than where it is alleged to be a breach of an implied contract or where no contractual relation at all existed. It is settled by innumerable cases that the right to recover for the death of a human being is a right solely given by statute, and as the plaintiff came not within the statute a judgment dismissing the complaint on the ground that it did not state facts sufficient to constitute a cause of action should be affirmed.

Proximate Cause of Death—Septicemia After Injury.

The Supreme Court of Wisconsin says, in the case of Cary vs. Preferred Accident Insurance Company of New York, an action on an accident policy, that the facts on which the jury based their finding of a special verdict that the death of the insured resulted proximately and solely from bodily injury caused solely by external, violent and accidental means, were, in effect, that he accidentally fell and sustained an abrasion of the skin on his right leg, which wound appeared somewhat red and inflamed on the second day; that on the eighth day a physician first saw the wound and then found the insured to be suffering from blood poisoning, and that two days thereafter he died. The evidence also showed that the abrasion of the skin furnished the portal of entrance through which bacterial infection entered his system and caused the septicemia which was the immediate cause of his death. It was urged that unless the evidence established the fact that the bacterial infection occurred at the time of the bodily injury by the fall it could not be found that his death was proximately and solely caused by the accident. But responsible causation, as applied in the law, is not dependent on time, distance or a mere succession of events. If an injury is inflicted by an event and it is found that it has set in motion all the succeeding agencies sharing in the result, then such event, as the efficient producing cause of the injury, is held to be the proximate cause of the injury. Under such circumstances the causal connection in the chain of events is shown by the dependence of each event for its action on the one preceding it, which thus form a continuous whole, witn a proximate relationship established between the event which acted first through those naturally succeeding and the point of injury. Apply this test to the facts in this case and it is shown that no such bacterial infection would in all probability have occurred had there been no abrasion of the skin. This leads to the inevitable inference that the bacterial infection and the resultant septicemia were in the natural course of events dependent on and set in motion by the abrasion of the skin caused by the fall. The entry of bacteria into the system can not be considered as an independent cause and as having intervened between the accidental fall and the death, because the fact that it was conditioned on the existence of the abrasion of the skin and was wholly incidental to and set in motion by it, thus making it one of the events in the chain of causation. The court is satisfied that the jury was well warranted in its conclusion that the death of the insured resulted proximately and solely from his accidental falling on the floor. As the infection which produced the septicemia could not be held to be the proximate cause of death, it did not come within the terms of a provision in the policy exempting the defendant from any liability for any injury "resulting from any poison or infection."

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 4.

1 *Diagnostic Features of Surgical Diseases Attended with Acute Jaundice. A. A. Berg, New York.
2 *Therapeutic Action of Splenic Extract in Malarial Infections. C. R. Carpenter, Leavenworth, Kan.
3 *Tuberculin in the Treatment of Tuberculosis. G. R. Pogue, Canon City, Colo.
4 Pathology, Etiology and Treatment of Puerperal Eclampsia, with a Plea for the Kidneys. J. W. Winston, Norfolk, Va.
5 *Galvanic and Other Treatment of the Prostate. J. V. Shoemaker, Philadelphia.

1. Diagnosis of Surgical Diseases Attended with Jaundice.—Berg declares that although it is commonly considered that all cases of liver abscess are accompanied by jaundice, this view is not borne out in practice. The diagnosis of liver suppuration does not rest on the presence or absence of icterus. Cases of primary acute infectious cholangitis may be very difficult to diagnose. The pain in the epigastrium and right hypochondrium and the jaundice are more suggestive of gallstone disease, to which the cholangitis is secondary. The enlarged tender liver, increased leucocytosis and fever and chills, suggest miliary abscess of the liver. It may be helpful here to remember that in long-standing gallstone disease the gall bladder is most likely to be contracted and not palpable, while in primary acute, infectious cholangitis it is distended and enlarged. In cases in which because the stones do not leave the gall bladder there is pain, but no jaundice, the diagnosis is often very difficult. Gummata of the liver when they break down are sometimes accompanied by acutely developing jaundice. The writer gives the histories of a number of cases illustrating his different statements.

2. Splenic Extract in Malarial Infections.—Carpenter states that he has found splenic extract to be a real remedy for malarial infection. Being an organic preparation, it is necessary to take special care that it does not spoil either in the hands of the druggist or the patient. The best way to prescribe it, he states, is in the form of powder enclosed in capsules. Splenic extract produces the beneficial effects of quinin in malarial infections without any of its bad results. Carpenter cites the histories of 15 cases in which he has used splenic extract. Red bone marrow was given the preference as a hematinic. Its effects began soon after its administration, and the splenic extract which was before powerless to do its work immediately began to act. When administration of the splenic extract follows that of the red bone marrow the physiologic resistance or cure of the disease appears.

3. Tuberculin in Treatment of Tuberculosis.—Pogue, from a study of 167 cases, draws the following conclusions: An early diagnosis is the most important step to the successful treatment of tuberculosis. Tuberculosis may be arrested by proper treatment, with a fair certainty of a permanent cure. Tuberculin is a valuable adjuvant in the treatment of tuberculosis, as evidenced by the recovery of twenty-eight out of thirty patients who were treated with practically nothing but tuberculin, while they continued to follow their ordinary occupations during the treatment. Cases of tuberculosis treated with the addition of tuberculin showed far less tendency to recur than did similar cases treated without tuberculin. Tuberculin in small doses (.01 to .5 mg.) seems to have a more curative action than when given in large and increasing doses. No ill effects follow the administration of small doses of tuberculin. Purely incipient cases improve very rapidly under the use of small doses of tuberculin, both as to the arrest of the disease and the clearing up of the diseased area. Tuberculin should never be given a patient who has fever or who is suffering from mixed infection. Third-stage cases, especially advanced cases, receive little or no benefit from the use of tuberculin.

5. Galvanic Treatment of the Prostate.—In the treatment of hypertrophy of the prostate, Shoemaker has found that the galvanic current is of the greatest value, although he also employs constitutional means. An incidental advantage is that in all persons the flow of electricity in the rectum from the negative pole increases the caliber of the rectum and causes a simultaneous downpour of mucus. Sometimes these effects are followed at once by urgency for defecation. This affords great relief from pressure on the congested and tender gland. The prostatic electrolyzer with a small wet battery has given instantaneous and great relief, he states, to may sufferers. A wet battery capable of producing thirty volts affords a margin for the range between the least sensitive and the most sensitive prostate. The author then reports the histories of a number of patients.

New York Medical Journal.

August 4.

6 *Modified Operation for Movable Kidney. J. C. Da Costa, Philadelphia.
7 Complications with Fracture of the Long Bones at the Wrist. V. Kenerson, Buffalo, N. Y.
8 *Carcinoma of the Stomach. J. D. Dunham, Columbus, Ohio.
9 *A Simple Device for Working Directly with Percentages in the Home Modification of Cow's Milk. M. F. Deming, Tappan, N. Y.
10 Surgical Significance of Jaundice. S. Lloyd, New York.
11 *Rational Treatment of Visceral Ptoses. J. M. Taylor, Philadelphia.
12 *Clinical Notes on a Recent Epidemic of Dengue Fever. A. Agramonte, Havana, Cuba.
13 *Intermittent Pentosuria and Glycosuria. D. M. Kaplan, New York.

6. Modified Operation for Movable Kidney.—After having tried various methods in order to overcome the objections urged against various operations for movable kidney, Da Costa hit on the following method: The incision is slightly oblique in order to enable the operator to remove the appendix if he so wishes; the exposure of the kidney is identical with the method of Senn. The kidney is brought out of the wound as advocated by Edebohls. The fatty capsule is cut away, and the fibrous capsule is either scraped with a needle and thoroughly rubbed with gauze, or, as in some cases seems preferable, is partially or completely removed by the operation of decapsulation. The iodoform gauze that is to be placed beneath the kidney as a sling is prepared beforehand. Da Costa prefers iodoform gauze for slings, as iodoform antagonizes putrefactive changes in wound fluids and seems to have an influence in stimulating granulation.

The ends of two pieces of iodoform gauze are sewed together with slender plain catgut, and thus a piece is prepared for the upper pole of the kidney. Two more pieces are sewed together in the same manner, and thus a piece is prepared for the lower pole. Therefore, instead of passing one long piece of iodoform gauze beneath a renal pole, and being obliged subsequently to pull a long end around under the kidney, when it is desired to remove the gauze, a sutured piece of gauze is put under a renal pole and, as the sutures are composed of catgut, they are quickly absorbed. In a few days the gauze is easily removed, and the suture line being directly under the kidney, there is only a short end to pull around on each side. The method of placing the gauze while the kidney is on the back is important. If operating on the right kidney the suture line of each piece of gauze is to be on the external surface. When the kidney is restored to its position, this means that the suture line will be on the anterior surface. After the two pieces of gauze have been placed around the kidney, that organ is restored to place and is pushed into its normal position; and in order to prevent its subsequent descent, a large piece of iodoform gauze is packed beneath the lower pole, so as to fill the gap, or cavity, that exists there, and to stimulate granulation to fill it up. Another and a smaller piece of gauze is now pushed down on the posterior surface and sides of the kidney. The protruding ends of the gauze around the upper pole are tied together with a piece of silk; the ends of the gauze from around the lower pole are also tied together in the same way; and the bit of gauze on the posterior surface of the kidney, and the four polar ends of gauze are tied into one bunch with a piece of silk. The ends of all the pieces of gauze emerge a little way from the wound, and are subsequently identified with ease.

After the kidney has been restored to position and the gauze has been inserted, stitches of silkworm gut are passed and tied at the upper and lower ends of the wound, in order to close partially the muscular, fascial and cutaneous gap. Through the center of the wound sutures are inserted, but are left untied, and they are not to be tied until the gauze is removed. The usual dressing is applied to the loin; a folded towel is placed on the abdomen below the right lower ribs, and a firm binder is put in place. At the end of seven or eight days the gauze is removed. The method of removing the gauze is also described in detail.

8. **Carcinoma of Stomach.**—Dunham reports a case of carcinoma of the stomach occurring in a man, aged 52, which illustrates the benefit to be derived from the surgical treatment of this affection. Eighteen months after the operation (gastrectomy performed after the Mayo method, one inch of the duodenum being removed, and a posterior gastroenterostomy being done with the Robson bobbin) the patient is apparently in good health and his digestion is excellent. He has increased 30 pounds in weight. The tumor was of the encephaloid type and was situated near the pyloric orifice.

9. **Home Modification of Cow's Milk.**—In the device described by Deming, all the complications usually met in the home modification of cow's milk are eliminated by the application of a new principle, which is to graduate a measuring vessel to percentages of proteids and fat of cow's milk so that any desired percentage of proteid and fats may be obtained directly without the necessity of calculations or writing a food formula. Deming claims that any one of ordinary intelligence can put up the prescription in a few minutes from one quart of bottled milk with remarkably accurate results.

11. **Treatment of Visceral Ptoses.**—Taylor presents a few facts and opinions with a résumé of his own experience in the treatment of visceral ptoses.

12. **Dengue.**—Agramonte discusses the epidemic of dengue which occurred in Havana in the fall of 1905 and lays particular stress on the difficulty encountered in the diagnosis of dengue, especially during the first forty-eight or seventy-two hours, when it may readily be mistaken for yellow fever.

13. **Intermittent Pentosuria.**—Kaplan divides pentosuria into the following varieties: 1. Chronic pentosuria. This occurs when pentose is excreted in the urine constantly, and when a glycosuria can not be induced after the intake of one hundred grams of glucose. 2. Alimentary pentosuria. This occurs in individuals who can not oxidize large amounts of pentosans introduced with the food, excreting a portion of the pentosan as pentose; when the articles containing these pentosans are excluded from the dietary the pentose disappears from the urine. 3. Intermittent pentosuria. This occurs when the excretion of pentose takes place at more or less regular intervals uninfluenced by external conditions and when one hundred grams of glucose will not give rise to a glycosuria. 4. Intermittent pentosuria and glycosuria. When this condition occurs pentose is present in appreciable quantities, and glucose appears in the urine either independently or after the administration of one hundred grams of glucose.

Boston Medical and Surgical Journal.

August 2.

14 *Gastromesenteric Ileus. J. M. T. Finney, Baltimore.
15 *Spontaneous Rupture of Heart, with Report of a Case. W. H. Palmer, Providence, R. I.
16 *Spontaneous Rupture of Heart in a Case of Senile Dementia. H. W. Miller.

14. **Gastromesenteric Ileus.**—Finney reports a case of this kind occurring in a woman, aged 46, the clinical symptoms resembling those of acute dilatation of the stomach less the abdominal distension. The patient died 6 days after the operation.

15. **Spontaneous Rupture of Heart.**—Palmer's case was unique for several reasons. The patient was only 36 years old and the rupture occurred into the pleural cavity, probably being determined by the obliteration of the pericardial cavity through the formation of adhesions which existed over the greater surface of both auricles and ventricles. The case presented the physical signs and symptoms of aortic aneurism and was accompanied by symptoms of pressure on the left recurrent laryngeal nerve. The coronary arteries were in an advanced stage of arteritis, while the systemic vessels were normal.

16.—**Id.**—Miller's patient was a man, aged 83, whose heart ruptured spontaneously as a result of myomalacia cordis, the accident being determined by mental and physical excitement. The rupture occurred near the tip of the left ventricle. The coronary arteries showed well-advanced arteriosclerosis.

St. Louis Medical Review.

July 28.

17 Casts in the Urine, Their Origin and Significance. L. M. Warfield, St. Louis.
18 Surgery of the Biliary Tract. (Concluded.) M. H. Richardson, Boston.

Surgery, Gynecology and Obstetrics, Chicago.

July.

19 *Study of Infections of the Knee Joint and Their Treatment. D. P. Allen and E. Alden, Cleveland.
20 Mortality from Puerperal Infection. H. H. Powell, Cleveland.
21 Subcutaneous Injuries of Nerves. R. H. Birge, Cleveland.
22 *Subclavian Thrombophlebitis Following Abdominal Section. W. H. Weir, Cleveland.
23 Fracture of Carpal Scaphoid. H. A. Becker, Cleveland.
24 *Ureteral Symptoms in Gynecologic Cases. O. T. Thomas, Cleveland.
25 *Prophylactic Treatment of Puerperal Eclampsia. F. S. Clark, Cleveland.
26 Transverse or Oblique Presentations. J. J. Thomas, Cleveland.
27 Diagnosis and Surgical Treatment of Tuberculosis of the Kidney. William E. Lower, Cleveland.
28 Hebotomy (Pubiotomy). A. H. Bill, Cleveland.
29 *Pulmonary Complications Following Abdominal Operations. H. Robb and H. Dittrick, Cleveland.
30 Multiple Giant Celled Sarcoma. G. W. Crile and W. C. Hill, Cleveland.
31 Observations on Surgical Hemorrhage. G. Crile, Cleveland.
32 *Search After Truth. R. B. Maury, Memphis, Tenn.
33 *Vaginal Cesarean Section. Dr. Dührssen, Berlin, Germany.
34 *Manual Dilatation of the Cervix of the Gravid Uterus. P. A. Harris, Paterson, N. J.
35 *Shortening of Round Ligaments within Inguinal Canals Through Single Suprapubic Transverse or Median Longitudinal Incision. R. Peterson, Ann Arbor, Mich.
36 *Hypernephroma Renis. J. W. Bovée, Washington, D. C.
37 *Conservative Operations on Ovaries. J. M. Baldy, Philadelphia.
38 *Technic of Repair of Large Vesical Fistulæ. Wm. S. Stone, New York City.
39 *Thrombosis and Embolism Following Abdominal Operations. J. T. Johnson, Washington, D. C.
40 *Results of Vaginal Section and Drainage in Early Cases of Ectopic Gestation. W. E. Ford, Utica, N. Y.
41 *Review of Surgery of Female Pelvic Organs. S. C. Gordon, Portland, Maine.
42 *New and Improved Method of Closing Vesicovaginal Fistulæ. A. L. Smith. Montreal, Canada.
43 Anesthesia in First Stage of Labor. F. S. Newell, Boston.
44 *Enteroptosis. R. R. Smith, Grand Rapids, Mich.
45 *Facts and Figures of End Results in 100 Cases of Conservative Operations on Uterine Appendages. W. P. Manton, Detroit, Mich.
46 *Postoperative Embolism. E. Boise, Grand Rapids, Mich.
47 *Treatment of Traumatic Esophageal Stricture by Dilatation. F. E. Bunts, Cleveland.
48 *Technic of Tubation of Pharynx to Facilitate Administration of Anesthetics and to Prevent Inhalation of Blood in Mouth and Face Operations. J. H. McHenry, Cleveland.
49 Normal Saline Solution in Abdominal Operations. W. H. Humiston, Cleveland.

19. **Infections of Knee Joint.**—Allen and Alden state emphatically that the knee joint, when infected or inflamed, is not to be considered as a closed cavity to be left alone. Their experience has convinced them that it may be aspirated, injected or incised with safety, no accident having followed any of these procedures. The advantages of the radical method are certainty of diagnosis at an early period, and positive treatment at a time when it may prove efficacious.

22. **Subclavian Thrombophlebitis Following Abdominal Section.**—The condition described by Weir occurred in the case of a woman operated on for a ruptured ectopic gestation. She rallied well from the operation and two days later had an attack of pain in the region of the gall bladder, with transient icterus. Both rapidly subsided. Eight days after the operation she complained of pain in the left axilla and shoulder and in the supraclavicular fossa, with local induration and tenderness along the course of the axillary vein. The edema and tenderness extended throughout the arm and also involved the left side of the neck to the median line in the area drained by the subclavian vein. The severe pain requires morphin at times. The arm was elevated, lightly bandaged with abundant cotton and heat applied continuously. The condition gradually improved, and about six months after the operation the arm was almost perfectly recovered, although it tired rather easily.

24. **Ureteral Symptoms in Gynecologic Cases.**—In 75 per cent. of all multiparous women seen by Thomas, who complain of classic subjective symptoms of disease of the generative organs, and in at least 90 per cent. of nulliparous women, the pain and the tenderness during manipulation was located neither in the uterus, tubes, nor ovaries, but in the pelvic portion of the ureters. Injuries during childbirth, pressure by inflammations and tumors of nearby organs, extension of inflammations either from the kidney or bladder, injuries due to the passage of renal calculi, the almost universal hyperacidity and extreme concentration of the urine in the female, and a type of woman in which there is a peculiar susceptibility to inflammations of mucous membranes throughout the entire body are the chief exciting causes of changes in the ureters.

25. **Prophylactic Treatment of Puerperal Eclampsia.**—According to Clark, the first step in the prophylactic treatment of puerperal eclampsia is so to manage cases of pregnancy as to reduce to the smallest number possible the cases of toxemia. When in spite of watchfulness toxemia develops, the case should be treated vigorously at the beginning, going to an extreme with it, and only terminating the treatment as its results justify it. When labor begins, the urine should be examined as soon as possible and again during and after labor. Chloral should be given, beginning with the onset of labor and continued until danger is passed. If the symptoms are becoming more pronounced as labor advances, it should be terminated. If, at the close of labor, symptoms are present either of impending eclampsia or even of a remote chance of eclampsia, the case should be treated as if the convulsions had already occurred, in this way preventing the actual occurrence of many that will come if nothing is done.

29. **Pulmonary Complications Following Abdominal Operations.**—In order to obtain some idea of the frequency with which an inflammatory condition of the lungs may follow abdominal operations, Robb and Dittrick made an analysis of 1,007 consecutive abdominal sections. Of this number, 35, or 3.5 per cent., of the patients developed pulmonary complications. Only 4 of the 35 showed physical signs of lung involvement before operation. In three cases acute pulmonary tuberculosis was evident immediately after the operation. Out of the 35 patients, 5, or 14 per cent., died. In one case, bronchopneumonia, in the second general peritonitis, and in the third acute cardiac dilatation were the immediate causes. In the 2 other cases metastatic nodules from malignant growths in the pelvis were found in the lungs. These pulmonary complications after abdominal operations may originate in several ways, generally from an infection originating from the field of operation. Another cause is the effect of the anesthetic, either because of the administration of too great a quantity of the drug for too long a time, because of the inspiration of vomited or infected material, or because of injurious substances contained in an adulterated anesthetic. Exposure, either during or after the operation, to sudden or excessive changes of temperature is a third cause.

32, 33, 40. The Journal, June 23, 1906, p. 1966.

34, 39, 44, 46. The Journal, June 9, 1906, pp. 1789-1791.

35, 36, 37, 38, 41, 45. The Journal, June 30, 1906, p. 2017.

42. **New Method of Closing Vesicovaginal Fistulæ.**—Smith reports two cases in which he employed a method devised by him for the closure of vesicovaginal fistulæ. After careful disinfection of the vagina, the latter was incised across in front of the cervix and the bladder pushed off the uterus in the same way as in the first step in vaginal hysterectomy. The vagina was divided in the middle line and separated from the bladder, except where the two torn edges had become united to the fistula. In one of the cases cited, a long tear in the bladder was then caught with a catgut stitch at either end, only taking in the muscular wall. When this was finished, there was a strong ridge on the site of the tear nearly a quarter of an inch wide, which was tested with sterilized milk injected into the bladder by a fountain four feet high. Care was taken not to allow the line of sutures of the vagina to come opposite the line of sutures in the bladder. This was avoided in the following manner: The slit in the vagina was closed with interrupted silkworm gut passed through one side of the vagina, then through the muscular wall of the bladder, but half an inch to the right of the tear in the latter, and then through the other side of the vagina, thus displacing the bladder half an inch to the patient's left, so that the line of suture in the two membranes was no longer in the same place that the line of the tear has been. By this means the line of suture in the bladder was backed up or strengthened in front by half an inch of solid vagina instead of a line of sutures, and should any pressure accidentally be brought to bear on the sutures in the bladder, it would have to overcome a valve instead of a hole, so that the harder it pressed the tighter would the valve close.

By this method, no stitches are allowed to enter the bladder, thus avoiding the danger of forming the nucleus for a calculus, and instead of depending on the union of a narrow ridge about the thirty-second of an inch thick, there is obtained a thick ridge fully an eighth of an inch thick in the bladder alone, to say nothing of the thickness of the vagina in front of it. In these cases a catheter should always be left in the bladder, as it removes all tension and places the bladder at complete rest so long as it remains in.

47. **Dilatation of Traumatic Esophageal Stricture.**—Bunts alludes to a series of nine cases of stricture of the esophagus all following the drinking of lye. Some of the patients were children, some adults, and in all the stricture was a very small one, so that in most of them the passage of even a filiform bougie was accomplished after several days of patient effort, and in several, total inability to swallow water was present. Finding it impossible to get esophageal bougies small enough for these strictures, Bunts had made a series of graded double-bulb, olive-shaped bougies, which he employed with much satisfaction. On each staff there are two bulbs, the first being one size of the French scale smaller than the second bulb. This serves to permit one to follow up the advantage gained by passing one bulb, by the immediate passage of one a size larger. Another advantage is that the passage of the first bulb is followed by a free passage of the intervening portion of the bougie until the second bulb is engaged in the stricture, making one feel safer in applying a moderate degree of pressure in pushing this one through. In children it is necessary to use a mouth gag, not so in adults. After securing a free dilatation of the esophagus, the patient may be furnished with a bougie for his own use, and by passing it once in a month or more all danger of return of the stricture is obviated. On inserting the bougie it is best to have the patient sit upright with the head thrown back somewhat. The bougie is best passed into the pyriform sinus at the side of the larynx, which affords a funnel-like aperture that will allow the bougie to slide into the esophagus without encountering the bodies of the cervical vertebræ or the cricoid cartilage.

48. **Tubation of Pharynx to Facilitate Anesthesia.**—In this article McHenry redescribes a method devised by Crile and described by him in 1903. (*Annals of Surgery*, xxxvii, p. 859.)

The Mobile Medical and Surgical Journal.

July.

50 Selected Case Reports of Abdominal Operations. W. M. Jordan, Birmingham, Ala.
51 Atony of the Stomach. S. Harris, Mobile, Ala.
52 Mental Attitude of Physician Toward Tuberculous Patient. J. S. McLester, Birmingham, Ala.
53 *Smallpox, as Observed in Alabama in Recent Years. S. C. Henderson, Brewton, Ala.
54 Society, Inebriates and Moral Perverts. R. J. Hargrove, Tuscaloosa, Ala.

53. **Smallpox in Alabama.**—Henderson refers to the mild form of smallpox with which he has come in contact in his capacity of County Health Officer in the past few years. He says that the period of incubation, the period of invasion, and all other manifestations are the same, except as to the severity of all symptoms. The constitutional symptoms are usually exceedingly mild. The mucous membrane is rarely affected, or if so, to a very mild degree, and the sufferings of the patient are so insignificant that many of them would not remain indoors unless compelled to do so. Henderson ascribes this to vaccination, and he agrees with others that the only practical and possible method of controlling the spread of smallpox is by vaccination, and that this to be efficient must be universal. He urges the enactment of laws making vaccination compulsory, and that the operation of vaccination should by law be entrusted only to those who are competent to perform it properly.

Northwest Medicine, Seattle, Wash.

July.

55 Disease of Gall Bladder and Ducts, with Reference to Stomach Troubles, Indigestion and Dyspepsia. G. M. Horton, Seattle, Wash.
56 Diagnosis of Gallstone Disease in Its Early Stages. C. W. Sharples, Seattle, Wash.
57 Commonly Overlooked or Misleading Symptoms of Gallstone Diseases. C. B. Ford, Seattle, Wash.
58 Clinical History and Diagnosis of Gallstone in the Gall Bladder, the Cystic or the Common Duct. N. J. Redpath, Olympia, Wash.
59 Relations of Pancreatitis to Cholelithiasis, with Report of a Case. N. F. Essig, Spokane, Wash.
60 *Unusual Case of Intestinal Obstruction. R. E. McKechnie, Vancouver, B. C.

60. **Unusual Case of Intestinal Obstruction.**—McKechnie reports the case of a woman who complained of obstinate constipation, vomiting and colicky pains that had lasted for several days, although large doses of physic had been given. The pain was about the umbilicus, the abdomen flaccid, tenderness on pressure a little below and to the left of the umbilicus; no sign of tumor. Repeated enemata, high and low, were tried, combined with the use of purgatives, but were ineffectual. The condition remaining the same, McKechnie operated. He found about a quart a serous fluid in the abdomen, slightly yellowish in color, and with no odor. There was no sign of peritonitis or disease of the gall bladder or appendix. Examination of the bowel showed that everything was normal, except about thirty inches of the jejunum, situated three feet from its upper end. The affected portion was an inch and a quarter in diameter, of uniform caliber, tapering off at either end into the normal contracted bowel without any sharp line of demarcation. The walls were double the thickness of the normal, were toneless, and apparently edematous. The color suggested edema, not congestion, so that the obstruction in this case was due to a paralysis of that portion of the bowel. Owing to the condition of the patient nothing further was done except to close up the abdomen. Opium and belladonna were given in suppositories and nutritive and saline enemata were also administered. The patient died on the third day from heart failure. At the postmortem the affected segment of bowel was found in apparently the same condition, no sign of gangrene, no more effusion, and no sign of peritonitis.

The Therapeutic Gazette, Detroit.

July 15.

61 *Treatment of Infantile Diarrhea. E. E. Graham, Philadelphia.
62 Cause and Treatment of Summer Diarrhea in Infants. J. P. C. Griffith, Philadelphia.
63 Remarks on Prevention and Treatment of Summer Diarrhea in Children. W. C. Hollopeter, Philadelphia.
64 Prophylaxis and Treatment of Infantile Diarrhea in Summer. T. S. Southworth, New York.
65 Dietetic Treatment of Summer Diarrheas of Infants. T. S. Westcott, Philadelphia.

61. **Treatment of Infantile Diarrhea.**—When the diarrhea is due to a toxemia Graham begins treatment with castor oil, or, if much vomiting is present, fractional doses of calomel, one-sixth grain every hour until one grain is given. In mild cases boiled water given by the mouth usually rapidly cleanses the stomach by being vomited; if vomiting persists, lavage must be resorted to. Irrigation of the colon is of advantage in every case. It should be done every twelve hours with a gallon of normal salt solution, at a temperature of about 100 F. Strychnin, 1/200 of a grain, repeated in three hours, is of advantage in the worst cases. Hypodermoclysis, eight ounces of sterile salt solution, repeated in twelve hours, is also beneficial in tiding the desperate case over a critical period. High temperatures are controlled by ice water enemata, one pint being used. Whisky, opium in the form of morphin or paregoric, may be given as indicated. Subnitrate of bismuth, in mucilage of acacia and peppermint water, is excellent, he states, in controlling the diarrhea.

When this is due to inflammation of the intestinal mucosa, hygienic and dietetic treatment are indicated. It is important to supervise the child's diet for a long while after convalescence is apparently established. Castor oil or calomel should be given in sufficient doses to sweep out the food and decomposed material thoroughly from the gastrointestinal tract. Rectal irrigation with normal salt solution is of benefit in almost every case. Subnitrate of bismuth, in ten grain doses, every two hours, should be given continuously during the entire course of the disease. If tenesmus is present, laudanum, four drops in four ounces of starch water, may be used as an enema. Stimulants will be required in the majority of cases. Opium is required in all but the mildest cases.

The Laryngoscope, St. Louis.

June.

66 Indications for Surgical Interference in Disease of Faucial Tonsils and Methods of Choice in Operating. An Analysis of 480 Cases. W. E. Casselberry, Chicago.
67 Affections of the Lips, Mouth and Tongue, as Seen by the Dermatologist. W. S. Gottheil, New York.
68 Acute Osteomyelitis of Temporal Bone; with Report of Cases. W. R. Dabney, Marietta, Ohio.
69 Contribution to Technic of Submucous Septal Operation. J. McCoy, New York City.
70 *Cases of Submucous Resection of Septum, with Conclusions Drawn from Same. W. W. Carter, New York City.
71 Indications for Operative Interference in Mastoiditis Associated with Acute Suppurative Otitis Media. T. M. Hardie, Chicago.
72 Anesthesia in Tonsil and Adenoid Operations. L. C. Cline, Indianapolis.
73 Sarcoma of Both Faucial Tonsils. C. D. Conkey, Superior, Wis.

70. **Submucous Resection of the Septum.**—All Carter's patients were males, varying in age from 10 to 57 years. Deviation in 24 cases was to the left; in 15 cases it was to the right; in 6 cases it was sigmoid, both sides being obstructed. In one case the anterior edge of the vomer consisted of two plates with an interval between. In two cases the cartilaginous septum was either calcified or ossified. In several cases there was distinct bulging on the side of the nose corresponding to the defection. In all but two cases it was necessary to remove some bone. The immediate results in all the cases were very satisfactory, the symptoms caused by the deflection being entirely relieved. There was one perforation. In all the cases the first good results have been maintained. In most of the cases no operative scar is easily discoverable.

The Laryngoscope, St. Louis.

July.

74 Diabetes and Bright's Disease in Relation to Suppurative Osteomyelitis of Mastoid. Polyuria a Symptom of Meningeal Irritation. T. Hubbard, Toledo, Ohio.
75 Some Affections of Lips, Mouth and Tongue, as Seen by the Dermatologist. W. S. Gottheil, New York.
76 *Proposed Operative Measure for Thrombosis of Cavernous Sinus. H. G. Langworthy, Dubuque, Iowa.
77 Case of Maxillary or Dental Cyst. "Hydrops Antri Highmori." G. E. Shambaugh, Chicago.
78 Demonstration of Suction Method in Diagnosing Sinus Disease. F. E. Brawley, Chicago.
79 Membranous Rhinitis (Non-Diphtheritic). C. M. Robertson, Chicago.
80 Cancer of Larynx: Laryngofissure. G. Kiaer, Copenhagen, Denmark.
81 Some Cases of Maxillary Sinus Empyema Treated Intranasally. H. H. Curtis, New York.

82 Epithelioma of Antrum of Highmore. R. H. Johnston, Baltimore.
83 Clinical Report on Use of Alypin as a Local Anesthetic. W. C. Phillips, New York.
84 Large Fibroadenoma of Nasal Fossa. R. H. Johnston, Baltimore.
85 Case of Serous Meningitis Mistaken for Brain Abscess. Operation. Recovery. L. Emerson, Orange, N. J.
86 Case of So-Called Laryngeal Vertigo (Bronchial Syncope). C. J. Whalen, Chicago.
87 Pharyngeal Fistula, Congenital. G. Worstell, Knoxville. Iowa.
88 Labyrinthitis In Secondary Stage of Syphilis. G. L. Renand. Detroit.

76. **Operative Treatment of Thrombosis of Cavernous Sinus.**—After elongating the usual frontal sinus incision downward along the nasal bone and retracting the eye out of the field, Langworthy removes the inner wall of the orbit over a considerable area together with the nasal bone on that side. The entire structures within the nasal fossa, ethmoid labyrinth and turbinates, are then curetted out. This at once brings him down on the anterior surface of the body of the sphenoid, with the opening of the sphenoidal sinus in plain view. The anterior wall of the sphenoidal sinus is next to follow, and also the external or lateral wall against which rests the cavernous sinus. If unsuccessful in opening the cavernous sinus, the external wound is easily closed, the eye remains uninjured, and nothing is lost by the attempt.

The Medical Fortnightly, St. Louis.

July 25.

89 Treatment of the More Common Secondary Symptoms of Diabetes. A. C. Croftan, Chicago.
90 The Atypical, the Indefinite. J. R. Landers, Bernadotte, Ill.
91 Sequel to the "Wholesale Poisoning" Scare. R. G. Eccles, Brooklyn, N. Y.

The Journal of the South Carolina Medical Association, Greenville, S. C.

July 21.

92 Simplification of Difficult Hysteromyomectomy. L. Peters, Columbia, S. C.
93 Obstructions in the Upper Respiratory Tract. H. H. Briggs, Asheville, N. C.
94 Use of Antitoxin in Treatment of Diphtheria. J. J. Watson, Columbia, S. C.
95 Polypharmacy. J. A. Faison, Bennetsville, S. C.

Denver Medical Times and Utah Medical Journal.

July.

96 Case of Sphenoidal Sinus Disease. F. G. Buchanan, Denver.
97 Case of Eclampsia Ending Fatally. M. Hawes, Denver.
98 Diabetes Mellitus In an Infant. E. Lawney, Denver.
99 A Right "Posterior Ilium." M. E. Bates, Denver.
100 Aortic Insufficiency, Appendicitis. T. S. Fantz. Denver.
101 Laboratory Diagnosis for the Practitioner. J. C. Todd, Denver.
102 Vomiting. (Continued.) D. S. Neuman, Denver.
103 A Plea for the Doctor of Internal Medicine. H. A. Castle, Pocatello, Idaho.
104 *Spotted Fever. H. N. Mayo, Salt Lake City.

104. This article appeared in The Journal, July 7, 1906, p. 36.

Southern California Practitioner, Los Angeles.

July.

105 Science, Religion and the Physician. T. J. Conaty, Los Angeles.
106 Lues as a Factor in General Practice. G. L. Cole, Los Angeles.
107 History of Stomach Surgery. J. DeB. Shorb. Los Angeles.
108 Induction of Labor. P. A. Adams, Los Angeles.
109 *Economy in Producing and Marketing Certified Milk. J. Roby, Rochester, N. Y.
110 The Water and Milk Supplies of Los Angeles. E. L. Leonard, Los Angeles.

109. This is modified from an article by Dr. Roby, which appeared in The Journal, May 12, p. 1430.

Annals of Gynecology and Pediatry, Boston.

July.

111 The Treatment of Suppurative Conditions in the Abdominal Cavity, General and Local. J. Douglas, New York.

The Journal of Medical Research, Boston.

July.

112 Studies in Absorption. B. H. Buxton and J. C. Torrey, New York.
113 Microscopic Evidences of Absorption in the Large Intestine. J. L. Bremer, Boston.
114 Two Modifications of the Leischman Stain. R. C. Whitman.
115 Regenerative Changes in the Liver: A Study of Experimental Lesions In the Dog. R. M. Pearce, Albany.
116 Simple Way of Using Buchner's Method for the Cultivation of Anaërobic Bacteria. H. J. Nichols and F. Schmitter, Washington, D. C.
117 Trypanosomata and Trypanosomiasis. E. N. Tobey, Boston.
118 Trypanosomiasis of the Newt. E. N. Tobey, Boston.
119 Relation of Autolysis to the Histologic Changes Occurring in Necrotic Areas. H. G. Wells, Chicago.
120 Case of Blastomycosis; Results of Culture and Inoculation Experiments. J. T. Bowen and S. B. Wolbach. Boston.
121 A New Toxic Action of Horse Serum. M. J. Rosenau and J. F. Anderson, Washington, D. C.

Colorado Medicine, Denver.

July.

122 Retinal Hemorrhages in Apparently Healthy Eyes. E. W. Stevens, Denver.
123 Tuberculous Meningitis. S. D. Hopkins, Denver.
124 A Case of Purulent Pericarditis. F. P. Gegenbach, Denver.
125 How the Medical Profession Can Aid in the Perfecting of Hospital Management. M. Collins, Denver.
126 Two Cases of Compound Fracture of the Vault with Loss of Brain Substance: Recovery. M. Kahn, Leadville, Colo.

The Kansas City Medical Record.

July.

127 How to Manage Otorrhea. F. E. Burgevin, Spiro, I. T.
128 Mucous Plaques; Prophylaxis and Treatment. E. H. Skinner, St. Louis, Mo.
129 Foreign Bodies in the Cornea and Conjunctiva. A. R. Baker, Cleveland, Ohio.
130 A Useful Antiperiodic Compound. J. A. Burnett, Dean Springs, Ark.
131 Emergencies in Internal Medicine—Treatment. J. H. Utley, Los Angeles.

Iowa Medical Journal, Des Moines.

July 15.

132 President's Address Before the Iowa State Medical Society. W. Jepson, Sioux City.
133 The Art of Medicine. E. Hornibrook, Cherokee.
134 Carcinoma. J. P. Crawford, Davenport.
135 Restoration of Nasal Contour, External and Internal. D. H. Lewis, Ottumwa.
136 Medical and Surgical Progress. G. Cullen, Des Moines.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

July 21.

1 *Some Points in Uterine and Ovarian Physiology and Pathology in Rabbits. C. J. Bond.
2 Vertigo. W. R. Gowers.
3 Effect of Bodily Exertion on the Opsonic Index of Healthy Persons. G. G. Ellett.
4 *Large Calculus of Ureter Removed by Suprapubic Cystotomy. R. Parker.
5 Pulmonary Tuberculosis in Children. J. E. Squire.
6 *Case of Actinomycosis of Abdominal Wall. A. Cuff.
7 *Value of Calcium Iodid in Treatment of Ulcers. G. A. Stephens.

1. **Points in Uterine and Ovarian Physiology.**—Bond investigated the effect of the removal of the uterine cornu on the ovary of the same side, and also the effect of the removal of the whole uterus on ovarian growth and function. He also inquired into the nature of and the conditions governing the secretion of a peculiar saline fluid by the endometrium and the mucous membrane of the Fallopian tubes, and the influence this secretion exercises when retained under pressure and absorbed into the circulation on estrus ovulation, pregnancy and the formation of lutein tissue. He also attempted to ascertain by experiments some of the conditions under which abdominal pregnancy and abdominal abortion occur in the rabbit. His conclusions are as follows:

1. The presence of functionally active ovarian tissue is necessary for the uterine function, or that portion of it which is concerned with the preparation by the endometrium of a suitable nidus for the imbedding of fertilized ova. 2. The presence of the uterine or endometrium tissue is not, on the other hand, necessary for the carrying on of ovarian function, either ovulation or the production of the internal secretion associated with estrus. 3. One function of the endometrium in the anestrous state is the secretion of a saline, watery fluid of low specific gravity, containing a large amount of chlorid of sodium in solution. 4. There is some antagonism between this endometric function or saline secretion and that portion of the internal secretion of the ovary which is specially concerned in producing pro-estrous changes in the endometrium

preparatory to the imbedding of fertilized ova. That portion of the internal secretion of the ovary which is, in fact, associated with the growth of corpora lutea. Thus the saline uterine secretion is associated with katabolic, the ovarian secretion with anabolic, changes. 5. The mechanism by means of which the ovary obtains its stimulus from the stimulated endometrium consequent on the occurrence of pregnancy is a circulatory and not a nervous mechanism. In all probability some substance is manufactured by endometrium or by trophoblast, or by both, which reaches the ovary by way of the blood stream, and is also concerned with the increased activity in the mammary glands. 6. The bilateral and bicorned uterus in the rabbit may be regarded as one gland so far as that function of the endometrium is concerned, which is associated with the preparation of a suitable nidus for fertilized ova. 7. The bilateral ovaries may also be regarded as one gland so far as the functions of ovulation and production of internal secretion are concerned. 8. After removal of one portion or half of this gland, the remaining portion is capable, under certain conditions, of undergoing a process of compensatory hypertrophy. 9. These necessary conditions in the rabbit are (a) the presence of the stimulus—namely, copulation—which in this animal normally determines ovulation, or (b) the stimulus of pregnancy. Under normal conditions these two stimuli occur together. 10. These hypertrophic changes in the ovary after unilateral oöphorectomy structurally resemble those changes which normally occur in the ovaries during pregnancy in its early stages. 11. After unilateral oöphorectomy, together with hysterectomy in the rabbit, the hypertrophhic stimulus is supplied by repeated copulation. 12. The prevention by previous hysterectomy of the secretion of the saline fluid by the endometrium of the anestrous uterus favors the overgrowth in the ovary of lutein tissue.

The facts now established are: 1. The endometrium has a secretion peculiar to the anestrous state. 2. There is evidence that some substance is elaborated by the pregnant uterus which stimulates the growth of corpora lutea in transplanted ovaries. Bond declares that we must, therefore, reconsider this matter and suggests that the ovary elaborates only one internal secretion having an influence on the uterus of an anabolic character, which at recurring intervals increases in amount and produces the phenomenon of pro-estrus and estrus.

4. **Large Calculus of Ureter.**—The calculus removed by Parker weighed a little over three-fourths of an ounce, and presumably was of the oxalate of lime variety. A striking peculiarity of the case related was that there were no urinary symptoms at any time. The inconvenience suffered was referred entirely to the rectum, through which the stone was originally felt.

6. **Actinomycosis of Abdominal Wall.**—The involvement of the abdominal wall in the case reported by Cuff was in the form of a tumor which involved the transversalis and peritoneum and slightly the internal oblique. The tumor was closely attached everywhere to the ascending colon. Cuff assumes that a piece of infected straw bearing spores of the ray fungus was swallowed by the patient; the small particle perforated the colon and entered the abdominal wall, setting up the disease there and leaving as evidence of its passage adhesions between the bowel and the abdominal wall. The tumor was removed and convalescence was uneventful.

7. **Calcium Iodid in Ulcers.**—The good effect produced by calcium chlorid in the treatment of acute ulcers led Stephens to try calcium iodid, and he says that the effect in reducing thick callous edges of chronic ulcers into thin healing ones was little less than miraculous. One or two of his patients found great difficulty in taking potassium iodid, but the calcium iodid agreed excellently, and the result was invariably good as regards smell, discharge and pain.

The Lancet, London.

July 21.

8 Notification of Pulmonary Phthisis. R. Sinclair.
9 X-Ray Shadows of Cystic and Xanthic Oxid Calculi. H. Morris.
10 Some Social Factors in the Causation of Infantile Mortality. T. Divine.
11 *Influence of Excessive Meat Diet on Growth and Nutrition. D. C. Watson.
12 Outbreak of Pneumonia in a Reformatory School. T. Oliver.
13 *Radical Cure of Femoral Hernia. A. Baldwin.
14 *Cessation of Pulse During Onset of Epileptic Fits A. E. Russell.
15 Two Cases of Amputation of Shoulder Girdle. J. C. Renton.
16 Operative Treatment of Laryngeal Papillomata in Children. D. R. Paterson.
17 *Case of Congenital Abnormality of the Genitourinary Organs. G. F. D. Smith and A. L. H. Smith.
18 Macroscopic and Chemical Observations in a Case of Scleroma Neonatorum. G. Carpenter and S. Neave.
19 *Case of Actinomycosis. E. Trevithick.

11. **Influence of Excessive Meat Diet on Metabolism.**—Watson made an extensive series of observations on the influence of a meat diet on the growth and general nutrition and the structure and functions of the organs of a large number of animals. The experiments proved that the excessive use of a meat diet in rats retards the growth and that sterility is induced if the diet is commenced in very early life. The power of lactation is diminished. A permanent weakening of the resisting power of the animals is induced, and they succumb to disease at an unusually early age. Furthermore, there is a high death rate in the offspring of animals fed on an excessive meat diet. Clinical experience leads him to think that we have here also a close parallel in diseases in the human subject, and more especially in the class of affections commonly included under the terms gout and goutiness.

13. **Radical Cure of Femoral Hernia.**—For some years past Baldwin has been practicing the following operation for the cure of femoral hernia, with a uniformly successful result. He has performed the operation about twenty times; all the wounds healed by first intention and caused no trouble whatever. The method of operation is described as follows: A curved incision about 1½ or 2 inches long is made over the saphenous opening. The sac is isolated and more or less cleared of fat. If not already back, the hernia is reduced. A slightly curved hernia director is now introduced up the crural canal in front of the sac and when its point is behind Poupart's ligament it is moved laterally so as for a short distance to strip off the peritoneum from the posterior surface of the transversalis fascia. The point of the director is now pushed farther upward and tilted forward so as to make the aponeurosis of the external oblique muscle project about half an inch above Poupart's ligament. A small transverse incision is then made through the aponeurosis, parallel to its fibers, on to the point of the director, which is now pushed up through the opening. The latter is only just large enough to allow of this being done. A sinus forceps, Spencer Wells forceps, or small nasal polypus forceps—the last, being slightly curved, is more convenient—is now introduced through the opening, passed behind Poupart's ligament, and made to project from the saphenous opening; as this is done the director is withdrawn; in its descent it guides the forceps and prevents it from catching. The fundus of the sac is now seized by the forceps, which is completely withdrawn, dragging the sac out through the opening in the external oblique aponeurosis. The sac is pulled out as much as possible and ligated at the top of its neck. By this maneuver no pouch is left in which recurrence may take place. A suture is then passed through the fundus of the sac, the suture is drawn through to its middle and then tied, thus leaving two free ends of equal length, or this may be done before the sac is pulled up through the opening in Poupart's ligament, the thread being seized by the forceps and used to pull up the sac. If the sac is large, however, the thread may tear out and time be lost. One end is threaded in a strong curved needle, one which will not rotate in the forceps which grasps it. The needle is now passed backward and forward through the sac several times, starting at the fundus and finishing at the neck, as described by Macewen, for puckering the sac. The needle is grasped in forceps, or a needle on a handle may be used, and its point is passed through the hole above Poupart's ligament, through the neck of the sac, down to the transverse ramus of the pubes, then by a turn of the wrist the point is made to slide forward across the pubic bone, as close to it as possible, then to pierce the pectineus muscle and to appear through the inner part of the saphenous opening. The needle is pulled through, bringing its thread with it. By drawing on the thread and by tucking the sac back again through the hole above Poupart's ligament by means of a stout

probe or similar blunt instrument, the sac disappears from view and comes to rest in a puckered-up condition behind the transversalis fascia and at the top of the crural canal, which it effectually roofs in. By this time the other end of the thread is hanging out of the opening above Poupart's ligament. It is tied rather firmly, but not too tightly, to the thread which projects from the saphenous opening; this fixes the sac in its place, and fixes Poupart's ligament to the pectineus muscle, so obliterating the crural canal. If necessary, a second suture may be put in for this purpose, but nearer the pubic spine. A suture is put in to close the hole above Poupart's ligament and the skin incision is closed. Thus there are three distinct checks against the recurrence of the hernia: (1) The sac is ligatured higher up than is possible by the ordinary method and leaves no peritoneal pouch; (2), the sac is used as a buffer or roof above the crural canal; and, (3), Poupart's ligament is approximated to the pectineus muscle and obliterates the crural canal. It may be urged that the sac will slough and cause trouble. This does not take place. It no doubt becomes vascularized, converted into granulation tissue, and ultimately into fibrous tissue.

In strangulated hernia, when it has seemed safe to leave the sac, and when time was precious, the author has modified the operation by pushing the sac up through the canal, after having made a little space for it as before, and then sutured Poupart's ligament to the pectineus muscle.

14. **Cessation of Pulse During Epileptic Fits.**—Russell points out that cardiac arrest does occur in some cases of epilepsy and suggests that it is far commoner than is suspected.

17. **Congenital Abnormality of the Genitourinary Organs.**—The diagnosis in the case recorded by the Smiths seemed to lie between inversion of the whole bladder wall, inversion of the mucous membrane of the bladder, and prolapse of the ureteric cyst, together with part of the bladder. At the necropsy it was apparent that this was a case of a dilated accessory ureter, either with a blind cystic ending in the bladder wall, or with ballooning of its lower end, due to congenital narrowing of its orifice.

19. **Actinomycosis.**—Trevithick reports a case of actinomycosis in a boy, aged 16, which manifested itself as a primary abscess of the left lung, exhibiting a spontaneous cure, and later a metastatic manifestation in the pelvis, declaring itself after a year's latency, with abscess formation and a slow spontaneous cure.

The Journal of Tropical Medicine, London.

July 16.

20 *Verruga Peruana. M. D. Eder.
21 Habits of Ornithodoros Moubata. F. C. Wellman.
22 Clinical Picture of Relapsing Fever. V. G. Desai.
23 Anatomy of Biting Flies of Genera Stomoxys and Glossina. G. M. Giles.

20. **Verruga Peruana.**—Under this name Eder describes yaws as occurring in a district in Peru where typhoid is endemic. The two conditions are often found in the same patient. The causal agent of verruga is unknown.

Journal of the Royal Army Medical Corps, London.

July.

24 Reports of Commission for Investigation of Mediterranean Fever. (Continued.) E. A. Shaw.
25 Examination of Blood to Determine if Other than Mediterranean Fever Sera Would Agglutinate the M. Melitensis. P. W. Basset-Smith.
26 Management and Use of X-Ray Apparatus. (Continued.) F. Bruce.
27 South African Stock Diseases. D. Bruce.
28 Mutual Mobility Between Skin and Deeper Structures and Its Relation to Bullet Wounds. G. L. Cheatle.
29 Date of Appearance and Duration of Bacillus Pestis in Peripheral Blood in Cases of Bubonic Plague in India. E. D. W. Greig.
30 Plea for Indian Service for all Ranks of the Corps. W. Tibbits.
31 Preparation of a Satisfactory Mercurial Cream for Intramuscular Injection. C. A. Hill.
32 Systematic Treatment of Malaria Among European Troops. W., E. Hudleston.
33 Preservation of Health Among the Personnel of the Japanese Army. Takaki.
34 Memorandum Regarding Antityphoid Inoculation. W. S. Harrison.
35 Dosage of Metallic Mercury in Intramuscular Treatment of Syphilis. F. J. Lambkin.

Presse Médicale, Paris.

36 (XIV, No. 53.) Sound Typhoid Bacilli Carriers.—Le bacille d'Eberth dans l'intestin des sujets sains. Conséquences cliniques et épidémiologiques. P. Remlinger.
37 La sécrétion interne du testicule dans l'ectopie de cet organe. R. de Gaulejac.
38 Une bonne formule d'apéritif. A. Martinet.

Revue de Médecine, Paris.

39 (XXVI, No. 5.) La légende de l'immunité des arabes syphilitiques relativement à la paralysie générale. Marie.
40 Perforations du septum interauriculaire. Leurs conséquences pathologiques et leurs variétés. Bériel.
41 Note sur l'épilepsie massive. C. Féré.
42 De l'existence de la fièvre méditerranéenne en Tunisie. Cathoire.
43 Vertige par lésion du rhino-pharynx (symphyses salpingo-pharyngiennes). Roque and Royet.
44 *Ostéomalacie et goitre exophthalmique. G. Tolot and F. Sarvonat.
45 (No. 6.) *La dengue en 1904 et en 1902. H. de Brun (Beyrouth).
46 *Une variété nouvelle de myoclonie congénitale, pouvant être héréditaire et familiale, à nystagmus constant (Nystagmus-myoclonie). E. Lenoble and E. Aubineau.
47 Traitément de la fiévre hémoglobinurique bilieuse. S. J. Kanellis (Athens).
48 Hypertension et bains carbogazeux (carbonated baths). J. Heitz.

44. **Is Osteomalacia a Thyroid Affection?**—Tolot and Sarvonat describe the case of a woman of 52 who had exhibited symptoms of mild exophthalmic goiter from childhood. During the last few months evidences of osteomalacia became apparent. In looking over the literature they found records of 11 cases of osteomalacia accompanying exophthalmic goiter. In the regions in Europe where goiter is endemic, osteomalacia is endemic likewise.

45. **Dengue in Syria.**—De Brun remarks that dengue epidemics have special characteristics. In one epidemic there will be eruptions in nearly every case, in another there will be no cutaneous manifestations. In one the disease will be very mild, in others it will simulate severe typhus, and so on. In a recent epidemic 26 cases developed in 11 days; the onset was sudden and severe, the fever reaching its maximum, 40 C. or thereabouts, at one swoop, and dropping to below normal on the third day. A peculiar painfulness of the ocular muscles seems to be pathognomonic of dengue, he states. In another epidemic the fever kept at about 40 C. for thirteen days and then dropped abruptly.

46. **Congenital Myoclonus with Nystagmus.**—Lenoble and Aubineau report 25 cases of inherited and familial myoclonus, associated with essential nystagmus, besides a number of cases of essential familial nystagmus.

Berliner klinische Wochenschrift.

49 (XLIII. No. 19.) *Disappointments and Hopes in Treatment of Tuberculosis.—Ueber einige Enttäuschungen und Höffnungen bei der Behandlung der Tuberkulose. E. de Renzi (Naples).
50 Zur Methodik der Aminosäurenbestimmung im Harn (amino acids in urine). L. Hirschstein.
51 *Ueber die Ochronose. L. Pick. (Concluded.)
52 *Zum Chemismus der Ochronose. L. Langstein.
53 Advantages of Combining Organo-Therapy with Other Measures.—Die Vorzüge der Kombination der Organo-Therapie mit den physikalischdiätetischen und balneotherapeutischen Mitteln und einige Beweismethoden dafür. A. v. Poehl (St. Petersburg). (Concluded.)
54 Uterine Hemorrhage.—Uterusblutungen. E. Runge.
55 Bier's Congestive and Suction Therapy in Affections of Skin and Genital Organs.—Ueber Stauungs- und Saugtherapie bei eingen Affektionen der Haut und der Geschechts-Organe. K. Ullmann. (Concluded.)
56 Ueber rhythmisch auftretende pathologische Symptome in der Menakme und Menopause des Weibes und deren Balneotherapie. E. H. Kisch.
57 Ueber Diät-Regelung bei Diabetes mellitus. Lenné.
58 Sanatoria for Children.—Das Kinderheilstättenwesen in Deutschland. P. Munz.
59 Balneologischer Bericht aus Marienbad. J. Kugler.
60 *Zur Palpation des Abdomens. A. Pollatschek.

49. **Disappointments and Hopes in Treatment of Tuberculosis.**—De Renzi has been experimenting with carbon dioxid as a means of influencing the course of tuberculosis, but was obliged to abandon all hope from this source. The antagonism between tuberculosis and emphysema is still unexplained. In regard to forced feeding he has found the carbohydrates, especially sugar, of great value in raising the general tone and strength of the tuberculous. Oatmeal is not liked or tolerated among his patients, but levulose, dextrin and cane

sugar, up to 300 or 400 gm., are proving very useful, especially levulose. The sugars increase the weight. His patients thrived best on from 100 to 120 gm. a day. In forced feeding the importance of frequently changing the food must always be borne in mind. In regard to repose, he has found relative rather than absolute repose better for the tuberculous. "Possibly," he adds, "the gout which is so prevalent in the southern Italian provinces requires moderate exercise, even in the tuberculous." In regard to the necessity for repose, he states that tuberculous guinea-pigs kept in cages that were shaken by an electric motor, died sooner than the controls in quiet cages. He remarks that the physician should not prescribe any medicine for his tuberculous patient. The only exceptions are oxygen and sodium salicylate. He has found that tuberculous guinea-pigs, given oxygen to inhale, survived much longer than the controls. In 6 cases in which he has applied it in the clinic, the symptoms subsided, and he is inclined to regard it as promising remarkable results when the technic of its application shall have been perfected. The oxygen has no specific action on the tubercle bacilli, but it increases the resisting powers of the organism. His experiments with ozone, both for animals and in the clinic, gave invariably negative results. His experience with sodium salicylate has been very encouraging. He has been giving it in his clinic since 1900 in daily doses of from 1 to 10 gm., averaging 3 or 4 gm. The reduction of the temperature is the most striking effect. It sometimes occurs with a few small doses, but in other cases not until after a few weeks or months. If the salicylate is suspended, the temperature is apt to rise again at first, but after the drug has been given long enough, apyrexia persists even when salicylate is no longer taken. No aggravation was noticed from the drug in the cases with complicating nephritis, except a slight transient increase in the albuminuria at first; and no symptoms on the part of the kidneys were observed in the patients in whom these organs were sound. Experiments with guinea-pigs gave negative results. He explains the favorable action of the salicylate as possibly due to its specific influence on the blood. It binds the oxygen more firmly to the hemoglobin, transforming it into methemoglobin. It is possible, therefore, that its influence is due to the larger amount of oxygen thus assimilated by the organism. Its effect on the fever, he states, surpasses that of any other drug he has tried, while it does not interfere with the physiologic metabolism. Ozone, on the other hand, had an inhibiting influence on the respiratory movements and on the nervous system in his experiments.

51 and 52. **Ochronosis.**—Pick reports the ninth case on record (according to his compilation), of pathologic brownish-yellow to black staining of the tissues, especially the cartilages, tendons, arteries and kidneys, as well as the skin. His was the only case diagnosed during life. The patient was a woman of 77, whose face was dark brown, and all the cartilages, etc., were found brown to black. In this and in another case on record the patients had used carbolic acid freely on chronic leg ulcers, and he is inclined to regard the ochronosis as possibly, in some cases at least, the result of chronic carbolic acid intoxication. There do not seem to be any grounds for connecting the condition with alkaptonuria.

60. **To Facilitate Palpation of Abdomen.**—Pollatschek recommends the preliminary application of cataplasms to the abdomen to soften it and thus to facilitate palpation. Under the moist heat the muscles relax as in a warm bath.

Deutsche medizinische Wochenschrift.

61 (XXXII, No. 26.) *Waller's Law.—Ueber das Wallersche Gesetz. Zander.
62 *Functional Tests of Heart Muscle.—Funktionelle Bestimmung der Leistungsfähigkeit des Herzmuskels und deren Bedeutung für die Diagnostik der Herzkrankheiten. Gräupner.
63 Precipitation Test of Albumin in Food.—Der quantitative Nachweis von Eiweisssubstanzen mit Hilfe der Präzipitin-Reaktion und seine Anwendung bei der Nahrungsmittelkontrolle. A. Schulz.
64 Spirochätenbefunde in den Organen kongenital syphilitischer Neugeborener. H. Schlimpert.
65 Ueber Filtrat-Aggressine. E. Levy and W. Fornet.
66 Fall von Staphylococcen-Septicämie. L. Vincenzi.
67 Beitrag zur Behandlung der Sepsis mit Kollargol. Bökelmann.
68 Skiagrams in Relief.—Zur Herstellung plastisch wirkender Röntgenphotographien. R. Lewisohn.
69 Zur streitfrage ueber den Fettgehalt in den Handelssorten des Kakaos (fat in cocoa). E. Harnack.

61. **Waller's Law.**—Zander is prosector at Stieda's Institute of Anatomy at Königsberg, and his experience in regard to the results of severing a nerve has shown that Waller's law must be recast in a new mold to conform to present knowledge. He asserts that sensory nerves can be permanently shut off only by removal of the ganglion. Sudden tearing out of the nerve, causing irreparable injury to the cells of the ganglion, has practically the same effect. As there is evidently no regeneration in the fibers of the brain and spinal cord, conduction is never restored after they are severed. Consequently, severing the roots between the ganglion and the central organ also excludes permanently the sensory nerves. This operation might be applied, he states, in case of trigeminal neuralgia. Excision of large sections of the nerves does not prevent the growing in of fibers from other nerve domains. Regeneration of motor nerves occurs more rapidly and more completely the earlier the peripheral is united with the central stump. If union with its own central stump is impracticable it may be implanted in an adjoining nerve, or a plastic operation be done on the nerve. Tillaux has reported a case in which, fourteen years after the median nerve had been severed, it was reunited with a suture and function restored. This encourages intervention even at a late date.

62. **Functional Test of Working Capacity of the Heart Muscle.**—Gräupner practices at Nauheim and has been conducting research at the University Institute of Hydrotherapy at Berlin, making a special study of the blood pressure as an exponent of the condition of the myocardium. On the basis of this experience he proclaims that functional tests of the heart must take into consideration the blood pressure, the volume of the heart beat, the degree of tension in the vessel walls, and also the mechanical pressure of the amount of blood in the region, which stretches mechanically the walls of the vessels. The importance of the behavior of the blood pressure as an index of the functional capacity of the heart has never been duly appreciated, he says. The regular changes in the blood pressure indicate the ability of the myocardium to adapt itself to existing conditions. This is especially noticeable when a certain group of muscles is called on for a certain special exercise, and the blood pressure is recorded every half minute, repeating the test again and again. He has devised an ergometer for the purpose, and has the patient stretch or bend both arms or legs while reclining. The theoretical premises as to the way in which the blood pressure first rises, then drops and then rises again a little, and finally settles back to the preceding figure, have been completely realized in practice. In health the blood pressure shows very little change during the exercise test. The rise and fall are minimal, although the blood drawn to the group of muscles performing the exercise leaves the vessels elsewhere comparatively empty. To restore the balance afterward the blood rushes away and the blood pressure drops. This is followed by a return wave, which again recedes. The extremes are further apart as the myocardium is less able to adapt itself to the demands made on it by these fluctuations in the mass of the blood. The variations in the blood pressure, therefore, are an index of the functional capacity of the myocardium. If it is enfeebled, then it is unable to control the blood sufficiently to compensate these fluctuations, and the result is shown in the height of the fluctuations in the blood pressure and the tardiness with which the balance is restored. Pathologic resistance in the vascular domain enhances this effect. With the aid of this functional test it is possible to determine in case of a valvular defect whether or not the myocardium is also affected. It is able, further, to differentiate whether a systolic mitral murmur is evidence of an actual valvular lesion or not, and whether the systolic murmur at the aorta, which is so frequently encountered in arteriosclerosis, is only "muscular," that is, due to some arteriosclerotic changes in the myocardium. It also indicates whether the myocardium is actually

enfeebled in case of dilatation in the right or left ventricle, or whether the enlargement of the area of cardiac dullness is due to pathologic vascular resistance. The test also serves to decide whether or not there is actual congested kidney in case of the presence of albumin and hyalin casts.

Deutsche Zeitschrift f. Chirurgie, Leipsic.

70 (LXXXII, Nos. 1-3.) Resistance to Torsion of Joint Ligaments.—Die Torsionsfestigkeit des Gelenkbandapparates. Torsions-Versuche an den Extremitätengelenken des Menschen. J. Fessler.
71 Bone Formation in Goiters.—Knochenbildung in Strumen. H. Hunziker and R. Pfister.
72 Classification of Femoral Hernias.—Ueber den äusseren Schenkelbrüche, nebst Bemerkungen über die Klassifizierung der Schenkelbrüche. Axhausen.
73 Ueber lokale Eosinophilie der Niere (of kidney). G. Sultan.
74 *Ueber die heteroplastische Deckung von Schädel-Defekten mit Celluloid (for skull defects). Blecher.
75 Isolierte Fraktur des Tuberculum majus humeri. Nieszytka.
76 Zur Lehre von der Fraktur des Calcaneus. Voeckler.
77 *Zur Diagnose und Therapie des primären Sarkoms der Kniegelenkkapsel (of capsule of knee). A R. v. R. Rydygier.
78 Beitrag zur Genese der Gesichtsspalten (hare lip). M. Drandt.
79 Surgical Cure of Amniotic Cord Groove in the Leg.—Operative Heilung einer amniotischen Abschnurung am Unterschenkel. G. Ottendorff.
80 *End-Resultate konservativer Behandlung der tuberkulösen Coxitis. S. Lewiasch.

74. Celluloid Plates to Close Defects in the Skull.—A celluloid plate has been used to close a defect in the skull in 11 cases to date, according to Blecher's figures. Two of the patients have been lost from sight; in 2 severe preëxisting troubles still persist, but the others so far are entirely free from any disturbances. The interval ranges from 4 to 7 and 8 years. This proportion of permanent cures is larger, he says, than in case of bone prothesis. The celluloid plate does not actually heal into the tissues, but remains always a mere mechanical cover. It is especially advantageous when, on account of caries of the bone, the wound may have to be opened up again later. Transparent celluloid might be used if desired. The celluloid plate causes no reaction, and no adhesions form on its shiny surface. Blecher's own patient was a man of 24. The results in this case have been eminently satisfactory for nearly five years to date.

77. Primary Sarcoma of the Knee.—From a comparison of the 9 cases on record with a case personally observed, the following conclusions seem evident to Rydygier: The sexes are about evenly divided (6 women to 4 men). The lesion develops between 20 and 39 and on one side only. The sarcoma may be sharply circumscribed and more or less movable, from the size of a bean to that of an orange, or it may be a diffuse infiltration of the capsule, or both forms may be blended, the diffuse infiltration containing one or more nodules. The functions of the joint were impaired very little, if at all, in the cases on record, and the lesion did not cause pain, except in one or two instances. In these there was considerable pain at first, but it subsided later and recurred only after a severe traumatism. In March's case there was no pain until recurrence. Puncture always revealed a reddish, clear fluid or blood, never pus. The glands in the inguinal region were not enlarged. Slight temperature was observed in only one case, and in one the knee is said to have felt hot. The remarkably slow course of the lesions was a striking feature. The first symptoms had been noticed 2 years before the patient, in the personal case described, had applied for treatment. The interval ranged from 9 months to 3 and 13 years in some cases. Hardie's patient did not consult a physician for 5 and March's for 14 months, and the latter patient was under treatment for 6 years. The absence of pain, of friction sounds, of pus, of atrophy of the muscles, of contracture, speaks against tuberculosis. Roentgen examination also shows the bone intact. Resection of the knee joint with thorough extirpation of the entire neoplasm is sufficient for most cases of the kind. Amputation and exarticulation should be reserved for far advanced cases.

80. Tuberculous Hip-joint Disease.—The end results in 100 cases treated by Kocher vary according as there was suppuration or not. Without suppuration 49 out of 66 cases (74.2 per cent.) had excellent remote results, while this proportion was only 39 per cent. in 23 suppurative cases. The cases are discussed from various standpoints. About 70 per cent. of the patients were under 20 and half of these under 10.

Münchener medizinische Wochenschrift.

81 (LIII, No. 19.) Ueber die pockenverdächtigen Formen der Varicellen (simulating smallpox). W. Ebstein.
82 Die Anästhesie in der kleinen Chirurgie. Verth.
83 Zur Methodik der Viskositäts-Bestimmung des menschlichen Blutes (of blood). Determann.
84 Ein zweiter Fall von Abknickung der Speiseröhre durch vertebrale Ekchondrose (kinking of esophagus). H. Zahn.
85 Gangrene of Both Lids After Slight Trauma of the Brow.—Symmetrische Gangrän beider Lider nach Verletzung an der Stirne. W. Apetz.
86 *Fall von artefizieller, akuter Nephritis nach Gebrauch von Peru-Balsam. A. Richartz.
87 *Heilung eines Falles von Tetanus traumaticus. Id.
88 Standard Nursing Bottle.—Eine Normalflasche für die Säuglingsernährung. H. Cramer.
89 Bildung spezifischer Leukotoxine im Blut-Serum als Folge der Röntgenbestrahlung der Leukämie, der Pseudoleukämie und des Lymphosarkoms (leucotoxins under Roentgen treatment). C. Klieneberger and H. Zoeppritz. (Concluded.)
90 (No. 20.) *Ein neuer Weg für die Operation der malignen Nasentumoren. A. Denker.
91 Zur Frage des sporadischen Auftretens von Meningitis zerebrospinalis (Weichselbaum). Küster.
92 Progress in Treatment of Flat Foot.—Fortschritte in der Plattfussbehandlung. G. Hohmann.
93 Ueber Analgesie der Achilles-Sehne bei Tabes (Abadiesches Symptom). Racine.
94 Warum sind die Lähmungen des Nervus peroneus häufiger als die des Nervus tibialis (comparative frequency of paralyses). E. Hartung.
95 *Beiträge zu den klinischen Erscheinungsformen der abdominalen Arteriosklerose. J. Rosengart.
96 Die Gas-Gemisch-Narkose mittelst des Roth-Dragerschen Sauerstoff-Apparates. W. Hagen.
97 Symmetrische Hand-Rücken-Lipome bei Togo-Negern. M. Martin.

86. Acute Nephritis After Use of Peruvian Balsam.—A girl of 16 was treated for scabies with three inunctions of 10 per cent. Peruvian balsam in one day. Symptoms of severe nephritis developed soon after, and the fourteenth day coma developed, with death the next morning. Nothing could be found to indicate any other cause for the nephritis than the Peruvian balsam. Richartz advises examination of the urine when using this remedy. He has found it extremely useful for superficial wounds and leg ulcers in the familiar formula of 5 gm. Peruvian balsam, 0.3 gm. silver nitrate and 45 gm. of simple ointment. Intoxication need not be feared from this form of its application on small areas.

87. Recovery from Traumatic Tetanus.—The symptoms in the case described were kept under control with morphin. About eight hours after an injection of 100 units of antitoxin there was a marked exacerbation of all the symptoms, and Richartz does not believe that its influence was favorable. The patient was a lad of 17. Morphin was injected about every four hours, its effect being always markedly beneficial. It allowed ample ventilation of the lungs and thus obviated suffocation, which he believes is the most frequent cause of death in tetanus. On account of the increasing rigidity of the muscles engaged in respiration, hypostasis and pulmonary edema are liable to occur; the patient is distressed by constant desires to cough, but is unable to do so. Death follows with increasing cyanosis. Richartz had occasion to witness this train of phenomena in a case of puerperal tetanus not long ago. Three injections of antitoxin in this case had failed to relieve. In the present case there was slight bronchial irritation at first, but it soon subsided. The incubation in this case had been 17 days and the symptoms were never of the severest type.

90. Removal of Malignant Tumors in Nose Through Upper Jaw.—Denker gives illustrations of his technic. The upper lip is mobilized and pushed up as far as desired, and access to the rear of the nose is obtained by resection of the facial and median wall of the maxillary sinus. An extensive operation on the nose can thus be done without leaving a trace on the face. In his experience with 3 cases he found that the dropping of blood and secretions into the upper air passages was more easily prevented than by other technics.

95. Clinical Manifestations of Abdominal Arteriosclerosis.—Rosengart remarks that recent discussions of arteriosclerosis have shaken many old established ideas. Cases have been reported in which the blood pressure had always been normal and others in which, with prominent tortuous arteries in the temples, no traces of arteriosclerosis were found anywhere in the body at autopsy. His experience has shown that abdominal arteriosclerosis is liable to induce annoying flatulence, painful distension, especially in the right hypochondrium, and occasional colic and eructations, the latter sometimes bringing relief. The patients are irritable and sleep is broken and fitful. Sometimes the condition in the night is improved if the patient eats something. The appetite is good, with a tendency to constipation. The stomach digestion is generally good, with occasionally a little hyperchlorhydria. Some patients in this class have proctitis with considerable secretion, eczema of the anus and hemorrhoids; slight albuminuria may also be observed. Gradually the pulse rate increases and a systolic murmur becomes audible sometimes, with accentuation of the second aortic sound; the blood pressure rises and the diagnosis of arteriosclerotic disturbances is rendered certain by an attack of angina pectoris. Some of these conditions may exist for years and deceptively simulate nervous dyspepsia. The patients are generally men who tell of overwork. Differentiation may be difficult, as signs of arteriosclerosis elsewhere than in the splanchnic region may be entirely lacking. Slight cardiac insufficiency may be discovered, with considerable difference in the pulse, standing or lying or after slight physical exertion. The patient may complain of dizziness, headache and possibly weakness of memory, and may display a remarkable intolerance of alcohol, especially men who have been in the habit of drinking to some extent. Buzzing in the right ear is often mentioned. Patients from the lower classes sometimes state that a brother, father or husband had "suffered a long time from hemorrhoids and then they went to his chest and he died." Rosengart learned the meaning of this statement when studying these initial manifestations of arteriosclerosis developing in the splanchnic region. In another series of cases the above symptoms were accompanied by vomiting, occurring particularly in the night, with sometimes blood in the vomit and stools and violent colics. This group comprises cases of abdominal arteriosclerosis with thrombosis of some of the finer arteries. He reviews some cases from the literature and one personally observed belonging to this class.

Therapie der Gegenwart, Berlin.

98 (XLVII., No. 3.) Rapid and Permanent Cure of an Old Caustic Stricture of Esophagus by Thiosinamin.—Heilung einer alten Verätzungstriktur durch Thiosinamin. K. Pollack (Stettin).
99 *Behandlung des Diabetes insipidus mit Strychnin-Injektionen. L. v. Ketly (Budapest).
100 Zur Hydrotherapie des Morbus Basedowii. J. Sadger (Vienna).
101 *Die Skoliosen-Behandlung des praktischen Arztes. G. Müller.
102 Ueber Trypanosomen und Trypanosomenkrankheiten. K. Fürntratt.
103 Ueber eine hygienische Verbesserung der Frauenkleidung (dress reform). T. Hoffa.
104 Alte Rezepte von C. Gerhardt.
105 Successful Mercurial Treatment of Gout.—Erfolgreiche Quecksilberkur bei einem Gichtkranken. L. Schuster. One Case.

99. **Treatment of Diabetes Insipidus with Strychnin.**—Ketly found injections of strychnin nitrate extremely useful in 3 cases of idiopathic diabetes insipidus. He commenced with 0.5 mg., increasing every second day by 0.1 mg. to a maximum of 0.01 gm. The patients were 3 men from 31 to 36 years old. The subcutaneous injections were given daily for about a month in one case and then the strychnin was given by the mouth for 3 days. The amount of urine dropped from 8.000 to 1.500 c.c., and all the symptoms permanently disappeared. In another case the diabetes persisted after the cure of a syphilitic brain trouble under mercurial treatment. Under the strychnin injections the amount of urine declined from 11.500 to 3.000 c.c. in 13 days, and the polydipsia vanished with the polyuria. This improvement was only temporary, however, as the symptoms recurred in two or three months. They subsided again under strychnin by the mouth. One female patient did not show any improvement under the strychnin.

101. **Treatment of Scoliosis by the General Practitioner.**—Müller describes in this profusely illustrated article the technic of massage and exercises for patients with scoliosis. He advocates the use of what he calls the "autogymnast." A ring like a stirrup fits over the foot, the heel in the ring, and is connected with a handle held in the hand. The connecting cord runs loosely through a ring fastened in a loose belt around the bare waist. All kinds of exercises can be done with a handle in each hand, the traction pulling on the corresponding foot. Particularly effectual exercises can be done with the child lying on a table, the trunk above the waist projecting over the edge, an assistant holding the feet down to the table, while the child works the autogymnast handles in various exercises or performs the motions of swimming.

Gazzetta degli Ospedali, Milan.

Last indexed, page 159.

106 (XXVII, No. 21.) *Cura della anemia nella anchilostomiasi. A. Berti.
107 *Le iniezioni parenchimali intrapolmonari di batteriolisina tubercolare nel trattamento della tubercolosi polmonare. S. Livierato.
108 (No. 24.) *La tubercolosi nell'esercito italiano (in army). C. Sforza.
109 *Autosiero-prognosi. M. Landolfi.
110 The Kidney and Liver in Splenectomized Animals.—Il rene ed il fegato negli animali smilzati. T. Silvestri.
111 Casistica di curiosta terapeutiche. A. Campani.
112 (No. 27.) *Influenza della tubercolina sulla infezioni sperimentali. C. P. Goggia.
113 *Ligature of Popliteal Vein in Treatment of Varices.—La cura delle varici alle gambe colla legatura della vena poplitea (Parona). C. Viscontini.

106. **Treatment of Anemia in Ankylostomiasis.**—Lucatello has been experimenting since 1900 with specific hemolysins as a means of treating anemia of various origins. Blood formation is stimulated by the injections of the specific hemolysins, and they have also a decided antitoxic action. He has been testing this method of treatment in the anemia of uncinariasis since 1904, and the results encourage further attempts in this line, although the experiments to date have always been in the more serious cases and without anthelmintic measures, in order to test the efficacy of the prepared serum to the utmost. Guinea-pigs were injected with serum from patients with pronounced anemia from ankylostomiasis, after previously heating the serum to 56 C. for half an hour to destroy the Ehrlich complements. From 25 to 50 c.c. of the serum was then injected subcutaneously into the guinea-pig. About 500 c.c. were injected into the animal the first month, 100 the second and 110 in the third month. The 3 patients treated with the serum of the guinea-pig after this preparation were given subcutaneous injections of from 2 to 5 c.c. two or three times a week. The very favorable experiences to date have confirmed the harmlessness of the treatment and encourage its use as an adjuvant to anthelmintic medication.

107. **Injections of Specific Tuberculous Bacteriolysins Directly Into the Lungs.**—Maragliano has been treating consumptives during the last year by direct injection into the lung of specific antituberculosis material. A large number of patients have been thus treated and a detailed report will be soon published. One case is described here, as it is typical of the results in all. The case was one of chronic destructive tuberculous lesions in bronchi and lungs, with severe general toxemia. The specific bacteriolysins are obtained from animals first treated with an aqueous extract of living tubercle bacilli. The specific bacteriolysins in the serum of the animals are injected directly into the diseased lung by a technic the same as for exploratory puncture. The injections were continued a little more than a month, repeated the second third and fourth days, the amounts injected ranging from 1 to 10 c.c., with a total of 70 c.c. The effect on the temperature, sweats and expectoration was markedly beneficial.

108.—**Tuberculosis in the Italian Army.**—Sforza reviews the published statistics. They show that since 1876, when the total losses in the army from tuberculosis amounted to 3.66 per thousand of the force at that date, the proportion has steadily declined to 1.61 per thousand in 1902.

109. **Auto-Prognosis.**—Landolfi is convinced of the great value of Gilbert's method of autosero-diagnosis, which consists in reinjecting, subcutaneously, serum or effusion taken from the patient's own pleura or peritoneum. A febrile reaction follows when there is tuberculous infection, but not if no tuberculosis is present. Landolfi has been studying the reaction obtained, and he states that it is able to afford im-

portant information, not only as to the tuberculous nature of the lesion, but also as to its seriousness and the ultimate outcome. For these points the particulars of the reaction must be recorded for several days after the injection, the curve then showing details which differentiate the affection and announce the outlook. The prognosis is graver the less the amount of effusion required to obtain the febrile reaction. The less the reaction and the tardier its appearance, the milder the affection. In the days following the primary febrile reaction the temperature may surpass that first obtained, or it may equal or not approach it, the severity of the affection being announced by the prolonged reaction. In case of a negative response, the amount of effusion to be reinjected can be increased from 1 to 2, 3 or 10 c.c. If there is no response after this large amount has been injected, and if the temperature remains unchanged or varies very slightly during the days following the injections, the prognosis may be regarded as extremely favorable. He does not venture to establish the laws for this method of autosero-prognosis, but he urges others to co-operate with him in this task.

111. **Therapeutic Curiosities.**—Campani reports from Galvagni's clinic a number of cases which might be regarded as therapeutic freaks. The first relates to the sudden cure of a severe and protracted hysteric delirium by the unintentional administration of considerably more than the maximal toxic dose of morphin. The excessive dose induced prolonged vomiting and the patient was cured. In a second group of cases obstinate sciatica was cured by a large blister applied entirely around the thigh, contrary to orders. In another case severe lumbago was cured at once by excessive wet cupping. The cupping had been ordered with about 40 scarifications, but the assistant mistook the directions and applied 40 cups, experiencing some difficulty in finding space for them all. The unintentional excessive revulsion in these cases was followed by the immediate cure of the affection. In a third group, maniacal delirium subsided under the influence of a large burn on the leg, compelling the patient to remain in bed for six weeks. A woman of 70 had long suffered from leg ulcers, but they had finally healed under compresses "kept moistened with her own urine." As the ulcers healed over, she developed a confusional psychosis, but this vanished at once after a fall, which broke open the ulcerations anew. In another case a patient suffering from hallucinations was entirely cured when a varix on the leg became an open ulcer. These 3 cases in which mental disturbances were arrested or completely cured by the opening on the leg of an outlet for the escape of morbid secretions, he states, are certainly instructive. In a fourth group a patient suffering from retention of urine in acute gonorrhea was given an injection and the tip of the guide accidentally pricked the mucosa of the urethra, allowing the escape of a few drops of blood, immediately followed by spontaneous micturition. In another case a patient with rebellious metrorrhagia was cured at once by a rectal enema evacuating the overloaded rectum. In another group, 6 cases of cysts or tumors healed completely after a single exploratory puncture. This insignificant intervention may be sufficient in some cases to modify the circulation and to restore the lost balance. In conclusion a number of similar freak cases are reviewed, taken from the literature.

112. **Influence of Tuberculin on Experimental Infections.**—The tuberculin enhanced the receptivity of the animals for all kinds of infection in the experiments reported.

113. **Treatment of Varices on the Leg with Ligature of the Popliteal Vein.**—In 1904 Parona, in Italy, announced that ligature of the popliteal vein was an effectual measure for treatment of varices on the leg, as superficial varicose veins are almost invariably associated with varices in the deeper veins. He has treated 22 patients by this technic, and all were completely cured of their edema, pains and ulcerations, and there has been no recurrence in any case to date. Viscontini has applied the same measure in 2 cases and has been much impressed with its great value. If, after careful examination, the varicose veins are found to be restricted to the superficial veins, then some other technic is preferable, but if the deeper veins are at all involved then the Parona technic will be found invaluable. The vertical incision is made in the upper half of the popliteal space. The popliteal vein is detached and ligated at two points and, if possible, resected between the ligatures. The limb is then immobilized for a time.

Riforma Medica, Naples.

Last indexed, page 315.

114 (XXII, No. 19.) *Intorno a due casi di leucemia. Cura con i raggi Roentgen. E. De Renzi.
115 *Meccanismo d' azione del radio sul virus rabido (radium in rabies). G. Tizzoni and A. Bongiovanni (Bologna).
116 (Nos. 20-23.) *Sull' urobilinuria nella cloro--narcosi. A. B. Gianasso.
117 *Passive Congestion for Gonorrheal Joint Affections.—Artriti blennorragiche e loro cura con il metodo Bier. T. Secchi.
118 *Corpi organici liberi nella cavita´ della sierosa testicolare. A. Coletti.
119 *Studio dell'infezione stafilococcica. U. Baccarani.
120 *Nevrectomia del grande occipitale con asportazione del 2 ganglio cervicale per nevralgia. O. Cignozzi.
121 *La chirurgia conservativa nei tumori della scapola. G. Pascale.
122 (No. 24.) Valore di alcuni metodi clinici per la determinazione delle ossidazione organiche (tests of oxidation processes). C. Gualdi.
123 Chlorin and Biliary Acids Under Use of Saline Waters.—Ricerche sul cloro e sugli acidi biliari nella bile sotto l'uso della acque chorurato-sodiche. P. Casciani.
124 (No. 25.) *Transmission of Kidney Changes to Fetus.—Sulla transmissibilita di alcune alterazioni renali sperimentali dalla madre al feto. E. Magni.
125 *Osservazioni cliniche e sperimentali sulle pneumoniti post-difteriche (post-diphtheric pneumonia). S. Cappellani.
126 Sulla rigenerazione delle fibre nervose. M. Segale.
127 (No. 26.) *Di alcuni postumi prossimi e remoti dell-infezione tifica (typhoid sequels). V. Patella.
128 Dimostrazione istochimica del mercurio. C. Lombardo.
129 Sulla struttura dei globuli rossi (structure of red corpuscles). A. Ghelfi.
130 Indurimento di vene periferiche (induration of peripheral veins). F. Pancrazio.

114. **Roentgen Treatment of Leukemia.**—De Renzi's experience with two patients has confirmed that of others in regard to the possible striking benefit from Roentgen treatment in leukemia. The spleen was exposed to the rays for from five to twenty minutes daily for ten days, and then again for ten days after an interval of several days. The intensity of the exposures corresponded to about 8 degrees on the Benoist radiochromometer. The blood rapidly regained its normal composition, the spleen became reduced in size and the patients gained in weight.

115. **Action of Radium in Rabies.**—Tizzoni reports the latest results of his extensive research with radium in treatment and prevention of rabies. He has previously announced that it neutralizes the rabies virus in the test tube and in animals even when the disease is already established, and that it induces radioactivity in the brain of the animal under treatment. He has found lately that the length of time required for the neutralizing of the virus varies with the kind of tissue. It only requires two hours when the virus is injected into the anterior chamber of the eye, while six hours are necessary when the injection is made under the dura mater. The neutralized virus does not regain its virulence later. The emanations have very little penetrating power, and they affect the virus more in proportion to the length of the exposure rather than by the number of radioactive units represented by the specimen of radium. An interesting fact is that only the brain of the living animal becomes radioactive. Dead tissues are inert. The radioactivity is demonstrated with sensitized plates, and it seems to occur only in brain tissue and most effectually through the eye. It was never detected in animals after the eye had been removed. The phenomena observed confirm the dual action of radium, the chemical action of the emanations on the virus in the test tube and the physical energy of the radiations which elicit vital phenomena in response.

116. **Urobilinuria After Chloroform.**—Gianasso found urobilin constantly in the urine in the 25 patients examined before and after general anesthesia with chloroform. The amount was proportional to the duration of the anesthesia. He thinks that it was evidently due to destruction of red corpuscles by the drug, the passage of hemoglobin through the kidneys and its transformation into urobilin. The urobilin follows a regular curve, coinciding with the elimination of the chloroform.

117. **Passive Congestion in Treatment of Gonorrheal Joint Affections.**—Secchi applied a Bier constricting band as a last resort in 6 cases of gonorrhea. A complete cure was promptly realized in 3 cases, and all the patients were improved. He advises its use as an adjuvant. He ascribes the unmistakable relief of pain in the part to the slightly benumbing action of the constricting band pressing on the nerve trunks.

118. **Free Bodies in Testicles.**—Trauma was incriminated in 2 of the 6 cases described by Coletti and chronic inflammation was evident in all. The connective tissue reaction to the work of microbes of attenuated virulence resulted in the production of what might be called fibromas, some pedunculated and others free.

119. **Staphylococcus Infection.**—Baccarani gives the details of about two dozen cases of general staphylococcus infections of diverse types. The fever was the most striking and in some cases the only symptom. The temperature curve is characterized by "febrile groups" alternating with periods of normal and even of actual subnormal temperature. These variations may linger for two months or more. From two to five of these "febrile groups" were observed in some instances. The temperature was above normal on the whole for an average of 23 days, the range being a maximum of 39.5, 40 and 41 C., with sometimes 35 C. in the apyretic intervals. The total average of fluctuating temperature was about 46 days. The fever and the large numbers of staphylococci in the blood cause surprisingly little disturbance of the general health. Treatment should aim merely to sustain the organism in its struggle with the germs, as no specific remedy is known and the prepared serums have not answered expectations. Intravenous injection of corrosive sublimate has been suggested. The main point is to keep the patient well nourished, and for this reason the digestion should not be disturbed by drugs given by the mouth. At most a little cordial or quinin might be administered. The apyretic intervals should be taken advantage of, having the patient leave the bed as the temperature approaches normal, stimulating the skin and the nervous system with a cold sponge and light massage, with an easily digested diet. The prognosis under these measures is much better, he states, than has hitherto been accepted.

120. **Neurectomy for Neuralgia.**—Cignozzi's successful operative treatment in a severe chronic case of occipital neuralgia is described in detail, with a review of occipital neuralgia and its mechanism in general. The extensive ablation of the nerve trunk to its intervertebral ganglion, the second cervical ganglion, which was removed with the segment of the nerve, freed the patient at one stroke from his agonizing pain, and there has been no recurrence to date since 1903.

121. **Conservative Surgery for Tumors of the Scapula.**—Pascale gives an illustrated description of 2 cases and reviews the literature on the subject. The results of conservative operations have been eminently satisfactory, even in malignant disease. The functions of the arm are retained to a large extent, as the points of attachment of the muscles can generally be retained. Even when the humerus has to be resected for 5 or 7 cm., functional use of the arm is still possible. When the entire scapula has to be removed, fixation of the head of the humerus or of the stump with a metal support is always preferable to disarticulation of the arm. An interscapulo-thoracic operation is extremely serious and should be reserved for malignant tumors invading extensively the bones of the shoulder. Recurrence is the rule after this operation. Conservative operations may be repeated at need and can be undertaken early.

124. **Transmission of Kidney Changes to Fetus.**—Magni found lesions in the kidneys of newborn rabbits similar to those in the maternal kidneys, produced by the nephrotoxic substances generated in the foci of experimental hydronephrosis. The lesions in the fetal kidneys were similar to those found in the kidney after experimental stricture of the other ureter. The nephrotoxic substances evidently pass through the placenta to the fetus, suggesting danger from this source in case of Bright's disease in the mother.

125. **Postdiphtheric Pneumonia.**—Cappellani summarizes 35 cases in which evidences of pneumonia were found after diphtheria. The pneumonia in some had not caused any appreciable clinical manifestations, and yet it had been the cause of death in 23 instances. Experimental research confirmed his assumption that both the streptococcus and the pneumococcus acquire unwonted virulence in the presence of the products of the diphtheria bacillus. In the cases related the pneumonia had developed during the phase of the greatest toxic action of the diphtheria bacilli and when the organism was being saturated with the absorbed products. The facts related emphasize the necessity for warding off secondary infection during this stage. Local disinfection of the mouth and upper air passages may prove an important aid.

127. **Typhoid Sequels.** — Patella describes a case of post-typhoid polyneuritis, accompanied by incipient endarteritis, in a young man. The arteritis was diagnosed from the changing composition of the blood. This shows in graphic manner the devastation being wrought in the arteries by the typhoid infection, entailing sclerosis later. Histologic study of the arteries shows the influence of preceding typhoid or other infection in incipient arteriosclerosis and aneurism. He adds that no one ever knows when, if ever, he has entirely recovered from typhoid fever. Signs of transient participation of the kidney in the typhoid process were likewise noted in his case. Sclerosis of the kidneys may be a sequel of typhoid infection. Enriquez succeeded in producing sclerosis of the kidneys in monkeys by three injections of diphtheria toxins. Patella's experimental research has shown that the same result can be obtained with typhoid urine and typhoid toxins. He succeeded in producing both generalized and focal sclerosis in the kidneys by this means, entirely distinct from the parenchymatous process and from diffuse arterial changes.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Practical Medicine Series, Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the general editorial charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Vol. IV. Gynecology edited by E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, and C. V. Bachelle, M.S., M.D., Gynecologist to the German Hospital, Chicago. Series 1906. Cloth. Pp. 227. Price, $1.25. Chicago: The Year Book Publishers. 1906.

Surgical and Medical Emergencies in Abstract. By S. L. McCurdy, A.M., M.D., Surgeon P. C., C. & St. L. Ry., Professor Orthopedic and Clinical Surgery, West Penn. Medical College, etc., Pittsburg, Pa. Flexible Leather. Pp. 153. Pittsburg, Pa.; Medical Abstract Publishing Company. 1906.

Clinical Bacteriology and Hematology for Practitioners. By W. D. Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 240. Price, $2.00. Philadelphia: P. Blakiston's Son & Co. 1906.

Twenty-eighth Annual Report of the State Board of Health of the State of Connecticut for the Year 1905, with the Registration Report for 1904 Relating to Births, Marriages, Divorces and Deaths. Cloth. Pp. 296. New Haven, Conn.: The Tuttle, Morehouse & Taylor Co. 1906.

Registration of Births and Deaths, Marriages and Divorces in Michigan. Thirty-sixth Annual Report of the Secretary of State, for the Year 1902. Cloth. Pp. 212. Lansing, Mich.: Wynkoop, Hallenbeck, Crawford Co. 1906.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XI. Mo-Nyström. Cloth. Pp. 858. Washington: Government Printing Office. 1906.

Transactions of the Association of Hospital Superintendents, Seventh Annual Conference held at Boston, Mass., Sept. 26-29, 1905. Vol. VII. Paper. Pp. 306. Published by the Association. 1905.

Hygiene of Pregnancy. By W. B. Jennings, Ph.B., M.D., Attending Physician (O.P.D.), St. Mary's Free Hospital for Children. Flexible Leather. Pp. 48. New York: Medical Review of Reviews (Inc.).

Behavior of the Lower Organisms. By H. S. Jennings, Assistant Professor of Zoology in the University of Pennsylvania. Cloth. Pp. 366. Price, $3.00. New York: The MacMillan Company. 1906.

Diet and Dietetics. By A. Gautier. Edited and Translated by A. J. Rice-Oxley, M.A., M.D. Cloth. Pp. 552. Price, $3.50. Philadelphia: J. B. Lippincott Company. 1906.

Report of the Commissioner of Education for the Year Ending June 30, 1904. Vol. I. Cloth. Pp. 1176. Washington: Government Printing Office. 1906.

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Addresses

CERTAIN PHASES OF RECENT WORK IN PATHOLOGY AND PHYSIOLOGY.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PATHOLOGY AND PHYSIOLOGY AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

HENRY A. CHRISTIAN.
BOSTON.

In accordance with the by-law of the American Medical Association the privilege is accorded to me, as Chairman, of opening this annual session of the Section on Pathology and Physiology. Moreover, I am geographically in a position to extend to you, its members, a welcome to the city of Boston and more especially to the laboratories of our medical schools and hospitals, and this I most cordially do. It is the privilege this year of the Section to have as guests Prof. von Frey of Würzburg and Professor Mills of Montreal. To them, in the name of the Section, I extend a hearty welcome and a cordial invitation to take part in all of the proceedings. We feel honored by their presence and anticipate much pleasure and profit from the addresses with which they are to favor us.

On this occasion it has seemed to me fitting briefly to call attention to certain phases of recent American work in pathology and physiology. It is not my intention to give a critical review of any special researches nor to attempt any enumeration of the recent publications. It is the general aspect of the work, not the work in detail, of which I wish to speak, and more particularly of that which in a sense represents some departure from the type of work done in earlier days.

Our medical laboratories may be grouped in four classes: 1, Government laboratories; 2, medical school laboratories; 3, hospital laboratories; 4, independent endowed laboratories.

Of government laboratories we have two classes, national and municipal. Medical laboratories under national supervision represent a recent development in the United States. Many of the departmental laboratories at Washington are indirectly associated with medical science. Those concerned in the standardization of antitoxin, drugs, and foodstuffs are of great importance to the medical profession, but it is medical investigation with which we are now most concerned, and in these lines some creditable work is being done at Washington.

The government laboratories at Manila have gradually grown out of the necessity of an army and navy occupation. Now they occupy a large, new, well-equipped building, forming an extensive plant, active in work. The investigations there of amebic dysentery, plague and other tropical diseases serve as types of their work and amply justify their existence. The facilities they furnished to the recent Harvard expedition for the study of experimental variola and vaccinia illustrates another form of their usefulness. With the extension of social and commercial relations between the United States and the tropics, as is inevitable with the possession of tropical colonies, a knowledge of tropical diseases will become of greater importance and our medical schools will be compelled to teach tropical medicine. Such laboratories as those at Manila should be able to furnish material for such courses and the facilities for our teachers to gain there some first-hand knowledge of the subject. An interchange of material and frequent expeditions should be of such great mutual advantage that the government could afford to furnish transportation and quarters each year for a few of our laboratory workers, and thus give a great stimulus to this branch of medicine in America. Unless this be done these laboratories, in a sense, will fail to accomplish their highest good.

Another form of government activity has been the equipping of commissions for the investigation of special problems. The brilliant results of the commission for the investigation of yellow fever are still fresh in our minds and their vast importance should serve as an incentive for much future work. The recent appropriation for the establishment of a station for the investigation of leprosy in the Hawaiian Islands, to be thoroughly equipped for scientific work and under the direction of a trained investigator, is a type of national government activity along these same lines.

Municipal laboratories have long been in existence in connection with boards of health and their routine work is of almost daily use to every medical man. However, only in recent years has medical investigation been a part of their work, and even now investigation is carried on in but few. The work of the New York City Board of Health, from whose laboratory much scientific work of merit has been published, should serve as an example in this respect to many other municipal laboratories. To serve its highest function, the muncipal laboratory must investigate as well as carry on routine examinations.

Medical school and hospital laboratories are in many cases very intimately associated. Their establishment came fairly early in America. Still, in the last few years, many new laboratories have been opened and great improvement has been made in both the old and the new, the greatest perhaps in those cases where the union between hospital and medical school has been closest and the stimulus of teaching has been strongly felt. This is a fact which can be scarcely disputed and should not remain without influence on the hospital laboratories as yet unattached to medical schools. Much of the advance in the medical school laboratories has been the result of the gradual extension to the medical school of the university spirit, and this influence, in turn, has been felt in the hospitals. With it has come a higher type of work, more experimental investigation, more search after basic principles.

A very large amount of work, much of it excellent in quality, has been produced in such laboratories. This covers a wide range of subjects. In the hospital laboratory most of this has been along the lines of pathology and chemistry. Physiology has lagged too much in the hospital laboratory, where for the most part it is unrecognized. In this respect development is needed in our clinics and may serve to lessen the present too great breach between laboratory and ward worker.

It would be interesting to recapitulate much of this recent work, but time does not suffice. The work of two laboratories, however, I wish to call attention to. In the laboratory of the University of Michigan valuable studies of the trypanosomes and the spirochetæ have been made. It is particularly noteworthy that there, in an inland town in the north temperate zone, investigations could have been carried on with the result of a distinct advance in our knowledge of a group of diseases of man, most of which are confined to the tropics. The results of this work will extend greatly the range of problems capable of successful attack in the laboratories of this country. In the laboratories of the Johns Hopkins Hospital another phase of medical work is shown. There in a laboratory of experimental medicine pathology, physiology, medicine and surgery have been combined; a form of medical coöperation, if I may be permitted the term, is in operation. Diseased dogs are treated and the student learns medicine and surgery. Diseased conditions simulating those occurring naturally are produced; operative technic is acquired. The immediate and late effects are studied by the methods of physiology and clinical medicine; the end results are studied by the methods of pathology. More exact knowledge of the phenomena of certain diseased conditions and a better understanding of their underlying causes are thus obtained. This is a type of laboratory and work which needs to be developed in many of our hospitals if we are to keep pace with medical science abroad.

Independent endowed laboratories are the latest development of medical science in America. They are represented by the Rockefeller Institute in New York, the Institute for the Study of Infectious Diseases in Chicago and the various commissions for the investigation of cancer. Some are organized for the study of special problems, others may devote their attention to a wide field. Recently a change has been made in the mode of attack of many of these special commissions. Instead of attacking the problem directly as in the earlier days, attention is being given to technical methods and more fundamental biologic principles in the hope of thus securing a new path of approach to the central problem. With this new point of view we hear less of the so-called practical. This query, "What is the practical use of the problem?" has too long been a drag stone to investigation in America. This hindrance, I believe, is now disappearing and as a consequence there is more search for the truths at the root of problems, even though any practical application may seem remote. In fact, advance will come earlier from work along these lines and already some of the most practical applications have been the results of most abstract investigations. This change in point of view, to me, marks a new and important phase of American medical investigation.

During the past few years, undoubtedly, distinct progress has been made in medical science in America. More men and more money than ever before are now devoted to the study of pathology and physiology. The subjects have broadened out until they touch more and more the abstract sciences, on the one hand, and clinical medicine and surgery, on the other. The methods of the laboratory are being applied in the clinic and from the clinic are gathered problems for the laboratory; both use more the methods of pure science. It is to be hoped that these changes mark the dawn of a new era for American medicine. Some of the spirit of this new medicine is suffused through the program for this session, to which I now invite your attention.

TWO DESIRABLE REFORMS.*

C. M. JACKSON, M.D.
COLUMBIA, MO.

At commencement exercises themes concerning the improvement of the medical profession are always appropriate. It is only through the aid of the well-trained young men now entering the profession that we may hope for greater progress in the future.

That there is still plenty of room for improvement in the medical profession can scarcely be doubted. If, indeed, we consider the matter carefully we must reach the paradoxical conclusion that the medical profession of the United States ranks at the same time the highest and the lowest among the great civilized nations. In technical skill our leaders, especially in surgery, are probably the best in the world. On the other hand, owing to the low standards of medical education that have prevailed in this country during the past century, it must be frankly confessed that the rank and file of our medical practitioners average low in proficiency. As a single example of this, I might cite the fact that not one practitioner in ten is able to use the microscope effectively, although this instrument is universally acknowledged to be of great practical value in the diagnosis of a large proportion of diseases.

Conditions are changing, however. We are now in the midst of a great movement which has for its object the improvement of medical education and the elevation of the medical profession. Entrance requirements of the medical colleges have recently been advanced from a common-school to a high-school education, and already it is generally recognized that to this at least two years of preparation in college work must soon be added. The time required by the medical course itself has increased fourfold, and the end is not yet.

Even more important than the increase in the entrance requirements, and in the length of the curriculum, is the change that has taken place in the character of the instruction given in medical schools. Corresponding to the rapid modern development of the medical sciences, laboratories have multiplied. These laboratories in all first-class schools have been thoroughly equipped with expensive apparatus and have been placed in charge of teachers who spend their entire time in instruction and research. Clinical instruction has also greatly improved, and that this also may be placed on a true university basis is one of the hopes of the future.

Most important of all, it seems to me, has been the revolution in the spirit of medical education. The old lecture system has been overturned and modern instruction is planned so that the student may learn by observing, thinking and acting for himself. The research spirit and methods so ably presented by Dr. Dodson[1] at the last commencement exercises of this school are beginning to dominate medical education.

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* An address delivered at the commencement exercises of the Medical Department of St. Louis University, May 19, 1906.

This research spirit, I believe, merits still greater encouragement. We have in our modern laboratories and clinics the facilities and conditions necessary for research work, at least by members of the faculty. Why not go a step further and make provision for research work by the students? The first of the two reforms which I wish to suggest to-night is along this line. I propose that, with this purpose in view, we revive as a requirement for the degree of doctor of medicine the preparation of a thesis, similar to that now required in European schools. I say revive the requirement, for it was in fact a requirement in the few American medical colleges existing before the Revolutionary war. In some medical colleges the custom of requiring a thesis for graduation was maintained until the latter half of the nineteenth century. These were, for the most part, theses in name only, however, being in reality mere compilations based on no original work.

The provision for real thesis work as a requirement for the degree of doctor of medicine could easily be made. A small amount of time, perhaps three hours a week, could be set aside in the senior year to be devoted to the work. At the beginning of the year each senior could select a topic for his thesis, with the advice of some faculty member, under whose supervision he would work. The thesis, after completion, would, of course, be submitted to the faculty for approval. The subjects selected would naturally vary according to circumstances, and would necessarily be simple in character, so that the work might be completed, the literature reviewed and the results worked up in the form of a written thesis within the limited time at the student's disposal. The necessary material for thesis work is already present in abundance in our laboratories and clinics. Why not utilize it in this way?

The first objection to the plan which is likely to arise is that the curriculum is already overcrowded, and that the medical student has no time for additional work. This objection might be met, it seems to me, by reducing to a slight extent in the senior year the time now required for the usual cut-and-dried courses, so as to give opportunity for a bit of original work. If, however, this be considered not advisable, there is still another possibility: through lengthening the curriculum. A fifth year for the medical course is already being seriously considered, and it is one of the desirable changes we shall doubtless see accomplished within a few years. This fifth year will probably be devoted to advanced clinical work, preferably hospital service, and would afford ample time and opportunity for working up a thesis for the doctorate degree.

A second objection which might be advanced is that students have not, as a rule, the ability to do original investigation for thesis work. That excuse might be valid for students of some schools, but not for those of any first-class school with modern equipment and respectable entrance requirements. Any student can do original investigation who can observe accurately and reason logically. And any student who can not do this should certainly not be allowed to enter the medical profession.

Then, again, it may be urged that the plan of requiring a thesis for graduation would throw an additional burden on the members of the already overworked medical faculty, under whose supervision the work would be done. But if the members of the class were properly scattered there would be very few, perhaps only one or two, under the supervision of each member of the faculty. And what member of the faculty would not be willing to give individual assistance to one or two students who wanted to do advanced work in that department? If necessary the teaching force could, of course, be increased to accommodate the extra work.

A more serious objection in the case of many schools is the lack of library facilities. This is one line of equipment which has as yet been greatly neglected in most medical colleges. It is especially important that files of the leading American and foreign periodicals devoted to the various medical sciences should be accessible in every medical college library. They are valuable for use in all instruction, but indispensable for research. I am glad to observe that the Medical Department of St. Louis University has already made a most excellent start in this direction, and I hope that the authorities and other friends of the university will not fail to lend their support in strengthening this most important feature. It costs money, it is true, but this is only one more proof of the statement that modern medical education is the most costly education in the world.

When all the objections to the plan of a thesis requirement have been met, we still have to consider whether it is really worth while. What advantages are to be derived from the measure? In the first place, the adoption of this plan would stimulate the research spirit throughout the entire medical school. It would tend to discourage that bane of modern medical education, the "cramming" system, and to encourage students to think for themselves. Independent thinking is one of the rarest things in the world. The accumulated experience of the past is, of course, not to be despised or neglected. On the contrary, to teach a student to appreciate properly the knowledge handed down to him, there is nothing so effective as to make him dig out for himself even the smallest nugget from the vast mine of undiscovered knowledge.

Training of this sort is also of great practical value to the future practitioner. It has often been said, but can not too often be repeated, that every case in medical practice is a scientific problem, and that every successful practitioner (whether he realizes it or not) is an original investigator. And if the practitioner has learned the research spirit and methods during his medical course of study his success in practice will naturally be more rapid and certain.

Moreover, although the intrinsic value of the results obtained by the work done for theses would in most cases be small, the final effect of such a requirement would be to increase the quantity and to improve the quality of the scientific work done by practicing physicians. Why is it that the average papers read at the meetings of our medical societies are so poor in quality? It is not from lack of time to prepare them. It is certainly not from lack of material. It is because the average physician does not realize what valuable opportunities for research work exist in connection with his practice. He does not know what observations are of scientific value or how to record them. He does not know where to find, for comparison, similar observations already recorded in the storehouse of medical literature. He has had no training in bringing his observations and conclusions into shape for presentation and publication. These deficiencies, at any rate in large part, would be supplied by the proposed requirement of original thesis work. There are undoubtedly to-day a great many unproductive physicians who could and would make valuable contributions to the advancement of medical science if some such training had been provided in the medical school.

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[1] THE JOURNAL A. M. A., July 8, 1905, p. 83.

Finally, the requirement of a thesis would add to the value and dignity of the degree of doctor of medicine. The doctor of divinity and the doctor of philosophy must each present a dissertation. The degree of doctor of medicine should represent attainments equally high. A thesis for the doctorate in medicine has long been required in Germany and in most of the other great European nations. America is slow in following their example, but "better late than never." Let it no longer be just to reproach the doctor of medicine with the phrase, *doctor sed non doctus!*

There is a second line of needed reform, without which no extensive improvement of the medical profession as a whole can be expected. The requirement of a graduation thesis is a measure which could be adopted and enforced by any medical college. But this, like the great improvements in various directions already made by many medical colleges, does not insure an improvement of the entire medical profession. As a matter of fact, only a small percentage of the medical colleges have kept pace with the advancing standards. Only a few colleges have had the progressive spirit, the ability and the courage to increase adequately the entrance requirements, to equip and to maintain first-class laboratories and clinics and to insist on a high standard of work. The result has been that the high-class schools often suffer from competition with inferior colleges having low requirements. In accordance with a fundamental law of Nature that all bodies move in the direction of least resistance, medical students tend to flock toward those institutions offering the medical degree for the least expenditure of time, money and energy. Why does this tendency, so clearly detrimental to the public welfare, remain unchecked? Why are the low-grade medical colleges still permitted to grind out annually thousands of unqualified graduates to swell the ranks of the already overcrowded medical profession?

It might be argued that the fault lies with the public; that if the people would refuse to patronize incompetent physicians the inferior medical schools would soon die a natural death. But the people are practically helpless. Even the most intelligent laymen often display a pitiful and disastrous lack of judgment in choosing medical advice. They must trust largely to appearances, and even the most incompetent practitioner usually manages to conceal his defects and to make a fine outward appearance. No, it is impossible for the public to protect themselves individually in medical matters. They must depend on the State for protection.

State protection depends primarily on the medical examining and licensing boards. The responsibility for present conditions, therefore, apparently lies chiefly with the licensing boards of the various states. It is to them that we must look for reform in this line. They, and they alone, have the power to protect the public on the one hand and to encourage the progressive medical colleges on the other. The state examinations may be compared to a dam placed across the channel of a river. The water of the stream rises to a level high enough to overleap the barrier, but no higher. Similarly, in medical education the great majority of medical students will prepare themselves to meet the minimum requirements, but no more.

It is but just to the state boards, however, to remember that they have had many difficulties to contend with. All of them, moreover, have improved, and in some states, notably New York and Michigan, they have materially advanced the cause of medical education. I do believe, however, that the majority still lag far behind what ought to be the minimum requirements.

The particular deficiency which I desire to point out in this connection concerns not the thoroughness but the character of the state examinations. The trouble, it seems to me, is not so much that the examinations are too easy as that they are not of the right kind.

To approach this question intelligently we must bear in mind the purpose of the state examination. It is, of course, to determine whether the candidate is properly qualified to practice medicine—to diagnose and to treat properly the various diseases. Do the state examinations fulfill this purpose? Are they a fair test of a man's ability to practice medicine? It does not require much argument to prove that in this respect they are utterly inadequate.

In this connection I will venture to make what may seem to be a preposterous statement. I believe that any young man with a good memory could in a few months memorize a set of quiz compends, and (if allowed to try) could pass the state board examinations in many states without ever having seen the inside of a medical college. And, furthermore, in some instances, if all reports be true, he need not even have a good memory, provided that he carry the quiz compend in his pocket!

The evils of such conditions need only to be pointed out to be condemned. But the important question is, How should the examinations be changed? Would a set of judicious questions, thorough but fair, and a system of inspection which would exclude cheating meet the requirements? It would doubtless be an improvement, but it would still be inadequate. The trouble is that our present system of written examinations is founded on a wrong principle. Nor would oral examinations (from a mere list of questions) help matters much. The ability to answer questions in this way depends largely on word memory, and word memory is no fair index of ability to practice medicine.

The only real and fair test, it seems to me, is a trial at the thing itself, or something as near to it as possible. Let us see how this principle may be applied. It may be assumed as self-evident, in the first place, that a knowledge of the normal and abnormal structure and functions of the human body is an essential prerequisite to the successful practice of medicine. What, for example, is a fair test of a student's knowledge of the anatomy of the triangles of the neck? It is certainly not the ability to repeat words of description which he may merely have committed to memory from a textbook, but (what is a vastly different thing) his ability to find, recognize, understand and explain the various structures from an actual preparation or on the living body. The same principle holds not only for all the fundamental sciences but even more forcibly for the clinical branches. For example, a student may be able to write a full and accurate description of a disease, and yet fail completely even to recognize that disease when he meets the practical test at the bedside.

A practical examination, therefore, is absolutely necessary to exclude incompetents and to test fairly the candidate's ability to practice medicine. It might not be wise to exclude altogether the usual form of written or oral examinations, for a certain amount of memorization is undoubtedly necessary in medicine. Such tests, however, ought to be made strictly subordinate to the practical tests mentioned.

Conceding the theoretical superiority of such practical examinations, the question now arises as to whether or not it would be possible for the state boards, under present conditions, to carry out such a plan. It seems to me quite possible. The necessary materials could usually be obtained without difficulty. The laboratories of any good medical school could readily furnish whatever specimens and apparatus might be necessary to test the candidate's knowledge of the fundamental sciences. Similarly, arrangements could doubtless be made with public or private hospitals for the use of material for the practical clinical examinations.

The greatest difficulty would doubtless be the increased amount of time necessary to conduct the examinations. Such examinations would necessarily consume much more time than the present plan, for they would be largely individual in character. As a necessary consequence the examinations would also be much more costly. But they would be well worth the additional cost, whether this cost be borne by the state or by the individual applicants.

That such a plan is entirely practicable is shown by the experience of Germany, where the state examinations are of such a practical character. In Germany there is an additional improvement, in that the state examinations are divided into two parts. The first examination, the *tentamen physicum,* comes at the end of the first two years of the medical course and covers the fundamental branches. The second and final examination at the end of the course is exclusively clinical in character. The advantage of this plan is that the student must have satisfactorily completed the work in the fundamental sciences before he is allowed to proceed with his clinical work. Many incompetents are thus weeded out at the end of the first two years.

If Germany can carry out a plan so cumbersome and costly, and yet so effective, why can not we? Is human life any less valuable here than there? The adoption of some such plan by our various states would be of the utmost value in the improvement of the medical profession. It would encourage higher medical education and protect the health and lives of the people.

IMPRACTICABILITY OF INTERSTATE RECIPROCITY.*

EDWIN B. HARVEY, M.D.
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BOSTON.

Interstate reciprocity, so-called, has been discussed to some extent in every convention of this organization during the last decade. It has survived the storms of debate for so many years from the fact, no doubt, that it possesses some features of interest to certain members of the profession, some problems which have been labored with, but not yet solved to the satisfaction of all, and which may not be in the discussions of to-day. It is a trite saying that no question should be settled until settled rightly. Our distinguished president, thinking perhaps that further agitation of this subject at the present time might be of interest, asked me a few days ago to write a brief paper for this convention on the impracticability of interstate reciprocity.

Interstate reciprocity should be considered impracticable, however widely practiced, if it does not conserve the broadest needs of society, the protection of the community in the best possible manner against the evils of charlatanism in medical practice. From this standpoint the argument of this paper is drawn.

WHAT IS RECIPROCITY?

The word reciprocity, unfortunately, has been chosen to stand for mutual recognition of medical registration certificates by state boards. This word belongs strictly to the literature of politics. In political circles it is much used at the present time in discussing trade relations between different countries. In such connection it has a well-understood meaning. The *North American Review,* in an article published not long ago, says:

> Reciprocity is only an international form of protection, signifying an equality between the citizens of two countries with respect to the commercial privileges to be enjoyed by each country within the domain of the other.

In this sense the word was first officially used in 1782, in the provisional treaty of commerce between the United States and England. The following may be cited as an illustration of the workings of this principle in international affairs: Canada recently said to the United States, We will allow your cotton goods manufacturers to dispose of the products of their factories in our country without levying duty thereon, provided you will allow our lumbermen to dispose of the products of their mills in your country on the same conditions. The United States replied, Such stipulations are not practicable, for we, too, grow forests and manufacture all the lumber we require for home purposes. The acceptance of your proposition would result in great injury to an important home industry which must be protected in the interests of our own people.

In every instance in international affairs we find that reciprocity has reference only to the importation of such goods or material as the receiving country does not produce at all or only in quantities insufficient to meet the public necessity. Reciprocity in political affairs has an eye ever to the protection of home interests, the prosperity of home institutions. But interstate reciprocity of medical licensure bears a different signification. For example: The state of Maine has a reciprocity clause, so-called, in its registration law. Maine says to New Hampshire, Why should we not reciprocate? We will permit your physicians to locate in Maine and will grant them a license without imposing any restrictions whatever as to their qualifications, provided you will receive our physicians on the same conditions. Such an understanding between two states, in medical parlance, is called reciprocity. But it is not reciprocity in the sense of affording protection. It is a free-trade arrangement wherein the primary object of medical legislation in the states is wholly ignored.

METHODS OF REGISTRATION.

Three methods of registration concern us to-day. In some seventeen or eighteen states registration is effected through an examination only. Massachusetts, North Carolina, Mississippi, and practically New York, Pennsylvania and California are in the list. The consideration and acceptance of credentials issued by another state board or foreign country, irrespective of reciprocity, is a method of registration in several states. New Jersey and Connecticut may be cited as examples. The third system is the reciprocating system, the I-will-if-you-will system, which has been adopted by thirteen or fourteen states. Maine, Vermont, Michigan, Wyoming and Oregon are examples. It is against this I-will-if-you-will system that this paper is specially directed.

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* An address delivered before the National Confederation of State Licensing and Examining Medical Boards, Boston, June 4, 1906.

MEDICAL PRACTICE LAWS.

For a moment let us consider the basic principle on which all state laws relating to the practice of medicine are constructed. Justice Field, of the United States Supreme Court, in rendering an opinion of the full bench on a question raised as to the constitutionality of such legislation, says:

> The power of the state to provide for the general welfare of its people, authorizes it to prescribe all such regulations as in its judgment will secure, or tend to secure, its people against the consequences of ignorance and incapacity. . . . Due consideration, therefore, for the protection of society may well induce a state to exclude from the practice of medicine those who . . . are found, on examination, not to be fully qualified.

This opinion by the highest court in the country is authoritative. It declares that protection of society underlies state medical legislation everywhere in this country. The fact that, to be constitutional, medical legislation must be based on the necessities of society for protection against certain real or supposed evils, should be kept constantly in mind in discussing interstate reciprocity.

In 1894 Massachusetts enacted a medical practice bill which, with a few modifications, is the law of the state to-day. When this bill was under discussion the only argument of influence advanced in its favor was the need of such a law to safeguard the people of the commonwealth, as far as possible, against the charlatan and the incompetent, whose methods and practices constituted an evil amounting to a real menace to the well-being of society. Not a word was said that such a law would in the least benefit or enhance the convenience of practitioners of medicine. Such a suggestion might have proved disastrous.

The outcome of this effort to secure medical legislation was the stablishment of a state commission to determine the qualifications of applicants, irrespective of college diploma or certificates of registration issued by other states. Should an advocate of reciprocity petition the legislature now for an amendment to this law, providing for the admission of physicians to practice in this commonwealth by virtue of certificates of registration granted by other states, the question would be raised at once as to what or whose interests would be promoted by the enactment of such a bill? The petitioner of necessity would reply that such an amendment would make itinerancy easy, that it would facilitate the advent into this state of physicians from other states looking for new fields for practice, inasmuch as they would not be called on to submit to examination tests as to their qualifications. Such amendatory legislation would admit to the ranks of the profession in this state persons adjudged qualified to practice by educational standards inother states, some of which at least may well be considered inferior to our own.

Should access to practice in any state be made thus easy? Is scarcity of physicians one of the evils confronting the people in any state to-day? If so, all restrictions on the importation of foreign talent should be removed and no scrutinizing tests applied. Rather than to advocate such a procedure of medical licensure, would it not be wiser and better to endeavor to limit the supply of practitioners, if possible, through efforts to achieve still higher standards in the medical school and in the licensing board in order that the men and women and children throughout all the states may be better protected in life and health and comfort by being brought into closer contact with a higher order of intelligence and skill in the medical profession?

It surely rests with the advocate of free interchange of registration certificates, call it reciprocity if you please, before his cause should receive recognition, to demonstrate how such a process of medical registration will best secure, or best tend to secure, the people of any state "against the consequences of ignorance and incapacity." The highest court in the land has said that considerations looking to the protection of society are the only considerations which enable a state to prescribe regulations to exclude from, or to admit any one to, the practice of medicine.

OBJECTIONS TO SO-CALLED RECIPROCITY.

At the risk of repeating myself somewhat, I desire to look at this matter from the standpoint of state regulations providing for reciprocity.

It Confers Exclusive Privileges on Certain Persons.—I contend that such regulations or statutory provisions as established in Maine, for instance, and in a number of other states, in effect confer exclusive privileges on certain persons. It must be clear to every one that the provisions of the Maine law discriminate against the citizens of that state and in favor of citizens of other states. Residents of Maine, young men of undoubted character and education, graduates of the Maine Medical School, applying for license to practice, are required to submit to a test examination by the Maine board; but young men residing in Tennessee, for instance, graduates of some one of the inferior medical schools in that state and registered there through the leniency of the examining board, would not be so required. Such a method of registration on the part of Maine surely constitutes a marked discrimination against the citizens of that state and, therefore, contravenes the provisions of the Maine state constitution.

It avails nothing to say that the applicant from abroad has taken one examination in his home state. Be that true, it may have been an examination equivalent, or not, to the usual examination tests in the state in which he seeks a license. If not equivalent, as likely not to be, the registration of physicians of low grade results. I contend that few states, if any, can afford to assume such a risk, lest they encourage thereby lower educational standards in the medical schools and in the profession generally.

Again, if reciprocity is to prevail to any great extent, it should prevail to the fullest. It should apply to all registered practitioners in the reciprocating states, irrespective of time or manner of registration; otherwise we would have class legislation, laws discriminating in favor of some and against others in the same line of business. This point, which, I think, is well taken, is ably presented by Dr. Beverly D. Harison,[1] the secretary of the Michigan examining board and a warm advocate of interstate reciprocity. He maintains that reciprocity, to be constitutional and of value to the profession (he does not say to the public), should include nearly the entire list of registered practitioners. He says:

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[1] Harison, Beverly D.: The Journal A. M. A., August 13, 1904, p. 482; also Medical Record, Oct. 4, 1902, page 525; also Bulletin of the Academy of Medicine, October, 1905.

> Reciprocal legislation which provides only for the present and future practitioner, and ignores the older and experienced practitioner, for the reason that the latter has not obtained his license through a state board examination, is not only irrelevant and unjust, but is also unconstitutional.

Dr. Harison is consistent in the position he has taken. His is the only kind of reciprocity that would be just to the profession. But how many practitioners are there in any state ready to advocate such a far-reaching scheme, which is neither more nor less than an open door to admit to practice in any state any outsider without imposing any important restrictions whatever, except his ability to pay a registration fee.

2. It Deteriorates the Standard of Medical Education.—I assume that all the states are in favor of maintaining high standards of excellence in the profession. But under reciprocity, limited or unlimited, high standards, it seems to me, can not be maintained. How can a pond rise higher than its source of supply? Under reciprocity the standard of qualifications for practice in Pennsylvania, for instance, would fall practically to the level of the standards maintained in the reciprocating states, from which, in part, it would draw its supply of practitioners. I wish to be clearly understood on this point, because it is one of great importance to the public, in whose interests state commissions are established and, from year to year, are upheld.

One of the bulletins of the Academy of Medicine, published in 1904, contains much interesting and important statistical matter relating to the work of examining boards in 1903 in the several states. Similar statistics for the year 1904 were published in The Journal of the American Medical Association.[2] These statistics show the number examined in the different states and the percentages of successful and non-successful applicants. It is a matter of interest to note that these percentages are practically the same for each state for the years covered by the statistics, a fact which tends to show that the different states have fixed standards of qualifications to which from year to year they adhere with marked uniformity.

In 1904 Pennsylvania reported the examination of 581 applicants, of whom 20.8 per cent. failed; Connecticut reported 93 applicants examined, of whom 28 per cent. failed; California reported 296 examined, of whom 20 per cent. failed; New Jersey, 96 applicants, of whom 20.8 per cent. failed; Maryland, 187 examinations, 35.3 per cent. failures; Virginia, 175 examinations, 30.8 per cent. failures; Massachusetts reported 330 graduates examined, of whom 94 were from the Harvard Medical School. The percentage of failures for the year was 18.5 per cent.

By the side of this list place the following: Illinois reported 762 examinations, with 4.5 per cent. failures; Nebraska, 100 examinations, 7 per cent. failures; Ohio, 249 examinations, 5.2 per cent. failures; Georgia, 114 examinations, 3.5 per cent. failures; Michigan reported 53 examinations, with only 1.9 per cent. failures; Vermont, 55 examinations, 1.8 per cent. failures.

With such a showing of inequality in examination results in the states quoted, how can any one for a moment harbor the opinion that interstate reciprocity is practicable? Can Pennsylvania, drawing largely its supply of applicants for licensure from its excellent medical schools in Philadelphia, afford to fraternize with Illinois in a fee interchange of license certificates? By what subtle mental process is the conclusion reached that 4.5 per cent. of failures in one state is an exact measurement of 20.8 per cent. in the other? Does the difference of 16.3 per cent. of failures represent the superiority of the applicants in Illinois over those in Pennsylvania? Is it not more reasonable to conclude that the difference in percentages so uniform from year to year in the two states represents pretty closely the difference in examination methods and requirements? That the difference is due to the examiners, not to the applicants examined? But reciprocity, it is said, is based on equality of qualifications established by the examining boards in the reciprocating states.

In the published proceedings of the sixteenth annual meeting of American medical colleges, held recently, a distinguished member[3] of the profession is reported as saying:

> The primary object of the legislature is to supply qualified medical practitioners to the people, and that is always the object that the boards must have in view.

Truly and wisely said. But that is just what the advocates of reciprocity never have in view. The fact that such is the primary object of the legislature in every state in the Union in creating examining boards is the keynote reason why under existing conditions in this country interstate reciprocity is impracticable.

All moving bodies, animate as well as inanimate, follow the lines of least resistance. A wife in New York tires of her marital relations and longs for the freedom of single blessedness. She does not apply in the courts in that state for a decree of freedom. She would meet with too much resistance there; she equips herself for a few months residence in one of the Dakotas where she accomplishes her purpose and returns to New York a single woman. Here Dakota dominates New York. A young man in Connecticut is inspired with the desire for a medical education. He, too, follows the lines of least resistance and enters a weak school in Tennessee or Maryland. In due time he receives his diploma and is ready, he thinks, for practice. He desires to live his life in the practice of medicine in his native state, but he finds in Connecticut too much resistance in the examining board. So by force of circumstances he seeks and finds recognition as a practitioner in some other state whose laws and methods of registration are less stringent. In due time he returns to his native state with clean papers. Under reciprocity he is enrolled as a qualified practitioner. By such a method of registration, high educational standards disappear both in the examining board and in the medical school. Reciprocity levels down, never up. Logically considered, no other conclusion can be arrived at. Under reciprocity, states whose laws and requirements for registration are most lax dominate all the other states.

Last March, and again last month, two young men, last year graduates, one from a Baltimore school and the other from a Boston college, were before the Massachusetts board. In their last examinations the average rating of each, as returned by the examiners, was less than 65 per cent. and yet since their first failure in Massachusetts last March, both of these young men have successfully taken the board examination in another state and have received their certificates of registration. Under reciprocity, Massachusetts would be asked to admit these parties to practice, notwithstanding its state board had twice refused them recognition on the ground of incompetency. What can be said to illustrate more forcibly the impracticability of interstate reciprocity?

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[2] Vol. xliv, May 6, 1905.

[3] B. D. Harison of Michigan.

The rating of examination papers is not an exact science, and from the nature of the work can never become so. A required general average of 75 per cent. for a successful examination means nothing whatever to any one, or to any examining board, other than the board establishing such percentage, as its starting and finishing point in working out its conclusions as to an applicant's capabilities to practice. It is an arbitrary requirement which might just as well be fixed at 65, 70 or 80 per cent. as at 75. "It is not the thing itself, but the way it is looked at that gives delight."

3. *It is of Limited Usefulness.*—Again, were interstate reciprocity universal among all the states and territories in the United States, its utility would not apply to more than one-half of one per cent. of the practitioners in the country who have been in practice for a period of not less than three years; and fully 90 per cent. of that one-half of one per cent. would include only the unsuccessful, the poorly equipped, the indolent members of the profession who are ever on the move looking for more productive fields in which to labor.

The medical profession is not a caravan on wheels. The call to the successful practitioner is not to move on, but to remain a fixture in the state and locality where he has earned a reputation and a merited recognition and where his usefulness is appreciated. To him reciprocity does not appeal. But we are told that there are "experienced and notable men in the profession, professors and teachers in medical colleges," to whom, in case they should need to change their state citizenship, reciprocity would be a "deserving and relieving measure." This is probably true, but such instances are very infrequent and too unimportant to the general welfare of the community to require special legislation in their behalf. Moreover, many examining boards have, and all should have, discretionary powers bearing on the examination and registration of such applicants. Their way into the ranks of the profession within the jurisdiction of any board, can be and should be made easier and more inviting than the course of procedure afforded by reciprocity.

4. *It is Impracticable Because of State Sovereignty.*—We are told by the advocates of reciprocity that registration laws put a "restraint on individual freedom guaranteed by the Constitution of the United States," that state boundaries are imaginary lines, and that physicians are not permitted to cross state lines to relieve human suffering. Were such statements true, reciprocity would not relieve the situation, for reciprocity is a method of registration, however undesirable. If they mean anything, they mean that there should be no legislation whatever regarding medical practice. The statement regarding the curtailment of individual freedom guaranteed by the Constitution, is a "glittering generality," thrown in the face of numerous decisions of the Supreme Court. Again, the registration laws in nearly every state in the Union provide for over-the-border practice by physicians residing in border towns. This class of practitioners is not calling for reciprocity.

Bearing on the impracticability of interstate reciprocity, much might be said on differences of legislation on medical matters in the different states; that in regard to skilled labor, professional work of all kinds other than medical, such as teaching, plumbing, engineering, or any other business conducted under a state license, or civil service regulations, reciprocity among the states is unknown. Each state is ever intent on the welfare of its own inhabitants. It sets its own standards for every department of endeavor and adheres to them with a spirit of enlightened state pride. On such matters the congress of the United States has no voice or control. The several states, under the Constitution of the general government, being left to themselves as independent judges on all such matters, it happens that wide differences of opinion on most subjects of legislation exist, which opinions find expression in law.

In matters medical I see no good reason why we should advocate interstate reciprocity between Maine and Connecticut, any more than between Maine and Canada. Canada, it is true, is a province of Great Britain, but the English parliament exercises no authority over Canadian practitioners, because Canada enjoys the privilege of legislating for itself in respect to its domestic affairs, just as each of our states is privileged by our general government.

Advocates of reciprocity are wont to refer to the fact that a license to practice granted by Great Britain, enables one to practice in any part of the United Kingdom, without being called on to submit a second time to an examining board test. But this fact does not help their cause in the least. The government of Great Britain and Ireland is monarchical; that of the United States is republican. One legislative body, the English parliament, enacts laws for the entire kingdom. In the United States there are fifty legislative bodies, each a parliament, so to speak, making laws for its own independent body of people, on all matters relating to its domestic affairs. A stranger entering the jurisdiction of the English government, for the purpose of practicing medicine, must prove his qualifications as required by the laws of that parliament. And this is the exact status of affairs in each of the sovereign states in this country. Interstate reciprocity therefore, receives no encouragement in an appeal to English methods of dealing with medical practitioners.

The spirit of commercialism enters to such an extent into the trades and professions everywhere, and incompetency and deception manifest themselves in so many ways detrimental to the safety and happiness of individuals and communities, the states have found it necessary to place restrictions on, or limitations to, almost everything from the preaching of the gospel down to the running of an automobile in the public streets. This they do not only to conserve, but to enhance public interests, to keep open the avenues of progress in science and art. Thus it happens that we meet on every hand, restrictions and prohibitions, as well as permissions and choice of action.

The practice of medicine without a license is a prohibition in all the states, and the conditions on which such a license can be granted, are fixed by law. Each state has its conditions, laws and ideals. Let each state adhere to its own. It has ever been the spirit of the old commonwealth of Massachusetts to maintain high standards in all lines of its endeavor, especially in regard to its educational institutions. Ever aiming at the highest, it desires to accept none that are inferior. As members of this organization, men and physicians, inspired by broad philanthropic purposes, let us cling to high ideals of professional achievement, usefulness and dignity.

Original Articles

ENTRANCE REQUIREMENTS.*

GEORGE W. WEBSTER, M.D.
Chairman of Committee on Entrance Requirements, Vice-President National Confederation of State Medical Examining and Licensing Boards, President Illinois State Board of Health.
CHICAGO.

At the annual meeting of this confederation at Atlantic City, June, 1904, I had the honor to submit a standard curriculum for medical colleges and to suggest in connection therewith that the entrance requirement should be the following:

(a) Seven years in the primary or grammar school.

(b) Four years of high school, preference being given to the scientific rather than the literary course.

(c) A special course of two years in chemistry, physics, biology and languages; or, a college course in which the last two years shall have been modified to meet the demands of the medical student.

This standard of preliminary entrance requirements was not adopted, but the committee was instructed to make a report at this meeting of the confederation. In the report, among other things, I said:

> The idealism of the German university maintains that the object and aim of an education is to develop in a symmetrical manner the mental faculties, to enable one to live to the utmost, to enjoy being. It is a doctrine of being, rather than of doing, of idealism rather than of realism, of the theoretical rather than the practical.
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> On the other hand, there is a very large class who insist in the social, and more especially the economic, utility of all human actions. They believe in the practical, the utilitarian, that which produces immediate results. They want men who do things.
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> The former argue that a man should devote 7, 4, 4, 4, 2 = 21 years of the best of his life to acquiring an education. Such a man, if he was always well, enjoyed good health in childhood, missed no time at school, and took no time for travel, would be ready to begin to earn his first fee at twenty-seven or twenty-eight years of age.
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> A system of education which demands that a man shall spend twenty-eight or thirty years of his life in preparation for active participation in its duties, that he earn his first fee at even twenty-five or twenty-eight years of age, seems in this eminently practical age, and as measured by organized society, to be impracticable and impossible.
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> Even in the so-called reputable medical colleges, there is nothing which approaches agreement as to the entrance requirements to be enforced, and in many of the medical colleges, these requirements are something fearfully and wonderfully made.
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> Unfortunately, the question in the past has been, not what constitutes the very best preparation for the very best kind of life work, but, Where can I get the largest number of degrees with the least work, the least expenditure of time, and a minimum of expense?
>
> We should determine, as far as we may, what constitutes the ideal medical course, and then what kind of foundation such a course should have; in other words, the character of the preliminary training.
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> Educators in general have given insufficient attention to the special requirements demanded by the student desiring to enter medicine as a career, and have not done their duty in aiding the trend of special mental development necessary to the successful practice of medicine.
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> In this country there is an unmistakable rift between studies for culture and studies for vocation. The college course is pursued for culture rather than as a preparation for the professions.
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> I believe that the liberal arts degree has, in a sense, at least, determined our educational standard; that it is the mark of the well educated man, irrespective of his calling, and that for those who are considering merely technical training rather than culture, there should be at least one year added to the medical course, a connecting link, and at present a weak one, between the high school and the medical school, and consisting of physics, chemistry, general biology, Latin and German or French, or both. Possibly the plan suggested by President Butler, of Columbia, would be even better than this. He says: "There should be a college course of two years in length, carefully constructed as a thing by itself, and not merely the first part of a three-year or four-year course, which will enable intending professional students to spend this time as advantageously as possible in purely liberal studies.

PRESENT CONDITIONS.

At the present time we are confronted by the following facts:

First.—The medical curriculum of the Philadelphia Medical College, founded in 1766, consisted of two courses of lectures of about sixty hours each, one in anatomy by Dr. Shippen, the other in medicine by Dr. Morgan. This curriculum has been gradually enlarged until to-day it contains a list of twenty-three subjects and the hours of instruction have been increased from a total of 120 to a total of about 4,000, the instruction extending over a period of four years.

Second.—In that same medical school, the entrance requirements decided on by the resolution of the trustees, May 27, 1767, were as follows:

> 1. It shall be required that such students as have not taken a degree in any college shall, before admission to a degree in physics, satisfy the trustees and professors of the college concerning their knowledge in the Latin tongue, and such branches of mathematics and natural and experimental philosophy as shall be judged requisite to a medical education.[1]

One of the four propositions quickly agreed on at the first meeting of what afterward became the American Medical Association in New York in 1846 was that "It is desirable that young men being received as students of medicine should have acquired a suitable preliminary education."

Third.—Notwithstanding the improved standards in the medical curriculum, little that is creditable in the way of raising the entrance requirements has been done by the majority of the medical colleges of the United States. In many instances they are lower than in the Philadelphia Medical College one hundred and forty years ago. Pedagogically and from the standpoint of the needs and rights of the people, the weak spot in our medical educational plan is that of entrance requirements. They are too slow and the medical colleges themselves are permitted to pass on their character. Even the entrance requirement of a high school is too low.

Fourth.—On the other hand, the greatly increased demands of the medical colleges make a college course of four years a longer time than the future physician needs to spend, in preparation for his medical studies. The report of the Associated Harvard Clubs, page 8, 1905, says:

> European experience all indicates that where secondary schools are highly organized and well conducted, and professional education amply developed, four years of liberal study can not be maintained between the school period and the period of professional study.

Again, in their report of May 26, 1906, page 8, the committee says:

> Even a cursory examination of the discussions on this subject discloses the fact that there is practical unanimity in this conclusion: That the period of four years between the second-

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* Report of Committee to the National Confederation of State Medical Examining and Licensing Boards, June 4, 1906.

[1] Packard's "History of Medicine in the United States," p. 199.

> ary and the professional schools is too long and that the requirement for the four years' course for the A. B. degree, if continued, will result in the exclusion of the holders of that degree from the so-called 'learned professions.' The four years' course is doomed. Indeed, it is already disappearing through natural causes, the effects of which can not be avoided to the extent of saving or restoring the four years' course.

Fifth.—The mass of the poorer or even middle class medical colleges will adopt no higher standard of entrance requirements than those imposed by the examining boards. This question of entrance requirements will never be solved by the medical colleges and the medical associations, partly for pecuniary reasons, and partly because the college associations persist in going about it in the wrong way. For example, the president of the Association of American Medical Colleges, in his annual address at the meeting at Pittsburg, Pa., March 19, 1906, still harps on that constitutional impossibility, a national board, as the panacea for all our medical educational ills. He says:

> The inconsistencies of many of our state laws controlling the practice of medicine and surgery lead us to a demand for national laws that would abrogate the present irregularities and bring about a uniform educational standard, acceptable to every examining and licensing board in the United States. To further this end, I solicit the indorsement of this association that such a national board be created from delegates sent from each state and territory.

It seems unnecessary, and in this body it is unnecessary to repeat that everything relating to the whole subject of medical education, including preliminary entrance requirements, the license and control of the practice of medicine, belongs to the state; its regulation and control is an exercise of the general "police power" of the state; it is one of the state's rights with which the federal government has nothing whatever to do.

The state board of health, or the examining or licensing board in each state, is, in view of the authority vested in it by the legislature, the only body authorized to determine the condition or terms under which physicians are licensed to practice in that state. This body determines the character of the entrance requirements, the length and character of the medical course, the subjects embraced in the medical curriculum, the time to be devoted to each, the character and scope of the examination, the equipment of the medical college in order to be in "good standing" with the board. The state alone, each for itself, through its examining board, has the sole right to establish and to maintain medical educational standards.

ATTITUDE OF EXAMINING AND LICENSING BOARDS.

Clothed with the power and charged with the duty of establishing, maintaining and enforcing reasonably high educational standards in the interests of higher education and of the rights of the people, what are we as examining and lincensing boards going to do in regard to this all important question of entrance requirements? Are we going to do as has been done in the past, wait, and "play safety" and progress no faster and no farther than we are forced by popular demand, or are we going to accept the other alternative, that of leadership, recognizing an educational and public need before it becomes a demand, perceiving the signs of the times, interpreting correctly "the handwriting on the wall," acting vigorously and fearlessly in the right as we see the right, in the strength of a faith which we feel sure will be justified by future results. Something should be done and done soon. The only question is, shall we act, here and now, or shall we wait and act in harmony with the organized profession, of the American Medical Association through its Council on Medical Education. It is for you to decide.

MINIMUM ENTRANCE REQUIREMENT.

We believe, and therefore recommend, that the following should be adopted as the minimum preliminary entrance requirement[2] to the study of medicine. We also recommend that the confederation work in harmony with the Council on Medical Education of the American Medical Association, the American Confederation, the Association of American Medical Colleges and all committees and organizations of all legally authorized schools of practice.

1. A high school diploma from a recognized high school, or its equivalent in the form of a certificate showing that the applicant has passed a satisfactory examination in all the branches usually embraced in the curriculum of a four-year high school course, said certificate to be either issued or passed on by some designated state official, such as the superintendent of public instruction, and not by any one connected with any medical college.
2. Satisfactory documentary evidence of having completed at least one year of not less than nine months' of work in chemistry, biology, physics and languages in either a recognized institution of learning chartered to confer liberal degrees, or in a recognized medical college, having a special additional year devoted exclusively to the above subjects, this requirement to apply to all students matriculating after Jan. 1, 1910.

In the foregoing I have used the term "year of work." Following the important suggestion made by Dr. B. D. Harison, secretary of the Michigan Board of Examiners, something should be done to improve and render uniform our terminology in describing and defining work. As I understand it, the following terms are in use. The term "count" is used by New York, meaning one hour each week of class room work throughout the college year. The term "point" is used by the Association of American Medical Colleges, meaning thereby two recitations each week throughout the college year. The term "course" is used at Harvard, meaning three hours each week. The term "unit" is used by the Michigan board and by the Michigan university and means four hours each week throughout the year. To recapitulate: "Count" equals one hour each week; "point," two hours each week; "course," three hours each week and "unit" four hours each week. All mean a certain definite number of hours. Then why not say so. But if any term other than the word "hour" or "hours" is used, let it be the New York "count" because of its age and simplicity.

THE TREATMENT OF EMACIATION.*

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DETROIT.

Almost daily, persons consult me whose one great sorrow in life is their condition of leanness or emaciation. They come to me with the request that I make them fat and plump.

A few of these persons are actuated in their request by the knowledge that their bodily strength and resistance have suffered as the result of their abnormal weight reduction. Others again recognize that their leanness is the expression of some digestive or metabolic disorder. With the great majority of persons, however, these matters are left out of consideration, their sole desire in wishing to become fat being to improve their personal appearance. The first writers who ventured on the subject of the treatment of leanness recommended that the individual be liberally fed, and with this advice we are indeed in the fullest accord, but, like almost all writers up to the present time, they have ignored the causes and the accompanying conditions of this difficulty.

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[2] This standard was unanimously adopted at the Boston meeting, June 4, 1906, and by the Illinois State Board of Health, June 20, 1906.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chapter on chapter has been written by dietitians on food values, fat producing foods, the possibility or impossibility of forced albumin feeding, etc., in reference to the treatment of leanness, but the underlying causes and a thorough consideration of the digestive and absorptive factors as well as the significance of medical treatment, have been entirely ignored.

CAUSES.

Leanness may be the result of various causes. It may be of an apparently hereditary character, or it may be acquired and arise as a primary or secondary condition. The one great cause of leanness excluding diseases like tuberculosis, diabetes, nephritis, and cancer and conditions like stenosis and vomiting, is the ingestion of an insufficient amount of food. This may result from a primary or secondary loss of appetite or a repugnance to food in consequence of various disorders, or as the result of emotions like pain, grief, sorrow, etc. It may be the result of faulty dietetic habit which I have seen handed down through several generations in a number of families.

Frequently it results from an ignorance of the nutritive significance of particular foods, or from the effect of eating but one or two meals a day by persons not constitutionally fitted for that sort of régime. It may be the result of poverty or the attempt to economize. It may be due to sexual neurasthenia, hysteria and nervousness, especially in persons of a typically nervous temperament.

These latter causes together with digestive abnormalities have formed the basis of the great majority of cases of emaciation which have come under my observation. In an interesting paper, recently published, Cabot mentions arteriosclerosis and sleeplessness, which latter condition I have often noticed, at least as an accompaniment of other symptoms, in a number of my cases.

To the second group of causes belong the gastrointestinal disorders which may be either of mechanical, chemical or secretory origin. I have observed them as a primary or secondary cause in almost all of my cases. There is no doubt whatever that the foundation of this class of diseases, with the frequently resulting emaciation, is often laid at the time of the birth of the child when it is artificially instead of naturally fed. We may further add to this list of diseases producing leanness all the circumstances in general which produce digestive disturbances.

As causative agents in the production of leanness, I might also mention the improper metabolism of food and the increased oxidation of food after it has become an integral part of the blood. We can not define these conditions, however, with any degree of precision, and it is not our object in this place to enter into a speculative consideration as to the possible nature of these conditions.

It will thus be seen that many circumstances and conditions, either singly or combined, may operate in the production of leanness. Cases may belong to that class which we may ascribe to hereditary influence, and which result from habitual underfeeding which I have noticed in successive generations of different families; cases of apparently simple or primary leanness may, on examination, be found to rest on some undoubted physical or nervous basis.

TREATMENT.

In the treatment of this condition it behooves us, therefore, to examine our patient thoroughly, and an examination is incomplete unless the state and degree of digestive activity have been accurately determined. One should know to what degree the stomach and bowels will bear forced feeding and what foods these organs will most readily digest and absorb. The selection of the kind and quantity of food and the determination of the quantity of liquids depend on these examinations.

With the absorptive and digestive activity of the stomach determined, and all other possible causes considered, I map out a diet list which will contain from 2,200 to 2,500 calories and gradually increase the amount until I reach a diet containing from 3,800 to 4,500 calories.

I strive to give from 100 to 250 gm. of fat in the form of milk, cream, butter, olive oil or emulsion; 100 gm. of fat equal 930 calories, 250 gm. equal 2,325 calories. If we add sufficient albumin containing food to amount to 150 gm. and carbohydrates amounting to 400 gm., the calorie value will be increased to 615 and 1,640, the entire caloric worth amounting to 4,580 calories. Thus:

Fat	250 × 9.3 =	2,325
Albumen	150 × 4.1 =	615
Carbohydrates	400 × 4.1 =	1,640
		4,580

The question as to how much or how little albumin is to be selected and the nutritive value of the different naturally and artificially digested foods I have discussed in former publications and need not repeat in this article.[1]

I always resort to tonics, both vegetable and mineral, given either hypodermically or by the mouth, and, when the occasion demands, I push them to their physiologic limit. In nervous individuals, I always use nerve sedatives, never of course resorting to narcotics of any kind. The medicinal list includes iron, arsenic, gold, manganese, strychnin, gentian, cinchona, quinin, condurango, colombo, sumbul, bromid and valerian. I always resort to the tonic, reconstructive, stimulative and sedative, actions of these drugs, which, when combined with properly selected foodstuffs, determine the outcome of the case.

From time to time I estimate the excretory activity of the kidneys, and compare it with the entire water intake, which should be from 2,000 to 3,000 c.c. I lessen or increase the exercise as the case may require, and resort to frequent tepid baths, cold rubs, massage and electricity. On a régime of this kind, convalescents often gain weight so rapidly that it becomes necessary to reduce the diet. The chronically underfed usually require from two to six months of very careful manipulation with the continuous coaxing of the digestive tract, and the constant tempting of the palate to achieve the desired result. Not only for an esthetic effect, but also as a prophylactic and curative means, the logical fattening of individuals is of an importance which can hardly be overestimated.

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[1] Breisacher: "Principles of Metabolism and Nutrition," Physician and Surgeon, November, 1900; also "Minimal Albumin Requirements in Health and Disease," The Journal A. M. A., vol. xlv, Dec. 9, 1905; "Artificially Prepared Foods," The Journal A. M. A., vol. xxxvii, Oct. 26, 1901; "Eiweissbedarf des Menschen," Deuts. med. Wochschr., 1900.

MUCOID SALTS.*

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We know practically nothing about the ways in which proteins are held in living protoplasmic structures. The molecules of the protein compounds are relatively so large that as yet our physicochemical methods of measurement are inadequate to give us correct ideas of molecular size and intramolecular structure, although we know considerable about the lifeless and, in some respects, comparatively meaningless fragments into which protein molecules may be broken. Our ignorance of the fundamental biochemic relations of proteins to the associated constituents of protoplasm appears to be largely due to our vague knowledge of the chemical statics and dynamics of true cellular proteins, a fact which serves as a constant stimulus to protein investigation.

Among the many protein substances the nucleoproteins and the glucoproteins are very important tissue constituents. The essential part of each natural type of these proteins, and the part to which the usual name is applied, appears to be a colloidal organic acid. The forms in which the acid radicals occur in cells and tissues have not been definitely made out, although it is natural to presume that the acid radicals are united directly to one or more distinctly basic radicals in each case, and that variations in the characters of such compounds are associated with physiologic as well as pathologic variations of cellular composition and tissue function.

I have endeavored to get to the bottom of this complicated matter, by making definite salts of these proteins with the aid of methods that could be relied on to leave the acid radicals unchanged. In this effort I have been encouraged by the hope that, by increasing our knowledge of artificial products, analogies with natural compounds would be not only more easily recognized, but also the characters and functions of the compounds in living protoplasm would be more thoroughly understood. Thus, at present, it is impossible to recognize satisfactorily the form or forms in which mucoid is contained in the connective tissues under either physiologic or pathologic conditions, nor are we able to explain, for example, the possible relationships of spermatic protamin (basic) and ovular mucoid (acid) to the more differentiated mucoid (acid) so conspicuous in embryonic tissue. I believe that a study of artificial products of such types as those referred to, will make it possible successfully to elucidate numerous problems awaiting solution, many of which my co-workers and myself have under investigation.

About five years ago I found that "when the electric current is passed through neutral or alkalin mucoid solutions (consisting of sodium or calcium salts of mucoids) turbidity results within a short time and flocks eventually form and can be filtered off." This observation was included in a preliminary report of work then in progress.[1] About the same time Huiskamp[2] had been making similar observations in connection with nucleoprotein salts from thymus. Shortly afterward, in preparing material for work in another connection, I[3] precipitated from an alkalin solution (Na_2CO_3) of mucoid with the aid of acetone, after failure with alcohol, a water-soluble compound, apparently sodium mucoid. This fact has not been published hitherto, although it was stated at that time that organic compounds such as gelatomucoid had been obtained.[4]

I have lately prepared calcium, sodium, potassium and ammonium salts of mucoids by the following process: The glucoprotein was obtained in slightly alkalin solution. This solution was dialyzed until neutral and then was poured into a large excess of 95 per cent. alcohol, by which treatment the mucoid was immediately precipitated. Initial purification was effected by resolution, dialysis and reprecipitation. The products were rendered anhydrous by treatment with absolute alcohol and ether. Probably all bases yield such salts, although, for the present, I shall confine my remarks to the simple inorganic salts mentioned.

The comparatively pure inorganic salts of the mucoids already prepared are light, snow-white powders. They dissolve in water very readily and are dissociable products. The concentrated solutions resemble mucus. The aqueous solutions are neutral to litmus and acid to phenolphthalein. Ammonium compounds have been prepared that were acid to litmus also. The calcium salt yields about 12 per cent. of ash, whereas the corresponding mucoid is practically ash-free. It is very probable that the mucins in the secretions occur in the form of such salts, as Müller has already suggested. Yeast nucleoprotein has also yielded similar products. Presumably other nucleoproteins will be found to do so also.

I believe these observations clear the way for important discoveries connected with the glucoproteins, nucleoproteins, proteinates and similar protein products. The best method of preparing the compounds referred to has not yet been definitely ascertained, but I hope to describe it in detail at an early date.

EXPERIMENTAL CEREBROSPINAL MENINGITIS AND ITS SERUM TREATMENT.*

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Cerebrospinal meningitis prevailed as an epidemic in Greater New York City during the winter of 1904 and the spring of 1905. Since that time up to the present writing, sporadic cases of meningitis still arise. In the spring of 1905 the Health Department of New York City appointed a commission to co-operate with the department in investigating the epidemic. As a member of the commission I undertook an experimental investigation of meningitis out of which the preliminary report has grown. The full report of this investigation will appear in a forthcoming number of the *Journal of Experimental Medicine.*

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

*From the Laboratory of Physiological Chemistry of Columbia University, at the College of Physicians and Surgeons, New York City.

[1] Mead and Gies: Am. Jour. of Physiol., 1902, vol. vi (Proc. Am. Physiol. Soc., 1901, p. 28); also Gies and collaborators: "Biochemical Researches," 1903, vol. i, p. 53.

[2] Huiskamp: Zeits. f. physiol. Chemie, 1901-02, vol. xxxiv, p. 32.

[3] Gies: Am. Jour. of Physiol., 1903, vol. viii, (Proc. Am. Physiol. Soc., 1902, p. 13); also "Biochemical Researches," 1903, vol. i, p. 54.

[4] Gies: Loc. cit.; also, Posner and Gies, Am. Jour. of Physiol., 1904, vol. xi, p. 404.

* From the Rockefeller Institute for Medical Research, New York.

The bacteriologic examination of the exudates from the meninges, obtained by lumbar puncture and at autopsy, showed the epidemic to be caused by *Diplococcus intracellularis* of Weichselbaum. My work was done almost entirely with this micro-organism. The sources of my cultures were the following: Dr. E. K. Dunham, Dr. Martha Wollstein and Dr. E. P. Bernstein. From Dr. Dunham I obtained a large number of cultures which he isolated from cerebrospinal fluid and the nasal mucous membrane of patients; from Dr. Wollstein I obtained cultures isolated at the Babies' Hospital, and Dr. Bernstein supplied me with cultures from patients at Mt. Sinai Hospital. In a few instances I made my own isolations from freshly-drawn cerebrospinal fluid. The large number of cultures of the diplococcus, or similar organisms, which were examined could not all be tested on animals. The biologic characters of a larger number of cultures than could be tested for their pathogenicity were studied. *Diplococcus intracellularis* possesses biologic characters which permit of its identification with a high degree of certainty. The cultural appearances on the usual media, temperatures of development, actions on sugars and brief viability, under ordinary conditions, all tend to distinguish the intracellularis among the wide group of non-Gram-staining diplococci. The brief vitality of many cultures of the intracellularis is a point of high differential importance. Many strains, grown on a favorable medium, unless transplanted to a fresh medium, do not survive beyond two or three days. Indeed, these transplantations do not succeed, frequently, unless considerable quantities of the growth are carried to the fresh tubes, an indication that only a fraction of the cocci have survived, or are still capable of multiplication. Vigorous fresh cultures of 16 to 24 hours' growth stain sharply and uniformly. On the second day the cocci show irregularities in staining and size, unless they have been carefully preserved from evaporation and fluctuations of temperature. Cultures three days old show marked degenerations, and these increase rapidly with age until, at the end of five or six days, no normal cocci persist. Even with very careful preservation the great majority of the cocci do not survive beyond this brief period. A few cocci, in carefully preserved cultures, may survive for many months. The appearance of old cultures is characteristic. At the beginning of the degeneration swollen-deeply-stained cocci occur among the smaller but usual forms, which take the stain less intensely than fresh cultures. As degeneration progresses loss of nuclear-staining and disintegration occur, until, finally, staining power is entirely lost and a formless detritus remains.

If a vigorous culture of the diplococcus is suspended in 0.9 per cent. salt solution and the suspension is kept at 37 degrees C., the cocci slowly undergo the changes described. Since in such a fluid medium evaporation goes on slowly and alterations in concentration are consequently small, the cocci degenerate less rapidly than when grown on the surface of solid media. Finally, the salt suspension of cocci also degenerates. If, however, to such a salt suspension a few drops of toluol be added and mixed with the fluid by agitation, the process of disintegration is greatly accelerated. Such a suspension, kept at 37 degrees C., may be wholly disintegrated at the expiration of 24 hours. The conclusion which may be drawn from this observation is that *Diplococcus intracellularis* possesses a highly potent autolytic ferment which tends, once the cocci are dead, quickly to cause disintegration of the micro-organisms. I noticed repeatedly when I transplanted thick suspensions of old cultures to fresh media that the turbid fluid became clear after a few hours, indicating solution of the bacterial substance in the new fluid used to dilute the original growth. I made some comparisons of the rapidity and degree of disintegration of the cocci which take place when the salt suspensions of cocci are toluolized and occasionally agitated and when they are not killed outright, but are shaken continuously for several days. The disintegration is much more rapid and complete in the toluolized specimens. The autolytic ferment is destroyed by heating the suspensions to 65 degrees Centigrade.

This great susceptibility of *Diplococcus intracellularis* to changes in osmotic conditions, and possibly to variation in temperature and accumulation of products of growth, separates it from a large number of non-Gram diplococci of various origins. The slight vitality of the diplococcus is bound up with this susceptibility. I noted the fact, at the beginning of my experiments, that cultures placed on ice might be dead in less than 24 hours. Later I made a few experiments on the viability of the cocci in thick, salt solution suspensions kept in a refrigerator the temperature of which varied from 2 to 4 C. In this case many living cocci were still present at the end of five days.

I secured a considerable number of non-Gram diplococci from human beings and animals which differed from *Diplococcus intracellularis.* Some of the former came from the nasal cavity of persons, children chiefly, suffering from epidemic meningitis. Others came from healthy persons who had not been exposed to cases of meningitis. A few cultures of so-called *Micrococcus catarrhalis* were sent me by other bacteriologists. In connection with the investigation of the Department of Health I had my assistant, Mr. Ward, study a number of domestic pets—cats and dogs—obtained from the houses in which cases of meningitis occurred. Several of these animals yielded cultures of diplococci which were decolorized by Gram's staining method. An autopsy on a case of cerebrospinal meningitis, the child having died in the sixth week of the disease, yielded a non-Gram diplococcus which belonged to this group. A few colonies of the coccus were obtained from the bronchial lymph glands, lungs, antrum and medulla oblongata, the last being covered with a thick exudate. All these cultures differed from the examples of *Diplococcus intracellularis* in not tending to undergo the rapid degeneration and disintegration described for that organism. Associated with this difference were the further differences that they grew from the first on media to which blood in some form had not been added and were viable over a long period of time—often for many weeks. They were, further, either devoid of power to ferment sugars or they possessed wider or more vigorous fermentative powers than the intracellularis.

A toluolized salt solution suspension of *Diplococcus intracellularis* quickly disintegrates, as has been stated. This fluid, deprived of its toluol by evaporation at a low temperature, and centrifugalized at high speed to remove solid particles, is toxic. The toxic constituents pass through unglazed porcelain (Berkefeld filter). The toxic effect of this fluid can best be studied on young guinea-pigs. Selecting pigs of 125 grams weight or less for the test, the degree of toxicity will depend on the strength of the original suspension of cocci. If the entire growth on the flat surface of a one-pint Blake bottle be suspended in a 10 cubic centimeters of salt solution the lethal 18 to 24 hour dose given intraperitoneally will be from 0.5 to 1 cubic centimeter. The lesions which result are similar to those caused by injections of living suspensions of cocci, except that fibrin may not appear.

The activity of this extract can be shown in still another manner. Since Bail's work on aggressins, so-called, and Wassermann's and Citron's observations on extracts of bacteria in promoting infection, we have learned that the pathogenic effect of bacteria may be intensified by combining them with these products. Guinea-pigs which have been inoculated simultaneously with living cultures and the autolysate of the cocci succumb more certainly and are subject to smaller doses of cocci than animals given the cocci alone. Intraperitoneal injections of the diplococcus in guinea-pigs gives rise to the production of an exudate which exerts an action similar to this extract in promoting susceptibility to the coccus.

As tested on laboratory animals *Diplococcus intracellularis* is a micro-organism of low and variable pathogenic action. Small guinea-pigs are, I found, more useful than mice for studying the effects of the cultures. The difference in susceptibility of guinea-pigs, according to weight, is very large. Guinea-pigs of 175 to 200 grams weight proved highly susceptible to the cocci as compared with pigs of 350 to 400 grams weight. Pigs of 250 grams are still useful for these tests, while full-grown pigs are highly refractory.

Not all cultures of the diplococcus, even in the first generations, are pathogenic for the small pigs, unless, indeed, very large quantities be injected. Speaking generally freshly isolated cultures are pathogenic, while cultures grown for a period on artificial media are not. Occasionally a strain of the coccus will retain its pathogenicity for many months, but, as a rule, the power is lost after the first transplantations extending over a few weeks. I have worked with cultures which have deteriorated in a few days, and one culture (Smith) retained its power undiminished for many months, to lose it in the end. This culture was passed through many mice, guinea-pigs, and monkeys during its active period, but, after its activity was lost, it could not be restored by passage through mice and guinea-pigs. It still yields an active extract and can be used as an adjuvant to living cultures. No increase in power was produced by passing it through ten successive generations in a medium consisting of bouillon and serum of a goat immunized to the diplococcus.

The reaction to inoculation, in the guinea-pig, varies with the degree of pathogenic power possessed by the strains of the coccus. In my studies I found it necessary to adopt a standard strength of culture to be inoculated. It was not readily possible to obtain uniform growths on agar-serum surfaces; hence I prepared from the large flat surfaces a suspension in salt solution which had a uniform degree of turbidity. The suspensions should be made from freshly-grown cultures (preferably under 24 hours old) and used soon after preparation. It is unsafe to carry suspensions over until the next day, unless a new determination of their strength be made. Partial deterioration quickly sets in.

The standard dose of the suspension varied, as a rule, from 0.1 to 0.5 cubic centimeter, for the small pigs, by intraperitoneal inoculation, and death occurred in less than 24 hours. Active cultures, in this strength of suspension, may cause death, in the smallest dose given, in 8 to 10 hours. A culture which in a dose of 0.5 cubic centimeter requires 24 hours to kill is one of weak virulence. In the course of any large series of experiments irregularities occur. It has happened that a guinea-pig of a series died in 4 hours and another survived 36 hours. But these irregularities can be ruled out by making duplicate inoculations. Among survivals it happens occasionally that death takes place after several days and is preceded by a state of great emaciation.

The most important lesions exist in the peritoneal cavity. Excluding the two extremes (death in 4 hours or after several days) the appearances and conditions present are uniform. It is the rule for the pigs of a series to succumb in about the same period, within one or two hours of each other. Where the coccus causes death in 12 to 14 hours the results are likely to be very regular. Greater irregularities occur where death is delayed until 24 hours after inoculation.

Fluid exudates into the cavity of the peritoneum are the rule, and more or less fibrin and pus covers the anterior surface of the liver and is present in the rolled up omentum. In gross appearance there is not great distinction between the animals succumbing in 12 and in 24 hours. But microscopic examination shows the difference to be considerable. It is the virulent cocci which bring on the more rapid forms of death. The exudate in this case shows many, often prodigious, numbers of cocci. The appearances are indicative not only of preservation of the injected cocci, but are suggestive of their multiplication. In the case of the less virulent cocci, the exudate contains fewer micro-cocci and may be devoid of them. Even when death occurs in the short period mentioned, the number of cocci is likely to be small. In other words, virulence and resistance to destruction go hand in hand. A relatively non-virulent strain of coccus may still be toxic, but has little or no capacity to resist disintegration and none for multiplication in the peritoneum. Hence two appearances are met with between which transitions occur. When the strain of coccus is actively virulent multiplication in the body probably takes place, but in any case there is only slight dissolution of the injected micro-organisms, and cultures are positive. Death usually takes place early, and it is rarely that a more resistant pig survives beyond the usual period, and even then cocci are still present in numbers. When the strain of coccus is little virulent it tends from the beginning to disintegrate, and, even if the animal succumbs early, the peritoneal cavity may be devoid of micro-organisms, or, should a small number still be present, they often do not develop in cultures. The more virulent cocci invade the blood and tissues and can be cultivated from the blood, internal organs, bone marrow, etc.; the less virulent cocci are not found in the interior of the body.

I have made some observations on the strength of the toxic fluids yielded by different strains of cocci through autolysis, and they indicate that these fluids have not the same absolute strength. The more virulent cocci yield, at times, an autolysate of greater toxicity than the less virulent micro-organisms. In view of the adjuvanting effect of the autolysate it may well be that it is this potent toxic extract which makes the former cocci survive and multiply in the body, for a part of them undergoing dissolution could supply the necessary autolysate to reduce the resistance of the animal. In case of the cocci of small virulence, the lethal action is, according to this view, due wholly to the liberated endotoxin for which larger quantities and longer time are required.

I have made some experiments on the dissolving power of the peritoneal exudate, from guinea-pigs, on the diplococcus. The fluid exudate is removed and freed from cells by centrifugalization. It possesses high digestive powers for the cocci. Mixed with fresh cultures many of the cocci are killed and disintegrated, and the cocci in the mixture which has been toluolized undergo dissolution much more rapidly. Enormous numbers of cocci can be digested by the exudate, which is increased in toxicity thereby. The dissolution of the cocci in the toluolized exudate goes on much more rapidly than in salt solution. The exudate heated to 58° C. for from 30 minutes to one hour has the same digestive action as before on fresh cultures and on cultures heated to 65° Centigrade. It is, therefore, assumed that its action is enzymotic. The blood serum of the guinea-pig has not the power to digest the cocci.

A measure of the reaction of the guinea-pigs is found in the emigration of leucocytes. In the cases of rapid death with preservation of the cocci the emigration is slight or wholly absent, while in the cases of slower death and disappearance of cocci the emigration is considerable. Many transitions between these extremes exist. When emigration is at all marked, even with an almost entire preservation of the cocci, phagocytosis has taken place. Where there has been considerable, although not total, disappearance of cocci, phagocytosis is more abundant. Phagocytosis is a function of emigration, but it is not a measure of this condition. The disappearance of the cocci from the peritoneal cavity does not depend wholly on phagocytosis. I believe that the cocci may be removed without the intervention of phagocytosis, probably through self-digestive action and digestive action of the inflammatory exudate.

The leucocytes are numerous, frequently, in the omentum and every fibrinous exudate, while they are few in number in the peritoneal fluid. The clear peritoneal fluids contain few leucocytes relatively; the turbid fluids contain many. Since the turbid fluids occur in animals surviving the longer periods, there is relation between degree of virulence and emigration. But since the emigration is more abundant in those animals in which the cocci quickly disintegrate, it would not seem to be wholly called forth by the need for phagocytosis. The toxic extracts of the cocci cause fluid exudations into the peritoneal cavity, but not turbid ones, so far as I have seen. Possibly fragments of the bacterial bodies present in injections of cultures and absent from centrifugalized and filtered autolysates attract many leucocytes. The leucocytes of the omentum are large and pale, and those of the peritoneal fluid small and dense. Their nuclei are often irregular in form or fragmented. Cocci are common in the protoplasm and rare in the nuclei, and they show all transitions from well-preserved organisms to fragments and swollen, metachromatic bodies.

The main visceral lesions met with in the pigs are (1) vivid congestion or hemorrhages of the adrenal glands; (2) hemorrhages into the mesentery and central tendon of the diaphragm; (3) gelatinous edema of the pancreas and peripancreatic tissues.

At the beginning of this investigation I had the plan of using monkeys to reproduce the lesions and symptoms of cerebrospinal meningitis in man. Some of my earliest experiments were made on these animals. The cultures were introduced into the spinal canal by means of lumbar puncture. The injection was made commonly in the canal at the level of the third lumbar space. This space is not below the level of the cord in many monkeys, but I have never had paralysis follow my inoculations. My first experiments were successful in producing acute leptomeningitis from which the animals died. The symptoms in different animals were depression, coma, convulsions, nystagmus, opisthotonos, etc. The experience which I was obtaining with guinea-pigs was of much use to me in the work on monkeys. The variable virulence of the cocci affected, at the beginning, the successful experiments with monkeys, as it did with guinea-pigs. By choosing suitable strains of the coccus I succeeded in inducing severe and fatal leptomeningitis in a large number of monkeys. Through the use of lumbar puncture, in the course of the disease, I studied the manner of reaction of the animals and the fate of the micro-organisms. I shall give in this place the protocol of my first experiment on monkeys, since it represents a typical case.

Macacus nemestrinus, May 12, 1905, 10:30 a.m. A good-sized monkey was etherized,[1] after which a needle was introduced into the spinal canal; clear, watery fluid escaped from the needle. A culture eighteen hours old of the *Diplococcus intracellularis*, in its first generations, on Loeffler's serum, was injected. The culture consisted of many discrete colonies and had been suspended in 2 c.c. of salt solution. The monkey quickly recovered from the operation. Six hours later it appeared to be sick; at 6 p. m. it no longer sat on its perch; 9 p. m., still on bottom of cage; head down, appeared very sick; on being disturbed it moved slowly. Death during the night. Survived injection probably eighteen to twenty hours.

Autopsy, 9 a. m., May 13: The internal organs, except the nervous system, showed no striking lesions. Brain and cord: No marked excess of fluid in the meninges. Convex surface of the brain greatly congested, punctiform hemorrhages in the pia arachnoid and superficial portion of the cortex. No definite exudate on the convex surface of the convolutions, although the pia of the sulci appeared white and slightly thickened (probably an old condition). A focus of softening, or an abscess, the size of a large pea occurred to the right of the superior longitudinal sinus in the convolutions anterior to the motor area and just beneath the membranes. The base of the brain was covered with an opaque exudate, white in color, which extended over the medulla and anteriorly to the optic commissure. The lumbar and thoracic portions of the spinal cord were covered, posteriorly chiefly, with an opaque, white exudate. The diplococcus was recovered in cultures from the exudate of the spinal cord and base of brain and from the blood of the heart. Smear preparations from the exudates showed large numbers of polymorphonuclear leucocytes, many of which contained the diplococcus, and they showed diplococci lying free in the exudate, The softened focus contained masses of leucocytes and enormous numbers of the diplococci. The microscopic examination of sections of the inflamed brain and cord showed the existence of an acute fibrino-purulent exudate within the pia arachnoid and a superficial encephalitis.

By means of this and later experiments it was shown that the lower monkeys could be infected without great difficulty with *Diplococcus intracellularis* and made to reproduce the pathologic conditions present in man in epidemic cerebrospinal meningitis. The experiments proved that the cocci, when introduced into a low level of the spinal canal, would distribute themselves in a few hours through the meninges and excite an inflammation, the exudate of which accumulated chiefly in the spinal meninges and the meninges of the base of the brain. The uniformity with which the chief exudate was found at the base of the brain and the rarity of its appearance in considerable amounts over the convexity led me to doubt the validity of the reasoning which ascribed this localization in man to the entrance into the meninges of the infective agent directly through the nasal mucous membrane. This tendency to localization at the base of the brain in monkeys is especially interesting in view of the fact that it is usually only a short time before death that they lie down on the side. In comparing the experimental lesions in the monkey with the naturally developed lesions in man note should be taken of the occurrence, under both conditions, of encephalitis and of abscess formation, due to the invasion of the substance of the nervous tissue by the diplococcus.

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[1] In later experiments ether was not used, since the operation gave little pain.

In contrast to the ease with which the acute inflammation can be excited is the difficulty which attends the production in the monkey of a subacute form of meningitis. The intraspinal injections produce either an acutely fatal meningitis or an acute disease from which recovery takes place rapidly. The animals which survive inoculation are usually well of the disease in three or four days. In rare instances the animal lingers a victim of the disease for a longer period than this to succumb in the end. Monkeys which survive the second day after inoculation tend rather to recover than to die. By following in inoculated animals the changes in the spinal canal by means of lumbar puncture, the progress of the infection can be traced and the final result often predicted. There is much similarity between the changes occurring in the spinal canal of monkeys and those in the peritoneum of guinea-pigs. The most striking difference is the greater degree of phagocytosis that takes place in the spinal canal, although the cocci are not all removed in this manner and the same difference in resistance to destruction, depending on virulence, is found in both animals.

Disappearance of cocci early from the spinal canal is a good sign; early emigration of leucocytes is also a good sign; early emigration, active phagocytosis and dissolution of the cocci, both within and without the leucocytes, are very favorable signs. And just as in the guinea-pig death may take place in spite of the entire disappearance of cocci from the peritoneum, the monkey may succumb, although cocci cannot be found either in smears or obtained in cultures from the inflamed membranes.

By following in this manner the results of inoculation I have been able to keep a small number of monkeys in a state of subinfection for several weeks with the diplococcus. The period of successive inoculating was determined by the puncture and by the physical condition of the monkey. A state of resistance tended to develop, which necessitated the use of increasing amounts of cultures to produce visible effects, and in the end the run-down animal succumbed—usually from an inoculation with an overdose of cocci. In these animals the exudates were thicker and firmer, and covered the base and convex surface of the brain. The ventricles were widely dilated and contained turbid exudate.

Although the pathologic effects produced in these monkeys are comparable to those occurring in the natural disease in man, there is no real correspondence in the relative susceptibility to *Diplococcus intracellularis.* The quantity of an active culture required to cause marked symptoms or bring about death from meningitis in monkeys is prodigious if compared with what probably happens in the human infection. Moreover, the amount of multiplication of the cocci in monkeys is, under the most favorable conditions, small, and I am disposed to think that in many of the experiments no multiplication whatever took place. In the case of abscess formation I believe multiplication of the cocci to occur. Experiments are in progress to determine to what extent the symptoms and lesions of meningitis can be produced by means of the soluble poison yielded by the cocci.

The inflammation of the meninges extends in monkeys into the membranes covering the olfactory lobes, and, as I have made out by means of smear preparations, into the ethmoid cells and into the nose. The nasal mucous membrane is found, in some instances, to be inflamed and beset with small hemorrhages. Smear preparations have shown me polymorphonuclear leucocytes, often in large numbers, carrying diplococci, which presented the form, size, staining qualities and degenerations of the cocci occurring in the same cases in the cerebral and spinal meninges. I failed in two attempts to cultivate the cocci from the nose, owing possibly to the extraneous bacteria present. On account of the bearing which the passage of the diplococci from the meninges into the nose would have on the epidemiology of meningitis, it is intended to repeat the effort at cultivation of the cocci from the nasal passages.

Notwithstanding theoretical discouragements, an investigation of the influence of antisera on the experimental infections with the diplococcus was undertaken. I assumed that the main pathologic phenomena played themselves out in the localities in which the cocci were injected, and hence as the sera could be brought directly into relation with the foci of infection, possibly a benign effect might be excreted.[2] I was influenced, too, by the consideration that in man the chief organic lesions of epidemic meningitis are present in the meninges, and appear only later, possibly, in the brain and cord, and in many cases the bacterial development is not very great. There was another consideration to be taken into account, for if the experimental disease in the monkey could be arrested by the injection of antisera into the spinal canal, and it proved that no ill effects followed the injections, the advisability of making similar injections might be thought of, possibly, even in human beings suffering from cerebrospinal meningitis.

The experiments with antisera, the results of which will be briefly given, were more satisfactory than I had expected they would be. They do not, however, represent conclusions, but merely the beginnings of an investigation into this important and difficult field of study.

The antisera were prepared in rabbits, goats and large monkeys. The rabbits were injected with single strains, the goats with many strains of cocci. The monkeys were injected with cocci and exudates (aggressin) from the peritoneal cavity of guinea-pigs. The rabbits proved poor animals for the work, as they developed hypersensibility to the injections, from which many died. They had the further disadvantage of yielding small quantities of serum. The goat proved a satisfactory animal to immunize, since it bore the injections well and developed an agglutinating serum in a relatively short time. The early experiments showed that rabbit serum was very poisonous for guinea-pigs when injected into the peritoneum in doses above 0.5 c.c. The first tests of the protective powers of the goat's serum were made with the serum obtained at the bleeding on Nov. 18, 1905. The guinea-pigs were of 250 gm. weight. Serum injections were made (1) twenty-four hours before the cocci were injected, and (2) simultaneously with the injection of the cocci. The pigs receiving the serum survived; the control pigs died. The quantity of goat's serum used was 1 c.c., and the injections were made intraperitoneally or subcutaneously; the cocci were injected into the peritoneal cavity. The next test of the serum was made three days later. The serum was given again subcutaneously and intraperitoneally, and, besides the ordinary controls, a set in which bouillon was injected was also employed. The cocci were injected thirty hours after the serum and bouillon. The control pigs, including those given bouillon, died during the night. The pig given 0.1 c.c. of the serum into the tissues of the back died in about the same time. The pigs which received 0.1 c.c. of serum intraperitoneally and 1 c.c. subcutaneously survived. The next experiment to be reported was made Feb. 26, 1906, with the serum of a rabbit injected with the diplococci and guinea-pigs' aggressin. The control pigs died in from fourteen to seventeen hours. The antiserum was given simultaneously with the cocci, and the pigs receiving 0.1 c.c. intraperitoneally and 0.5 c.c. subcutaneously survived, while those given 0.5 c.c. intraperitoneally and 0.1 c.c. subcutaneously survived longer than the controls, but finally died. Thus it is seen that by preceding the injection of cocci with a prophylactic dose of serum, or by injecting serum and cocci simultaneously, the lives of the guinea-pigs can be saved. Dosage of rabbit serum is important. Too little serum fails to protect, and too much serum, at least in case of rabbit serum, prejudices the result by reason of its own toxicity. Therapeutic tests were made with antiserum from the rabbit, with the result that some pigs were saved with a dose of 0.5 c.c. one hour after infection. When this dose was exceeded the serum poisoning accelerated the fatal action of the cocci. After several months' additional injection of the goat its serum was again tested. The bleeding of March 14, 1906, was used in the subsequent experiments. This goat's serum was found to be certainly protective by simultaneous injection in doses of 0.1 c.c. and variably protective in doses of 0.02 to 0.01 c.c. It was also effective as a therapeutic application when given intraperitoneally in a dose of 0.1 c.c. two hours and four hours, respectively, after injection. Infected pigs could not be saved by means of subcutaneous injections of even larger quantities of serum after the lapse of several hours. The difference which the time interval makes is shown by the loss of weight (25 per cent.) suffered by the pig treated four hours after infection.

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[2] It is now known that the diplococcus appears in the circulating blood in epidemic meningitis. It is noteworthy that the diplococcus invades the blood from the spinal canal in inoculated monkeys.

The first test of the goat's serum on the monkey was made on Dec. 2, 1905. Two spider monkeys (South American) were inoculated at 12 o'clock noon with cultures of the diplococcus. At 3 p. m. the same day one was given 2 c.c. of the serum into the spinal canal. Both animals became very sick; the control monkey finally recovered and the treated monkey succumbed during the night. The serum-treated animal became rapidly worse after the serum injection, showing the ill effect of the injection. The lesions found at autopsy were very severe and of a character which was taken to indicate that goat serum can not be injected with impunity into the inflamed spinal canal of the monkey.

Two large monkeys (*Macacus nemestrinus*) were immunized, as stated, for the production of an homologous serum to be tested chiefly on monkeys by intraspinal injection. Injections of diplococci and of exudate (aggressin) from guinea-pigs were made during a period of nine months. The animals were bled June 15, 1906, and the serum tested. A series of five monkeys (*Macacus rhesus*) was treated with the serum, a control animal having been inoculated in each case. These experiments will be given in brief form. The control monkeys for each experiment succumbed. Before giving the protocols of these experiments it should be stated that, with one exception, the same strain of coccus was employed. It was found that of the standard suspension 0.5 c.c. caused death in about fifty hours and 1.0 c.c. in twenty-two hours. For the serum tests the larger dose was used.

Experiment, July 3, 1906: Medium-sized *Macacus rhesus* given at 11 a. m. 1 c.c. emulsion of diplococcus No. 596, together with 1 c.c. of monkey antiserum No. 1. Fluid flowed from the needle before injection. July 4, 9 a. m., monkey appears normal, active, on perch. Lumbar puncture yields several drops of faintly turbid fluid, which shows on cover slips free diplococci and leucocytes in moderate numbers, some of which contain diplococci, staining poorly. Cultures from the fluid negative. July 5, 11 a. m., monkey apparently well. Lumbar puncture gave a small amount of clear fluid, which contained neither leucocytes nor cocci. Cultures negative. July 10, the monkey remains well.

Experiment, July 5, 1906: Medium-sized *Macacus rhesus* given 1 c.c. suspension of culture No. 596 at 11:45 p. m. Fluid flowed from needle before injection. At 2 p. m. the monkey was sick. Lumbar puncture gave a small quantity of rather thick, opaque fluid. One cubic centimeter of immune serum injected rapidly. Immediately at conclusion of injection pressure symptoms of an alarming character developed. The animal was prostrated for two hours, after which it slowly got better. At 6 p. m. it responded to disturbance. At 8 a. m. next day the monkey was up and appeared well. It remained so subsequently. The cover slips from the exudate of the lumbar puncture showed many polymorphonuclear leucocytes and a small number of lymphocytes, many extracellular and a few intracellular diplococci.

Experiment, July 13, 1906: Moderately large *Macacus rhesus* given at 11:15 a. m. 1 c.c. emulsion of coccus No. 596. Although no fluid was obtained, the canal was certainly entered; 4 p. m., animal sick; 5 p. m., depressed, but still sits up. Lumbar puncture gave a small quantity of turbid fluid, but during the operation the animal collapsed; 1 c.c. of serum injected slowly. The monkey was watched until 10 p. m.; no progress of the disease. July 14, 10 a. m., animal appeared well. No future symptoms developed. The fluid obtained by lumbar puncture showed many leucocytes with an occasional intracellular coccus, and extracellular cocci.

Experiment, July 27. 1906: At 8:45 a. m. a medium-sized *Macacus rhesus* was given one full agar slant culture No. 610, eighteen hours old, suspended in salt solution, into spinal canal. Fluid obtained before injection. At 11 a. m. 5 c.c. of antiserum from monkey No. 2 was injected into the skin of the thigh. Before the serum injection the animal was sick; it lay half down on the bottom of the cage. No immediate effect followed from the injection, but the symptoms did not progress. The next day the animal appeared well. Lumbar puncture was unsuccessful after the injection until the next day, at which time clear fluid, containing neither cocci nor leucocytes, was obtained. The control for this monkey was a much smaller and weaker monkey of the same species, which succumbed in eight hours.

I do not regard this experiment as entirely free from doubt, but as I was unable to obtain more monkeys at this time the experiment could not be repeated.

This series of experiments was, up to this point, successful. But I must record a failure under conditions which, in view of the foregoing successful tests, was wholly unexpected:

Experiment, July 20, 1906: Medium-sized *Macacus rhesus* given at 12 m. 1 c.c. of emulsion of coccus No. 596; 3 p. m., 1 c.c. of antiserum injected intraspinally. This monkey was sick when given the serum and the symptoms progressed fairly rapidly. At 11 p. m. the animal was much prostrated and sat in the cage with head depressed. It died about 7 a. m., July 21. The autopsy showed a very unusual amount of exudation in the membranes of the cord. Cover-slip preparations showed a purulent exudate with large numbers of cocci, all of which were within polymorphonuclear leucocytes. The exudate in the meninges of the brain and cord showed the same condition of complete phagocytosis, although the number of leucocytes and cocci was smaller. The fluid withdrawn by lumbar puncture before the serum injection contained large numbers of diplococci and very few leucocytes; an occasional leucocyte contained diplococci. Cultures from the meninges of the cord, medulla and cortex and from the lateral ventricle were positive; those from the heart and bone marrow of the femur were negative.

In describing the characteristic lesions in the guinea-pigs the occurrence of hemorrhages in the mesentery, diaphragm and adrenals were noted. It was found that the antiserum prevented the appearance of these lesions, even when they failed to save the inoculated pigs. The immune serum from the monkey was effective in the guinea-pig, although this serum possesses apparently greater native toxicity for guinea-pigs than goat serum.

The experiments here briefly described have, possibly, some value in aiding us to understand better the manner in which *Diplococcus intracellularis* brings about its peculiar effects in human beings. They would also seem to show that the diplococcus is an organism possessing highly interesting and very peculiar biologic properties. The special experiments dealing with the prophylactic and therapeutic properties of antisera prepared from the diplococcus are sufficiently encouraging to be more widely and closely studied. In how far the results obtained on guinea-pigs and monkeys can be applied to the prevention and treatment of cerebrospinal meningitis in man it is not safe to predict. Should further experiments show that subcutaneous or intravenous injection of antisera can modify favorably the experimental disease in monkeys, the case would be not without hope. I do not think that the injection into the spinal canal of man of alien sera should be undertaken until their physiologic action has been worked out in more detail in monkeys. Were it practicable to employ monkeys for producing the antisera to be used in man, the danger of serum intoxication might be lessened, while the good effects of the immunity principles were retained. It is my intention to continue the studies already begun along these lines.

TUMORS OF THE CAROTID GLAND.

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(Concluded from page 479.)

PATHOLOGIC PART BY DR. FUNKE.

A knowledge of the normal gland would facilitate the study of the tumors arising from the carotid gland, but the lack of this information has led to the existing confusion with regard to the classification of the neoplasms. Then, too, the obscure embryology adds to the confusion.

EMBRYOLOGY.

In 1881 Stieda[23] attempted to enlighten us on this question. He found a triangular cell collection connected by means of a fine fibrous strand with the mouth epithelium on the one hand and with the thymus gland on the other. In embryos of 36 mm. the cell collection was round and no longer connected with the structures just named. The cell collection, he holds, gives rise to the carotid gland. In sheep embryos of 10 and 11 mm. the gland is first seen as a thickening of the posterior portion of the horizontal branch of the branchial cleft, from the superior part of which the thymus develops. Like Stieda, Rabl (cited by Paltauf[2]) holds this organ to be epithelial in origin. He found in mammifera and in birds that the endoderm of the third branchial cleft furnished the ventral diverticulum for the thymus and a dorsal bud for the intercarotid gland. Pierre de Meuron,[24] holding that the carotid gland develops from the third branchial cleft, found it in sheep near the bifurcation of the carotid artery, but in embryos of 18 mm. it was not separated from the thymus. Born[25] is inclined to believe that the structure described as the carotid gland by these authors separates from the parent body and develops into the accessory thyroids. Contrary to the views of the authors who hold the organ is of epithelial origin, Fischelis[26] maintains that the carotid gland develops from the tissues lying between the approximating ectodermal and endodermal layers, but it does not develop from epithelial structures. Katschenko,[27] who, perhaps, has done, if not the most recent, the most thorough work in this direction, takes the ground that the carotid gland arises from a slightly thickened portion of the adventitia of the internal carotid artery near the bifurcation of the common carotid, and that the first evidence of the structure is seen in embryos of 14 and 15 mm. as an ellipsoidal body composed of loosely woven, richly cellular connective tissue. In embryos of 30 mm. he found the portion of the gland nearest to the bifurcation thickened, while that part farthest from this point was thinner; in still older embryos the gland was found nearer the bifurcation. The structure described by Stieda, Rabl and Pierre de Meuron, according to Katschenko, was the upper part of the thymus anlage—the *nodulus thymicus*. Paltauf's[2] investigations lead him to conclusions similar to those of Katschenko; in embryos of 4.5 cm. (Fig. 22[*]) Paltauf found the organ at the posterior part of the common carotid at the bifurcation. The pictures Paltauf found during his investigations of the carotid gland of rabbits, cats, calves and human beings were so nearly uniform that, according to his views, the anlage is connective tissue rather than epithelial. In snakes Van Bemmelen (cited by Priceteau[28]) found that the organ develops from the endoderm of the third branchial cleft. Prennant (cited by Priceteau) comes to similar conclusions, while Priceteau[28] himself maintains that the carotid gland develops from the third branchial arch and arises from the structure, which gives origin to the common carotid artery. Borst[29] tells us that the organ is derived from the mesenchyme, while v. Heinleth holds that it arises from a cellular thickening of the posterior and outer periphery of the primitive carotid. Differing, but not widely, from some of the opinions given, are the views of Kohn,[30] whose investigations led him to view the origin of the organ as distinctly nervous, maintaining that it developed from the embryonal ganglion cells of the intercarotidal plexus, a view long entertained by Luschka.[31] In embryos of 4 months Marchand found the gland surrounded by loosely woven connective tissue, in which were many blood vessels and nerves.

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[23] Stieda: "Untersuchungen ueber der Glandula, Thymus, Thyroidea u. Carotica," Leipzig, 1881.

[24] Pierre de Meuron: Dissert., Geneva, 1886, p. 107.
[25] Born: Arch. f. micro. Anat., vol. xxii, 271.
[26] Fischelis: Archiv. f. micro. Anat., 1885, vol. xxv. p. 405.
[27] Katschenko: Archiv. f. microskop. Anat., vol. xxx.
[28] Priceteau: Jour. de Med. de Bordeaux, 1899.
[29] Borst: "Die Lehre von dem Geschwuelste."
[30] Kohn: Archiv. f. micro. Anat., 1900, vol. lvi.

[*] The twenty-four illustrations, including three views in colors, appeared in the first portion of the article published last week, August 18.

While many views have been expressed with regard to the development of this organ, the trend of opinion of the recent writers looks more favorably on the researches of Katschenko and Paltauf, and tumors arising from the gland are being classified according to the views of these authors, although the grouping would be more satisfactory if the embryology were definitely known.

HISTOLOGY.

The controversial views of the architecture of the normal carotid gland entertained by Luschka[31] and J. Arnold[32] are interesting from an historical point of view and illustrate how both the contending parties may be right in a certain measure. In my first paper[3] I took the ground that the gland was not constantly present; in my recent investigations I have been more successful in finding the organ. The size of the gland varies slightly, according to different authors. Mönckeberg[11] gives its length as varying from 5 to 7 mm., its breadth from 2.5 to 4 mm., its thickness 1.5 cm. Reclus and Chevassu[18] say that it is 7 mm. long. At times it is found on the posterior aspect of the common carotid just below the bifurcation, but most frequently on the inner and posterior side of the internal carotid at the origin of the vessel, where it is attached to the artery by means of a thin strand of fibrous tissue containing its blood vessel, which in embryos of 4 cm. Paltauf found arising from the external carotid. In my recent work I found it lying on the external carotid in the bifurcation.

According to Marchand[1] and Schaper[33] there exists a hilus-like structure where the artery enters the gland. The organ has a distinct capsule, which, according to nearly all authors, contains both types of nerve fibers. The capsule sends forth prolongations that enter the underlying structure and divide the organ into lobules, which are again divided by delicate strands of fibrous tissue or capillaries, or both, inclosing the so-called *Zellballen* (Figs. 23 and 24) of the German writers; each lobule receives a branch from the main artery, so that the number of lobules constituting the gland corresponds to the number of branches the main artery possesses. In the lobules the branches form capillaries, producing a structure which, according to Schaper, conforms to the architecture of the gland described by J. Arnold. This writer, who maintained that the essential part of the organ consisted of the glomeruli which are formed of a capillary network, is supported in his contention by Pfoertner,[34] Eberth[35] and Frey.[36] Paltauf, on the other hand, does not hold the organ as a typical glomerulus-like structure, but maintains that in addition to the glomeruli there are large cells lying in close association with the blood vessels and at times lining spaces.

It is very interesting to note that in this controversy between Luschka and Arnold with regard to the structure of the organ, each side had some grounds on which to base its argument, and it is also interesting to note that while most authors now regard the carotid gland as largely a vascular structure and that the cells of the organ are in some way intimately related to the capillaries, recent experiments indicate the correctness of the view expressed by Luschka that the carotid gland is analogous to the coccygeal, the suprarenal glands and to the hypophysis cerebri. Because of the organ's close proximity to the cervical ganglia and because of the presence of many nerve fibers in the gland Luschka regarded it as a nervous structure. Paltauf suggests that later we may recognize a close relationship between the nervous system and the gland.

It must be admitted that the arrangement of the cells of the carotid struck Luschka as being like that of an epithelial gland and that he did not recognize the irregularly arranged and irregularly distributed chromaffine cells, the elements on which the secretory properties of the organ depend. The vessels of the carotid gland, that is, the branches of the main artery, are of considerable size; occasionally they are small and contain but few red blood cells or granular detritus.

Marchand states that the structure of the gland is difficult to determine, but that it is composed of two essential elements, namely, blood vessels and cells. The cells are large, polyhedral, round or oval; the protoplasm is granular and stains faintly. Mönckeberg speaks of protoplasmic prolongations which are occasionally found. The nuclei of the cells are circular or oval and, like the protoplasm, react poorly to the stains. Although the arrangement simulates gland structure, the phenomenon is too inconstant to ascribe to the cells a definite arrangement, but in nearly all instances they are intimately related to the blood vessels; in fact, so intimate is this relation that Marchand is strongly inclined, even in the adult gland, to regard the cells as derivatives of the capillaries. Marchand, and recently Mönckeberg, have pointed out that the capillaries sometimes appear to penetrate the cells, a phenomenon frequently observed in my studies of the normal gland. Paltauf holds that the fibrous reticulum is in no way related to the cells, except to act as a sustaining frame. He notes that the reticulum is not developed to the same extent at all points; occasionally it is so inconspicuous and the nuclei of the cells are so prominent that it is difficult to determine whether these nuclei belong to cells poor in protoplasm or whether they belong to giant cells. Schaper, on the other hand, did not find the reticulum described by Paltauf, whose findings Schaper regards as postmortem changes. According to the last-named author the trabeculæ arising from the capsule divide the organ into secondary nodules, the fibrous tissue around which penetrate them and surround the *Zellballen,* the elements of which, Schaper holds, are not identical with the cells lining the blood vessels, thus controverting Marchand's view. Schaper bases his opinion on the fact that the endothelial cells of the capillaries are never absent. The typical relation of the cells to the capillaries occurs at those points where the cells in a single layer form partially closed spaces, the relatively small lumina of which may contain one, two or even three capillaries.

Among the cells of the lobules and in the stroma are a different type of cellular elements, to which Stilling[37] applied the term "chromophile" and which have recently been described by Kohn, who termed them "chromaffine" cells because of their affinity for the chrome salts. The recent work of Mulon[38] attributes to these cells an important functional significance. Similar or, perhaps, identical cells have been found in the suprarenal glands as early as 1865 by Henle.[39] These cells have been found in the coccygeal gland, the hypophysis cerebri and in the abdominal sympathetic ganglia. Mulon made extracts from the carotid glands of horses and injected this substance into the veins of rabbits, where it invariably produced a rise in the arterial pressure and sometimes produced an acceleration of the beat and force of the heart. Mulon concludes that the chromaffine cells secrete a substance which, when introduced into animals, acts like adrenalin in raising the arterial pressure. The structures containing these cells he terms "chromaffine organs," and holds that they present some connection with the sympathetic system. If these experiments are corroborated the organ will necessarily have to be termed a gland instead of a body.

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[31] Luschka: Archiv. f. Anat. u. Physiol., 1862, p. 406.
[32] Arnold: Archiv f. path. Anat., 1865, vol. xxxiii, p. 194.
[33] Schaper: Archiv. f. micro. Anat., 1892, vol. xl.
[34] Pfoertner: Henle's u. Pfeffer's Zeitft., vol. xxxiv.
[35] Eberth: Strickler's Gewebelehre, p. 213.
[36] Frey: Handb. d. Hist. u. Histochemie, p. 482.
[37] Stilling: Revue de Med., 1891.
[38] Mulon: Archives Gén. de Méd., 1904, p. 3265.

TUMORS OF THE CAROTID GLAND.

The tumors, Marchand maintains, arise as a result of the proliferation of the cells of the gland. The growths are either lobular or lobulated; sometimes they are the shape of a small kidney. Lobulation is not infrequent, because of the location of the neoplasms, which during their development grow on either side of both the internal and the external carotid arteries; then, too, the broad septa which penetrate the tumors draw in the capsule at various points and thus produce the lobulated condition. If the tumors remain globular they may push upward as they develop, increasing the angle of the carotids and finally lie on the vessels. This fact was noted by Reclus and Chevassu. Gilford and Davis noted that, while their tumors were adherent to the carotid vessels, they rested on these structures. Marchand says they rest on the carotid arteries as the thyroid rests on the trachea, but the tumors in addition encircle the vessels.

The consistency of all the reported growths is not uniform. Paltauf's first case presented a firm tumor and his second was less firm, but not soft. Kopfstein speaks of a firm growth; the three reported by Gilford and Davis were hard, and the first tumor which Mönckeberg reports was firm; Scudder's and Kretschmann's tumors possessed a similar consistency. The greater number of the reported cases were soft; indeed, some authors speak of a brain-like consistency. Case 22 of the reported series was elastic and soft, and Cases 26 and 27 were softer. The consistency depends largely on the amount of fibrous tissue present and also on the degree of the blood-vessel distension.

The color varies from a reddish-gray to a gray or a brown. Few authors report the gray color seen by Gilford and Davis. Kopfstein and von Heinleth state that the color of the tumor simulates the tinge of a parenchymatous goiter. Reclus maintains that the color ranges from a brownish-violet to a pure violet.

Encapsulation is present in all cases, and although the capsule is most frequently adherent to the surrounding structure it is occasionally free. If the carotid arteries are not embedded in the tumor there are, as a rule, two grooves, either on the anterior or on the lateral surface of the growths. This is due to the fact that as the neoplasms develop there is a tendency to grow posterior to the carotid vessels. The capsule gives rise to many bands that can be identified macroscopically and which penetrate the underlying structure, where they gradually become lost. Occasionally the cut surfaces of the tumors contain large masses of fibrous tissue at some points, usually near the center of the growths.

The blood vessels are a conspicuous feature of the tumors. They are found in the capsule and in all parts of the growths. So abundant are these structures that the cut surfaces of the neoplasms appear sponge-like.

While these tumors often differ in their minute structure, the histology, in a general way, is identical in nearly all the reported cases. The capsule is always described as containing arteries and veins in considerable numbers. Nerve fibers of both the medullated and the nonmedullated types are found by all writers, but I must confess that I have not succeeded in demonstrating these structures in any of the tumors I have had occasion to examine. The fibrous septa mentioned in the gross description as arising from the capsule are more abundant in some tumors than in others; Case 22 was particularly rich in this respect. These penetrating bands, which contain small and large blood vessels, take part in the production of the alveolar architecture, which is a characteristic feature of these growths. Paltauf and Kopfstein speak of the hyalin degeneration these septa suffer. This change was more marked in Case 22 than in Cases 26 and 27. Von Heinleth holds that this change is incident to alterations in the capillaries; the cells lining these structures by overproduction cause occlusion of the lumina of the vessels and thus give rise to hyalin degeneration of the neighboring tissue, as well as the capillaries themselves.

The blood vessels alone, in a large number of cases, form the walls of the alveoli, but occasionally the capillaries are supported by thin fibrous strands, constituents of the fibrous septa. In Case 22 the walls of the alveoli were uniform in thickness and rarely did the capillaries alone form the alveolar walls; in Cases 26 and 27 they were less uniform in thickness and not infrequently, in fact most frequently, they were formed by the capillaries alone or by a single layer of endothelium. Many of the walls were difficult to determine. It is not a rare occurrence to find large vessels from which smaller ones arise and anastomose with other capillaries, forming in that way the walls of the alveoli. The capillaries vary with regard to their structure; occasionally the walls are composed of a single layer, occasionally there appear to be two layers of endothelial cells; in others the endothelial lining is supported by thin fibrous strands.

The size of the alveoli varies. In Case 22 they were fairly uniform, ranging from 0.05 to 0.1 mm. in diameter, while in Case 27, or the tumor reported in this paper, they varied considerably; some possessed a diameter of 0.4 mm. The shape, like the size, varies; in Cases 22 and 26 they were all either circular or oval; in Case 27 the one diameter exceeded the other four and five times, the contained cells forming long strings, like those constantly seen in endotheliomata.

The spaces or alveoli invariably contain tumor cells, which are, as a rule, large and polyhedral in shape, although this varies according to the amount of pressure exerted, and, since the cells possess no limiting membrane, but little force is necessary to influence the shape. Oberndorfer tells us that in his tumor the cells were small but the protoplasm comparatively large. Mönckeberg speaks of the relatively long protoplasmic prolongations as being present among the polyhedral, spindle- and triangular-shaped cells of the alveoli. Paltauf refers to the protoplasmic processes, which, he says, are found among the cells at the peripheries of the *Zellballen* and which protrude into the walls of the capillaries; this phenomenon suggests very strongly to Paltauf that the cells of the spaces are derivatives of the capillaries forming the walls of these structures. Because of the absence of the limiting membrane, the granules of the protoplasm are not closely set and consequently, in a large majority of instances, this substance is transparent. In Case 27 I found vacuolation a few times. In Cases 22 and 26 the cells showed no such condition. Mönckeberg found glycogen in the tumor cells examined in the fresh state, and maintains that the vacuolation found in these structures by other authors is due to glycogenic infiltration. The demonstration of this substance further illustrates the resemblance of the carotid gland to the suprarenal glands. Perhaps further studies instituted by Mulon will bring to light still other similar features in these two organs, so widely separated topographically.

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[39] Henle: Zeitft. f. rationalle Med., 1865.

Oberndorfer speaks of a foam-like appearance of the protoplasm of these cells, which he believes to be due to the presence of fat globules or glycogen, but because his specimens were not examined in the fresh state it could not be determined which of the two substances was present. The number of cells in each alveolus varies in different tumors and also in the same growth. In Cases 26 and 27 the spaces were so well filled that it was extremely difficult to identify the boundaries of the alveoli in many parts of the tumor. Marchand in his paper called attention to this feature.

The nuclei of the cells are, as a rule, large; of course, they vary and sometimes they are small in comparison to the size of the protoplasm; some are circular, others are spindle-shaped, but the greatest number are oval; all are vesicular. The nuclei can be studied to a greater advantage owing to the fact that they are so readily outlined. The nuclear membrane is always conspicuous; the amount of chromatin varies in the same growth and in different growths. The chromatin in the nuclei of the tumor cells in Cases 22 and 27 was very much less than in Case 26, in which the staining of these structures was intense compared with the other cases named. In Cases 22 and 27 the centers of the nuclei were very often occupied by a hyalin substance, now and then traversed by a delicate chromatin-containing strand. It is not an uncommon thing to find among the *Zellballen* red-blood cells; in fact, nearly all writers on the subject speak of their presence. Mönckeberg found alveoli where the tumor cells had been almost entirely replaced by the blood. In addition to the blood cells Paltauf found fibrin. Red blood cells were present in greater abundance in Case 27 than in Cases 10, 22 and 26. Marchand notes that in his tumor the cells were placed so loosely in the alveoli that the dislodgement was readily accomplished. Leithoff calls attention to the fact that in the tumor of which he writes the alveoli contained many cells, the protoplasm of which was scanty, but the nuclei were prominent and rich in chromatin. He states that they bear a striking resemblance to sarcoma cells.

Occasionally the tumor elements, instead of being inclosed by the delicate fibrous tissue strands or the capillaries, are disposed around cross-sectioned vessels, there being no definitely formed alveoli. Here occasionally one finds tumor cells placed at right angles to the blood vessels. Leithoff[40] maintains that such an arrangement is a frequent occurrence, while Mönckeberg holds these pictures as coincidents rather than as specific arrangements. Now and then one finds tumor cells, as pointed out by Oberndorfer, arranged around small spaces forming structures like acini. Paltauf referred to these pictures as spaces in the *Zellballen*. Marchand observed certain cells which he maintains resembles syncytium and regards them as probably the result of confluence of several tumor cells. Oberndorfer speaks of similar structures. Mönckeberg and also Gilford and Davis found elements containing nuclei; they look on them as giant cells; similar structures were found in Case 26.

The source of the tumor cells is still an unsettled question. Von Heinleth declares that the tumor elements not only lie on the capillaries, but are derivatives of those structures. Marchand is of the same opinion. There are points in the sections that appear to me to indicate that the cells must be derivatives either from the endothelium or, what is more probable, from the cells around the capillaries, which are perhaps identical with the endothelium. There is, of course, no method by which we can determine definitely that the tumor elements are derivatives from either the lining of the capillaries or the cells around these vessels. In Cases 26 and 27 it was no uncommon thing to find capillaries with a single layer of endothelium forming the alveolar walls, to which were partially attached cells jutting into the alveoli and among the contained cells.

Kaufmann and Ruppanner exclude the carotid tumors reported by Gilford and Davis, but Dr. Keen has included them in the series. The ground on which Kaufmann and Ruppanner make the exclusion seems to me insufficient; the only sound point in their argument which can possibly carry weight is the fact that the tumors were found lying on the carotid arteries instead of behind and between them; in the gross description mention was made of the fact that if the tumors remain globular they may push upward, increasing the angle of the carotids, and finally may lie on these structures. In the second case of the Gilford and Davis report the statement is made that the tumor was also between the vessels. While it is the rule to find the tumor extremely vascular, yet in the same case they say that in some areas the tumor was soft and red in color; the prevailing tinge was gray. It must be admitted that the microscopic description is very superficial, yet they speak of the alveolar arrangement of the cells and of the fine capillaries in the walls of these structures; their description of the tumor elements corresponds to the cells found in carotid tumors; they also found red cells among the tumor elements in the alveoli, a constant feature of these neoplasms. Giant cells which they found have been mentioned by several authors.

By some these tumors have been termed angiosarcomata, but most writers have called them peritheliomata. Leithoff,[40] because of the abundance of the small cells in the alveoli, declared the tumor of which he wrote was a perithelial sarcoma. Paltauf maintains that histologically the perithelial cells do not differ from the endothelial, consequently there is no sound basis on which the term perithelioma is placed, yet he maintains that multiplicity of names, when associated with the proper conception, does not constitute a source of confusion. I am inclined to simplicity and would suggest that the tumors be called endothelioma, notwithstanding the fact that I applied the term perithelioma to the tumor in Case 22.

DISCUSSION.

Dr. Joseph D. Bryant, New York, said that he had never met with a case of this kind and had been able to learn of but one, and this only after consulting with the pathologists of his city. It occurred to Dr. Bryant that the interference of the circulation referable to the brain would be an important matter to consider and, therefore, he consulted the classic essay of Dr. Wyeth, published some years ago, bearing on the surgery of the carotid artery, and found that he had collected 789 cases of lig-

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40. Leithoff: Dissert., Wurzburg, 1904.

ature of the common carotid, 95 or 12 per cent. of which caused more or less disturbance of the cerebral circulation. From this 95, he selected 62 cases and arranged them according to age and sex.

Of these 62 cases under 25 years of age there were 21 cases in which cerebral disturbances ensued, following ligature of the common carotid; 7 females and 14 males. Of the 7 females, four recovered and three died. Of the 14 males, three recovered and eleven died. Twenty-eight cases were noted between 25 and 50 years of age, 6 females and 22 males. Of the 6 females, one recovered and five died; of the 22 males, 6 recovered and 16 died. From fifty years and upward there were thirteen cases, eight males and five females. Of the eight males, two recovered and six died. Of the females, all died. These cases are interesting, because they illustrate very forcibly the effect of ligature of the common carotid arteries, but this list can be regarded only as suggestive, since many of the cases were of greater significance in other respects than ligature of the vessels for carotid tumors. The latest general statement regarding deaths in ligature of the common carotid shows that of 834 patients, 327 died; of the total number (834), 789 were ligatured before asepsis, 323 of whom died. Of the remaining 45 ligatured under asepsis, but 4 died, showing at once the great importance of modern methods.

PARAFFIN PLATES AS AN AID IN OPERATIONS FOR EXTENSIVE SYMBLEPHARON

AND FOR THE RESTORATION OF CUL-DE-SACS FOR PROTHESIS.*

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Symblepharon of severe degree, because of extensive destruction of the conjunctiva, has long been a *bête noir* for the ophthalmic surgeon. I do not intend to consider in this paper those simpler cases in which there is a limited destruction of the conjunctiva and slight band-like adhesions between the eyelid and the ball, for these can easily be relieved by the exercise of some ingenuity on the part of the surgeon and the transplantation of flaps of conjunctiva by one of the many methods that have been devised by different operators. I propose, however, to consider those severe cases in which, from injury, burn or ulceration, there has been extensive destruction of the conjunctiva, and a great part or the whole of one or both lids has become firmly adherent to the eyeball.

My subject also includes those more difficult cases of atrophy of the conjunctiva, sometimes almost total, resulting from ulceration, burn, cicatricial growth in the orbit from cellulitis after an imperfect operation of enucleation, in which an artificial eye can not be worn and which are brought to the surgeon for prothesis. Such cases of total symblepharon have been a dread to every ophthalmic surgeon, and, as stated by Arlt years ago, are for him a *noli me tangere*.

Knapp[1] stated:

> In spite of the numerous attempts which, during the last twenty-five years, have been made to remedy this unfortunate condition by grafting skin or mucous membrane of all possible localities and in all possible manners on the atrophic surfaces, I have not seen, either in New York or in my travels, a single case that had been more than a temporary improvement, including even the cases in which the object aimed at was only to fit a stump for the prothesis of an artificial eye. All these grafts, if they take root at all, sooner or later ulcerate and slough or shrink to nothing.
>
> The older methods of securing free space by putting between the wounded surfaces foreign bodies, e. g., plates of metal, have been abandoned.
>
> The grafting of small pieces of skin or mucous membrane on wounded surfaces had practically to be given up when tried on the conjunctiva. The unavoidable movements of the eye almost always prevented them from taking root.

I make this rather extensive quotation from such an eminent authority as Dr. Knapp to show that as late as 1898 the application of grafts for the purpose of making an artificial fornix was unsuccessful, and the same was said of transplantation of skin flaps from the lid or cheek.

The reasons for failure are apparent. Thick-skin grafts, such as Wolff grafts, are more likely to slough than the thinner Thiersch grafts. Again, the latter are not likely to grow unless they are perfectly and evenly applied to the wound surface, and this is accomplished with difficulty in the case of a cul-de-sac or fornix that has to be lined unless we use some means that insures perfect and even coaptation. This is not accomplished by the use of sutures placed through the graft and fornix, for these tend to wrinkle it, but such sutures may have a distinct advantage if used according to the method practiced by Weeks,[2] so that they will pass through the firm tissue of the periosteum in their course to the cheek and so anchor the graft firmly and reduce to a minimum contraction of the new fornix.

The ideal operation for symblepharon will be that which will bring about permanent restoration of the fornix and secure mobility of the eyeball, or, if the eyeball is absent, furnish a cul-de-sac deep enough to allow an artificial eye sufficiently large to be worn. This ideal operation must remove any cicatricial tissue that causes thickening and deformity of the lid, or that would by its contraction cause shrinking of the newly made cul-de-sac.

The new cul-de-sac must be lined with epithelium, and for this purpose one would preferably select conjunctiva if that were available, but this is not easy to obtain, although for operations of limited extent the conjunctiva of a rabbit or a dog may be used.

In this particular we can not attain our ideal and are forced to take epithelial structure from some other part. Mucous membrane from the lip may be used, but here again the amount is limited and it is difficult properly to sterilize it and to remove it in thin layers, such as are required. Furthermore, such grafts are more liable to shrink than those taken from skin surfaces.

The lining graft should be thin and membrane-like, and so if mucous membrane is not available Thiersch grafts of suitable size may be used instead. These, as originally pointed out by Hotz,[3] answer almost every requirement, although, naturally, there are some objections to their use. The membrane must be perfectly fitted to line the pocket and must not wrinkle or fold, but must be perfectly coapted; otherwise it will not attach itself and will slough away. The introduction of some mechanical appliance, such as a plate, that will press the graft evenly and firmly into every part of the new cul-de-sac, and will at the same time immobilize the part, so that healing will take place promptly, a plate that can be easily removed if desired and as easily replaced, that will not irritate by its presence; such a method would approach the ideal.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Norris & Oliver: "System of Diseases of the Eye," vol. iii, p. 884.

[2] Weeks: Trans. Sect. on Ophth., A. M. A., 1902. Trans. Tenth Cong. Ophth., Lucerne, 1904.

[3] Hotz: "The Use of Thiersch Skin Grafts as a Substitute for Conjunctiva," Ann. Ophth., April, 1893.

A number of years ago, before the introduction of plates for this purpose, I tried in several cases to hold the graft smoothly in place by pouring melted paraffin into the freshly lined pocket, but the paraffin had to be of such low melting point to avoid injury to the tissues that it was not firm enough to give the needed support. In some simpler cases it seemed to suffice, but it would not meet the requirements in the more difficult ones. I made mention of my experience with this method a number of years ago in a discussion on this subject in this section, but I have since abandoned its use.

Nothing answers so well the purpose of holding the graft in position as some form of plate. In 1898 Morton[4] recommended the use of a prothesis to hold the grafts in place, and a little later May[5] contributed reports of several cases successfully treated by this method. He uses a shell of porcelain or glass, shaped like an artificial eye, on which the Thiersch graft, with its raw surface outward, is placed. This shell is then placed in the newly made cul-de-sac, so that the raw surfaces are brought into contact. Fine sutures unite the edge of the graft with the edge of the wound.

A number of operators have reported satisfactory results in operating for total symblepharon by implanting Thiersch grafts and holding them in place by a glass or porcelain prothesis after the method of Morton and May. Among these are Natanson,[6] Grunert,[7] Gullstrand[8] and Abadie.[9]

Wecks recommends a plate made of "base gutta percha" about 1 mm. thick, such as is used by dentists, which is molded into proper form after dipping it into hot water. The Wolff graft that he uses is secured by loop sutures that pass through the firm periosteum at the orbital margin, and is then held in place by the gutta-percha plate.

Hotz[10] employs a lead plate (Fig. 1) that is shaped to fit the new cul-de-sac. The Thiersch graft is first spread out over the wounded surface and the edges united with fine sutures. After this is accomplished the lead plate is placed in position and stitched to the lid through holes previously drilled through the plate. This holds the graft down into the deepest part of the cul-de-sac.

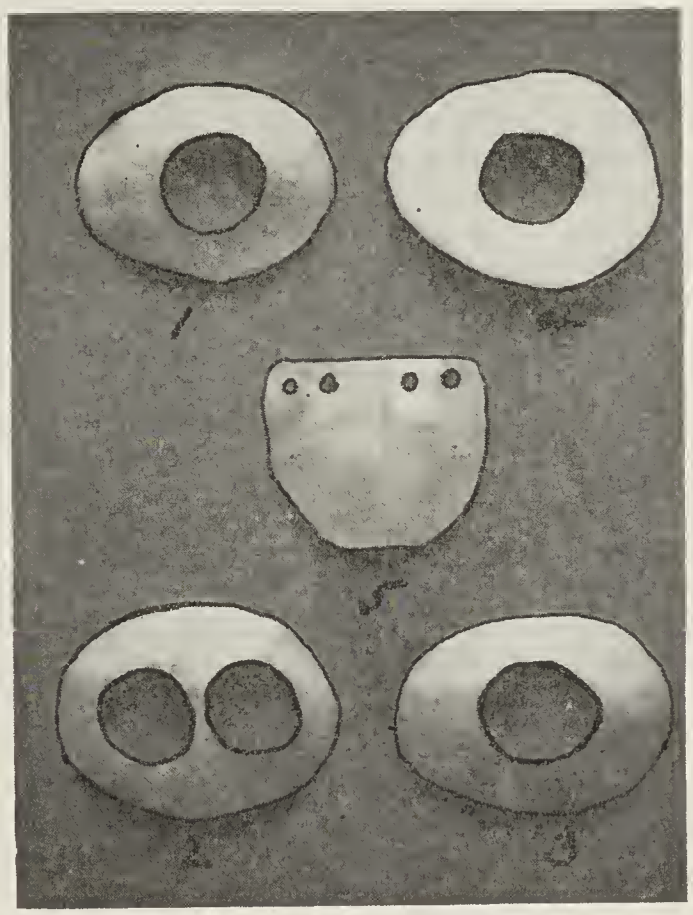
H. W. Woodruff[11] employs much the same method, preferring, however, to make the plate of block tin. He spreads the graft over the edge of the plate, raw side outward, and then inserts it carefully into the new cul-de-sac. He does not attempt to suture the edge of the graft to the conjunctiva (a manifest advantage if it can be dispensed with), but in sewing the plate to the lid he passes the thread through that part of the graft that lies next to the lid. Only one lid is operated on at a time.

I have seen the results of some of Dr. Woodruff's operations and can testify to the value of the method. Indeed, his success prompted me to endeavor to add something to the technic of this difficult work.

The method of operation that I now employ, a modification of the plate or prothesis method, has proved so successful in my hands in a number of difficult cases that I venture to recommend it. Metal plates, preferably of soft sheet lead or block tin that can be easily cut to any size or molded to any shape, are coated with hard paraffin of high enough melting point so that the temperature of the body will not melt it and so expose the metal plate. Such a paraffin plate is perfectly smooth and can do no harm to the cornea.

Through the center of the plate a hole about the size of the cornea has been made, and through this the cornea can be seen and treated if necessary while the plate is in position (Fig. 1).

In operation on cases of obliteration of the conjunctival sac, the eyeball being absent, I use a paraffin plate of a size large enough to fill out both cul-de-sacs, and in the center of this plate have two or three holes, through which the orbit can be easily irrigated while the plate is in position. Furthermore, the band of metal separating these openings furnishes a good handle for the forceps to seize while inserting or removing the plates.



Figs. 1 and 3.—Lead plates prepared for symblepharon operation, the cornea being present.
Fig. 2.—Lead plate used for restoring cul-de-sacs for prothesis. This would be coated with paraffin.
Fig. 4.—Similar plate coated with paraffin.
Fig. 5.—Lead plate to be sewed to the lid in the method of Hotz and Woodruff.

TECHNIC.

The technic of an operation for symblepharon of one or both lids when the eyeball is present and the cornea is intact or partially so would be as follows: In many cases local anesthesia will suffice. In addition to 4 per cent. cocain solution externally, hypodermic or subconjunctival injections of 0.5 per cent. solution are used. In extensive cases or with nervous individuals a general anesthetic would be required.

If the palpebral fissure is shortened, a free canthotomy should first be made, extending to the orbital margin to give a free field for dissection. The lid should then be carefully dissected from the cornea, if it is attached thereto, and this can best be done with a Graefe cataract knife. In the course of the separation of the lid from the eyeball and the preparation of a new cul-de-sac the dissection should be made close to the lid and should proceed until the margin of the orbit is reached, if there is much cicatricial tissue present. Unless the dissection is close to the tarsus the lid is apt to appear too thick; this precaution, therefore, is especially to be observed in restoration of the socket for prothesis.

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[4] Morton: Ophth. Rec., Aug., 1898.
[5] May: Arch. Ophth., vol. xxviii, p. 182, 1899; vol. xxx, p. 474, 1901.
[6] Natanson: Klin. Monats. f. Augenhk., vol. xlii, p. 116.
[7] Grunert: Klin. Monats. f. Augenhk., vol. xliii, p. 298.
[8] Gullstrand: Klin. Monats. f. Augenhlk., vol. xliii, p. 312.
[9] Abadie: Bull. et Mem. de la Soc. Franc. d' Ophth., vol. xx, 1903, p. 241.
[10] Hotz: Klin. Monats. f. Augenhlk., vol. xliii, p. 319, Chicago Med. Rec., 1901; Ann. Ophth., July, 1905.
[11] H. W. Woodruff: Ann. Ophth., March, 1903.

If the margin of the lid has been destroyed, as by a burn, an attempt should be made to restore it by inverting the part dissected from the eyeball, and by loop sutures passed through it, "hemming" it in a position to secure proper continuity of the lid border. This can sometimes be very accurately done, as in a difficult case of symblepharon I recently had in which two-thirds of the lower lid border changed into scar tissue because of a burn with molten iron, had grown to the eyeball, covering the lower half the cornea.

In preparing such a flap for inversion, care should be taken to make it thin enough by dissecting off the cicatricial tissue with knife or scissors.

When the cul-de-sac has been made of the proper depth and the eyeball is free to move in all directions, the operator proceeds to fashion a prosthetic plate. For this purpose pure sheet lead about 0.5 or 1 mm. in thickness is preferred, for it is easily shaped with scissors, knife and file, and is soft enough to mold into any form to suit the individual requirements. The part that is to hold the graft in the new cul-de-sac may be made of more prominent contour to insure a greater depth at this point. As the piece has been properly sterilized, it can be introduced into the wound to be sure that it will fit. A large circular opening for the cornea is then made with knife or drill and its edges made smooth with a round file. After being cleansed and dried, the plate, held by its edge with light forceps, is dipped quickly in melted paraffin, which has previously been sterilized by boiling.

As has been said before, this paraffin should be hard, with a melting point not lower than 130 F. The thin layer that adheres to the metal can be quickly set by dipping it into cold water, and then it can be repeatedly dipped into the paraffin and into the water until it has an even coating of the proper thickness. The vessel containing the melted paraffin should be in a dish of hot water to prevent congelation; otherwise the layer of paraffin deposited will be too thick and uneven. A very short time is required to prepare such a plate.

A thin Thiersch graft should then be cut from the least hairy part of the arm or leg. It is well to have the graft wide enough so that one piece will answer for each lid and there will not be too much overlapping. The razor that is used for cutting the graft should be in the best possible condition and should be flat on one side, like that used for histologic section cutting. A very little vaselin or soft-soap rubbed on the flat surface of the razor prevents it from sticking to the skin and so insures a more even graft as the surgeon cuts it with short sawing motions. An assistant keeps the razor and graft flooded with warm salt solution.

The graft is transferred to the paraffin plate directly from the razor by setting that edge of the plate which is to rest in the new cul-de-sac against the epithelial side of the graft which is uppermost, and then stroking it into place with forceps or spatula, so that both sides of the plate are covered. The graft is very easily handled, as it adheres beautifully to the paraffin surface, and every wrinkle can be smoothed out or the position can be changed as desired. This adhesion of the graft to the paraffin, preventing the curling of the edges, which is so annoying, and making unnecessary the use of any sutures, is one of the advantages of the method.

The plate now covered with the graft, the raw side outward, is inserted into the new fornix, the hemorrhage, of course, having been checked. The graft naturally comes in contact with every irregularity of the raw surface of the cul-de-sac and should be large enough to lap over on the uncut surface. No sutures or trimming are necessary, for the overlapping edges will either be cast off or can be trimmed off later at the time of one of the dressings, and if care has been taken in fitting and coating the plate and applying the graft smoothly to it all raw surfaces will be covered.

If the symblepharon affects but one lid there will be very little danger of dislodgment of the graft when the operator inserts the paraffin plate, if he first presses it into the new cul-de-sac and then draws the sound lid over it. If both lids are involved it would be better to avoid displacing the graft on one side of the plate by securing it with two or three sutures, which can be passed through the edge of the graft and then through the openings in the plate to the edge of the graft on the other side. This can very easily be done, as the graft adheres so well to the paraffin. It is almost needless to say that during the manipulation of the graft on the plate an assistant should keep it warm and moist with saline solution. In this way both lids can be operated on at the same session.

If a canthotomy has been done, the canthus should be brought together with sutures, and then a moist boric-acid dressing of gauze and cotton should be placed over the closed lids and held in place with an appropriate bandage. Both eyes should be bandaged and the patient kept in bed. The dressing may be changed the next day so that the cornea may be inspected and the eye gently irrigated with a warm boric-acid or saline solution.

If the case is one in which the eyeball is present, the plate is carefully removed at the end of forty-eight hours to make sure that the cornea is uninjured and that the paraffin has not been rubbed off the plate. The graft will be attached by this time, but after gentle irrigation the plate should be reinserted and the eyes dressed as before.

In cases of restoration of the cul-de-sacs for prothesis in which the eyeball is absent, the plate may be left in position for six or seven days, if there is no evidence of infection, and the orbit irrigated through the openings in the plate. At the end of this time it should be removed, recoated with paraffin, if necessary, and reinserted. If the plate used in such a case has been very large, to insure deep cul-de-sacs, it may be necessary to cut it in two to remove it easily, but this can be readily done with scissors along a central line corresponding to the long axis of the palpebral fissure. A smaller plate can be reinserted or the old one can be reapplied by hinging it, that is, making holes at either end of each half and tying them together with strong silk thread. In cases in which there has been extensive contraction of the conjunctiva, such plates must be worn continuously for weeks to prevent shrinking of the new cul-de-sac.

I have operated by this method in eight severe cases of symblepharon, two of which were total, and with uniformly good results. Six of these cases had extensive symblepharon of the lower lid, so that the cornea was partly covered by the adhesion and the eyeball could not be moved. The patients wore the paraffin plate over the cornea with perfect safety and comfort until the graft had firmly healed in place and good mobility was secured. In the cases of total symblepharon there was complete obliteration of both cul-de-sacs, in one of them the palpebral fissure being reduced to a mere slit. In each case operation was done on both lids at one session and the results obtained were such that an artificial eye could be worn. Furthermore, the length of time that has elapsed since the operation, two and one-half years in one case and nearly two years in the other, without noticeably more shrinking than occurred in the first three months after the treatment, encourages me to believe that the result is permanent.

CONCLUSIONS.

The advantage of a plate for holding mucous or Thiersch grafts in place in the fornix of the eyelids is obvious. The advantage of the paraffin plate is that it can do no harm to the cornea. It can be built up as required to fit any conjunctival cul-de-sac that has to be lined with a Thiersch graft. The graft adheres to the paraffin, so that it can be evenly smoothed out on it, and thus perfect coaptation is secured between the graft and the raw surface of the cul-de-sac. To accomplish this the graft should be thin and large enough to cover all raw surface, no sutures being required. With perfect coaptation the graft will have secured a firm hold at the end of forty-eight hours and the plate can be removed for cleansing the eye. In the case of restoration of the socket for prothesis, it may be left in place for a considerable time, for the sac can be cleansed by irrigation through the holes in the plate. If it is so large that there is difficulty in removing it, it can be cut in two and the subsequent treatment continued with a plate that can be more easily inserted.

DISCUSSION.

Dr. Charles H. May, New York, has been so well satisfied with the porcelain supports he has been using, that he has never felt tempted to try any substitutes. He uses porcelain shells of greater or lesser thickness, having the shape of artificial eyes; in fact, they are artificial eyes minus the coloring which is added for cosmetic effect—the blood vessels, iris and pupil. He has a supply of various sizes, including some which are shell-shaped and others which are thicker and hollow, corresponding to the so-called Snellen or reform eyes. Porcelain can be easily sterilized; it is smooth and polished and thus will not damage the cornea (in cases in which the cornea is intact); it is available in different sizes, shapes and thicknesses, and it requires no special preparation.

He thought that the circular opening in the plate, advocated by Dr. Wilder, is an advantage in those cases in which the operation is performed for extensive symblepharon and in which the cornea is healthy, since it admits of inspection of this part of the eye without removal of the graft support. Even in those cases in which there is no cornea to protect, the ability to irrigate and cleanse the orbit through the openings in the paraffin-covered plates seems a very desirable improvement in technic, providing the necessary separation of the lids does not disturb the graft sufficiently to interfere with smoothness in the adhering process. With the porcelain supports, since it is injudicious to remove the shell for six days, the orbit can not be cleansed thoroughly, and only such material as escapes to the edges of the lids and dressing can be removed. It is true the orbit does not present so favorable a seat for infection as does a bony cavity surrounded by venous sinuses and meninges; but the possible danger of such a result ought not to be entirely dismissed, and the patient's temperature should be carefully watched. The openings in the support, advocated by Dr. Wilder, lessen this danger, if a more extended resort to this operation should prove that such a risk really exists.

Concerning the technic of the operation, he is in the habit of making the cavity just a little larger than is desired. The formation of a little recess at the external canthus is very important. A prothesis is inserted which makes the palpebral aperture just a little larger than that of the opposite side: the one selected should fit nicely and easily, and should remain in position without any necessity for external aid. During the time that bleeding is being controlled, the prothesis is removed, placed on a piece of rubber tissue and a pattern cut out one-third larger than is sufficient to envelope the artificial eye; this serves as a guide to the size and shape of the graft. He prefers Thiersch grafts, but is not prepared to say that they should always be used. The Wolff graft is thick and occupies a good deal of space, the defect in the integument is a very considerable one, and there is often some tension and sometimes a little difficulty in the approximation of the edges, and always quite a scar. In one case in which he used a Wolff graft, although he selected a region of the skin devoid of all but the very finest hairs, the latter became thicker, coarser and longer in their new situation, and in the course of a few weeks quite a crop of good-sized hairs presented itself in the newly-formed socket; the thick graft is much more easily handled than the Thiersch grafts.

The graft is next wrapped around the prothesis, with the raw surface externally, in such a manner that the junction of the upper and lower margins will fall in the middle of the anterior or convex surface of the support. If, after insertion, the support stays in nicely so that there is no tendency to fall out, and the socket seems comfortably filled so that the lids can be closed readily, he does not insert any stitches either through the bottom of the cul-de-sac, at the edges of the denuded portion of the socket, nor sutures to hold the lids together. The support if sufficiently large and correct in fit, keeps the graft in close apposition with the raw surfaces. The marginal excesses of the graft slough away. A moist dressing is applied, changed after 48 hours, and daily thereafter; but the support is not disturbed until after 6 days.

He agreed with Dr. Wilder that no sutures are necessary. He has used marginal stitches, and has also employed two sutures through the bottom of the cul-de-sac, coming out just above the supraorbital margin, as recommended by Weeks; but the cases treated without both of these forms of stitches have done just as well as those in which he has used them. The main factor in keeping the graft in place and in having it taken evenly and completely is not the stitches, but sufficient size of the cavity created and ample size and correct shape of the support. In those cases in which there is a globe with clear or damaged cornea and the operation is resorted to for the cure of extensive symblepharon, he is in the habit of sewing the graft or grafts in place by marginal sutures, and then inserting the shell-shaped support. Here also, the success or failure of the operation seems to depend on the establishment of sufficient depth of the fornix and the insertion of a support of adequate size.

Dr. Clark W. Hawley, Chicago, has seen the plates used in one or two cases with very satisfactory results. He has never used the Wolff grafts, but has used a large number of Thiersch grafts and has been well satisfied with them. Some operators make them too thick. He has seen two operations for pterygium fail because the grafts were too thick. The grafts can not be made too thin, especially when grafting on the eyeball itself. The suggestion as to infection through the Thiersch grafts he thought was not well taken. He thoroughly cleanses the field from which the graft is taken so that there is very little danger of carrying infection that way. He has never lost even a part of a graft and so has had no thought of such a thing as infection.

Dr. John E. Weeks, New York, pointed out that it is evident that different men with the same purpose in view, and the same material to work on, will obtain different results. In his opinion there are a number of essentials for the success of this operation. One is that the groove must be sufficiently large and deep; in many cases the external canthus must be divided. Another is that the flap must have attachment to the peritoneal

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tissue in order to maintain the depth of the cul-de-sac. Another that the plate must be sufficiently large to carry the graft to the bottom of the groove in case sutures are not employed. Dr. Wilder's plate meets that indication fully. An artificial shield, as made by the men who make artificial eyes, is frequently not large enough and does not carry the graft sufficiently deep. In his opinion a plate which the operator can mold at the time of the operation is preferable, so that a paraffin plate made as Dr. Wilder has made it is a very excellent one. The plate made of gutta percha is also a good one. An advantage in Dr. Wilder's method is that sutures are not necessary. If the Wolff graft is used, sutures are necessary. He has operated on fourteen cases after the method described by him and they have been successful without exception. The earliest case is now seven years old and is all right. A fault with many operations is that tissue fills in from the bottom and the cul-de-sac is obliterated. Another advantage of Dr. Wilder's method is that both lids can be operated on at the same time. That can not safely be done by the method the speaker advocated. One other thing is the prevention of sepsis. The antiseptic precautions should be thorough. If this is well done there is no reason why the operation should not be successful.

Dr. S. D. Risley, Philadelphia, has resorted to many methods and thinks this will probably be an improvement. Sometimes, however, simpler things work very well. His first attempt was with a celluloid plate, softened by placing it in hot water, and a sheet sufficiently large cut out, with three or four openings through it for drainage. Next he used a thin plate prepared in the same way. He used this to hold the graft in place and also as a shell in very young children where it was not possible for years to wear an artificial eye. On one occasion where he was compelled to resort to something on the spur of the moment, he employed sterilized protective, holding it in place by packing in cotton, and he has never had a case do so well as this one.

One of the important parts of the technic is the treatment the graft receives. These cells are very easily destroyed, especially by efforts to render the graft absolutely sterile. Chemicals that are destructive should be avoided. The physiologic salt solution is the one he always uses. He favors the Thiersch graft and always puts it in place from the razor without putting it into any fluid. Placing one end of the graft in contact with the wound, then pulling the razor away, it spreads itself out as though it belonged there. There is no need to fear its being washed away if the surface on which the graft is placed has been prepared carefully. The readiness with which these cut cells adhere to the denuded surface is remarkable.

Dr. C. D. Wescott, Chicago, has seen Dr. Wilder operate by this method and vouched for the simplicity of the method as compared with others. He said that the plate can be made of almost any desired thickness by rapidly dipping it into melted paraffin, and manipulating the paraffin with the fingers as it is cooling. The shape of the Snellen can be closely imitated, if desired. The modeling wax of the dentists may be used instead of paraffin. It is a substance of higher melting point than paraffin.

Dr. William H. Wilder agreed as to the necessity of as perfect antisepsis as can be practiced in this locality, although the tissues here are much more resistant than elsewhere. Grafts will hold in the socket and on the lids that perhaps would not hold elsewhere. The chief advantage urged for this little measure is its adaptability. There is no question about the artificial eye itself furnishing an excellent plate for the graft, but it is essential to have something that can be adapted to the individual case. One of these plates can be made in five minutes and tried to see if it fits the socket. It can be made more prominent at one place than another to suit the individual case. Another advantage is that both lids may be operated on at the same sitting, but the precaution should be taken of making a good wide canthotomy to expose the field to view. Later a canthoplasty can be done.

Diabetic Insomnia.—Hutchinson gives twenty grains of strontium bromid and fifteen grains of antipyrin at night.—*Denver Medical Times.*

THE FETICH OF DISINFECTION.*

C. V. CHAPIN, M.D.
PROVIDENCE, R. I.

Disinfection in this connection refers to that sort which is commonly carried out by health officials after death, or recovery, from contagious diseases. The paper has no reference to that continuous attention to cleanliness—"medical antisepsis" the French call it—which is desirable in the management of contagious cases. This terminal disinfection, if one may so call it, occupies a high place in public sanitation. A reader of works on hygiene would conclude that disinfection is held in equal esteem with isolation, or is perhaps of even more importance, for it is sometimes expected to work wonders in the prevention of disease where there has been no isolation, as, for instance, the official disinfection after a case of tuberculosis when for years there may have been no attempt on the part of the patient to prevent the infection of others.

OFFICIAL DISINFECTION.

Official disinfection costs money and is annoying. Its only excuse is that it is believed to be an important factor in preventing disease. But is it an important factor, and is its practice based on good evidence of its necessity and value? It is to be feared that it is not. We do not disinfect because the utility of the process has been demonstrated, but because of precedent and authority. There can be little doubt that disinfection had its origin at a time when disease was believed to be the work of demons. Burnt sacrifices and fumigations with aromatics were among the means employed to appease the supernatural powers. The early practice of medicine was confined to the priesthood, and the final cleansing of the sick was largely a religious ceremony. This cult of purification by fire and smoke and libations has continued even to modern times. The attempt to give it a scientific basis is an afterthought.

REASONS FOR DISINFECTION.

Several arguments are advanced by the advocates of disinfection in support of the practice. Disinfection is necessary, it is claimed, because the virus of the disease becomes attached to material things such as clothing, books, toys, furniture and the walls and woodwork of rooms. On these things, it is said, it retains its life for weeks and months, and these infected things are, therefore, a very important factor in the extension of the contagious diseases.

That this is so is believed because numerous cases are on record in which infected things are assumed to have caused sickness. Reports are often made of diphtheria due to exposure in a room which had not been disinfected or due to contact with infected books or playthings. The virus of scarlet fever is supposed to be particularly tenacious of life, and we hear of cases due to the bringing out of infected clothing or furs which had been put away months or even years before. While accounts of such cases are often enough found in medical literature, they are, even if true, far from proving that such infected things are a really important factor in maintaining our common contagious diseases. Now, just here, I wish to make myself perfectly clear. I would not, in the present state of our knowledge, for a moment deny that clothing, books and even a room itself may be infected and may remain so for a considerable time, and then give rise to a fresh outbreak of disease. What I do claim is that reports of such modes of infection are rarely well authenticated, and even if it is admitted that such infection occasionally takes place there is no evidence that this is a factor of any moment in the extension of the contagious diseases, while there is a great deal of evidence that it is a factor of no consequence at all.

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

TRANSFERENCE OF DISEASE.

To return to the value of the evidence of the specific instances narrated of the transference of disease by infected clothing, bedding, toys, books, letters, etc., it is well to recall in this connection how firmly was established the theory that yellow fever was often transmitted by fomites. Any one who questioned this was laughed to scorn. The proof of it was felt to be conclusive by almost everybody. To sleep in a bed lately occupied by a yellow-fever patient would have been thought to be suicidal. Now we know that this has been done with impunity, and that clothing, bedding and letters are never carriers of the yellow-fever virus. Perhaps it would be well, then, to question whether or not an infected room really does cause diphtheria in its occupants, or a woolen coat transmit scarlet fever, or toys act as the bearers of measles. In most of the cases of alleged infection by fomites the fact is not proven at all; at best it is a possibility merely, not even a probability, and certainly far from a demonstration. The majority of cases of contagious disease can not be traced to their origin. Because a certain case develops soon after exposure to a supposed infected article is no proof that it was due to such exposure. As will be shown later, direct exposure to infected persons is the probable source of the infection in most cases of contagious disease. Unless this source of the infection can be fairly well excluded, it is merely an assumption to attribute the infection to things. A more critical examination of these cases would eliminate most of their value as evidence. After all, instances of apparent infection by fomites are rare. In my own experience of 22 years as health officer I have met with few of them, even in the earlier years of my practice, when I must confess I looked for them more carefully than I do now, since I have become satisfied of their unimportance. Doubtless all health officers will agree with me as to the rarity of cases in which it appears probable that fomites are the source of infection. Certainly no one could develop by induction, from their frequency, the theory that the contagious diseases extend chiefly in this way. It will not be claimed that the health officer practices disinfection because compelled to it by the frequency with which cases of fomites infection are brought to his notice. It is done for other reasons.

Probably one reason why so much importance is attached to thing infection is the large amount of discussion which is given to the question of the vitality of bacteria outside the body. Everybody has heard that anthrax and tetanus spores live for years, and, though it is generally recognized that most of the common disease germs do not belong to the spore-forming class, this great vitality of these exceptional types has had its psychologic effect. Bacteriologists have been very apt to report instances of maximum vitality of the organisms of pneumonia, diphtheria, plague and the like, but it is generally forgotten that these are the exceptions, and the impression remains that most of the bacteria given off from the sick retain their vitality and virulence for a long time, which is certainly not the fact.

But undoubtedly there is another and chief reason why the belief has become so well established that the virus of disease remains long attached to things, that these fomites are a most important source of infection; and that the contagious diseases can only be successfully combated by terminal disinfection. As was before stated, it has rarely been possible to trace more than a small proportion of cases of contagious disease to direct contact with others. Even in country places cases are constantly appearing without any visible connection with a previous case. In cities it is still more difficult to trace direct exposure to the sick, and so far as can be determined by routine examination the majority of cases of scarlet fever and diphtheria appear to arise spontaneously, or sporadically, as it was formerly called. Even in smallpox, which owing to its marked eruption and comparative rarity is easier to trace than almost any other disease, a large portion of cases appear to have no connection with previous cases. To explain the origin of these cases has been the chief problem of sanitary science. At one time it was believed by many that the virus of most of the contagious diseases could develop outside of the body. Hence the filth theory of disease, which, although now entirely discredited, still has great influence, even among sanitary officials.

THE SPECIFIC VIRUS THEORY.

The hypothesis which next appealed to workers in this field was that the specific virus, though incapable of growing outside of the body, could yet retain its vitality for a considerable time, and, attached to various articles, be carried unnoticed to great distances. It must be admitted that this is a very natural and reasonable hypothesis and is supported by many of the findings of bacteriology, and by certain clinical observations. A dozen years ago it was really the only working theory that we had. Of course, if its probability is admitted, disinfection must necessarily follow. This, I take it, is the true reason why for so many centuries disinfection has played such an important part in preventive medicine. It was the only means for controlling that mode of infection, which appeared to be the principal factor in the maintenance of the contagious diseases.

ORIGIN OF DISINFECTION.

Disinfection had its origin in superstition, and its practice so partakes of the character of magic art that it catches the popular fancy. Even if the health officer does not disinfect, the infected family is quite likely to sprinkle a little sulphur on the stove, or place a saucer of chlorid of lime behind the door. Thus unconsciously do we follow the customs of our remote ancestors who exorcised the demon of disease with incense and incantation. Here we have another explanation of the vogue of disinfection.

SCIENTIFIC ARGUMENT IN FAVOR OF DISINFECTION.

Let us now examine into the principal scientific argument in favor of disinfection, i. e., that infection is spread chiefly by things. As was before stated, this theory was the outcome of the attempt to explain the origin of that vast number of cases of contagious disease which could not otherwise be accounted for. But within the last dozen years a multitude of facts have come to light which renders this theory unnecessary. It has always been recognized that mild and atypical cases of contagious disease are occasionally seen. Scarlet fever without eruption, mild sore throat diphtheritic in nature, and walking cases of typhoid were mentioned by the older writers; but they were not believed to be common, and little account is taken of them in the text-books. To-day the majority of physicians are skeptical about the diagnosis when they see an almost afebrile scarlet fever with slight, fleeting rash, or diphtheria without exudation and the patient not confined to the bed; yet those who have studied these diseases most closely know that the mild, atypical cases are extremely common. Even in smallpox, a disease with more characteristic symptoms than any other, mild, unrecognized cases are very numerous. If one examines the reports of health officers of the past few years, it will be found that the frequency of these mild cases is dwelt on, and to them is attributed the origin and maintenance of most of the local outbreaks. The report on typhoid fever during the Spanish war indicated that mild, unrecognized cases were twice as numerous as the recognized cases. In investigating this disease in a small rural community Koch found scores of cases which the attending physicians failed to recognize, or to which no physician was called. Instance after instance is recorded in which a mild sore throat has been the starting point of an outbreak of diphtheria. In Hartford, of 2,038 apparently benign sore throats found in children at school, 29 per cent. were shown to be true diphtheria. The English, who often isolate as high as 90 per cent. of their recognized scarlet fever cases in hospitals, and nevertheless continue to have as much of this disease as we do, attribute their failure to control the disease to the existence of so many mild, unrecognized cases. In fine, we now know that there is a vast number of atypical, unrecognized cases of contagious disease, sometimes exceeding in number the known cases.

CARRIER CASES.

We have learned that there is still another factor to be reckoned with. It is now well known that the pathogenic bacteria often grow in human beings without producing any symptoms of the disease. After recovery, the specific bacteria may continue to develop for weeks, months, and even years. Not only that, but they are found also in persons who have never been sick at all. These are what the English call "carrier" cases and present no symptoms. They are even more numerous than the mild cases of illness. Such carriers have been found for diphtheria, influenza, cerebrospinal meningitis, typhoid, cholera, the plague, and many other diseases, and the wide distribution of the pneumococcus is known to everybody. In the protozoan diseases, as malaria, trypanosome diseases and Texas cattle-fever, individuals often carry the infection in the blood and show no symptoms. These facts receive scant recognition in most text-books, even those on bacteriology, and are entirely ignored by nearly all writers and lecturers on clinical medicine and sanitation, yet they are of the utmost significance. In these mild cases and living "carriers" we have the real source of contagious disease.

BACTERIOLOGY.

What does bacteriology tell us about this matter? The direct evidence as to the infection of things is scanty. It must be admitted that there has been very little investigation of this question, although it lies at the basis of sanitary theory and practice. Examinations made in Providence, and by Hill, in Boston, show that diphtheria bacilli are rarely found, even on objects most likely to be infected by the patient. Tubercle bacilli are more tenacious of life than most common bacteria, yet search made for them on floor and walls, where they are most likely to be expected, usually fails to reveal them. It is not easy to find pathogenic bacteria outside of the body. While it is true that bacteria, especially certain resistant kinds, like the tubercle and typhoid bacilli, may occasionally live for some months when removed from the body, it is nevertheless true that all non-spore-forming pathogenic bacteria tend to die off, and that quite rapidly, when so removed.

This whole question may be summed up very concisely. Which is the more likely to be the chief factor in the extension of contagious disease: inanimate objects hypothetically infected with dying bacteria, or living and moving human beings who are continuously throwing off living bacteria? It must be admitted that fomites may spread disease; but, if we reflect how unlikely infected things are to be brought in contact with people and how great the chance of human beings coming in contact with each other, it seems very unlikely that fomites can have appreciable effect in the spread of disease.

FUTILITY OF DISINFECTION.

If then, as all evidence tends to show, contagious diseases usually extend by means of pretty direct contact between the infected and non-infected, and transmission by fomites has little influence on such extension, it follows that even the most thorough disinfection will have little effect in checking these diseases. There is certainly no rational basis for making it such an important feature in public health work, and holding it of equal value with isolation.

Another thing to be borne in mind in connection with this subject is that a good deal of disinfection does not disinfect.

Until eight or nine years ago sulphurous anhydrid was the chief disinfectant, and this is now considered to be entirely unreliable. Then formaldehyd came into use and at first most of the disinfection with it did not accomplish more than the sulphur. Even now a great deal of formaldehyd disinfection is inefficient, and at the best only exposed surfaces can be disinfected. As the larger part of the clinical evidence of the value of disinfection dates from a time when the process was very imperfect, the value of that evidence is much impaired.

In Providence we have been making a practical test of the value of disinfection by omitting it entirely in some cases. It seems useless to disinfect an apartment unless we can be fairly sure that its occupants are not propagating the germs of disease. In diphtheria we can have no reasonable assurance of this without getting at least two negative cultures from the nose and throat of every member of the family. To require such cultures is impracticable. Disinfection, however, is refused after diphtheria, unless the above-named reasonable conditions are met, which very rarely happens, or unless it is especially requested after a death. During the last year the warning card has been removed 258 times without disinfection, and there has been a recurrence in the family within two months in four cases, or 1.55 per cent. In 87 instances in which disinfection was practiced during that period or a few months preceding it, there was a recurrence in 2.3 per cent. of the cases. The total number of cases of diphtheria fell, however, from 780 in 1904 to 562 in 1905.

It may be asked: What objection can there be to disinfection even if it is not so important as has been thought? Aside from the question of expense, which is by no means unimportant, there is a decided objection. The confidence which the public has in the efficacy of disinfection is the greatest hindrance to the development of better methods of handling disease and guarding against infection. To practice strict personal cleanliness, not only in the presence of contagious disease but at all times, is the sole mode now known in which the unrecognized cases and the "carrier" cases can be guarded against. The public, and even the medical profession, refuse to believe in infection in well persons, but cling to the old notion that it is things, not persons, that are to be feared. And they will cling to this view so long as health officials lay so much stress on their official disinfection. Many a time a family has lived for months with a consumptive who has taken no precautions about his sputum, and after his death has promptly asked to have the house fumigated. The expiatory sacrifice of disinfection is believed to atone for every sanitary sin. It is our duty to teach that hygienic salvation can only be attained through the good works of personal cleanliness. As the surgeons have given up antisepsis for asepsis, so the health officer must substitute cleanliness for disinfection.

SUMMARY.

As a brief summary of the argument and the conclusions to which it leads, it may be said:

1. The pathogenic bacteria tend to die rapidly after discharge from the body.
2. There is very little bacteriologic evidence that things remain long infected, and, therefore, contact between the non-infected persons and the infected things must be very direct and very close in point of time if the things are to transmit the infection.
3. Clinical evidence of the necessity for disinfection is wanting.
4. The true explanation of the spread of contagion is the great number of unrecognized, atypical and "carrier" cases.
5. Infected persons, not infected things, are to be feared.
6. Disinfection, that is, official disinfection as a final precautionary measure, has little value in preventing the spread of the common contagious diseases.
7. This sort of disinfection is a powerful factor in preventing sanitary progress, by encouraging belief in discredited theories.
8. While it is by no means advisable to abandon disinfection entirely, it should not be made so important a part of public health work, and should not be insisted on unless it is practically certain that no member of the household remains infected, and should be refused when it is probable that any member of the household is so infected.

DISCUSSION.

Dr. Clarence L. Wheaton, Chicago, declared that if we accept the theories advocated by Dr. Chapin, the germ theory must be overthrown. Dr. Wheaton said that it has been demonstrated by bacteriologic examination that the dust on the walls of rooms occupied by tuberculosis patients contains, at times, bacilli; and that it has been possible to make cultures of these germs, proving it absolutely. The same, he believes, is true in cases of diphtheria. Now it would be almost malpractice, he declared, to leave these homes without proper disinfection.

Dr. W. F. Morrison, Spokane, Wash., declared that if Dr. Chapin's ideas of sanitation and disinfection are adopted, we will very soon be followers of Mother Eddy. As a health officer of four or five years' experience, Dr. Morrison said that he has had quite a good deal to do with contagious diseases. He has seen the spread of contagious disease more frequently when disinfection has not been performed than when disinfection after the good old-fashioned method of first cleaning the body, then cleaning the clothes and then disinfecting the house goes hand in hand; and if the clothes are left unwashed, uncleaned and undisinfected, and only the individual is cleaned, the individual may be clean, but the house from which the individual comes (if there is any sense in the germ theory of disease) is still full of living germs; and if one goes into that house and stays long enough and is not immunized he will get the infection. Not everybody gets any infection; thousands of people escape who are immune; thousands of people are immune to everything. Every day of our lives we see the most filthy people escape all forms of disease. Among the indigent in obstetric work physicians see the most abject filth, and yet comparatively little contagion arises from it; and women get up in three or four days and go to work apparently well. In Dr. Morrison's opinion we must not only disinfect the patient with soap and water, but must also disinfect the house from which the patient comes by some approved disinfecting agent. The things must be combined. Dr. Morrison asked if a surgeon who washes his hands with water and makes them as clean as he can, not using approved disinfecting agents, in preparing for a surgical operation would be clean or fit to operate on a patient. If so, the germ theory of disease, he said, is of no value whatever. Providence, he said, has been exceedingly kind to the people of Rhode Island, but Dr. Morrison does not believe the rest of the world can safely follow their example at the present time with the present knowledge.

Dr. S. A. Knopf, New York, declared that there is a happy medium, that we need not go to excess, but we should clean the patient and clean the room. In regard to tuberculosis, he said that he could not accept the idea that the patient is more of a danger to his fellow men in the first stages of the disease. Dr. Knopf thinks that the patient who is up and about, expectorating everywhere, is more of a danger than the one confined to his room, who is only a danger to the few people who are in that room. Dr. Knopf declared that he knows of a number of cases in which the walls have been infected through careless expectoration and in which people who have moved into these rooms without having them previously disinfected have contracted the diseasé. In his investigations of prisons Dr. Knopf has found prisoners who have contracted tuberculosis in cells where other prisoners who had suffered from this disease had remained for a number of years. Simple whitewashing was not enough to do away with the infection. Examination of the dust from the walls showed the presence of the tubercle bacilli. Dr. Knopf said that he is not a specialist in typhoid fever, but he would not wish to have the linen of a typhoid patient put with other linen without previously disinfecting it. Certainly he would never use the handkerchief of a tuberculosis patient, even though the patient had never expectorated in it, but simply wiped his nose and mouth with it. In tuberculosis, Dr. Knopf said, we must not forget the rôle of flies in the transmission of the disease. The ordinary house-fly will take up tuberculosis matter and deposit its excrement on the walls, and it has been demonstrated, Dr. Knopf said, that the excrementitious matter from flies which had been in a room with tuberculosis patients when injected into animals led to tuberculosis. Therefore, he said, physicians should not teach that disinfection after death is not just as important as prevention while the tuberculosis patient is alive.

Dr. H. D. Holton, Brattleboro, Vt., said that in the exposure of a hundred people to any contagious disease perhaps not more than forty would come down with it. Why? We do not know. We say their systems were not susceptible at that time. It is very difficult to trace the source of contagion. We do not know, a great many times, where scarlet fever comes from. Dr. Holton sometimes finds out months afterward from some slight circumstances, but he has seen repeated evidences of its contagiousness. He carried it home, he believes, to his own little girl many years ago. He was visiting a man, and a little girl was playing with some toy acrobatic men; she was dovetailing them together and Dr. Holton assisted her and handled them while talking to the man. He went home and his little girl urged him not to go into the office, as his supper was ready, so he picked her up and carried her into the dining-room. In five days she was down with scarlet fever. On investigation it was learned that these toy acrobatic men had been used by the other child to amuse her while recovering from scarlet fever. Dr. Holton has always believed that taking these toys and gathering from them the loose collections in the dovetails, which, under the microscope, proved to be epithelial scales, was the source of his daughter's scarlet fever. Contagion occurs in different ways. Dr. Holton believes that it comes from walking cases of diphtheria, scarlet fever and measles. He has seen these patients without any eruption at all, and yet they communicated the disease. We see typhoid-fever patients walking around; there is no question about this. The first case of typhoid fever that occurred at Chickamauga Park came from a soldier from Vermont, who enlisted from a town where there was polluted water and typhoid the year round. Dr. Holton believes that the soldier carried that germ in his body; by exposure and changed methods of living he developed typhoid fever. Not every person who, having tuberculosis, is not careful about sputum communicates tuberculosis. We know that it may be communicated in just that way and that not to exercise care and caution would be criminal. We used to see a wife whose husband had died with tuberculosis and who had nursed him through his illness develop the dread disease. Shall we say that it is not demonstrated that the disease was communicated to this devoted wife by bacilli from the sick husband? If so, Dr. Holton said, we must give up all the theories that we have held. It is possible, he said, that Dr. Chapin did not really mean to give us all the ideas that we absorbed. He is very forcible in expression and his hearers may have taken a little more than he intended.

Dr. J. N. Hurty, Indianapolis, said that he still believes in disinfection. He can not throw it aside. It seems to him that beyond doubt some diseases are carried by fomites. He holds to the belief that scarlet fever may be so carried, and he believes that typhoid fever may be carried by infected clothing. It should be disinfected. Disinfection carries with it a psychic effect which is worth much. He declared that disinfection may be relied on with too much confidence. An individual or a head of a family might say, "My house has been disinfected and I need not be clean." Again, disinfection might bring calmness of mind and satisfaction with conditions, which is not without worth. Dr. Hurty would prefer to have clothing disinfected, even in yellow fever, not to stop the disease, but to satisfy the desire of the mind for perfect cleanliness. Although he knows perfectly well the method of transmission of that disease, still he said that he would prefer to have yellow-fever clothing disinfected. In reference to Dr. Chapin's remark about the tendency of pathogenic organisms to die, Dr. Hurty said that he was taught that the unicellular organisms are immortal. They do not die; they are destroyed in untold millions by various agencies, such as light, air and disinfectants, but their duration of life is not limited by the needs of the species, as in the case of multicellular organisms. He said that this paper will make us think on this subject, and by thinking and by study we will finally arrive at a correct solution of the problem of disinfection. He said that he will now study this subject with new zeal and with greater earnestness.

Dr. A. D. Lake, Gowanda, N. Y., said that the departure of Dr. Chapin from our accepted belief has been so decidedly radical that it seems to him that Dr. Chapin must more thoroughly substantiate his position before he can ask others to agree with him. To take his view of the matter is to revolutionize all of our long and well-established ideas of the value of disinfection. That disinfection is most potent in its power to destroy disease germs was, perhaps, first illustrated in the history of the plague in London. This terrible disease hung like a pall over the city for many months and thousands died therefrom. In the midst of its devastation occurred the great fire, which swept away one-fourth of the buildings of the city, and through this thorough disinfection the further extension of the epidemic was prevented. It was probably the only means, in those days, whereby the awful mortality could have been controlled. As an illustration of the danger of infection from contaminated clothing, Dr. Lake mentioned the following incident: About three years ago a case of scarlet fever occurred at the Thomas Indian School, where about 150 children are maintained by the State of New York. The first patient, a girl, had been taken from another institution, about thirty miles away, where she had been retained for a short time only. It was learned that just previous to her stay there some cases of scarlet fever had existed at the same institution. The disease developed three weeks after her arrival at the Thomas School. It was found that about a week before the attack began some clothing was sent her from the other institution, and a dress which had been worn by a girl who had died of scarlet fever was included in the bundle. This dress was given to her and she wore it at the time she was taken sick. It is well to state that this dress had been hung in a closet and forgotten when the other garments were disinfected. This one case, it seems to Dr. Lake, settles the question of the importance of disinfection and the danger of conveyance of disease through infected clothing.

Dr. D. M. Totman, Syracuse, N. Y., declared his belief that Dr. Chapin is dealing a great deal in theory. Dr. Totman said that he was attending a child who had a very bad throat. He diagnosed the case as a possible case of diphtheria. This was before the certain methods of diagnosis of the present day. He took great care for a few days and kept entirely away from his children, as he always does in such contagious diseases as diphtheria or scarlet fever. Suddenly the child apparently recovered without any other trouble. He saw the child and it appeared perfectly well in the afternoon, about 5 o'clock, and he believed that he had been mistaken about the case and that it was not diphtheria. He put on his overcoat, buttoned it up and went home. He went directly to the room where his little girl was, took her in his lap, opened his coat, held her and kissed her. In five or six days she came down with a typical case of scarlet fever. It was a seven-days' wonder to Dr. Totman how she could have contracted it. In the proper time (five or six days) his other little girl came down with the same disease. She was very ill. He looked for a rash. His daughter had a little rash on the back of her neck only. He visited the first child and found the desquamation of a typical scarlet-fever case of three weeks' standing. Dr. Totman said that nothing can ever convince him that he did not carry that scarlet fever in his clothing.

Dr. Wallace Clarke, Utica, N. Y., asked Dr. Chapin to define cleanliness. He asked if it is the strong, stalwart scrubwoman, with her pots and pails and liquid disinfectants and soap and water, or is it the introduction into the room of something that will reach every particle of the room as no liquid disinfectant will. He said that this question came up three years ago before the sanitary convention of the State of New York, when the health officer of Rochester introduced exactly the same idea. With regard to cases, he said that he had just been through an epidemic of scarlet fever, lasting two and a half years; it is not over yet. There have been over a thousand cases. In one institution where the officials struggled against scarlet fever very strongly they finally conquered it. Then the building in six or seven weeks was thrown open to visitors again to come and see their children. In the meantime the epidemic was prevailing in the city. Within a short time there was a repetition of scarlet fever in that institution. Visitors were again shut out and again it was got under control and the building thoroughly disinfected, as it was after the first attack. No one was allowed to visit the building, and the inmates were in no way allowed to go out or to communicate with people where they might catch the disease; still, in about two months the disease reappeared. Here was another faulty disinfection, apparently, or a useless disinfection. The cause was looked for and it was found that clothes which had been used in a scarlet-fever ward had been put in a hamper and put in a closet in the laundry. That closet was not reached in any way by disinfection. Missing those clothes, the laundry woman remembered they were in there and sent one of the boys to the room to take the clothes to the laundry. That boy developed scarlet fever seven days afterward. Dr. Clarke would ask Dr. Chapin as to the time limit when he would admit outsiders into a room where there had been, say, scarlet fever.

On the subject of disinfection Dr. Clarke said that formaldehyd is his favorite agent, but he finds that a large body of men do not know how to use it properly. They disinfect the houses and neglect the kitchens, and they forget to disinfect pet animals in the house, and then they claim that disinfection is complete. When a house has been disinfected Dr. Clarke disinfects every one in the kitchen; finally the last person disinfects the kitchen, some outsider disinfects the last-named disinfector and the disinfection is complete—and that in the presence of a great deal of moisture. One may have a disease in a house—scarlet fever or diphtheria—and not disinfect, and have no repetition of the disease. But Dr. Clarke declared that 91 per cent. of individuals are immune to measles and 33 per cent. to scarlet fever. All physicians know that the mere non-disinfecting of the house shows that immune people as a rule have invaded that house afterward or they would have acquired the disease.

Dr. Charles S. Williamson, Chicago, in regard to the question of disinfection, advised looking at the disease in the same light as tuberculosis, and referred to the experiments of Cornet. In these experiments he said that we know that the infection comes from only one source: the expectoration of some infected individual. Now if a patient has been living in a room and has been coughing, even if he has not been deliberately expectorating, little droplets of sputum may be deposited over the entire room, even to the ceiling. If then, Dr. Williamson said, disinfection is unnecessary, we must admit that this whole area is unaffected and incapable of transmitting the infection; yet many experiments have demonstrated that Pullman cars, cabs, etc., are infected in a large number of cases. Dr. Williamson called attention to the fact that all physicians are coming to recognize the importance of house epidemics of tuberculosis and said that these can occur in only one way. He mentioned some of the conditions in Chicago: Some tramp gets tuberculosis; he goes to a lodging house and expectorates over everything. When investigating instances of tuberculosis it is found that certain houses produce overwhelming numbers of cases. They are not borne in and wafted from the windows; they did not come down from heaven; they are infected by that particular area indirectly from that particular patient. Dr. Williamson said that this is not a matter for academic discussion; it is the most important thing that physicians have to face. He said that for the safety of the people it is necessary to disinfect these houses. When disinfection is improperly done he said that it is usually the fault of the politician who does it. He declared that negative results can be explained by the fact that a great many health officers go through the thing perfunctorily. The disinfection is not carried out in the spirit nor even in the letter. Dr. Williamson said that he tells his patients that he will attend to the disinfection and that they are not to turn it over to the health officer. Under these conditions the danger of contagion, he believes, is brought down to a minimum. He said that seven years ago he had the opportunity of assisting in a large number of bacteriologic experiments on dust collected from different pavilions in the same hospitals. It was found that in the surgical division, where a large number of infected cases had been harbored, but where good asepsis and disinfection had been carried out, the infective quality of the dust was very slight. In other words, injection into guinea-pigs, rabbits and white mice in a considerable number of cases did not produce infection; but in the medical ward (and in this particular hospital it was done to emphasize to the medical people the necessity of disinfection) a perfectly overwhelming amount of infectiousness was found in the dust; it was found also that almost every animal inoculated died from streptococcus infection, pneumococcus or miliary tuberculosis. No amount of sophistry can gainsay results of this kind, because they are definite and clean-cut. Somebody will say no patients there took any disease. It is not known that in this particular medical ward some poor fellow who was convalescent did not go out and die of tuberculosis that he had acquired there from the dust. It is known that the dust was there and that it was capable of infecting animals with tuberculosis, and, therefore, probably capable of infecting man. All the negative evidence does not prove anything at all; it is the positive result which counts

Dr. G. F. Patton, New Orleans, said that it has been his fortune to be in the forefront of the battle in all the yellow-fever campaigns in the section where he lives. He began that service under the régime of the Louisiana State Board of Health in office in 1877. The disinfection of that day, he said, might well be styled fetich worship. It consisted in walking backward and forward with a garden sprinkling pot and scattering carbolic acid solutions on the suspected fomites. The system of maritime quarantine then in force actually invited an invasion of yellow fever by disregarding the incubation period of the disease and trusting blindly to disinfection with carbolic acid, after which hundreds of passengers not more than three days from Havana were admitted to New Orleans up to the beginning of June without any detention for observation. Dr. Patton said that while we all agree in condemning idolatry, there is no one who will seriously propose that the human race shall throw aside all forms of religion because some of those forms savor of fetich worship. The majority of physicians are convinced of the utility of disinfection in dealing with certain infectious diseases. Let us, therefore, he said, accept the logic of the situation as being simply this: that everything connected with disinfection that consists of useless formality be thrown to the winds, but that we can not afford to forget or to ignore the fatal lessons of the past as regards the conveyance of such diseases as erysipelas, diphtheria and scarlet fever by fomites. The evidences of such transmission are too overwhelming and we can not get around them by argument. Dr. Patton said that there is common ground on which others can meet Dr. Chapin. Though all physicians can not accept the doctrine which he advocates *in toto*, still they will agree that the fetich of disinfection which has held the medical profession in bondage for so many years, and has led to untold disasters, is now a thing of the past, and that henceforth our efforts will be to apply disinfection strictly in accordance with the revelations of modern science. We have got rid of senseless disinfection in dealing with yellow fever. That fetich is overthrown, Dr. Patton said, and he is a convert to the doctrine that the disease can be conveyed only by the stegomyia mosquito. We still have with us all the time such diseases as scarlet fever, diphtheria and erysipelas, and we can not get around the fact that they seem to be carried by fomites. Therefore he considers it our duty to act on that belief until very much stronger argument to the contrary is brought forward than has yet been presented.

Dr. Seneca Egbert, Philadelphia, said that in spite of the fact that he does not believe that Dr. Chapin has convinced any one that disinfection is not wise nor necessary, he feels that the doctor has some of the logic of the question on his side. Prophylaxis includes all the methods that may be used to prevent disease, and we can divide the work of prophylaxis into two parts: disinfection, which gets rid of the exciting causes of disease, and that greater function, sanitation, which has to do with the removal of the predisposing conditions. Dr. Egbert declared that Dr. Chapin has in his favor the fact that physicians are doing a great deal of harm in giving the public the idea that disinfection is the thing of most importance in our efforts to eliminate infectious diseases. Physicians still have a great deal to do in teaching people that they can increase their own personal vital resistance by the many ways of sanitation, and that they can thus very greatly lessen the incidence of infection and the consequent number of cases of disease. Dr. Egbert does not agree with Dr. Chapin that it is wise to do away with sanitary disinfection. He believes that every infected place should be thoroughly disinfected; and that word "thoroughly" means a great deal, and a lack of thoroughness covers a multitude of sanitary sins. Though physicians do not accept Dr. Chapin's ideas as regards the wisdom or advisability of doing away with disinfection, they ought not to lose the idea that the importance of sanitation should be impressed on the public and that every means should be used to educate the people to increase their vital resistance and to make themselves immune. Dr. Egbert said that he feels from his own experience that the laity certainly (and sometimes even medical students) do not get that idea from us as forcibly and persistently as they should.

Dr. Charles V. Chapin, Providence, R. I., explained what he meant by "cleanliness." In some of the Paris hospitals for a few years past they have been treating cases of scarlet fever, diphtheria, measles, smallpox, in what is practically the same ward. The same nurse has gone to a case of scarlet fever and then to a case of diphtheria and then to a case of measles. They have done that without the disease extending from one to another, except in a very few instances—far less often than occurs in most contagious hospitals. That is done by the nurses practicing, as they leave one case and go to another, the same sort of personal cleanliness that surgeons practice in their work. Medical antisepsis is what is needed in the care of contagious diseases. Dr. Chapin wants all people to treat contagious disease exactly in that way, and he never can get them to do it so long as they believe that they can treat it as carelessly as they please, and when they get through call on the health officer to fumigate and thus stop off all sources of danger. He thinks that the psychic effect of disinfection is wholly bad.

He said that instances (usually one) have been mentioned in which it seemed that a disease was transmitted by clothing or some other inanimate object. Dr. Chapin said that he did not deny that every single one of those cases referred to was caused in just exactly that way, but he would be entirely justified in doubting it, because no one presented any stronger evidence than the physicians who mentioned such cases in connection with yellow fever, and we now know that there was not the slightest basis of fact in any single one of those cases. The sole question we have to consider, he said, is whether or not that mode of dissemination of disease is an important factor in the maintenance of contagious disease in the community. He does not think that the advocates of disinfection have substantiated their theory that fomites are an important factor. This subject can only be settled in a statistical manner, and the collection of statistics is very difficult. There is no question but the chance of transmission in the ways suggested is greater in tuberculosis than in any other of the common diseases we have in this country. Dr. Chapin said that physicians often hear about cases of tuberculosis contracted in an infected house, but he has never seen that any infection in the lung diseases comes from the house, except in the living beings who are the occupants of the house. The men who advocate this theory of transmission by fomites should present evidence which is unimpeachable to support their view.

Dr. Chapin said that he believes in disinfection when there is reason. He thinks that we must treat different diseases in different ways. In his paper he said he referred chiefly to the routine work of the health officer in this country, and especially in the common diseases, such as scarlet fever, diphtheria, tuberculosis, typhoid, measles. He thinks that we should have disinfection in certain cases. In pandemics, suppose a person has been sick in a house for some time; no care has been taken; the patient is removed by death or otherwise; now if another and well family should come into that house he thinks that the house should be disinfected—not by the disinfection of sulphur and formaldehyd, but by elbow grease and soap and water. Even without this disinfection he thinks that the danger of infection of the second family is very slight. However, nine-tenths of the disinfection done to-day after tuberculosis is, he maintains, where the patient has been sick with the disease and has remained in the family until removed by death, and the family is going to remain right in the same house; no precautions have been taken during the long course of the disease and they expect fumigation or disinfection by the health department is going to help them to atone for all past sins of omission. He said that it is wrong for him to do it and to confirm them in the wrong idea. Again, he is called on at times to disinfect for tuberculosis when the greatest precautions have been taken over a period of months or years. It seems to him that there is no use for it, that it is possible for a tuberculosis patient to live in a room with others and to work with them and not to infect them if he will only take care of his sputum. If that is true, there is no necessity for disinfecting a house which the patient has taken care to disinfect, or, rather, not to infect. Practically, Dr. Chapin said, when the danger of infection is greatest there are very few cases in which disinfection is of the slightest good.

In diphtheria there is no question but that in a majority of cases it extends by means of bacilli in the throats and noses of well people or of convalescent people, and it is perfectly absurd and wicked, he said, to disinfect a house where there has been diphtheria unless we are very sure that the people who live in the house are no longer infected. It is possible for us to learn whether or not the people are infected. Isolation can not always be maintained in diphtheria until the physician is sure of non-infection; and, therefore, in Providence the plan of not disinfecting simply as routine was adopted. If any family wants disinfection they have to subject their throats and noses to two or more tests by culture and show that no bacilli are present. Dr. Chapin believes that the common contagious diseases are almost entirely carried by the direct contact of sick persons and infected well persons with the well; that is, by persons and not by things; and if that is so, disinfection of things, no matter how well carried out, can have no appreciable effect in checking the spread of these diseases. He believes that if to-day in the United States disinfecting after scarlet fever, diphtheria and tuberculosis should be stopped, it would not have the slightest effect on the prevalence of these diseases.

STUDIES ON PHAGOCYTOSIS.*

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The studies of Leishman, of Wright and Douglas, of Neufeld and Rimpau, of McFarland and Engle, and of others, have opened up a new field of investigation for the elucidation of the problem of the mechanism of immunity. The experiments that have been reported thus far have dealt almost entirely with the opsonic powers of the blood serum against staphylococci, streptococci and pneumococci, and the observations have been made exclusively on the phagocytic powers of the polymorphonuclear leucocytes, or the microphages of Metchnikoff.

It seemed desirable to ascertain whether the opsonic power of the serum was efficacious against other classes of micro-organisms, and also whether the macrophages of Metchnikoff participated in the phagocytosis. Metchnikoff himself states that in the resorption of animal cells in general it is especially the macrophages which intervene, but in natural immunity against micro-organisms positive chemiotaxis is exhibited by the microphages more than the macrophages. He states that the sensitiveness of the two chief categories of phagocytes often exhibits a marked difference and that spirilla, for example, are ingested and destroyed exclusively by the macrophages of the guinea-pig which alone exhibit the necessary positive chemiotaxis. In many other examples of natural immunity the part played by the macrophages is masked by that of the microphages.

My own experiments were carried out with the peritoneal exudate of guinea-pigs following aleuronat injections. This exudate was mixed with equal quantities of .85 per cent. sodium chlorid solution and then added to the various bacterial suspensions in equal proportions in capillary tubes. These tubes were incubated at from 34 to 36° C. for thirty minutes when smears were prepared and the number of bacteria taken up by 20 microphages and by 10 macrophages estimated. For each test on such a peritoneal exudate fresh bacterial suspensions were prepared which contained as nearly as possible equal numbers of bacteria, but no attempt was made to have an equal number of bacteria for the several tests, so that the suspensions used for the different exudates did not contain equal numbers of bacteria.

A series of ten observations was carried out on the exudate obtained from ten different animals by employing the following cultures: *Bacterium pseudodiph-*

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theriticum; two cultures of *Streptococcus pyogenes,* one from urine and from the throat of a case of scarlet fever; *Micrococcus catarrhalis; Micrococcus pyogenes albus* and *Micrococcus aureus.* The results obtained in these ten observations are shown in Tables 1 and 2, Table 1 showing the average number of bacteria taken up by the microphages, Table 2 showing the average number of bacteria taken up by the macrophages. While there is considerable variation in the results obtained with the different exudates it will be seen that in a fairly constant degree the macrophages had taken up a greater number of bacteria than had the microphages. This fact is shown more definitely in the means of the ten observations in the last column of each table.

TABLE 1.—MICROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	M.
Bact. pseudodiph	0.7	0.4	1.0	1.5	4.3	2.8	0.8	0.4	1.1	0.5	1.46
Strept. pyog (urine)...	7.2	1.1	1.1	1.0	3.6	4.1	4.6	2.5	4.7	4.6	3.45
Strep. pyog. (scarlet fever)	4.4	0.4	2.2	9.0	6.4	3.8	1.1	3.8	4.3	3.7	3.91
Mic. pyog. albus.......	1.5	0.5	2.0	4.3	4.5	3.0	1.7	0.7	0.8	2.7	2.17
Mic. pyog. aureus......	1.8	0.6	1.9	5.0	4.2	6.0	3.0	3.4	2.6	4.5	3.30
Mic. catarrhalis........	1.5	8.2	0.4	9.2	4.0	6.2	1.5	3.1	2.6	2.3	3.90

TABLE 2.—MACROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	M
Bact. pseudodiph.	1.3	0.4	16.2	9.4	6.3	5.0	2.6	1.7	4.4	1.3	4.86
Strept. py. (urine)	3.7	6.2	10.7	4.3	1.6	6.9	4.4	4.1	15.0	15.0	7.91
Strep. pyog. (scarlet fever).	23.4	5.0	2.4	4.0	2.1	5.4	5.4	1.6	5.3	12.2	6.78
Mic. pyog. albus.	3.2	0.4	5.5	3.3	2.3	8.9	5.6	1.2	0.6	3.1	3.41
Mic. py. aureus.	7.4	7.5	0.8	15.0	4.1	4.3	3.2	21.2	4.0	15.4	8.29
Mic. catarrhalis.	2.9	1.1	0.6	3.0	1.9	18.7	4.4	6.5	2.0	4.0	4.51

A second series of five experiments was undertaken with the view of ascertaining the range of bacteria susceptible to phagocytosis under similar conditions. For these observations the following organisms were employed: *Micrococcus aureus; Microspira schuylkilliensis;* and *Bacillus dysenteriæ,* Shiga. The results obtained in this series of observations are shown in Tables 3 and 4. These results are too few in number and too erratic to warrant the formulation of any definite deductions. In several instances no phagocytic action could be demonstrated, and doubt existed usually whether the spirilla and dysentery bacilli were really within the phagocytes or were merely lying on them, or adherent to their exterior. The results indicate that the opsonic power of the blood serum is much more pronounced for those bacteria which induce septicemia than for those in which a more distinct bactericidal immunity is induced.

TABLE 3.—MICROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.
Mic. pyog. aureus..................	4.4	2.0	0.8	2.0	2.5
Mc. sp. Schuylkill	0.5	0.1	0.15	0	5.2
B. dysenteriæ	0.6	0.6	0.7	0.6	3.0

TABLE 4.—MACROPHAGES AS PHAGOCYTES.

Culture.	1.	2.	3.	4.	5.
Mic. pyog. aureus..................	7.2	2.0	1.6	2.5	0.5
Mc. sp. Schuylkill	8.6	0.6	0	2.6	6.2
B. dysenteriæ	3.0	0	2.3	0	3.0

Paralysis of Ocular Muscles After Lumbar Anesthesia.—Loeser of Berlin publishes in *Med. Klinik* for March 11 reports of 3 cases of paralysis of the ocular muscles observed after spinal analgesia. The first patient was a man of 45, operated on for hydrocele. The evening after the operation, while healing was progressing smoothly, intense headache developed and vomiting. The headache continued, and when the patient got up for the first time on the fifth day, he presented symptoms of trochlear paralysis on the right side. Recovery was complete in a week or so. The second and third patients had been operated on for hemorrhoids or hernia under stovain; spinal analgesia, and abducent paralysis developed in direct connection with the operation. This paralysis subsided very slowly. In all the cases the first symptoms were noticed as the patient first left his bed.

Clinical Notes

THE TREATMENT OF FRACTURES OF THE FEMUR

WITH A DOUBLE ANGULAR PLASTER-OF-PARIS SPLINT AND ITS APPLICATION BY A SECTIONAL METHOD.

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Owing to the difficulty of obtaining the results without deformity and the great suffering and long confinement of patients suffering from fractures of the femur, this condition has interested the profession from time immemorial.

The different methods, devices and apparatus devised for the treatment of these fractures are too numerous to mention, and I have not added another wholly new one to this list, but have tried to get the best points of each and to combine them into one which will meet every indication of any fracture of the femur, whether of the neck, upper, middle or lower third, and one open to the fewest rational objections. It is conceded that no straight splint can be employed successfully in fractures of the upper and lower end of the femur. If this be true, then the straight plaster cast, Buck's extension and the long-side splint of Hamilton must be laid aside or used only in fractures of the middle third. The recognition of this fact led Esmarch to use a double inclined plane, Nathan R. Smith to devise his long anterior splint and, later, Hodgen his posterior suspension. These three last methods had the important idea in view of making the long fragment conform in direction to the short one, and at the same time to get the nearest approach to a natural restful position of the leg and greatest amount of normal muscular relaxation. Each of these methods meets the indications mentioned, provided the patient can be kept still, yet none of them meets the fundamental indication for which they were devised. "The objects in the treatment are to reduce the fracture, to maintain reduction immobilized until union is firm, and to restore the leg to its normal usefulness."

Does any method given in our text-books to-day meet the above-mentioned objects in treatment? I believe nearly all will agree with me that they do not, and most of them seem to have things reversed, as, e. g., the immobilization of the patient instead of the fracture. Each splint or device I have spoken of has many merits, especially the Hodgen, and I do not speak of them in a spirit of criticism, by any means. They have each served the profession well and have aided in relieving suffering humanity. As we can never reach a state of perfection, we must always be looking for something better. Let us combine the good points of all these methods and see if we can not meet all these requirements and at the same time give the patient a reasonable degree of comfort and safety and the freedom of any desired movement during this long process of repair without increase in present pain or risk of future deformity. Esmarch, Smith, Hodgen and Cabot's apparatus give us position; Buck's apparatus, extension; plaster-of-Paris, fixation.

AUTHOR'S DEVICE.

I want to combine all these important points in one universal dressing known as the double angular plaster-of-Paris splint, which, if properly applied, will meet every indication.

To illustrate, let us assume that we have a supercondyloid fracture. We must flex the leg on the thigh.

the thigh on the abdomen, then apply a plaster-of-Paris cast from the base of the toes to just above the knee in this properly flexed position (Fig.1); make the cast a little thicker just below the knee and allow the plaster to set; when sufficiently hard, which takes about ten minutes, arrange for extension and counter-extension.

If not provided with an apparatus like than shown in the illustrations, a folded sheet may be passed between the legs and brought well up against the perineum with a strong man holding each end. Have another assistant place the right hand under the knee, the left hand over the front of the lower end of the tibia. By these assistants pulling in opposite directions the necessary amount of extension can be effectually made in this position and all the aid of natural muscular relaxation possible obtained.

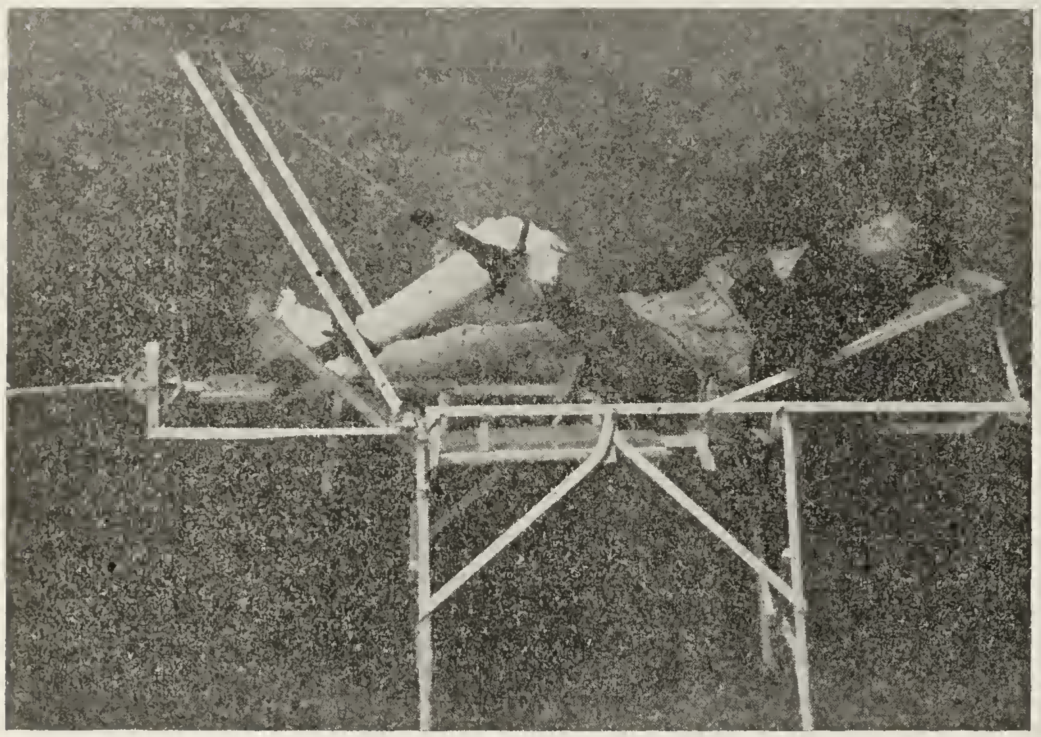
Figure 1.

The traction being steadily kept up, the fragments are brought into apposition and held firm while the upper section is applied. Pad the parts to be covered by plaster in cotton batting held by a roller bandage; take a couple of heaping tablespoonfuls of dry plaster, moisten to the consistency of thin dough, rub thoroughly around the upper end of the lower section, start with the plaster roller at this point and go up in the usual way to the ensiform cartilage, making as many layers as necessary to give the desired strength. Opposite the hip joint there is only a three-fourths circle in the cast; this makes a weak point and is one of the greatest strain, consequently reinforcement will have to be made thoroughly or it will break. This can be done by an up-and-down back-and-forth application of the plaster roller or by placing between the layers of plaster narrow strips of tin or strips of fine wire gauze. The addition of a few extra turns of roller at the welding point just above the knee completes the dressing (Fig. 2)

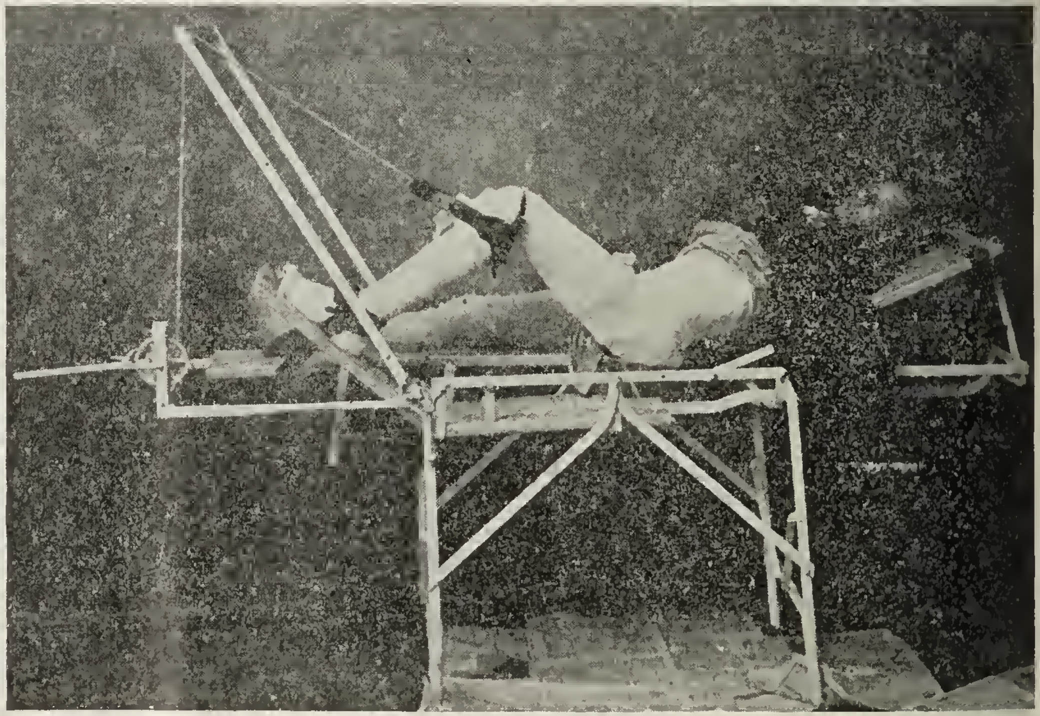
Figure 2.

ADVANTAGES OF THE DRESSING.

Note carefully the position of the limb in Figure 2. There are two angles, one at the knee, the other at the hip. These angles serve a threefold purpose:

1. *Position.*—By placing the muscles in a natural state of relaxation the long and the short fragments are accommodated and brought in line with each other. They serve as points of fixation, prevent shortening and laxation which is a great comfort to the patient. It places him in a fixed sitting position, which can be assumed at will in comfort. In walking with the crutch the foot is out of the way; when in bed he can lie on the side or back by placing a folded quilt under the knee. By this splint we give the patient the freedom of every movement without fear of pain or injury.

2. *Extension.*—We could ask no better extension than that afforded by the abrupt angles at the knee and hip.

3. *Fixation.*—The plaster cast is the most perfect form of fixation, fitting the limb as accurately as an elastic stocking; it prevents movement of the fragments, muscular contraction and pain.

By this method three-fourths of the horrors of fracture of the femur are done away with by giving the patient the freedom of lying, sitting or walking at his pleasure with the assurance of a good result, and all this with a remarkably small amount of pain. Can as much be said for any other method? What objection or drawback is there to this method? There are two: One is the weight of cast sufficiently strong to be effectual; the other is the danger of swelling of the limb and the cutting off of the circulation to the distal portions. As to the first, a plaster cast on an adult six feet high and weighing 175 pounds, from base of toes to ensiform cartilage on the second day, after evaporation has taken place, weighs approximately eight and one-half pounds; an extra heavy one would weigh ten pounds. This is nothing when compared with a ten- or fifteen-pound Buck's extension weight or partial body suspension by a Smith or Hodgen's splint.

The greatest drawback or danger is swelling or obstruction of the circulation. This can be obviated by laying the cast open and applying an ordinary roller bandage; with this there is no more danger than from any other splint, and yet it fits the limb perfectly, and later, when swelling subsides, a strip can be cut and the edges brought together, and there is still a perfect splint, one that will give comfort and pleasure to the patient, success and happiness to the physician.

A CASE OF TOTAL ATROPHY OF THE STOMACH.

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AND
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The following case is worthy of record. The condition is exceedingly rare and should not be confounded with hysteric affections on the one hand nor with gastric carcinoma on the other. The patient was studied by us through the courtesy of Dr. Stuart McGuire.

History.—Two years ago, a dentist, about 35 years of age, after a couple of years very hard work associated with much loss of sleep, suddenly became the victim of "nervous breakdown," and at about the same time after dietetic indiscretion, suffered acute gastritis. From the latter he rapidly recovered and was advised to take a sea voyage, which he did. The voyage was rough and he was made violently seasick for a week. After this he began to take excessive care of himself and particularly of his stomach, carefully avoiding eating a full meal and never completely gratifying his hunger for fear of an attack of indigestion. On questioning him carefully we learned that he had not had indigestion since his primary attack and that since he was seasick he had not vomited nor been nauseated.

Symptoms.—His symptoms throughout were negative save that he had emaciated in the past 18 months from his normal weight of 160 pounds to 80 pounds. He had had at no time any colic or indigestion or pain either before or after eating. He had lost correspondingly of strength and his bowels did not move as regularly as they previously did, still he was not constipated. He had been regularly hungry till the last 6 months but was always afraid to eat. For the past 6 months he was less hungry than formerly. Since the beginning of his illness he had not taken at any time a full meal and during the past 6 months had lived on fluids with an occasional piece of toast. The greatest quantity, even of milk, which he had taken, was two-thirds of an ordinary tumblerful, and now even this caused fulness in the epigastrium.

Physical Examination.—Patient was a remarkably emaciated man in whom every superficially-placed bone can be outlined. He was slightly anemic and yet his appearance was not that of cachexia. Weight, 80 pounds. His tongue was clean, red, small and moist. Exhaustive examination of every organ in his body failed to detect evidence of disease, except in the stomach. The abdomen was scaphoid in shape, so much retracted that the pulsations of the abdominal aorta were distinctly visible. There was no rigidity nor tenderness anywhere and the anterior portion of the spinal column was easily palpable through the abdomen. The pylorus could not be felt. Urine and feces were perfectly normal.

A test meal of bread and water was administered and could not be recovered at the end of an hour. The effort to wash his stomach was so exhausting to him that this was not attempted again till he could be strengthened by stimulating nutritive enemata. At the end of about a week after a test meal, the gastric contents showed an entire absence of HCl and yet no lactic acid was found. His gastric capacity was greatly diminished (stomach held only 8 fluid ounces).

Diagnosis.—Voluntary starvation. Secondary atrophy of the stomach.

Treatment.—He was placed under nourishing treatment. His dietary was carefully arranged so as to avoid at any time giving him sufficient quantity to cause the slightest discomfort, lest he should again become afraid to eat. He was, therefore, fed small quantities often, gradually increasing the quantity and increasing the intervals between feedings, in a manner very similar to that employed in training an infant stomach to solid food.

Under this treatment the patient gained 5 pounds weekly for 5 weeks. By this time he was on regular house diet but since he could not take a full meal at once, he was given eggs and milk between meals. About this time he failed to gain more than about a pound a week. A week or so later his gastric contents still failed to show HCl.

Operation.—The man being about 35 years old, it was decided to make an exploratory incision in the hope that carcinoma of the stomach could be discovered in time for radical cure. Operation revealed an atrophied stomach about the size of an ordinary tumbler with no sign of infiltration nor any evidence of structural change.

A CASE OF TETANUS NEONATORUM WITH RECOVERY.

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History.—Infant, F., aged 10 days. Mother and child were attended by a midwife until the ninth day, when the present illness began. The mother noticed that the baby was cross and irritable and was unable to nurse, and the jaw was set.

Examination.—Temperature, 101.5. Trismus, rigidity and retraction of the neck were marked. The navel was red and swollen, and several drops of pus were pressed out.

Treatment.—The infected area was opened with a knife and cauterized with 95 per cent. carbolic acid. Ten cubic centimeters of antitetanic serum were administered over the sciatic nerve at the gluteal fold. Two grains of chloral hydrate and four grains of potassium bromid were given by rectum every four hours. Camphorated tincture of opium was given in five-drop doses as often as necessary to keep the baby sleeping. The child was nourished with mother's milk given with a medicine dropper, the jaws being separated with the finger for the purpose.

Course of the Disease.—July 18: At 8 a. m. the temperature was 100.4; at 2 p. m. it was the same. Ten cubic centimeters of antitetanic serum were administered over the sciatic nerve at the gluteal fold. The opium, chloral and bromid were continued. The rigidity extended to the muscles of the back and lower extremities; there were opisthotonos and cynosis if the baby was disturbed.

July 19: At 8 a. m. the temperature was 102.4; at 2 p. m. it was 103.6. Antitetanic serum was again administered in the same situation. At 8 p. m. the temperature was 101.3. The bromid and opium were continued. The opisthotonos and cyanosis remained about the same.

July 20: At 8 a. m. the temperature was 103.2. Ten cubic centimeters of antitetanic serum were injected into spinal cord between the fourth and fifth lumbar vertebræ. At 7:30 p. m. the temperature was 100.6. The same amount of antitetanic serum was injected into the spinal cord at the lumbrosacral joint. Five minims of a 5 per cent. solution of carbolic acid were given hypodermatically every three hours and increased 5 minims at each dose till 20 minims were being given at each dose. The chloral, bromid and opium were continued. The trismus was less marked; the opisthotonos and cyanosis were still present. The child was able to take nourishment from the nursing bottle.

July 27: Chloral and bromid were discontinued and the centimeters of antitetanic serum were injected into the spinal cord between the third and fourth lumbar vertebræ. At 8 p. m. the temperature was 98.6. There was some trismus and rigidity of the back and lower extremities when the baby was disturbed.

July 22: At 8 a. m. the temperature was 98.6; at 7 p. m. it was 101.2. Ten cubic centimeters of antitetanic serum were injected into the spinal cord between the fourth and fifth lumbar vertebræ. The chloral, bromid, opium and carbolic acid were continued.

July 23: At 11 a. m. the temperature was 98.6; at 8 p. m. it was 99.2. The hypodermic injections of carbolic acid were discontinued.

July 24: At 8 a. m. the temperature was 98; at 8 p. m. it was 98.6. There was still some rigidity of the back and lower extremities when the baby was disturbed.

July 25: At 8 a. m. the temperature was 98.6; at 8 p. m. it was 98.8. The chloral and bromid were ordered given three times a day.

July 26: At 8 a. m. the temperature was 98.4. The baby was able to nurse from mother for the first time since the illness began. There was a diffused erythema all over the body. There was no rigidity of the back and lower extremities.

July 26: Chloral and bromid were discontinued and the child was discharged cured on July 29.

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[*For other information see second page following reading matter.*]

SATURDAY, AUGUST 25, 1906.

The space given to statistics of colleges and state boards in this issue, our annual Educational Number, requires the omission of some departments and the abbreviation of others.

As will be noticed, we have combined in this number the statistics relating to the examinations for license to practice medicine conducted by the various state licensing and examining boards during 1905, with the medical college statistics covering the year ending June 30, 1906. While there are advantages in combining all this matter in one issue of The Journal, we find it not altogether satisfactory. In the first place, the statistics regarding the state board examinations might have been published at least three months earlier. Again the work connected with tabulating this matter, making deductions, etc., is very great, and this makes the labor burdensome when it all comes at the same time. We shall probably hereafter, therefore, publish the statistics in two different numbers, as we have done in the past.

COUNTRY PRACTICE.

Suggestions as to available locations for physicians can scarcely be out of place at any time, but we are inclined to believe that, owing to hospital appointments, postgraduate vacations and discouragement after ineffectual attempts to secure a foothold in crowded centers, during the "healthiest" season of the year, a very large proportion of the members of spring graduating classes are seeking locations late in the summer and early in the fall.

In England, there is an ethical and economic rule, not, of course, strictly enforced, that the young physician shall seek an actual vacancy, left by the death or retirement of a practitioner. In this country, no such principle is recognized and competition, provided that it is fair and honorable, is allowable. With considerable justice, the young graduate is often advised to select the most desirable location that he can possibly command, even at some risk of failure, to make his charges equal to those of the most firmly established practitioners of the neighborhood, to hang out his sign in the same row with the most successful older men and, in general, to aim high.

With all deference to the idea that every barefoot boy may be president and that neither heredity nor early mental mediocrity is a bar to success, there is much wisdom in having the young man in any profession, indeed, before selecting his life work, make a careful, impersonal, judicial canvass of his probable capabilities, and such a course would undoubtedly result in less aggregate waste of effort, less humiliating disappointment and greater total achievement than the policy of following the dreams of ambition. "Aim high" is a specious motto. "Aim to hit the mark," with regard to the carrying power of the weapon and ammunition possessed, is a much better one.

It is obvious that one who has a reasonable ambition for medical teaching, hospital work and specialization should remain in a city, though not necessarily the one in which his medical studies have been pursued, nor should longitude be too slavishly considered. For the man whose tastes and aptitude mark him for the general practice of medicine, the country or small town should receive fair consideration and the prejudice in favor of the city should be taken only at its true value.

A practical, initial reason for preferring the country—and we shall include in this term the village or small town in which most so-called country doctors actually reside—is that the English rule of seeking a real vacancy can be followed more literally than in the city. Any possible fluctuation in the medical population of a large city fails to create a genuine need of another practitioner or to render it impossible for one or more to secure a foothold without displacing some one else. In a village with its tributary country, it is, on the other hand, easy to determine whether a vacancy exists or not. The fact should not be overlooked that to attempt to establish oneself in such a community by driving out a veteran physician may and should fail.

It may be stated as a fact, that, in this country, less than 600 inhabitants support one physician. Unfortunately, this support is far from ideal and the ratio should be very much larger. Obviously, the general wealth of a community, its dependence on medical charity, and the prevalence of disease, accident, and the birth rate, must be considered, as well as the arithmetical ratio. It is also a matter of general observation that a new—not necessarily a young or even a recently graduated physician—in a city, requires about three years to build up his practice to a point at which he can be self-supporting, unless he has unusual influence or unless the circumstances are otherwise unusual. In the country, a practice may reasonably be expected to be adequate for self-support within a year and the same statement applies to certain isolated—but not often desirable—sections of cities. Salaried positions, on a fair living basis and in ethical lines of medical work, afford support for about 2 per cent. of the medical profession, but the more desirable, as in the government medical service, state institutions, private sanitariums and municipal boards of health, are not available for the average man or for immediate selection after graduation.

The urban population of the United States—meaning residents in towns and cities of 8,000 and over was 20.9 per cent. in 1870, 22.6 per cent. in 1880, 29.2 per cent. in 1890 and 33.1 per cent. in 1900. It is obvious that a town of 8,000 inhabitants is not a city in the ordinary social and sanitary sense and that physicians residing in such towns must have a considerable amount of country practice. These statistics show that there has been, in the last ten years, a decided slowing of the tide from country to city, especially if we consider that the natural, local increase of population in cities is a large factor in the total increase for the nation and that the same growth would bring a great many villages past the 8,000 limit. At any rate, from purely statistical reasons, it is obvious that two-thirds of the recent graduates should seek locations in the country, and probably this fraction would be increased to four-fifths if we include as cities, only such centers of population as have 15,000 or more inhabitants.

As a matter of fact, an approximate study of statistics shows that the normal distribution of physicians is not maintained. For example, the cities of New York state, of 100,000 or more inhabitants, containing about 52 per cent. of the population, have about 70 per cent. of the physicians. While the support of many specialists and physicians of note, living in cities, receives a substantial contribution from the country, this applies to relatively few in the aggregate and seldom amounts to more than a quarter of the total income of an individual physician. Moreover, large cities contain, to a disproportionate degree, persons who can not help in the support of our profession.

Passing from the statistic to the general impressionistic argument, we find that the young physician supported outside his practice is a type almost solely limited to cities and that while the gross income of a fairly mature and successful physician in a small village or town usually averages from $2,500 to $5,000, probably not more than 20 per cent., if as many, of city physicians, pass the lower figure. A strictly country practice, however, rarely exceeds $3,500, the fees and distances covered in visiting patients rendering it almost impossible to do a larger "business." On the other hand, it should be remembered that the scale of living and the actual prices of rent or its equivalent, maintenance of equipage, provisions, etc., are much lower in the country than in the city. Thus, as compared with his clientele or with his professional colleagues, the country practitioner with a gross income of $1,500, is as well off as the city practitioner with a gross income of $2,500.

It may not be out of place, also, to point out that the country or small village by no means corresponds at present to the description of rural simplicity of the fifth reader and that the twentieth century country doctor in most parts of the United States, is much less of a hero and more fortunate in his material and social life than Ian MacLaren and various other writers of fiction would give us to believe.

The city dweller is too apt to imagine that what have been called city conveniences are out of the question in the country. Water supplies, gas and electricity are becoming common in villages of even 1,500 inhabitants and less. Even where coöperation has not already secured these conveniences, the improved wind mill or gasoline engine and acetylene or naphtha gas plants, place them within the reach of any fairly well-to-do country resident at an initial cost which is not excessive, when the cheapness of maintenance is considered. The telephone is also, now, relatively as common in the country as in the city and is much less expensive. Rural free delivery of mail and local deliveries of merchandise are also in common use.

It is true that educational and social advantages are easier of access in the city, yet good high schools, in the more enlightened states, are found in practically every village, local libraries are common and many public libraries in cities have arranged for suburban service. In many parts of the country, the train or trolley service to and from large cities places the resident of a village thirty miles away within easy and rapid access of the business center.

Of course the ambitions of the country doctor are somewhat limited in regard to certain forms of professional activity. At the same time, these limitations are by no means so serious nor so absolute as might appear. The tendency is for medical teaching to become more and more a specialty by itself, conducted for the most part by men who do not engage in practice. Conversely, the physician, as such, is tending to return to the status of a private practitioner and to make his reputation accordingly. Small hospitals have arisen in the small towns and a great deal of good surgery is now done in communities tributary to large cities which was formerly done by the city surgeon.

It must be admitted that the rural districts described in the pioneer tales and in the fifth reader still exist and that the simple life there found is not particularly attractive to the average twentieth century American. On the other hand, forces are at work with an ever increasing momentum to check the excessive development of urban life at the expense of rural life and to render the country and small village more and more desirable, not only for our own profession, but for the better class of the population generally. The man who somewhat anticipates the turn of the tide of population may well feel that he is making a wise investment for the future.

THE NECESSITY FOR BETTER PROVISION FOR LEGAL MEDICINE IN THIS COUNTRY.

Medical jurisprudence or legal medicine, considered as a distinct discipline, is fast becoming a neglected subject in the American medical curriculum. It is true that many state boards specify a certain amount of instruction in something that is loosely called medical jurisprudence, but it does not appear that the exact field of knowledge that this subject should cover has been accurately defined and, judging from the lists of questions published from time to time by state boards, little or no attention is paid to the subject in the various state examinations for license.

It is also true that many of our medical schools offer brief courses of instruction in medical jurisprudence, but such a thing as a definitely organized department of medical jurisprudence with the necessary laboratory and other special facilities does not appear to exist in any of our medical schools. The actual state of affairs in this respect may be learned from the following summary of the work actually given in some of our well-known medical schools:

1. Harvard Medical School has a voluntary course of six lectures by a local judge. The course is not taught as a separate study, instruction being given by the various departments in the medicolegal aspects of the various subjects.
2. Johns Hopkins University. Instruction is given in the third and fourth years, definite number of hours not given, excepting one hour a week; probably between twenty to thirty hours given.
3. University of Michigan. Thirty hours of lectures given to the joint senior classes in law and medicine.
4. Northwestern University Medical School gives eight lectures and sixteen recitations in senior year.
5. Yale Medical School, during the senior year, gives one hour a week for two terms, total about twenty hours, which is devoted entirely to lecture work.
6. University of California, during the third year, gives about twenty hours of lecture work.
7. University of Minnesota, during the last half of the senior year, devotes between sixteen to twenty hours to lectures and recitations.
8. Washington University, St. Louis. During the second part of the senior year, between twenty-five and thirty hours are given to lectures by different men, including two lectures at special postmortem.
9. University of Pennsylvania, during the first part of the fourth year, devotes about sixteen hours to the subject.
10. McGill University, Montreal, devotes twenty hours during junior year to lectures and practical work. The practical work takes up blood stains both with the microscope and spectroscope.

The New York schools, Columbia, Bellevue, and Cornell, make no mention of the subject whatever. Medical jurisprudence is not among the courses required by the New York Board of Regents.

In our large cities the appointment of untrained men, which so far has been the rule, to such places as coroner's physician, as well as the frequent changes for purely political reasons of such appointees, coupled with loose administration and total failure to provide permanent and proper facilities for even only the routine work, have long since accustomed us to put up with much that is crude and discreditable in this important branch of public service. At the same time as this is true in general, it should not be forgotten that we have many men who, by devoting themselves to special lines, largely in the capacity of private experts, have become recognized authorities in their chosen fields of legal medicine. In the smaller towns and the rural communities, in which the opportunities for medicolegal work necessarily are limited, the appreciation of some of the most fundamental medicolegal principles must often be slight if one may judge, for instance, from the number of improperly conducted and incomplete postmortem examinations in suspected criminal cases. The fundamental rule that in order to establish definitely the real cause of death (whenever that is possible) it is essential to examine all the body is frequently neglected and sometimes this neglect results in the miscarriage of justice.

In other countries legal medicine appears to receive a far greater degree of attention than in ours. As examples may be cited Germany and Austria, with their professorships of legal medicine, their special medicolegal institutes equipped with the necessary laboratories and apparatus for pathologic and chemical work; here also a certain amount of definite knowledge of the subject on the part of the applicants is necessary for license to practice medicine. In France and Italy this subject receives also special attention, and the late Professor Brouardel, of Paris, was one of the great authorities in this field. In Europe special journals have existed for years devoted to the publication of scientific investigations, practical observations and discussions of medicolegal problems. When one considers the relative paucity of original contributions to medicolegal subjects here, the impression results that conditions in this country so far surely have not been so favorable as one would wish for the growth of interest in and appreciation of the practical and scientific importance of this special branch of medicine.

The remedy? Improvement in the existing conditions which are unsatisfactory from the point of view of the public and discreditable to the medical profession, must be sought in at least two different directions. In the first place, provision should be made for the appointment in our larger cities, where the normal amount of criminal and other medicolegal work clearly warrants it, of medicolegal experts, especially in pathologic and chemical lines. These appointments should be permanent and they should be made according to merit, and not, as at present, for political reasons, when made at all. The salaries should be large enough to attract good men to the positions. When we consider the character of the work and the special qualifications necessary to do it well, the hardships of such positions should command at least about the same grade of salaries as are paid to those professors in our better university medical schools who devote themselves wholly to the teaching of and investigation in the fundamental branches. Then there should be provided assistants and adequate facilities for the work in the form of suitable postmortem rooms, with laboratories and apparatus for microscopic, bacteriologic and chemical purposes and with space for the establishment of museums in which valuable specimens of various kinds could be placed for use in instruction and study. In many of our cities an arrangement of this general character would be economical, because the large special expert fees now paid in so many notorious murder cases would be rendered largely unnecessary, to say nothing of the greater promptness and thoroughness of the examinations.

On account of the relatively small population of our ordinary counties (exclusive, of course, of those containing large cities), it can not be expected that each county ever will maintain a permanent, competent medicolegal expert. On the other hand, the state might well establish a state medicolegal office or institute for the purpose of furnishing (outside of the larger cities) prompt and skilled medicolegal service in criminal and other cases demanding such service.

In the second place the instruction in legal medicine in the medical schools should be improved and extended. By this it is not meant that a full, new department, with separate staff and equipment, must be established in every medical school in the country. This would be possible, to a greater or less degree, in the case of only a small number of university schools that could enter into mutually advantageous relations with the city in which they are located (or possibly with the state). Thus, the professor of legal medicine in Harvard University, for instance, might very well be the chief medicolegal officer of Boston—indeed, we believe some arrangement like that now exists—the institute and equipment being furnished in accord with arrangement between the city and the university. Naturally, the students in schools so favorably situated as this would be in this case would enjoy special advantages, and in time these advantages would be sought by those who desired to become specially trained in medicolegal work. In other words, schools of this kind would become special centers for the training of men in what we are calling legal medicine. And such centers may be needed more and more in the future as the opportunities for careers in legal medicine increase and enlarge.

In the medical schools in general in which legal medicine can be taught only in outline or in which instruction is supposed to be given by the various departments in the medicolegal aspects of their various subjects, it would seem to be desirable that the faculties make special efforts to strengthen the work, and especially in the direction of better co-ordination between the various departments. Thus, it is particularly necessary that students be instructed more carefully in the matter of postmortem examination in medicolegal cases. Experience in criminal cases, especially in cases of abortion and poisoning, shows that practitioners often have no adequate conception of the thoroughness and objectiveness required.

If it were possible to promote development in the directions outlined, there would soon be established in this country higher standards for medicolegal work, at least in the lines touched on here, and the law in general would receive more direct and greater benefit now of existing technical knowledge in medicine.

EXAMINATION FOR A HIGHER MEDICAL CERTIFICATE IN FRANCE.

An interesting and important decree has recently been promulgated by the Minister of Public Instruction of France, which appears in the *Semaine Médicale*, August 1, under the heading, *"Décret instituant un certificat d'études médicales supérieures,"* and which is commented on at some length in the same issue by Prof. Ch. Bouchard.

The decree outlines in detail a new plan of examination for those who desire to secure a certificate of superior attainment which will make them eligible to positions in any of the medical faculties of France. or which may serve as evidence of especial qualifications wherever they may wish to pursue research or engage in teaching. The statute of 1874 required that a candidate for a teaching position must hold himself in readiness to pass an examination at any time in any or all of the branches of medicine. The obligation thus imposed on the young physician to keep fresh in memory an enormous mass of facts entailed such an expenditure of time and energy that it operated as a serious bar to original investigation. To this Professor Bouchard attributes the fact that France was relatively sterile in research and original contributions to knowledge until 1887, when the law was modified by eliminating the examinations in anatomy and physiology, and by permitting the candidate in immediate preparation for the oral test in pathologic anatomy to have access to books in the national library. He was also required to submit a thesis embodying the results of his own researches. Unhappily, however, this resulted in neglect of the young physicians to keep up their interest and their knowledge in the medical branches, other than those in which they were engaged in research, and the result, while greatly stimulating investigation in special lines, the fruits of which have been abundant and gratifying, was the production of a body of younger men not possessing that broad general information which is indispensable to the successful teacher.

The recent degree may be regarded as a compromise between the statute of 1874 and the amendment of 1887. It provides for examinations, to be held semi-annually, by properly constituted juries, in twenty different groups of subjects, and the examination is to consist of: 1. A composition on anatomy, physiology and histology, lasting four hours, the question discussed to be one of three drawn by lot from those provided by the jury. This examination is to be held in a closed room, without access by the candidate to any aids whatsoever. 2. An oral examination on one of three question in general pathology, similarly drawn, to continue not more than three-quarters of an hour after three hours for preparation by the candidate in a closed room without aid; and, 3. A practical demonstration in pathologic anatomy, comprising the various methods of exploration of the tissues and organs.

Similar examinations are provided for candidates who seek positions in the schools of pharmacy. The first examination is to be held in October, 1907, and, after January, 1908, they are to be held semi-annually. Each jury is to be composed of nine members, selected by the Minister of Public Instruction from the faculties of France, not more than four members of any one school, however, to be drawn on any jury. The candidate may submit to one, two or all three of the tests at any one examination as he may elect. Having satisfactorily passed these examinations, he is to receive the *"certificat d'études médicales supérieures,"* and he will not thereafter be required to take any further examination, but becomes at once eligible for appointment in any faculty of his choice, when there may be a vacancy, as chief of clinic, laboratory assistant or substitute professor.

It is apparent that the new plan has been considered with great care by the council for higher education of France, and is expected to result in a decided improvement in the quality of the accessions to the medical faculties, while, at the same time, it will preserve to the younger physicians that leisure, freedom and tranquillity of spirit which are essential to original investigation.

AN INCREASE IN MEDICAL COLLEGES.

One discouraging thing in the statistics published this week is the fact that, while small, there has been an increase rather than a decrease in the number of medical schools. On the other hand there is, here and there, an indication of a desire for betterment by combining institutions. During the year the Central Medical College of St. Joseph, Mo., and the Ensworth Medical College of St. Joseph, Mo., merged into the Ensworth-Central Medical College of St. Joseph, Mo. The Medico-Chirurgical College of Kansas City, Mo., the Kansas City Medical College of Kansas City, Mo., and the College of Physicians and Surgeons of Kansas City, Kan., united to form the Medical Department of the University of Kansas. The most noteworthy merger, however, was that through which the Fort Wayne College of Medicine, the Medical College of Indiana and the Central College of Physicians and Surgeons of Indianapolis became the Indiana Medical College, the school of medicine of Purdue University, the latter a semi-state institution. Each of these three schools had become a well-established and recognized institution, and considerable self-sacrificing spirit was shown on the part of the members of each of the faculties in giving up their respective institutions for the sake of having one good school in the state. It is to be regretted, therefore, that another school is being started in Indianapolis, so that, in spite of the merger, there are still to be two schools in that city. We make this comment as a general proposition without entering into the merits of the case. It is, however, such instances as this that discourage those who are desirous of eliminating weak schools by combining two or more into one strong one. In several locations where two, three or more colleges are struggling along with difficulty, not able to do good, efficient work through lack of equipment, futile efforts have been or are being made to unite them into one institution. Doubtless in time personal ambition on the part of the few will give way to the best interests of the many and minor difficulties be overcome and one strong college take the place of two or more weak ones. Standing, as our country does, as one of the leading nations in commerce, in the arts, in the sciences and in general education and enlightenment, it is certainly to be deplored that she remains a laggard in standards of medical education.

COLORADO'S NEW REQUIREMENT.

The Colorado Board of Medical Examiners has adopted new requirements regulating medical licensure which are certainly to be commended and which place that state far in advance of its former position. Up to the adoption of this new schedule, Colorado was among the states which did not require an examination of all applicants and which registered non-graduates. Graduates of the Colorado schools will hereafter be required to take the examinations the same as graduates of schools outside the state. Provision has been made for old practitioners by special sections, exempting them from the more exacting requirements that apply to recent graduates. The new schedule also contains a provision whereby commissioned medical officers of the United States Army, United States Navy and of the United States Public Health and Marine-Hospital Service may be registered without examination. This offers one class of credentials which it seems to us might be accepted in other states.

CALIFORNIA STATE SOCIETY JOURNAL OUT OF THE ASHES.

The California State Journal of Medicine, Phoenix-like, has risen from the ashes of the earthquake and fire. The June number appears in the old form and size, and Editor Jones is giving evidence that he is in business at the old stand. In the number before us, however, there are items that indicate that things are not as they were. "Please do not ask for back numbers of the *Journal,* for there are none," we read. "Please don't ask for copies of the constitution and by-laws, or for back numbers of the Register of Physicians, or for programs, for there are none." The state society seems to have been in unusual ill luck, for, while practically everything was wiped out by the earthquake and fire, another visitation was made on the night of July 21, when a new edition of the register, i. e., the state directory of physicians, was destroyed by fire at Mountain View, where the printing and binding were being done. We extend our sympathy to the state society officers, but congratulate them on the energy they are displaying. The offices of the society are now located at 2210 Jackson street, San Francisco.

MEDICAL EDUCATION IN THE UNITED STATES.

In this number appear statistics regarding medical education in the United States for the year ending June 30, 1906. The information was obtained direct from the colleges, from the annual announcements and from other sources, special care being taken to insure correctness in every instance. We desire to express our appreciation of the assistance rendered by the officers of the medical colleges.

While there is much to regret regarding medical education in the United States, there is much to encourage the belief and hope that improvement is being made. Many of the colleges are, of their own volition, raising their standards, either by increased entrance requirements, by longer sessions, by offering better courses or by all of these. Many of the state licensing boards are also demanding higher entrance and graduating requirements, and are continually urging and adopting changes for the better. The various college associations are wielding a good influence. The establishing of a Council on Medical Education is having a decided effect. State medical societies are establishing permanent committees on medical education, some of which have already done energetic work. The outlook, we repeat, is encouraging.

Number of Medical Students.—The total number of medical students (matriculants) in the United States for the year ending June 30, 1906, was 25,204, a decrease of 943 below last year. Of this number, 23,116 were in attendance at the regular schools, 1,085 at the homeopathic, 644 at the eclectic, 110 at the physio-medical and 249 at the nondescript (unclassifiable) schools. The attendance at the regular schools shows a decrease of 1,003 below that of last year, a decrease of 546 below 1904 and a decrease of 1,814 below 1903. The number this year is the smallest since 1900. In the homeopathic school there was a decrease of 19 below the attendance of 1905, a decrease of 224 below 1904, there being a constant decrease since 1900, and the attendance for each of the past two years has been below that of 1880. The eclectic schools show a slight increase over last year, although the figures of each of the last two years are smaller than previous years since 1900. The physio-medical colleges had 110 this year, against 114 last year and 129 in 1904.

Table 4.—Medical College Attendance.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	9,776	1,220	830	...	11,826
1890......	13.521	1,164	719	...	15,404
1900......	22,710	1,909	552	...	25.171
1901......	23.846	1,683	664	224	26.417
1902......	24.878	1,617	765	241	27,501
1903......	24,930	1,498	848	339	27,615
1904......	23.662	1,309	1,014	357	28.142
1905......	24,119	1,104	578	346	26,147
1906......	23.116	1.085	644	359	25,204

Graduates.—The total number of graduates for the year ending June 30, 1906, was 5.364. a decrease of 242 below 1905, 383 below 1904 and 334 below 1903. The number of graduates this year is the lowest since 1902, when it was 4,999. For the year just closed the percentage of graduates to matriculants was 21.3, or practically the same as for 1905. The percentage was 30.3 in 1904 and 22.8 in 1903. The number graduated from the regular schools was 4,841, or 285 less than in 1905 and the smallest number since 1902. From the homeopathic colleges 286 were graduates, showing an increase of 10 over last year. The eclectic colleges graduated 186, an increase of 33 over last year.

Table 5.—Medical College Graduates.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	9,776	380	188	...	3,241
1890......	3,853	380	221	...	4,454
1900......	4,715	413	86	...	5,214
1901......	4,879	387	148	...	5,444
1902......	4,498	336	138	27	4,999
1903......	5.088	420	149	41	5,698
1904......	5,190	371	146	40	5,747
1905......	5.126	276	153	51	5,606
1906......	4,841	286	186	51	5,364

Women in Medicine.—During the past year there were 840 women studying medicine, or 3.3 per cent of all medical students, as against 4.1 per cent last year. There were 233 graduates this year, or 4.5 per cent. of all graduates. In 1905 there were 1,073 students and 219 graduates, while in 1904 there were 1,129 students and 244 graduates. Of all women matriculants, 189 (22.5 per cent.) were in attendance at the three medical colleges for women, as compared with 221 (20.6 per cent.) in 1905. From these schools there were 33 (14.2 per cent.) graduated, as compared with 54 (24.5 per cent.) in 1905. The others matriculated in and graduated from co-educational colleges.

Number of Colleges.—During the past year eight colleges ceased to exist, seven (which are mentioned in another column) united with other colleges, and one, the Harvey Medical College, an evening school of Chicago, became extinct. Nine new schools have been organized. All these were regular colleges. The number of homeopathic, eclectic and physio-medical colleges remains the same. The total is 161, as against 160 last year. Of this number, 130 are regular, 18 homeopathic, 9 eclectic, 3 physio-medical and 1—the National Medical University of Chicago—is unclassifiable. Seven of the regular colleges listed do not grant degrees, teaching only the first and second years of the medical course. Sixty-one regular colleges are members of the Association of American Medical Colleges; 14 belong to the Southern Medical College Association; all the homeopathic colleges are recognized as in good standing by the college committee of the American Institute of Homeopathy, and all the eclectic colleges are members of the National Confederation of Eclectic Medical Colleges.

TABLE 6.—MEDICAL COLLEGES.

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med. and Nondescript.	Total.
1880......	72	12	6	...	90
1890......	93	14	9	...	116
1900......	121	22	8	...	151
1901......	124	21	10	4	159
1902......	121	20	10	4	155
1903......	121	19	10	4	154
1904......	133	19	10	4	160
1905*.....	129	18	9	4	160
1906......	130	18	9	4	161

* An error was discovered in the figures for 1905 which is corrected here.

Length of Terms.—Here particularly may be seen the advances in medical standards. This year 14 colleges have sessions of 6 to 6½ months' (23 to 26 weeks) duration, where there were 58 in 1901, there having been a constant decrease since that year. The 7-months schools (29 to 30 weeks) increased in number from 1901 to 1903 at the expense of the 6-months schools, but since 1903 they have likewise been decreasing gradually in number. While there has been some fluctuation among the 7½-months (29 to 30 weeks) colleges, there has been an increase. Eight-months colleges have decreased from 44 to 32, while 8½-months colleges have increased from 13 to 24. The colleges requiring more than nine months are all night schools.

TABLE 7.—COLLEGE TERMS.

Year	6-6½ mos 23 to 26 weeks.		7 mos. 27 to 28 weeks.		7½ mos. 29 to 30 weeks.		8 mos. 31 to 32 weeks.		8½ mos. 33 to 34 weeks.		9 mos. 35 to 36 weeks.		Over 9 mos. Ov. 36 weeks	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3

Location of Colleges.—The size of the city in which a college is located does not necessarily indicate the value of the training afforded; nevertheless there are usually and naturally better clinical facilities in larger than in smaller cities. That the majority of senior students are in the larger cities is shown by the fact (see Table 3, page 634) that of the 148 colleges which had graduates, 97 are located in cities having 100,000 or greater population, and these schools turned out 4,103 graduates. In other words, only 65.5 per cent. of the colleges are located in cities of 100,000 or over, and yet 77 per cent. of the graduates come from these colleges. This leaves 51 colleges (34.5 per cent.) in cities of less than 100,000, and these schools turned out only 1,224 (34 per cent.) graduates. In cities above 50,000 population there are 114 colleges, which graduated 4,582 students. In other words, these cities have 77 per cent. of the colleges and yet turn out 86 per cent. of all graduates. This leaves to the cities having less than 50,000 inhabitants 33 per cent. of the colleges from which come only 14 per cent. of all graduates.

Statistics of Colleges.—On pages 628 and 629 will be found Table 1, giving the states containing medical colleges, the name of each college, the population of the city in which the college is located, the number registered as students during the session of 1905-06, and also the graduates (men and women) of 1906, the total number of teachers in each college and the number of weeks in the college year. The suffixes, R., H., E., Ph.M., stand for regular, homeopathic, eclectic and physiomedical. Beginning on page 589 we present, in abstract form, essential facts of all medical colleges arranged by states, and on pages 627, 633 and 635 will be found the requirements of the regular, homeopathic and eclectic medical college associations, also a list of colleges holding membership in these organizations.

STATE BOARD EXAMINATIONS DURING 1905.

This week we publish in tabular form* the results of the examinations for medical licenses held during 1905 by the examining boards of the various states and territories, together with the number of those licensed on their credentials. Peculiar conditions existing in Georgia, Missouri and in Indian Territory made it impossible to obtain from them reports that could be utilized. No applicants were examined during the year in New Mexico. The Tables A, B, C and D are so arranged that, reading from left to right, gives the results by colleges, while reading from above downward gives results by states. The statistical information regarding medical education and licensing included in these tables will be found valuable and will bear careful study.

TABLE E.—COLLEGES GROUPED BY STATES.
Showing Number Examined and Percentage of Failures.

Colleges of	Graduates of 1905.		Graduates of 1900 to 1905		Graduates of 1899 and previous		Graduates of all years.		Rank according to number Examined	Rank according to low per cent.
	Number Examined.	Per cent. Failed.	Number Examined.	Per cent. Failed.	Number Examined.	Per cent. Failed.	Number. Examined.	Per cent. Failed.		
Alabama	40	7.5	49	8.2	6	16.7	55	9.0	20	5
Arkansas	2	0.	1	0.	2	50.0	3	33.3	30	23
California	99	30.0	156	29.4	6	50.0	162	30.4	14	21
Colorado	6	16.7	29	17.2	5	20.0	34	17.6	24	13
Connecticut	10	0.	29	0.	1	0.	30	0.	25	1
Dis. of Columbia	67	17.9	126	21.4	14	28.5	140	21.8	16	17
Georgia	9	0.	18	33.3	9	44.4	27	37.0	27	24
Illinois	668	4.8	1,005	8.5	129	38.0	1,134	12.0	1	8
Indiana	138	17.4	156	19.9	11	63.7	167	22.7	13	18
Iowa	151	5.3	175	9.7	40	53.7	215	17.7	10	14
Kansas	20	0.	24	4.1	5	40.0	29	10.3	26	6
Kentucky	89	32.5	175	43.4	54	38.9	229	42.3	9	26
Louisiana	81	11.1	99	19.1	3	33.3	102	19.6	17	15
Maine	17	0.	20	0.	4	0.	24	0.	28	1
Maryland	317	27.4	570	31.1	26	15.4	596	31.1	4	22
Massachusetts. .	132	8.3	222	9.9	19	26.3	241	10.8	8	7
Michigan	70	0.	149	6.0	35	40.0	184	14.8	11	11
Minnesota	94	14.9	151	18.5	10	0.	161	17.3	15	12
Missouri	285	12.3	390	15.4	85	48.2	475	20.6	5	16
Nebraska	15	46.6	31	28.6	5	0.	36	27.8	23	19
New Hampshire.	13	0.	15	0.	4	25.0	19	5.3	29	2
New York......	411	2.4	620	3.2	63	28.6	683	5.7	3	3
North Carolina.	54	27.7	84	39.2	1	100.0	85	40.0	19	25
Ohio	231	6.1	285	10.1	66	31.8	351	14.8	7	11
Oregon	39	41.0	47	53.1	2	0.	49	51.0	21	27
Pennsylvania ..	481	5.8	675	7.1	65	24.6	740	8.6	2	4
South Carolina.	19	0.	32	21.9	2	0.	34	20.6	24	16
Tennessee	209	27.8	372	36.8	41	41.1	413	37.0	6	24
Texas	25	20.0	33	30.3	1	0.	34	30.3	24	20
Vermont	39	2.5	67	8.9	21	28.6	88	13.6	18	10
Virginia	105	5.7	160	13.0	14	14.3	174	13.2	12	9
Wisconsin	33	9.0	36	11.1	2	50.0	38	13.2	22	9
All states....	4,016	11.4	6,001	16.0	751	34.0	6,752	20.6	..	..

Table A shows the number of graduates of all years and of undergraduates who came up for examination.

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* See large tables inserted opposite page 611.

TABLE F—COLLEGES HAVING 50 OR MORE EXAMINED.

TABLE SHOWS TOTAL NUMBER EXAMINED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

Name of College.	Graduates all Years.			Graduates 1905.			Graduates 1900-1905.			Grad. 1899 and Prev			Margin No.
	No. Examined.	Per cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	No. Examined.	Per Cent. Failed.	No. States.	
College of Physicians and Surgeons, Chicago.	302	8.6	26	205	2.9	17	278	6.1	25	24	39.0	13	26
Rush Medical College	254	8.3	30	88	2.3	14	205	4.9	28	49	23.2	17	33
Jefferson Medical College	231	5.6	35	162	2.3	22	209	3.8	34	22	22.7	11	128
Coll. of Physicians and Surgeons, New York.	229	3.9	26	118	3.4	9	210	4.3	23	19	0.	10	101
Northwestern University Medical School	191	5.1	27	135	0.7	16	175	1.7	22	16	46.6	11	32
University of Pennsylvania	181	5.5	27	89	2.2	10	157	3.1	23	25	20.0	14	126
University of Michigan (R)	136	11.8	24	55	0.	10	111	3.6	21	25	48.0	8	77
Medico-Chirurgical College of Philadelphia	128	19.5	10	95	15.7	11	121	18.2	10	7	43.0	4	130
Baltimore Medical College	127	27.6	26	71	28.1	18	120	29.1	25	7	0.	6	61
University of Minnesota	123	11.4	13	82	14.6	5	115	12.1	9	8	0.	6	80
University of Maryland	117	26.5	17	72	19.4	10	116	26.7	16	1	0.	1	66
Harvard University Medical School	116	2.6	18	54	0.	8	101	0.	14	15	20.0	11	71
Maryland Medical College	115	53.0	18	65	55.3	12	115	53.0	18	..	...	..	68
Medical College of Indiana	100	17.0	6	88	13.6	1	98	17.3	6	2	0.	1	38
College of Physicians & Surgeons, Baltimore.	97	16.5	25	58	15.5	14	92	17.3	22	5	0.	5	63
Western Pennsylvania Medical College	94	13.8	8	66	3.0	3	88	11.3	6	6	50.0	5	131
Marion-Sims Beaumont Medical College	93	15.0	17	64	7.8	11	85	11.8	17	8	50.0	4	90
State University of Iowa	91	8.9	14	69	0.	1	75	1.3	7	16	43.7	10	47
Tulane University	91	11.1	15	74	5.4	10	88	10.2	13	3	33.3	3	59
Keokuk Med. Coll. of Phys. & Surg	90	28.9	15	58	13.7	8	70	21.4	12	20	55.0	11	44
Long Island College Hospital	90	11.1	8	66	6.0	4	83	7.2	5	7	57.1	6	104
University of Vermont	88	13.6	14	39	2.5	5	67	8.9	12	21	28.6	8	151
Memphis Hospital Medical College	86	36.0	9	37	16.2	7	77	29.9	8	9	66.7	7	139
University & Bellevue Hospital Med. Coll	84	13.2	20	30	0.	5	66	1.7	12	23	43.4	13	107
Hahnemann Med. Coll. & Hospital Chicago.	79	16.7	18	51	5.8	8	65	12.5	15	14	35.7	8	27
Cornell University	79	0.	10	58	0.	7	79	0.	10	..	...	..	102
Tufts College Medical School	76	9.2	9	58	10.3	6	73	8.2	8	3	33.3	2	72
Barnes Medical College	73	34.2	23	41	26.8	13	59	27.1	17	14	64.3	9	89
George Washington University	70	17.6	14	45	13.6	10	66	16.9	14	4	25.0	2	16
University of Virginia	65	9.1	15	28	0.	7	54	7.4	12	11	18.2	8	154
Johns Hopkins University	64	0.	25	24	0.	10	61	0.	24	3	0.	3	64
University Medical College, Kansas City	62	13.1	14	37	2.7	4	51	6.0	10	11	45.4	9	83
Washington University, St. Louis	61	13.1	20	34	0.	9	51	9.8	16	10	30.0	9	135
University of Nashville	60	18.3	14	42	9.5	10	56	19.6	12	4	0.	4	135
University of the South	60	45.8	16	10	30.0	6	57	47.3	15	3	0.	3	140
Illinois Medical College	59	28.8	22	31	19.3	9	54	24.1	17	5	80.0	4	30
Baltimore University	59	66.1	15	13	61.5	5	52	69.2	13	7	42.8	5	62
University of Buffalo	59	1.7	9	31	0.	1	54	0.	6	5	20.0	4	109
Kentucky School of Medicine	58	41.4	24	16	18.7	8	35	38.2	16	23	47.8	16	52
Ohio Medical University	58	15.5	11	40	10.0	5	51	15.7	10	7	14.3	4	120
Meharry Medical College	58	43.1	16	38	42.1	11	55	43.6	16	3	33.3	2	138
Eclectic Medical Institute	56	21.4	14	34	14.7	8	47	25.5	11	9	0.	7	116
University College of Medicine, Virginia	57	8.7	4	41	2.4	3	57	8.7	4	..	...	..	153
Albany Medical College	56	0.	7	45	0.	4	53	0.	5	3	0.	2	100
Cooper Medical College	54	16.7	7	37	10.8	3	48	14.6	4	6	33.3	5	4
Medical College of Ohio	54	14.8	12	36	11.1	5	41	7.3	8	13	38.4	8	117
Hahnemann Med. Coll. & Hospital, Phila	53	3.7	10	38	0.	8	51	1.9	9	2	50.0	2	127
Medical College of Virginia	53	23.1	9	36	13.8	5	50	24.0	7	3	0.	3	152
Denver & Gross College of Medicine	52	11.5	12	32	3.1	5	48	10.4	11	4	25.0	2	12
Woman's Medical College of Pennsylvania	52	3.8	17	30	6.7	10	48	4.2	16	4	0.	4	129
American Coll. of Med. and Surgery	51	17.6	9	42	11.9	5	50	14.0	8	1	100.0	1	35
	4,893	15.1	16	2,908	9.2	8	4,384	13.1	14	509	32.2	6	

Table B gives the results in regard to the graduates of 1905. Table C gives results in regard to graduates of 1900 to 1905, inclusive (recent graduates), and Table D gives the results in regard to old practitioners, or those who graduated in 1899 or previous years.

Of the 7,620 candidates, it will be seen that 4,066 (54.3 per cent.) were graduates of 1905; 6,280 (82.4 per cent.) were recent graduates—graduates of 1900 to 1905, inclusive—and 890 (11.7 per cent.) were old practitioners, that is, those who graduated previous to 1900. There were also examined 450 undergraduates and a number of graduates for which no year of graduation was obtainable, this group comprising about 5.9 per cent. of all applicants.

A study of the failures is interesting. The graduates of 1905 had 4,066 applicants, with 11.6 per cent. of failures; graduates of 1900-1905, inclusive (recent graduates) had 6,280 applicants, with 16.1 per cent. of failures; graduates of 1899 and previous (old practitioners) had 890 applicants, with 34 per cent. of failures. The largest percentage of failures, however, as would naturally be expected, was obtained by the 450 undergraduates, etc., which was 54.9.

The fourteen colleges having 100 or more candidates (Table F), while furnishing 31 per cent. of all applicants, had only 297, or 19 per cent., of all failures. The fifty-one colleges having fifty or more candidates, although having 64 per cent. of all applicants, had only 739, or 47.8 per cent., of all failures. Thus, the reports favor the larger colleges from the standpoint of excellence.

Table E is based on the four preceding tables and shows the results obtained by graduates of all colleges of each state. This is of interest, since by it we can see whether the colleges in each particular state as a group are progressing. It is encouraging to note that in almost all states the percentage of failures is smaller for the 1900-1905 group of graduates than for 1899 and previous groups and still smaller for the 1905 graduates. This table also shows which states send out the most

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE C.

College.	Total Examined.	Results in Home State.			Results in Other States.		
		P.	F.	%F.	P.	F.	%F.
ALABAMA + *28.4*	*49*	*41*	*2*	*4.9*	*4*	*2*	*33.3*
Birmingham Medical College	8	7	0	0	1	0	0
Medical College of Alabama	41	34	2	5.3	3	2	40.0
ARKANSAS	*1*	..	..	..	*1*	*0*	*0*
University of Arkansas	1	..	..	..	1	0	0
CALIFORNIA — *25.6*	*168*	*82*	*42*	*34.6*	*40*	*4*	*9.0*
Cooper Medical College	48	30	7	18.9	11	0	0
University of California	23	17	2	10.5	4	0	0
California Medical College	12	2	3	60.0	4	3	42.8
Hahnemann Medical College	15	10	4	28.6	1	0	0
Coll. of P. and S., San Fran.	39	10	13	56.5	15	1	6.2
Oakland Coll. of M. and S.	..	..	..	..	..	..	..
University of South. California	29	11	13	54.2	5	0	0
C. of P. and S. Los Angeles	2	2	0	0	..	..	..
COLORADO + *4.9*	*69*	*37*	*2*	*5.1*	*27*	*3*	*10.9*
Denver and Gross	48	28	2	6.7	15	3	16.7
Denver Homeo. Med. College	6	4	0	0	2	0	0
University of Colorado	15	5	0	0	10	0	0
CONNECTICUT —	*29*	*20*	*0*	*0*	*9*	*0*	*0*
Yale Medical College	29	20	0	0	9	0	0
DISTRICT OF COLUMBIA — *5.8*	*130*	*52*	*16*	*23.5*	*51*	*11*	*17.7*
George Washington University	66	36	9	20.0	19	2	9.5
Georgetown University	30	9	3	25.0	13	5	27.8
Howard University	34	7	4	36.4	19	4	17.4
GEORGIA* —	*18*	..	..	..	*12*	*6*	*33.3*
College of P. and S., Atlanta	12	..	..	..	9	3	25.0
Georgia Eclectic Medical College	3	..	..	..	0	3	100.0
University of Georgia	3	..	..	..	3	0	0
ILLINOIS + *12.8*	*1,011*	*553*	*16*	*2.8*	*373*	*69*	*15.6*
American Medical Miss. College	20	3	0	0	14	3	17.6
Bennett Medical College	30	24	0	0	3	3	50.0
Chicago Homeo. Med. Coll.	10	..	..	..	6	4	40.0
College of Med. and Surgery	13	6	4	40.0	1	2	66.7
College of P. and S., Chicago	278	162	0	0	99	17	14.6
Hahnemann Med. Coll., Chicago	65	42	0	0	15	8	34.8
Harvey Medical College	18	15	1	6.2	1	1	50.0
Hering Medical College	21	12	1	7.7	7	1	12.5
Illinois Medical College	53	20	2	9.1	21	10	32.2
Jenner Medical College	22	13	5	27.8	3	1	25.0
Northwestern University	175	92	0	0	80	3	3.6
Rush Medical College	205	85	0	0	110	10	8.3
National Medical University	22	15	0	0	6	1	14.3
American Coll. of M. and S.	50	36	3	7.7	7	4	33.3
Dearborn Medical College	29	28	0	0	0	1	100.0
INDIANA + *11.9*	*156*	*116*	*27*	*18.9*	*9*	*4*	*30.8*
Cent. College of P. and S.	27	21	4	16.0	1	1	50.0
Medical College of Ind.	98	76	15	16.5	5	2	28.6
Physio Med. of Ind.	7	4	3	42.8	..	..	..
Eclectic Medical College of Ind.	6	3	1	25.0	1	1	50.0
Ft. Wayne Coll. of Med.	14	9	4	30.8	1	0	0
Indiana University	4	3	0	0	1	0	0
IOWA + *29.7*	*175*	*139*	*7*	*4.8*	*19*	*10*	*34.5*
Drake University	14	13	0	0	0	1	100.0
Keokuk Med. Coll. of P. and S.	70	45	6	10.9	10	9	47.4
Sioux City Coll. of Medicine	15	13	0	0	2	2	0
University of Iowa (H)	1	..	..	..	1	0	0
University of Iowa (R)	75	68	1	1.4	6	0	0
KANSAS + *12.5*	*25*	*17*	*0*	*0*	*7*	*1*	*12.5*
Coll. of P. and S., Kansas City	4	2	0	0	2	0	0
Kansas Medical College	21	15	0	0	5	1	16.7
University of Kansas	..	..	..	..	..	..	..
KENTUCKY† —	*175*	*5*	*0*	*0*	*94*	*76*	*44.7*
Hospital Coll. of Medicine	40	3	0	0	18	19	54.3
Kentucky School of Medicine	35	1	0	0	21	13	38.2
Louisville Medical College	26	..	..	..	14	12	46.1
Louisville National Medical Coll.	1	..	..	..	1	0	0
Southern Homeo. Med. Coll.	3	..	..	..	1	2	66.7
University of Louisville	35	1	0	0	21	13	38.2
Kentucky University	35	..	..	..	18	17	48.6
LOUISIANA + *23.5*	*100*	*48*	*4*	*7.7*	*33*	*15*	*31.2*
Flint Medical College	12	1	4	80.0	1	6	85.7
Tulane University	88	47	0	0	32	9	21.9
MAINE —	*20*	*18*	*0*	*0*	*2*	*0*	*0*
Medical School of Maine	20	18	0	0	2	0	0
MARYLAND — *2.3*	*576*	*105*	*62*	*31.1*	*291*	*118*	*28.8*
Baltimore Medical College	120	12	7	31.6	73	28	27.7
Baltimore University	52	1	4	80.0	15	32	68.1
College of P. and S., Baltimore	92	13	2	13.3	63	14	18.2
Johns Hopkins	61	13	0	0	48	0	0
So. Homeopathic Med. Coll.	14	8	0	0	5	1	16.7
University of Maryland	116	40	16	28.6	45	15	25.0
Woman's Medical College	6	2	0	0	4	0	0
Maryland Medical College	115	16	33	67.3	38	28	42.4
MASSACHUSETTS + *0.4*	*222*	*127*	*13*	*9.3*	*74*	*8*	*9.7*
Boston University	17	5	2	28.6	10	0	0
College of P. and S., Boston	31	4	7	63.6	14	6	30.0
Harvard University	101	63	0	0	38	0	0
Tufts Medical College	73	55	4	6.8	12	2	14.3
MICHIGAN — *2.8*	*149*	*61*	*5*	*7.6*	*79*	*4*	*4.8*
Detroit College of Medicine	21	6	1	14.3	12	2	14.3
Detroit Homeo. Med. College	..	..	..	..	..	..	..
Michigan Coll. of Med. and Sur.	2	..	..	..	1	1	50.0
Grand Rapids Med. Coll.	2	..	..	..	1	1	50.0
University of Michigan (R)	111	51	4	7.2	56	0	0
University of Michigan (H)	13	4	0	0	9	0	0
MINNESOTA — *12.0*	*151*	*74*	*22*	*22.9*	*49*	*6*	*10.9*
University of Minnesota (H)	1	..	..	..	1	0	0
University of Minn. (R)	115	64	12	15.8	37	2	5.1
Hamline University	35	10	10	50.0	11	4	26.7
MISSOURI‡ —	*393*	..	..	..	*333*	*60*	*15.2*
Medico-Chirurgical, Missouri	121	..	..	..	10	2	16.7
University Md. C., Kansas City	50	..	..	..	47	3	6.0
Kansas City Hahne. Med. Coll.	4	..	..	..	3	1	25.0
Kansas City Med. Coll.	36	..	..	..	33	3	8.3
Eclectic Medical University	3	..	..	..	2	1	33.3
Central Medical College	17	..	..	..	12	5	29.4
Ensworth Medical College	16	..	..	..	9	7	43.7
Barnes Medical College	59	..	..	..	43	16	27.1
St. Louis University	85	..	..	..	75	10	11.8
Coll. of P. and S., St. Louis	42	..	..	..	36	6	11.6
American Medical College	7	..	..	..	5	2	28.6
Homeo. College of Missouri	5	..	..	..	5	0	0
Washington University	50	..	..	..	46	4	8.0
University of Missouri	7	..	..	..	7	0	0
NEBRASKA — *66.6*	*36*	*1*	*5*	*83.3*	*25*	*5*	*16.7*
University of Nebraska	15	0	2	100.0	10	3	23.1
Creighton Medical College	13	0	1	100.0	11	1	8.3
Lincoln Medical College	8	1	2	66.7	4	1	20.0
NEW HAMPSHIRE —	*15*	*4*	*0*	*0*	*11*	*0*	*0*
Dartmouth Medical College	15	4	0	0	11	0	0
NEW YORK + *8.1*	*622*	*512*	*10*	*1.9*	*90*	*10*	*10.0*
Albany Medical College	53	46	0	0	7	0	0
College of P. and S., New York	210	159	6	3.6	42	3	6.7
Cornell University	79	68	0	0	11	0	0
Eclectic Med. Coll., New York	16	13	0	0	0	3	100.0
Long Island College Hospital	83	72	4	5.3	5	2	28.6
New York Homeo. Med. Coll.	24	21	0	0	2	1	33.3
N. Y. Woman's Medical Coll.	10	8	0	0	2	0	0
University and Bellevue M. C.	61	46	0	0	14	1	6.7
Syracuse University	32	30	0	0	2	0	0
University of Buffalo	54	49	0	0	5	0	0
NORTH CAROLINA + *21.5*	*84*	*33*	*14*	*29.8*	*18*	*19*	*51.3*
Leonard Medical College	45	5	6	54.5	16	18	52.9
North Carolina Medical College	30	20	7	25.9	2	1	33.3
University of North Carolina	9	8	1	11.1	..	..	..
OHIO + *18.1*	*286*	*170*	*5*	*2.8*	*87*	*23*	*20.9*
Western Reserve University	25	20	0	0	5	0	0
Cleveland Coll. of P. and S.	18	16	0	0	1	1	50.0
Cleveland Homeo. Med. Coll.	27	12	0	0	15	0	0
Eclectic Medical Institute	48	11	1	8.3	25	11	30.5
Medical College of Ohio	41	28	0	0	10	3	23.0
Pulte Medical College	8	3	0	0	4	1	20.0
Miami Medical College	24	20	0	0	4	0	0
Ohio Medical University	51	32	2	5.9	11	6	35.3
Starling Medical College	36	28	1	3.4	5	2	28.6
Toledo Medical College	8	0	1	100.0	7	0	0
OREGON — *55.5*	*47*	*20*	*25*	*55.5*	*2*	*0*	*0*
University of Oregon	36	15	19	5.6	2	0	0
Willamette University	11	5	6	54.5	..	..	..
PENNSYLVANIA — *4.2*	*676*	*407*	*38*	*8.5*	*221*	*10*	*4.3*
Temple College	2	1	0	0	1	0	0
University of Pennsylvania	157	86	2	2.3	66	3	4.3
Hahn. M. C. of Philadelphia	51	33	0	0	17	1	5.5
Jefferson Medical College	209	117	5	4.1	84	3	3.4
Woman's M. Coll. Pennsylvania	48	25	2	7.4	21	0	0
Medico-Chirurgical Coll., Pa.	121	77	19	19.8	22	3	12.0
Western Pennsylvania M. C.	88	68	10	12.8	10	0	0
SOUTH CAROLINA — *26.9*	*32*	*19*	*7*	*26.9*	*6*	*0*	*0*
Med. Coll. of South Carolina	32	19	7	26.9	6	0	0
TENNESSEE + *5.7*	*372*	*55*	*27*	*32.9*	*178*	*112*	*38.6*
Tennessee Medical College	17	11	1	8.3	3	2	40.0
Knoxville Medical College	7	0	1	100.0	1	5	83.3
University of Nashville	56	13	3	18.8	32	8	20.0
Vanderbilt University	25	6	0	0	17	2	10.1
University of Tennessee	34	7	7	50.0	13	7	35.0
Meharry Medical College	55	3	6	66.7	24	22	47.8
Memphis Medical College	77	7	2	22.2	45	23	33.8
University of South	57	1	0	0	29	27	48.2
Chattanooga National M. C.	..	..	..	..	..	..	..
Chattanooga Medical College	42	7	5	41.7	14	16	53.3
University of Tennessee	2	0	2	100.0	..	..	..
VERMONT + *15.8*	*67*	*29*	*0*	*0*	*32*	*6*	*15.8*
University of Vermont	67	29	0	0	32	6	15.8
VIRGINIA — *5.7*	*161*	*91*	*15*	*14.9*	*49*	*5*	*9.2*
Medical College of Virginia	50	28	9	24.3	10	3	23.1
University College of Medicine	57	38	3	7.3	14	2	12.5
University of Virginia	54	25	4	13.8	25	0	0
TEXAS + *10.3*	*33*	*12*	*4*	*25.0*	*11*	*6*	*35.3*
Fort Worth University	4	2	0	0	1	1	50.0
University of Texas	11	10	0	0	1	0	0
Baylor University	7	0	3	100.0	4	0	0
Dallas Medical College	3	..	..	..	1	2	66.7
Gate City Medical College	5	..	..	..	2	3	60.0
Southwestern University	2	0	1	100.0	1	0	0
Coll. of P. and S., Dallas	1	..	..	..	1	0	0
WISCONSIN + *33.6*	*36*	*29*	*2*	*6.4*	*3*	*2*	*40.0*
Milwaukee Medical College	20	18	0	0	0	2	100.0
Coll. of P. and S., Wisconsin	16	11	2	14.6	3	0	0
+ 11.3	2,467	1,382	153	10.0	733	199	21.3

Figures in italics show totals by states.

* Examination reports not received.

† Most graduates of home colleges registered without examination.

‡ No record kept of year of graduation, so could not differentiate between graduates and undergraduates.

TABLE II. REJECTIONS BY LICENSING BOARDS.

Arranged in order of the percentage of rejections by each State Examining Board. Based on Table C.

State.	Colleges of all States.				Colleges of Home States.				Colleges of Other States.			
	Total Number of Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.	Total Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.	Total Applicants.	Number Registered.	Number Rejected.	Percentage Rejected.
Mississippi	135	71	64	47.4	....	....	...	...	137	71	64	47.4
Oregon	96	53	43	44.8	45	20	25	55.5	51	22	18	35.3
Nebraska	26	16	10	38.5	6	1	5	83.3	20	15	5	25.0
California	202	125	77	38.1	124	82	42	33.9	78	43	35	44.9
West Virginia	137	85	52	37.9	....	....	...	...	137	85	52	37.9
New York	688	662	26	37.8	522	512	10	1.9	166	150	16	9.6
Maryland	187	118	69	36.9	167	105	62	37.1	20	13	7	35.0
South Carolina	65	44	21	32.3	26	19	7	26.9	39	25	14	35.9
Texas	68	47	21	30.9	16	12	4	25.0	52	35	17	32.7
Tennessee	102	71	31	30.4	82	55	27	32.9	20	16	4	20.0
Montana	35	25	10	28.6	....	....	...	...	35	25	10	28.6
Rhode Island	58	42	16	27.6	....	....	...	...	58	42	16	27.6
Delaware	26	19	7	26.9	....	....	...	...	26	19	7	26.9
Virginia	181	133	48	26.5	107	91	16	15.0	74	42	32	43.2
New Hampshire	19	14	5	26.3	4	4	...	...	15	10	5	33.3
Minnesota	147	112	35	23.8	96	74	22	22.9	51	38	13	25.5
Dist. of Columbia	85	65	20	23.5	68	52	16	23.5	17	13	4	23.5
New Jersey	64	50	14	21.9	....	....	...	...	64	50	14	21.9
Indiana	284	230	54	19.0	143	116	27	18.9	141	114	27	19.1
Connecticut	75	61	14	18.7	20	20	...	...	55	41	14	25.4
Oklahoma	48	39	9	18.7	....	....	...	...	48	39	9	18.7
Massachusetts	302	252	50	16.5	140	127	13	9.3	162	125	37	22.8
South Dakota	37	31	6	16.2	....	....	...	...	37	31	6	16.2
Idaho	42	36	6	14.3	....	....	...	...	42	36	6	14.3
Utah	28	24	4	14.3	....	....	...	...	28	14	4	14.3
Arizona	30	26	4	13.3	....	....	...	...	30	26	4	13.3
Arkansas	30	26	4	13.3	....	....	...	...	30	26	4	13.3
Washington	115	100	15	13.0	....	....	...	...	115	100	15	13.0
Iowa	227	201	26	11.4	146	139	7	4.8	81	62	19	23.4
Pennsylvania	608	519	89	11.3	445	407	38	8.5	163	112	51	31.3
Kansas	166	149	17	10.2	17	17	...	...	149	132	17	11.4
Alabama	124	112	12	9.7	43	41	2	4.6	81	71	10	12.3
Colorado	193	175	18	9.7	43	37	2	5.1	154	138	16	10.4
Louisiana	107	97	10	9.3	52	48	4	7.7	55	49	6	10.9
Florida	23	21	2	8.7	....	....	...	...	23	21	2	8.7
North Dakota	69	63	6	8.7	....	....	...	...	69	63	6	8.7
Kentucky	35	32	3	8.6	*5	5	...	...	30	27	3	10.0
Maine	60	57	3	5.0	18	18	...	...	42	39	3	7.1
Michigan	83	79	4	4.8	62	61	1	1.6	21	18	3	14.3
Wisconsin	93	89	4	4.3	31	29	2	6.4	62	60	2	3.2
Illinois	766	736	30	3.9	569	533	16	2.8	197	183	14	7.1
Ohio	208	203	5	2.4	175	170	5	2.9	33	33	...	...
Vermont	42	41	1	2.4	29	29	...	...	13	12	1	7.7
Nevada	26	26	....	....	....	....	...	...	26	26	...	...
Wyoming	18	18	....	....	....	....	...	...	18	18	...	...
Totals	6,280	5,278	1,002	15.5	3,244	2,877	367	11.3	3,036	2,401	635	20.9

* Registers a considerable number of graduates of home colleges without examination. No reports from Georgia and Missouri.

physicians and, if the results of these examinations may be taken as a guide, the class of physicians. In the last two columns the rank of each state is given; in the first according to the number of applicants, and in the second according to the success of the graduates in passing the examinations.

Table F, also based on the first four tables, allows us to make comparisons among the larger colleges, or the 51 colleges having 50 or more candidates examined during the year 1905. There were 154 colleges in all which had candidates examined by state boards, of which 14 had 100 or more examined and 37 had between 50 and 100 examined. Therefore, 33 per cent. of the colleges had 50 or more candidates, while 103 (67 per cent.) had less than 50 each. There were 70 (45 per cent.) which had less than 25 candidates each. In other words, 2,350, or about 31 per cent. of all the candidates, came from 14, or 9 per cent., of all colleges, while 4,893, or 64 per cent., of all candidates came from 51, or 33 per cent., of the colleges.

In making comparisons, beside the percentage, one must consider also the number examined and the number of state boards before which the college was represented. The above group—Table F—is arranged according to the number examined. As to the representation before state boards: Jefferson leads, its graduates appearing in 35 states. Rush Medical College comes next, its graduates appearing in 30. Northwestern University Medical School and the University of Pennsylvania each had graduates appearing in 27 states. The College of Physicians and Surgeons, Chicago, the College of Physicians and Surgeons, New York, and the Baltimore Medical College each had representatives in 26 states.

Table G is based on the examination of graduates of 1900 to 1905, inclusive, i. e., *"recent graduates."* All graduates who were examined in the state in which the college is located are grouped in one column, while all the graduates of that college who were examined in other states are in another column. This is for the purpose of showing the number of graduates who stay in the state in which the college is located; also to show what is evidently a fact, that, as a rule, the graduates of a certain school have a much better chance of passing the examination in the state in which the school is located than they have elsewhere. This should always be con-

COLLEGES CLASSIFIED.

The following tables are based upon Table C, therefore on results of the examination of *recent graduates*:

TABLE I.—Colleges Having Less Than 10 Per Cent. of Failures.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
ALABAMA.					
Birmingham Medical College....	8	8	0	0	2
Medical College of Alabama....	41	37	4	9.7	2
CALIFORNIA.					
University of California........	22	20	2	9.0	5
COLORADO.					
Colorado School of Medicine....	8	8	0	0	7
CONNECTICUT.					
Yale University	29	29	0	0	6
ILLINOIS.					
College of P. and S., Chicago....	276	259	17	6.1	25
Northwestern University	175	172	3	1.7	22
Rush Medical College	203	193	10	4.9	28
Dearborn Medical College.......	29	28	1	3.4	2
IOWA.					
Drake University	14	13	1	7.1	2
Sioux City Coll. of Medicine....	15	15	0	0	2
University of Iowa............	75	74	1	1.3	7
KANSAS.					
Kansas Medical College........	21	20	1	4.8	5
MAINE.					
Medical School of Maine.......	20	20	0	0	3
MARYLAND.					
Johns Hopkins University	60	60	0	0	24
MASSACHUSETTS.					
Harvard Univ. Medical School..	101	101	0	0	14
Tufts College Medical School..	73	67	6	8.2	8
MICHIGAN.					
University of Michigan (R)....	111	107	4	3.6	21
MISSOURI.					
Univ. Med., Kansas City.......	49	46	3	6.1	10
Kansas City Medical College....	36	33	3	8.3	7
Washington University	49	45	4	8.2	16
University of Missouri	7	7	0	0	6
NEW HAMPSHIRE.					
Dartmouth Med. Coll	15	15	0	0	3
NEW YORK.					
Albany Med. Coll.	53	53	0	0	5
College of P. and S.	210	210	9	4.3	23
Cornell University	79	79	0	0	10
Long Island College Hospital..	83	77	6	7.2	5
N. Y. Womans Medical College..	10	10	0	0	3
University and Bellevue........	60	59	1	1.7	12
Syracuse University	32	32	0	0	3
University of Buffalo	54	54	0	0	6
OHIO.					
Western Reserve University	24	24	0	0	5
College of P. & S., Cleveland....	18	17	1	5.9	2
Medical College of Ohio	41	38	3	7.3	8
Miami Medical College	24	24	0	0	3
Starling Medical College	36	33	3	8.3	7
PENNSYLVANIA.					
University of Pennsylvania.....	157	152	5	3.1	23
Jefferson Medical College.......	208	200	8	3.8	34
Woman's Medical Coll., Phila....	48	46	2	4.2	16
TENNESSEE.					
Vanderbilt University..........	25	23	2	8.0	10
TEXAS.					
University of Texas....	11	11	0	0	2
VERMONT.					
University of Vermont	67	61	6	8.9	12
VIRGINIA.					
University College of Medicine...	57	52	5	8.7	4
University of Virginia	54	50	4	7.4	12
Totals	2,788	2,673	115	4.2	10

sidered in making comparisons between colleges. A college having an exceedingly low standard, by having its graduates all locate in the home state, may thus show a lower percentage of failures than a college of much higher standard. This table will enable one to correct such an impression.

Colorado and Kentucky registered without examination graduates of their own schools. Reports from Missouri, as before stated, did not contain the year of graduation, so we could not use the data.

The figures in italics give the results by states. The first column of italic figures show the difference between the percentages of home colleges and of colleges of other states. The plus sign indicates that colleges of other states have the larger percentage of rejections; the minus sign indicates that the home colleges have had the greater percentage rejected.

Table H, also based on Table C, shows the percentage of rejections by each state, the states having the highest number rejected being given first. This table is of but comparative value. In making comparisons a number of other points must be considered. Some states scrutinize the credentials of candidates carefully before allowing them to come up for examination, thereby eliminating those who would be more apt to fail at the examinations. In Kentucky and Colorado a number of applicants were registered on presentation of acceptable credentials without examination. These are included in figuring the percentage of rejections. Columns showing candidates from colleges of home states and colleges of other states are arranged to allow comparison with Table G.

In Tables I, J, K and L, the colleges have been classified according to the percentages of failures. For greater fairness to all these figures this year have been drawn from Table C, and are, therefore, based on the results obtained from *recent graduates*. Table I shows those colleges receiving less than 10 per cent.; Table J shows those receiving from 10 to 20 per cent., and Table K shows those obtaining 20 per cent. of failures and over. In Table L have been placed all the colleges regarding which the data was insufficient to allow of fair comparison. Owing to the fact that the homeopathic and eclectic colleges have in many states different boards or members of boards passing on the examination papers, comparisons would not be entirely fair and it was thought better to place these colleges in the unclassified list.

There are 44 colleges listed in Table I; of these, 16 had no failures, 11 had from 1 to 5 per cent. failures

TABLE J.—Colleges Having from 10 to 20 Per Cent. Failures.

College.	Total Examined.	Number Passed.	Number Failed.	Per cen. Failed.	No. of States.
CALIFORNIA.					
Cooper Medical College	45	38	7	15.5	4
DISTRICT OF COLUMBIA.					
George Washington University..	65	54	11	16.9	14
ILLINOIS.					
American Medical Miss. College..	20	17	3	15.0	12
INDIANA.					
Central College of P. and S.....	27	22	5	18.5	3
Medical College of Indiana.....	98	81	17	17.3	6
LOUISIANA.					
Tulane University	87	78	9	10.2	13
MARYLAND.					
College of P. and S., Baltimore..	92	76	16	17.3	22
MICHIGAN.					
Detroit College of Medicine.....	21	18	3	14.2	10
MINNESOTA.					
University of Minnesota........	115	101	14	12.1	9
MISSOURI.					
Medico-Chirurgical, Missouri....	12	10	2	16.7	6
St. Louis University	85	75	10	11.8	17
College of P. and S., St. Louis..	42	36	6	11.6	10
NEBRASKA.					
Creighton Medical College.......	13	11	2	15.3	9
NORTH CAROLINA.					
University of North Carolina...	9	8	1	11.1	1
OHIO.					
Ohio Medical University........	51	43	8	15.7	10
Toledo Medical College.........	8	7	1	12.5	3
PENNSYLVANIA.					
Medico-Chirurgical, Philadelphia.	121	99	22	18.2	10
West. Pennsylvania Medical Coll.	88	78	10	11.3	6
TENNESSEE.					
Tennessee Medical College......	17	14	3	17.6	3
University of Nashville	56	45	11	19.6	12
WISCONSIN.					
Milwaukee Medical College.....	20	18	2	10.0	2
Wisconsin College of P. and S..	16	14	2	12.5	3
Totals	1,108	943	165	14.8	8

and 17 had from 5 to 10 per cent. In Table J, 22 colleges are listed, 10 having 10 per cent. or less than 15 per cent. of failures and 12 which have 15 or less than 20 per cent. of failures. In Table K, 40 colleges are listed, 16 having from 20 to 30 per cent. failures, 3 having from 30 to 40 per cent., 12 having from 40 to 50 per cent., 5 having from 50 to 60 per cent., and 4 which have, respectively, 60 per cent., 69.2, 83.3 and 85.7 per cent. of failures.

Our endeavor in the publication of these statistics has been to give an absolutely fair presentation of facts as they exist. A knowledge of such facts is always beneficial, and we trust this exposition of the results of the examination of applicants for license to practice medicine in the United States will help in the advancement of medical education in this country .

Although there were one or two states from which, owing to local difficulties, reports were not received, we have received from all examining boards a ready coöperation which has been most encouraging. We wish to acknowledge our indebtedness to the state examining and licensing boards, whose complete reports have made the publication of these data possible.

TABLE K.—Colleges Having 20 Per Cent. of Failures and Above.

College.	Total Examined.	Number Passed.	Number Failed.	Per Cent. Failed.	No. of States.
California.					
California Medical College	10	4	6	60.0	5
Coll. of P. and S., San Francisco	33	19	14	42.3	6
University of So. California....	29	16	13	44.8	4
Colorado.					
Denver and Gross.............	19	14	5	26.3	11
District of Columbia.					
Georgetown University	30	22	8	26.7	11
Howard University	34	26	8	23.5	13
Georgia.					
College of P. and S., Atlanta...	12	9	3	25.0	7
Illinois.					
Illinois Medical College	53	41	12	22.6	17
Jenner Medical College	21	15	6	28.6	5
Indiana.					
Ft. Wayne College of Medicine..	14	10	4	28.6	2
Iowa.					
Keokuk Med. Coll., C. of P. & S..	70	55	15	21.4	12
Kentucky.					
Hospital College of Medicine....	40	21	19	47.5	14
Kentucky School of Medicine....	35	22	13	38.2	16
Louisville Medical College......	26	14	12	44.0	13
University of Louisville........	35	22	13	37.1	13
Kentucky University	35	18	17	48.4	16
Louisiana.					
Flint Medical College	12	2	10	83.3	3
Maryland.					
Baltimore Medical College	120	85	35	29.1	25
Baltimore University	52	16	36	69.2	13
University of Maryland	116	85	31	26.7	16
Maryland Medical College......	115	54	61	53.0	18
Massachusetts.					
Coll. of P. & S., Boston........	31	18	13	41.9	10
Minnesota.					
Hamline University	35	21	14	40.0	7
Missouri.					
Central Medical College	17.	12	5	29.4	3
Ensworth Medical College	15	8	7	46.6	5
Barnes Medical College	59	43	16	27.1	17
Nebraska.					
University of Nebraska.........	14	9	5	35.7	9
North Carolina.					
Leonard School of Medicine.....	45	21	24	53.3	10
North Carolina Medical College..	30	22	8	26.6	2
Oregon.					
University of Oregon	36	17	19	52.7	3
Willamette Univ.	11	5	6	55.5	1
South Carolina.					
Medical Coll. of South Carolina.	32	25	7	23.3	6
Tennessee.					
Knoxville Medical College	7	1	6	85.7	5
University of Tennessee	34	20	14	41.2	12
Meharry Medical College.......	55	31	24	43.6	16
Memphis Hospital Medical Coll..	77	52	25	29.9	8
University of the South........	57	30	27	47.3	15
Chattanooga Medical College...	42	21	21	50.0	11
Texas.					
Baylor University	7	4	3	42.8	5
Virginia.					
Medical College of Virginia.....	50	38	12	24.0	7
Totals	1,565	968	597	38.2	10

TABLE L.—Unclassified Colleges.

In this list have been placed all colleges regarding which there was insufficient data to allow of comparison.

College.	Total Examined.	Number Passed.	Number Failed.	Per cent. Failed.	No. of States.
Arkansas.					
Med. Dept. Univ. Arkansas (R.).	1	1	0	0	1
California.					
Hahnemann Medical College (H.)	15	11	4	26.7	2
Oakland Coll. of Med. and Sur..	..	..	..	..	..
Coll. of P. and S., Los Angeles..	2	2	0	0	1
Colorado.					
Denver Homeo. Med. Coll. (H.).	2	2	0	0	1
Georgia.					
Georgia Coll. of Ecl. M. and S..	3	0	3	100.0	2
Medical College of Georgia......	3	3	0	0	2
Illinois.					
Bennett Medical College (E.)...	30	27	3	10.0	5
Chi. Homeo. M. C. (H.), extinct.	10	6	4	40.0	7
Coll. of Med. and Surg. (Ph.M.).	13	7	6	46.1	3
Hahnemann M. C., Chicago (H.)	64	56	8	12.5	15
Harvey Medical College, extinct.	18	16	2	11.1	3
Hering Medical College (H.)....	21	19	2	9.5	7
National Medical University (?).	22	21	1	4.5	5
American Coll. of M. and S. (E.)	50	43	7	14.0	8
Indiana.					
Physio-Medical, Ind. (Ph.M.)...	7	4	3	42.8	1
Eclectic Med. Coll. of Ind. (E).	6	4	2	33.3	3
Ind. Univ. School of Medicine..	4	4	0	0	2
Iowa.					
Univ. of Iowa Homeo. Dept....	1	1	0	0	1
Kansas.					
P. and S. Kansas City (R.).....	3	3	0	0	3
School of Med., Univ. of Kansas..	..	..	..	..	..
Kentucky.					
Louisville National M. C. (R.)..	1	1	0	0	1
Southern Homeo. M. C. (H.)...	3	1	2	66.7	1
Maryland.					
Southern Homeo M. C. (H.)....	14	13	1	7.1	4
Woman's M. C., Baltimore, (R.).	5	5	0	0	5
Massachusetts.					
Boston University (H.)........	17	15	2	4.8	6
Michigan.					
Detroit Homeo. Med. Coll. (H.).	..	..	..	..	..
Michigan Coll. of M. and S. (R.)	2	1	1	50.0	2
Grand Rapids Med. Coll. (R.)...	2	1	1	50.0	2
Univ. of Michigan Homeo. (H.).	13	13	0	0	6
Minnesota.					
University of Minnesota (H.)..	1	1	0	0	1
Missouri.					
Kansas City Hahn. Med. Coll...	4	3	1	25.0	2
Eclectic Medical University.....	3	2	1	33.3	2
American Medical College (E.)..	7	5	2	28.6	6
Homeo. Med. Coll. of Misouri..	5	5	0	0	4
Nebraska.					
Lincoln Medical College (E.)...	8	5	3	37.5	5
New York.					
Eclectic Medical College (E.)....	16	13	3	18.7	2
New York Homeo M. C. (H.)...	24	23	1	4.2	4
Ohio.					
Cleveland Homeo. Med. College..	27	27	0	0	7
Eclectic Medical Institute (E.)..	48	36	12	25.0	11
Pulte Medical College (H.)....	8	7	1	12.5	5
Pennsylvania.					
Temple College of Med. (R.)....	2	2	0	0	2
Hahnemann M. C. of Pa. (H.)..	51	50	1	1.9	9
Tennessee.					
Chattanooga National Med Coll.	..	..	..	..	..
University of W. Tennessee (R.)	2	0	2	100.0	1
Texas.					
Fort Worth University (R.) ..	4	3	1	25.0	3
Dallas Med. Coll. (R.), extinct.	3	1	2	66.7	2
Gate City Medical College (R.)..	5	2	3	60.0	2
Southwestern University (R.)...	2	1	1	50.0	2
Coll. of P. and S., Dallas (R.)..	1	1	0	0	1
Totals	553	467	86	15.6	3

RECIPROCITY.

Physicians and students are continually writing us for information in regard to reciprocity between the various state examining boards. The following information is based on statements received direct from the examining boards themselves and so should be approximately correct. We shall consider it a favor if state boards will correct any errors or wrong impressions which may have crept in, as we are daily replying to correspondents on these points.

The ideal basis for reciprocity would of course be uniform—and therefore equally high—standards by all the boards. But this is considered by many an idea too utopian to be considered. As conditions now exist, states having comparatively equal standards have arranged for reciprocity on two different bases: (1) On the basis of an examination before an examining board, and (2) on a diploma without an examination.

1. On the Basis of an Examination.—This basis is acceptable to a larger number of states than the second. A physician must have passed an examination before an examining board and (under most provisions) have resided in that state a year succeeding the examination, whereon he may register in any other state of the group through reciprocity without examination.

2. On the Basis of a Diploma Without Examination.—This applies only where the applicant was registered in another state prior to the date when the state receiving him through reciprocity required an examination. For example, a physician of good repute was registered to practice medicine in Nebraska in 1880. For good reasons he desires to change residence to Minnesota. Taking for granted his credentials were otherwise acceptable, he is eligible to registration in that state through reciprocity, since Minnesota did not require examination of all applicants until Jan. 1, 1887. Those who registered in Nebraska since Jan. 1, 1887, would not be eligible through reciprocity unless they could register on Basis No. 1.

The reciprocity table published herewith is based on statements from the various examining boards and other data, which we have reason to believe is reliable. The figures given on the table indicate (1) whether reciprocity is on the basis of an examination, and (2) whether reciprocity is on either the basis of an examination or on a diploma without examination. In the table are a number of states which apparently do not reciprocate with others, although having authority under their laws to do so. In regard to reciprocity with these, one should refer to the special statements below regarding reciprocity with these states.

While the various states reciprocate, as stated in the table, most of them have other requirements. All of them require that the applicant must be of good moral character and that he shall hold credentials from a recognized medical college. Many require one or two years of reputable practice, and some require that he must have been a member of a county, state or national medical society for at least a year. Regarding these special requirements one should correspond with the secretary of the examining board of the state where he wishes to locate.

The laws of the following states have provisions for reciprocity, but no information is at hand as to what arrangements have been made with any states in regard to it:

California.—"The board may, in its discretion, accept and register, on payment of the registration fee, and without examination of the applicant, any certificate which shall have been issued to him by the medical examining board of the District of Columbia, or of any state or territory of the United States; provided, that the legal requirements of such board shall have been, at the time of issuing such certificate, in no degree or particular less than those of California at the time when the certificate shall be presented for registration to the board created by this act; and provided, further, that the provisions in this paragraph contained shall be held to apply only to such of said medical examining boards as accept and register the certificates granted by this board, without examination of them, of the ones holding such certificate." The registration fee is $20.00. California does not yet reciprocate with any other state.

Colorado.—It is the policy of this board to license without examination applicants who have been legally engaged in the practice of medicine in other states, provided they qualified in those states by offering in evidence a standard of educational and moral qualification which was required in Colorado for the corresponding year. This board will also register without examination all applicants who have been admitted and are duly authorized and empowered to practice medicine in any of the regular medical departments of the Army, Navy and Public Health and Marine-Hospital Service of the United States of America, and who are in good standing and of good repute in such Federal service.

Connecticut.—The license granted by any other state may be accepted on presentation of satisfactory evidence that said license was granted after an examination equivalent to that of the Connecticut board.

Delaware.—The board indorses the certificate of license issued after examination by any state medical examining and licensing board whose standard of requirements is substantially the same as that of Delaware or higher, irrespective of reciprocity, provided the applicant furnishes satisfactory proof of good moral character. Reciprocal registration fee, $50.00.

District of Columbia.—The board is authorized to license, without examination, any applicant who has been engaged in the practice of medicine and surgery in any other state, territory or insular possession of the United States or a foreign country for the last two years, and who received his license under conditions equivalent to those required in the District of Columbia; provided, that the licentiates of the district board are granted a similar privilege.

Kansas.—The board may accept the certificate of the board of registration and examination of any other state or territory or any foreign country whose standards of qualification for practice are equivalent to those of this state.

Maine.—Any person who is eligible for examination before this board, and who has been examined and registered or licensed by the examining board of any other state which maintains a standard of education at least equal to that required in this state, may be registered on complying with the requirements of the board.

Missouri.—The legislature passed a reciprocal clause granting us the privilege to hold reciprocal relation with states having a standard of requirements equal to the requirements of this state.

New Hampshire.—Applicants examined and licensed by other state examining boards registered by the regent as maintaining standards not lower than those provided by this state, may, on payment of $5.00, be licensed without examination.

New Jersey.—New Jersey will now indorse the medical license issued by any state after examination, whose educational, examining, and licensing requirements are substantially equal to, or higher than those of New Jersey, irrespective of reciprocity, provided the applicant complies with the conditions of indorsement. The fee is $50.00.

New Mexico.—On payment of the regular fee, the board may grant licenses to licentiates of other states and territories which have like requirements, and when said states and territories reciprocate in this matter.

RECIPROCITY TABLE.

	Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	District of Columbia.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Indian Territory.	Iowa.	Kansas.	Kentucky.	Louis'ana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Mississippi.	Missouri.	Montana	Nebraska.	Nevada.	New Hampshire.	New Jersey.	New Mexico.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
Alabama																																																		
Arizona																																																		
Arkansas																																																		
California																																																		
Colorado							1							1														1																				1
Connecticut																																																		
Delaware													1								1										1																1			1	
District of Columbia					1																		1																									1	1				1
Florida																																																		
Georgia															2		2			2		2					2																		2						2	1
Idaho																																																		
Illinois													1		1	1			1	1		1	1				1			1				1	1					1					1				1	1
Indiana												1			2	2	2		2	2		2					2	2		2					1								1			1			2	
Indian Territory																																																		
Iowa					1					2		1	2			2	2		2	2		2	1		1		2	2		1				2						2	1		2						2	1
Kansas												1	2		2		2			2		2	2				2			1																				2	1
Kentucky								2		2			2		2	2			2		2				2				2			1	2					2									2	
Louisiana																																																		
Maine												1	1		1					2		2	2							1				1	2					1					1					1
Maryland							2	2		2		1	2		2	2			2			2					2		2						2		2			2			2		1	1			2	1
Massachusetts																																																		
Michigan								1		2		1	2		2	2	2		2	2			2		2		2	2		1		2		1	2					1					2	1			2	1
Minnesota												1			2	2			2	1		2			1			1		1					2					1	1								2	1
Mississippi																																																		
Missouri															1								2	1							1																				1
Montana																																																		
Nebraska										2		1	2		2	2				2		2	2														1										1			2	1
Nevada													2		2								2	1																		1			2							
New Hampshire																																																		
New Jersey												1							1			1												1			1										1	1			1	
New Mexico																																															2	
New York																						1								1																					
North Carolina																																																		
North Dakota												1			2		1		1			1																								1				1	1
Ohio								2				1	2						2	2		2	2				2			1															1	1			2	
Oklahoma																																																		
Oregon																					2																													
Pennsylvania																																																		
Rhode Island																																																		
South Carolina												1				1			1	1			1					1		1					1								1			1			1	1
South Dakota															1								1																											1	
Tennessee																																																		
Texas																														1																	1				
Utah																																																		
Vermont								1					1							1	1		1							1				1	1																1
Virginia							1						1	1							1		1					1			1					1				1			1							
Washington																																																		
West Virginia																																																		
Wisconsin							1			2		1	2		2	2	2			2		2	2				2			1	2			1	2					1	1								1
Wyoming					1					1		1			1	1			1			1	1		1		1						1						1					1				1	

Key: 1, Reciprocates on basis of an examination. 2, Reciprocates on diploma or examination.

South Dakota.—The board is empowered to accept and license on the payment of the regular fee ($20.00), without examination, the holder of a license issued by the examining board of any other state or territory having requirements equal to those of the state of South Dakota at the time when such license is presented for registration, and who grant reciprocal privileges.

Utah is authorized to reciprocate with states having equally high standards.

Vermont.—The board will endorse the certificate or license of any state medical examining and licensing board in accordance with the following section of the Public Acts of 1904: The board shall issue licenses without examination to reputable physicians and surgeons who shall personally appear and present a certified copy of certificate of registration or license, which has been issued to said applicant in another state in the Union, where the requirements for registration shall be deemed by said board to be equivalent to those of this state, provided such state shall accord a like privilege to holders of a license granted under the laws of this state. Each applicant for such license shall pay to the board the sum of $10.00.

Wyoming.—The board may, in its discretion, grant certificates on licenses issued by the medical examining board of the District of Columbia, or of any state or territory of the United States, provided they have been granted on requirements no less than those of Wyoming, and provided, further, that the board of the state or territory issuing the license reciprocates on the same terms with Wyoming.

No Reciprocity.—The following states have made no statement in regard to or no arrangements for reciprocity:

Alabama.
Arizona.
Arkansas.
Florida.
Idaho.
Indian Territory.
Louisiana.
Massachusetts.
Mississippi.
Montana.
North Carolina.
Oklahoma.
Oregon.
Pennsylvania.
Rhode Island.
Tennessee.
Washington.
West Virginia.

EDUCATION NOTES.

New Colleges.

Nine new schools have been organized since June, 1905, five of which had matriculants. These colleges are the College of Physicians and Surgeons, Little Rock, Ark.; the Atlanta School of Medicine, Atlanta, Ga.; the Indiana Medical College, School of Medicine of Purdue University, Indianapolis, Ind.; the State College of Physicians and Surgeons, Indianapolis, Ind.; the Mississippi Medical College, Meridian, Miss.; the Nebraska College of Medicine, Lincoln, Neb.; the Medical Department of the University of North Dakota, University, N. Dak.; the College of Physicians and Surgeons, Memphis, Tenn., and the Medical Department of the University of Utah, Salt Lake City, Utah.

Colleges Which Have Raised Standards During the Past Year.

The colleges listed below, according to their announcements, have made an increase in entrance requirements during the past year:

University of California, two years of work in a college of arts.
University of Missouri, one year in a college of arts.
George Washington University, two years of work in a college of arts, beginning with the session of 1909-10.
University of Texas Medical Department, the equivalent of one year's work in a college of arts, beginning in 1909.

Colleges which have already been requiring one or more years of work in a literary college are the following:

Harvard Medical School requires a degree from a college of liberal arts.
Johns Hopkins Medical School requires a degree.
Western Reserve University Medical Department, three years.
Rush Medical College, two years.
Indiana University Medical School, two years.
University of Minnesota, both regular and homeopathic departments, one year now, will require two years hereafter.
College of Physicians and Surgeons, New York, requires one year.

The faculties of the following colleges have voted to require a preliminary year in physics, chemistry, biology and languages to apply to all students beginning medical study after Jan. 1, 1910:

College of Physicians and Surgeons, San Francisco.
Northwestern University Medical School.
Jenner Medical College.
State University of Iowa, both regular and homeopathic departments.
University of Kansas, Medical Department.
College of Physicians and Surgeons, Baltimore.
College of Physicians and Surgeons, Boston.
Cleveland Homeopathic Medical College.
Cleveland College of Physicians and Surgeons.
University of Tennessee Medical Department.
Dearborn Medical College (evening classes) has extended its course to five years.

The following colleges, according to their announcements, have lengthened their annual sessions as follows:

1. Medical College of Alabama, from six to seven months.
2. University of Arkansas, from six to seven months.
3. College of Physicians and Surgeons, Los Angeles, from eight to eight and one-half months.
4. Denver Homeopathic Medical College, from seven to eight months.
5. Georgetown University, from eight to eight and one-half months.
6. Atlanta College of Physicians and Surgeons, from six to seven months.
7. Atlanta School of Medicine, from six to seven months.
8. Hahnemann Medical College, Chicago, from seven to eight months.
9. Physiomedical College of Indiana, from seven to eight months,
10. Keokuk Medical College of Physicians and Surgeons, from seven to eight months.
11. Maryland Medical College, from eight to nine months.
12. Baltimore University Medical Department, from six to nine months.
13. Detroit College of Medicine, from seven to eight months.
14. Barnes Medical College, from seven to eight months.
15. Western Reserve University, from eight to eight and one-half months.
16. Willamette University, from six to seven months.
17. University of Oregon Medical Department, from seven to seven and one-half months.
18. University of Tennessee Medical Department, from six to seven months.
19. Chattanooga Medical College, from six to seven months.
20. Memphis Hospital College, from six to seven months.
21. Eclectic Medical College of Indiana, from six to seven months.

Distribution of Medical Students.

Table 2, on pages 630 to 633, shows the distribution of students of each college by states. The influence of the proximity of the medical school is seen in the fact that states which have medical colleges have more students in proportion to the population than those which have none. Only three states contributed over 2,000 students: New York, 2,361, Illinois, 2,383; Pennsylvania, 2,115. Two states contributed over 1,000 students, but less than 2,000; Missouri, 1,087, and Texas, 1,026. Ohio contributed 975 students; Massachusetts, 923; Kentucky, 891; Iowa, 828, and Indiana, 815. Of the states having the fewest students, Arizona and Wyoming each had 9. Nevada and New Mexico each contributed 23; Montana, 27; Idaho, 41; Delaware, 54; North Dakota, 61, and South Dakota, 79. The states not mentioned contributed between 100 and 700 each. Only one college failed to furnish the information needed in time for publication. In this instance, that the totals may be more nearly accurate, we have inserted the distribution of last year. All the states from whom no reports were received last year, sent in their reports this time, so our report is practically complete.

Etiology of Abdominal Conditions.—J. Gibbs, in the *Canada Lancet*, June, 1906, traces the etiology of infections of the pancreas, duodenum, stomach, gall bladder and liver to the obstruction and stagnation in the intestines and glandular ducts occasioned by prolapse of the organs following relaxation of the abdominal walls.

Medical News

ARKANSAS.

Personal.—Dr. Joseph P. Sheppard, Little Rock, will succeed Dr. William P. Illing as superintendent of the Pulaski County Hospital on October 31, when Dr. Illing's resignation will become effective.——Dr. George H. Martindale, Hope, is reported to have shot and killed Sam Thomas at Patmos, August 14.——Dr. George S. Brown has been elected president, Dr. George D. Dickerson, secretary, and Dr. Joseph S. Westerfield a member of the Conway Board of Health.

CALIFORNIA.

Banquet to Red Cross Director.—A banquet was given at the St. Francis Hotel, July 31, in honor of Dr. Edward T. Devine, director of the American Red Cross, and after the banquet a silver loving-cup was presented to him by the citizens of San Francisco.

Mortality.—The mortality for June was at an annual death rate of 15.5 per 1,000. Tuberculosis was the chief cause of death, followed by diseases of the circulatory and nervous systems and by pneumonia. The most fatal epidemic diseases in order were typhoid fever, measles, whooping-cough, diphtheria, croup and influenza.

Hospitals to Be Established.—Dr. Winslow Anderson has petitioned for a permit to reëstablish the St. Winifred's Sanatorium at 1025 Sutter Street. He proposes to put up a reinforced concrete building.——The regents of the University of California have planned to establish a students' hospital on the campus at Berkeley.

Personal.—Dr. R. S. Lanterman, Los Angeles, was caught between the step of his carriage and a heavy truck, August 5, and suffered severe contusions of the leg.——Dr. Quinton J. Rowley, Downey, who has been in practice for many years, retired August 1.——Dr. Chester Rowell, Fresno, who has been dangerously ill, is slightly improved.

College News.—The College of Physicians and Surgeons, San Francisco, has petitioned the Board of Supervisors for permission to establish and maintain a medical college at its old address on Fourteenth Street between Woodward Avenue and Stevenson Street.——The regents of the State University, Berkeley, have arranged that the old mining laboratory building is to be used by the department of anatomy and that the other departments of the medical college for the first two years will be housed in the civil engineering building.

Surgeons for Relief Work.—The Board of Health of San Francisco has appointed the following surgeons to take charge of the relief work of the city: Drs. Charles Clark, John A. Haderle, H. V. Prouty, David Friedlander, Herbert A. Gale, Arthur B. Nelson, William J. Gavigan, G. C. Albee, Walter S. Johnson, Emil V. Lonigo, Silvis J. Onesti, Frederick R. Starr, Grace Simon, James V. Hughes, Thomas B. W. Leland, George L. Helms, William C. Hopper, William R. P. Clark, William C. Voorsanger, John M. Quigley, Benjamin Apple, William F. McNutt, Jr., Watts and Roland E. Hartley.

COLORADO.

New Hospital.—The Santa Fé Hospital Association has appropriated $25,000 for the erection of a new hospital at La Junta.

Personal.—Dr. Richard V. Barta, Denver, has been appointed a police surgeon to succeed Dr. Wilbur L. Davis, resigned.——Dr. Raynor E. Holmes, Canon City, who underwent an operation in Pueblo for appendicitis, July 16, is making a satisfactory recovery.

Fined for Failure to Report Disease.—Dr. Chelsea M. Erb, Leadville, charged with having violated the city ordinance, July 31, by failing to report a case of diphtheria within twenty-four hours after its discovery, was found guilty and fined $10 and costs. The case was appealed to the county court.

CONNECTICUT.

Off for Europe.—Dr. William F. Verdi, New Haven, sailed for Europe on the *Kaiser Wilhelm II*, July 17.——Dr. John B. Boucher sailed for Germany, August 4.

July Deaths.—During the month of July, 1,525 deaths were reported, 276 more than for June, 125 less than in July, 1905, and 92 more than the average number of deaths during July for the five preceding years. Infectious diseases caused 119 deaths, or 15 per cent. of the total mortality.

Communicable Diseases.—On August 11, eight cases of typhoid fever were found on a single milk route in New Haven, and on the same milk route five more cases were discovered August 13.——On August 11, six cases of diphtheria were reported from Windsor Locks. The proper quarantine precautions have been taken.

Infectious Diseases.—During July 4 cases of smallpox were reported from 3 towns; 57 cases of measles, with two deaths, from 38 towns; 55 cases of scarlet fever from 24 towns; two cases of cerebrospinal fever, from two towns; 806 of diphtheria, with two deaths, from 22 towns; 92 cases of whooping-cough, with 5 deaths, from 22 towns; 65 cases of typhoid fever, with 4 deaths, from 28 towns; and 58 cases of consumption, from 25 towns, with 23 deaths from the disease.

DELAWARE.

Delaware to Fight Tuberculosis.—The Delaware Anti-Tuberculosis Society has been incorporated and will erect buildings as soon as funds can be secured. Dr. John J. Black is the leader in the movement. The society was organized two months ago at a meeting in Wilmington, when addresses were made by Dr. Lawrence F. Flick, Dr. Joseph Walsh, and other Philadelphians interested in the work. Efforts are being made to raise the money needed for the buildings, and an appropriation by the state legislature is expected next winter. The society will conduct a sanatorium and dispensary for consumptives in the same manner as those at White Haven and elsewhere. It is stated that patients will be cared for in tents until the buildings are completed.

DISTRICT OF COLUMBIA.

Personal.—Dr. John P. Cole, Washington, suffered painful injury by being thrown from his carriage in a runaway, July 28.——Dr. Alfred Richards has been appointed police surgeon of the third surgical district, vice Dr. Charles C. Marbury, resigned.

Less Typhoid.—There was a decrease in typhoid fever in the District during the week ended August 11, in which 72 cases were reported. Since the first of the year 519 cases have been reported, and during the same period of 1905 only 395 cases. There were 26 cases under treatment in Washington August 12.

Health of the District.—During the week ended August 4 there were 139 deaths reported, 76 among the whites and 63 among the colored population, equivalent to an annual mortality of 22.1 per 1,000. The chief causes of death were: Diarrheal diseases, 18, or 3 less than in the previous week; consumption, 15, 1 less than for the preceding week; kidney disease, 10; heart disease, 9; malignant diseases and pneumonia, each 6; typhoid fever and cerebral hemorrhage, each 5. During the week there were 78 new cases of typhoid fever reported and 21 patients were discharged.

GEORGIA.

Personal.—Dr. and Mrs. J. M. Baird, Columbus, sailed for Europe August 21 on the *Kaiser Wilhelm II.*

Provision for Insane Consumptives.—In a bill passed by the house, August 3, provision is made for $10,000 of the last appropriation voted for the State Sanatorium in Milledgeville, to be used for the erection of a building for the isolation of insane consumptives.

Augusta College Notes.—The faculty of the Medical College of Georgia has petitioned the city council for $5,000 to enlarge the municipal laboratory.——Drs. Charles W. Crane, William C. Kellogg, William Z. Holliday and William C. Lyle have been added to the faculty of the college.

Scholarships in Medical Colleges.—The Governor has issued an order naming the following successful competitors for the beneficiary scholarships in the medical colleges of Georgia: State at Large—Frank C. Tharpe, Buena Vista; Frank P. Norman, West Point; W. E. Braswell, Monroe; John A. Brown, Athens; First District—Harry Sutten, Swainsboro; George L. Smith, Swainsboro; Second District—G. T. Crozier, Cedar Springs; Leonard Baker, Ansley; Third District—Guy C. Lunceford, Americus; Jesse H. Riley, Grovania; Fourth District—Thomas Grant, West Point; W. E. Drane, Buena Vista; Fifth District—W. H. Galloway, Monroe; Mason Smith, Douglassville; Sixth District—W. H. Austin, Griffith; George L. Johnson, Yatesville; Seventh District—W. A. Davis, Marietta, R. F. D.; Irby Simmons, Hiram; Eighth District—O. S. Wood, Madison; G. T. Bernard, Athens; Ninth District—J. S. Burrell, Burton; Ralph Freeman, Dacula; Tenth District—John L. Lee, Augusta; L. B. Royal, Hephzibah; Eleventh District—W. T. Price, Jr.

ILLINOIS.

Personal.—Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician at the Illinois Western Hospital for the Insane, Watertown.

Defies State Board.—John Gregg, Sterling, who has been ordered by the State Board of Health to discontinue practicing massage and magnetic healing on penalty of being prosecuted for violation of the laws, is reported to have written to the State Board of Health that he would continue practicing and that he defied the board to stop him.

Smallpox.—A case of smallpox was reported from Evanston August 12, and the patient, who had come from Michigan a few days before, has been taken to the Isolation Hospital, Chicago.——Smallpox in mild form was discovered by the health officer of Peoria, August 13. Three children in one family were affected, and the entire family, consisting of father, mother and six children, were taken to the Detention Hospital. The disease is believed to have been communicated by a member of the family who recently contracted it in California.——A case of smallpox was discovered in a Chicago hospital August 14. The patient lived in a boarding-house in West Monroe street and had recently visited Milwaukee and Joliet.

Chicago.

Danger of Typhoid Epidemic.—According to newspaper reports residents in the southern part of Chicago are threatened with typhoid because of an official blunder in sewer construction, which has produced a dangerous condition of the drainage. The board of local improvements is constructing a new sewer system on Seventy-ninth street, and it is asserted that instead of building the lateral sewers connecting with the homes at the time the work on the sewers was being done, the contractors cut off the drain pipes leading to the street gutters and there is now no outlet for the waste water and sewage from the homes.

Deaths of the Week.—During the week ended August 18, 531 deaths were reported, 72 fewer than were reported during the week previous. The chief decreases in death causes were in acute intestinal diseases, 25; consumption, 10, and nephritis, 7. There was a sharp increase in the number of deaths from bronchitis, from 3 to 12. The mortality was equivalent to an annual death rate of 13.52 per 1,000. Acute intestinal diseases still led death causes with 125, followed by consumption with 53; violence, including suicide, with 48; nephritis with 42; pneumonia with 27; heart diseases with 25; cancer with 24, and nervous diseases with 20.

INDIANA.

Typhoid Fever.—Numerous cases of typhoid fever of a severe type are reported at Churubusco and vicinity.——The Secretary of the Board of Health of Evansville has analyzed the drinking water of that city and issued an urgent warning against the drinking of unboiled water.

July Diseases and Deaths.—During July diarrhea and cholera morbus were the most prevalent diseases in Indiana. Tonsillitis, rheumatism and dysentery were quite prevalent and there was a decrease in typhoid fever, as compared with July, 1905. There were reported 18 cases of smallpox from 7 counties, with 1 death. Tuberculosis caused 319 deaths during the month; cancer caused 108 deaths; pneumonia was much lessened as compared with the preceding month. Deaths from violence numbered 208, of which 7 were homicides, 13 suicides, and 188 accidental. Of the latter, 36 occurred on steam railways and 4 on the street cars. Burns and scalds caused 18 deaths, drowning 32, ptomain poisoning 3, poisoning 5, suffocation and lightning each 7, sunstroke 8, and mining accidents 6.

KANSAS.

Typhoid Fever.—Six cases of typhoid fever have been reported in Topeka, the largest number thus far reported in a single month.

Ill in Leavenworth.—Dr. William R. Van Tuyl, county physician of Leavenworth County, is ill at his home in Leavenworth.——Dr. Harley J. Stacey, Leavenworth, is suffering from septicemia.

Tuberculosis Census Planned.—The State Board of Health is endeavoring to secure as nearly a complete census of the tuberculosis in the state as possible. To each of the physicians in the state blanks will be sent for the report of the cases in his practice. The blanks also show the stage of the disease, the causation, and the previous general health of the patient.

LOUISIANA.

State Board of Health Moves.—The State Board of Health has taken a suite of rooms in the Hibernia Building, New Orleans, which will be ready for occupancy about October 1.

Typhoid Fever.—Owing to the numerous cases of typhoid fever at New Iberia, the milk supply has been placed under rigid examination and the character of the water supply is also being investigated.

Polyclinic and College Merged.—It is stated by the New Orleans *Democrat* that the arrangements have been practically completed for the merging of the New Orleans Polyclinic and Tulane University of Louisiana.

Personal.—Dr. J. Ashton Blanchard has been elected city health officer and president of the Shreveport Board of Health. ——Dr. A. H. Butler, New Orleans, has been appointed resident medical inspector at Tela, Honduras.

Hospital Notes.—At a regular meeting of the managers of the Truro Infirmary, it was decided to screen thoroughly the entire building, which is now in course of completion.——A sanitarium is to be built at Shreveport, to cost about $20,000.

Chagres Fever at Quarantine.—The steamer *Whitehall*, which arrived at Quarantine from Colon August 4, lost three of her complement of 21 men from chagres fever. The steamer was declared to be a menace to all ports and orders were given by the State Board of Health to hold it indefinitely at the Mississippi River Quarantine station.

Yellow Fever.—On August 19, Dr. Clifford E. Irion, Benton, president of the State Board of Health, sent out an announcement of a case of yellow fever at New Iberia, 125 miles from New Orleans. The patient was a mulatto boy, 12 years of age, living in an isolated part of the city. Dr. Irion has gone to New Iberia to take charge of the situation.

Seeks Information.—The State Board of Health is making every effort to secure as accurate and as reliable information as possible from the practitioners in the state regarding all cases of yellow fever. Circular letters have been sent to all physicians and parish health officers enclosing blank forms and asking them to report to the State Board of Health all cases of yellow fever in their practice.

Epidemic at Sabine Parish.—Dr. Fred J. Mayer, a special medical inspector of the State Board of Health, is investigating a peculiar infection in Florien Sabine, where an epidemic of spinal meningitis was reported, with a mortality of 90 per cent. Dr. Mayer considers the epidemic to be typhoid fever, and says that the death rate, which amounted to about 50 per cent., was the result of excessive doses of quinin and calomel.

Injunction Issued.—The State Board of Medical Examiners on August 13, filed a suit against D. N. Williams, New Orleans, claiming that he was practicing medicine without having first obtained a certificate as the law requires. Under the law, if Williams has been practicing medicine without warrant of law, he is liable to $100 fine and $50 attorney's fees. In the suit filed, an injunction was asked to restrain Williams from practicing medicine until he should have obtained a certificate, and Judge St. Paul ordered the issue of the injunction.

MARYLAND.

Baltimore.

Personal.—Dr. William E. Hoffman has been appointed city chemist, vice Dr. Gustav W. Lehman, deceased.——Dr. Alexander D. McConachie is taking a trip to Nova Scotia, New Brunswick and Newfoundland.——Dr. Joseph G. Evans, formerly of Baltimore, now assistant quarantine officer at Cristobal Colon, Canal Zone, is visiting his home in Marion, S. C.

Donation to Hospital.—The widow of the late Dr. Samuel L. Frank, who was the president of the Hebrew Hospital at the time of his death, will donate $75,000 to that institution to be used in the erection of a new hospital building adjoining the present one. The new building will be made the hospital proper and the present building will be used as a home for incurables and as a training school for nurses.

MASSACHUSETTS.

New Floating Hospital.—The new floating hospital sailed August 15, on her first trip with 80 permanent and 110 day patients aboard. Dr. Robert W. Hastings, resident physician of the hospital, is in charge of the boat. The cost of the boat, fully equipped, has been about $100,000.

Personal.—Dr. William J. Sullivan has resigned as trustee of the pauper institutions of Boston at Long Island. Dr. David D. Scannell and the other trustees, whose resignations were asked for by the Governor, it is reported, refused to resign, and were removed.——Dr. Frederick G. Smith, Summerville, has returned from Germany.

MICHIGAN.

Forbidden to Distribute Samples.—The authorities of Pontiac has forbidden the distribution of samples of patent medicines and circulars.

Personal.—W. L. Shuart, Battle Creek, has been appointed a member of the board of preliminary examiners for admission to medical colleges by the State Board of Registration in Medicine.——Dr. and Mrs. Alexander G. McLeod, Calumet, left for Scotland August 1.——Dr. James A. Ardiel, Grand Rapids, has returned from a two-months' trip to Great Britain.

Northern Michigan Physicians Meet.—At the annual meeting of the Upper Peninsular Medical Society, held in Escanaba, August 2 and 3, Menominee was decided on as the place for the next meeting, and the following officers were elected: President, Dr. Alfred F. Snyder, Escanaba; vice-presidents, Drs. Benjamin T. Phillips, Menominee and Charles H. Rodi, Calumet; and secretary, Dr. Robert A. Walker, Menominee.

Coroners Should Be Physicians.—At the annual meeting and picnic of the Ottawa County Medical Society, July 25, a decided stand was taken in favor of the position of coroner being held only by medical men, and the following resolutions were unanimously adopted, to be presented to the Republican County convention:

> The Ottawa County Medical Society wishes to impress on the public and on the county conventions, both Republican and Democratic, that in accordance with the proper performance of the duties of coroner, and especially for the public good, the office of coroner should be filled by a medical man, one fully conversant with medicolegal matters, necessary for the proper understanding of this office. As physicians of Ottawa County and as citizens who have always worked for the good of the people, the medical fraternity suggests that the nominations for the office of coroner be filled with the names of representative physicians instead of laymen.

MISSISSIPPI.

Fire Damage.—At a fire in Moorhead, July 2, Dr. W. A. Attaway suffered a loss of $3,000, partially covered by insurance.

New Hospital.—The Board of Trustees of the Mississippi Insane Hospital, Meridian, at its regular meeting, considered plans for two new hospital buildings, to be erected at a cost of $30,000.

Favorable Health Report.—On August 3, Dr. John F. Hunter, Jackson, Secretary of the State Board of Health, reported that the general health conditions of the state were never better at this period of the year. From no part of the state was contagious or infectious diseases reported, with the exception of a few cases of scarlet fever.

Medical College Officers.—The following are the officers of the Mississippi Medical College, which is to be opened about October 1: President, Dr. W. W. Hamilton; vice-president, Dr. T. A. Barber; secretary, Dr. O. W. Bethea; treasurer, Dr. T. J. Houston, and dean, Dr. N. L. Clarke, and these officers constitute the executive committee. The following have been elected members of the faculty of the institution: Dr. N. L. Clarke, dean and professor of diseases of children; Dr. W. W. Hamilton, obstetrics and clinical genitourinary diseases; Dr. D. U. Wadsworth, surgery; Dr. J. H. Blanks, operative and clinical surgery; Dr. W. W. Reynolds, anatomy; Dr. M. J. Lowrey, gynecology; Dr. O. W. Bethea, pharmacology; Dr. H. F. Tatum, chemistry; Dr. W. J. Anderson, physiology and clinical gastrointestinal diseases; Dr. J. R. Tackett, theory and practice of medicine; Dr. W. H. Rowan, physical diagnosis and chest diseases; Dr. T. A. Barber, eye and ear; Dr. J. E. Seale, nose and throat; Dr. T. J. Houston, genitourinary surgery and venereal diseases; Dr. F. L. Walton, clinical medicine and clinical eye, ear, nose and throat. Lecturers and instructors: Dr. Saro Castle, bacteriology, hygiene and clinical dermatology; Dr. C. H. Ramsey, pathology, histology and electro therapeutics; Dr. James Bennett, demonstrator of anatomy and clinical lecturer on diseases of children; Dr. E. E. Robinson, clinical gynecology, minor surgery and surgical dressing; Dr. S. A. Witherspoon, medical jurisprudence.

NEW JERSEY.

Hospital Incorporated.—Incorporation papers have been filed for the Newark Private Hospital, with a capital of $50,000.

Anti-Tuberculosis Society.—A branch of the Association for the Prevention and Relief of Tuberculosis was organized in Camden, August 15, at the office of the mayor.

Typhoid Fever.—The seventeen cases of typhoid fever which were reported at Trenton for the week ended August 11, have been traced to one dairy, the owner of which was suffering from the disease. The Board of Health is making thorough plans for the inspection of milk in the city.

Personal.—Dr. Edmund Eastwood, Burlington, has resigned as city physician and Dr. Charles Dingee has been appointed to fill the vacancy.——Dr. Claude E. McNenney, Jersey City, was severely injured in a panic on the excursion steamer *Perseus* July 19. He was severely bruised and had one of his lower ribs fractured.——Dr. William O. Bailey, Newark, was thrown from his carriage in a runaway accident, August 9, and sustained severe lacerations and contusions and injuries of the right hip.

NEW YORK.

New York City.

Foul Bakeries.—The health board in its recent investigation has found 229 insanitary bakeries.

Personal.—Dr. J. Hubley Schall sailed on the *Minneapolis* August 18.——Dr. William T. McMannis returned last week from Europe.

Ellis Island Epidemic.—Trachoma has been unusually prevalent at Ellis Island, 127 immigrants having been deported on account of this disease during the first two weeks of August.

Public School Nurses.—In 1905, the Health Department spent $60,000 for nurses employed in public school and tenement-house work. An allowance of $55,000 has been made for the same purpose for the present year.

NORTH CAROLINA.

Typhoid Epidemic at Elizabeth Seminary.—Passed-Assistant Surgeon Anderson of the Public Health and Marine-Hospital Service, has completed his investigation of the typhoid fever epidemic which occurred in May at Elizabeth Seminary, Charlotte. The school has 180 pupils and teachers, 92 of whom boarded in the college, of these 33 developed a supposed enteric fever within the ten days from May 10 to May 20. Dr. Anderson thinks (*Public Health Reports*) that only 17 of these were genuine typhoid, since the other cases had a duration of less than a week. None of the day pupils, about 88 in number, developed enteric fever during this time. The epidemic seems to be traceable to an additional supply of milk which was first used at the college twenty-one days before the outbreak of the fever. Practically the entire water supply of the city of Charlotte is infected, apparently in consequence of the presence of cases of enteric fever on the watershed, and the unscientific and faulty method of conducting the filtration plant, which removes only about 88 per cent. of the bacteria. Bacteriologic and chemical study of the water supply, proper policing of the watershed, daily examinations of the water, closure of infected springs and wells, the regulation of the milk business and the ice industry, sterilization of milk bottles and utensils are recommended. It is suggested that ice ought not to be put directly into milk or drinking water. If these suggestions are carried out Dr. Anderson states that parents need have no hesitancy in sending their daughters to Elizabeth College for the ensuing session.

NORTH DAKOTA.

Personal.—Dr. Henry H. Ruger, Devil's Lake, one of the pioneer practitioners of North Dakota, had a severe cerebral hemorrhage a few days ago, but is now reported to be slowly improving.

District Medical Society Meeting.—The annual meeting of the Grand Forks Medical Society was held in Grand Forks, July 11, and the following officers were elected: Dr. Frank J. King, St. Thomas, president; Dr. James Grassick, Grand Forks, vice-president; Dr. Henry H. Healy, Grand Forks, secretary; Dr. Archie L. McDonald, Grand Forks, treasurer; Drs. W. H. Bates and Charles S. Crane, Grand Forks, delegates to the state society, and Dr. Charles A. Warner, Petersburg, censor.

OHIO.

Submit Plans for Tuberculosis Hospital.—The State Tuberculosis Hospital Commission met August 14 and considered the plans for the hospital submitted for their approval.

Free Antitoxin.—The State Board of Health has issued a circular to the boards of health and the officers regarding the free issue of antitoxin for the protection of the public health. The State Board has arranged to keep a stock of fresh antitoxin always on hand, and a supply will be sent immediately to any board of health on request.

Personal.—Dr. Joseph A. Stansell, Forest, is critically ill with nephritis and prostatitis.——Dr. Otto Juettner, Cincinnati, has been made an honorary member of the Roentgen Society of Breslau, Germany.——Dr. Philip S. Rieg, Toledo, has been appointed medical examiner for the U. S. Marine Corps for that district.

OREGON.

Medical School Remodeled.—The Medical Department of the University of Oregon, Portland, is to be remodeled at a cost of $3,000.

Spotted Fever.—Two serious cases of spotted fever are reported from the sheep country, one at Ironside and the other at Lockhard ranch.

Fire at State Hospital.—A fire at the Oregon State Insane Asylum, Salem, caused damage amounting to about $5,000, July 27. The fire was confined to one ward and owing to the fact that the patients had been given a weekly fire drill, they were marched quickly out of the building without casualties.

Personal.—Dr. Willis B. Morse, Salem, has been appointed a member of the State Board of Health, vice Dr. Harry M. Lane, Portland, resigned.——Dr. Oregon C. Blaney, Portland, had an attack of vertigo recently and fell, sustaining severe lacerations of the face.——Dr. Frederick Crang, Forest Grove, is reported to be critically ill.

Annual Report of Board of Health.—The State Board of Health of Oregon reports that during 1905 there were 3,066 deaths in the state, of which 486 resulted from communicable diseases. There were 4,439 births, of which 2,294 were males and 2,145 females. There were 645 deaths from diphtheria reported, 44 deaths from tuberculosis, and 83 from typhoid fever; smallpox was present at no time during the year to any alarming extent. During the year there were reported 375 cases of typhoid fever, 352 of diphtheria, 338 of measles, 265 of scarlet fever, and 133 of smallpox.

Hospital Notes.—The citizens of Forest Grove have formed a hospital association with Dr. Edgar H. Brown as president, and have decided to establish a hospital in that place. The association is to be incorporated with a capital stock of $5,000.——Drs. W. William Oblesby, and Best, Cottage Grove, are to establish a hospital at Drain.——St. Mary's Hospital, Albany, established by the Sisters of Charity of San Francisco in the Father Metayer mansion, with accommodations for twenty patients, will be opened September 1.——The new hospital at Milton was opened July 30, with appropriate ceremonies.

PENNSYLVANIA.

Personal.—Dr. Daniel B. D. Beaver, of Reading, sailed for Europe August 18.

School Teachers Vaccinated.—The Red Lion School Board has decided that all teachers employed in the borough schools must be successfully vaccinated before the opening of the public schools in September.

Typhoid at Pottsville.—Several cases of typhoid fever have been reported in Fishback, a suburb of Pottsville, and an investigation instituted by the State Department of Health to discover the origin of the infection found it in the water supply.

Site Chosen for Asylum.—The commission for the erection of the Pennsylvania State Institution for the Care and Treatment of the Criminal Insane, have decided on the site at Fairview, Wayne County. This land, comprising 625 acres, 2,000 feet above the sea level, was offered to the commission by the Delaware and Hudson Railroad Company, for $5, the cost of a deed. This is a saving to the state of $9,995 out of an appropriation of $10,000. The commission has the sum of $150,000 toward the erection of the buildings.

Restrained from Practice.—In a decree handed down by Judge Doty, Edward Barnes, Monessen, is restrained from practicing medicine in Westmoreland County. The Medical Association of Monessen made an investigation on a petition presented to it alleging that Barnes had never been a regular practitioner and that he had served a sentence in the state penitentiary for arson. The commissioner who was appointed to take the testimony recommended that Barnes' registration be set aside. It is understood that Barnes is now in Newcastle.

Societies Meet.—The Northwestern Medical Society held its fourth annual meeting at Warren, July 10. The following officers were elected: President, Dr. Morris S. Guth, Warren; vice-presidents, Drs. William A. Nicholson, Franklin; George B. Kalb, Erie; and Thomas L. Kane, Kane; secretary, Dr. James R. Durham, Warren; treasurer, Dr. Charles W. Schmehl, Warren.——The Lehigh Valley Medical Society, at its annual session at Easton, elected the following officers: Dr. Charles McIntyre, Easton, president; Dr. George W. Guthrie, Wilkesbarre. A. F. Myers, Blooming Glen, John H. Wilson, Bethlehem, and Obadiah H. Sproul, Flemington, N. J., vice-presidents; Dr. Clinton J. Kistler, Lehighton, secretary; Dr. William

P. Walker, South Bethlehem, assistant secretary; and Dr. Albert A. Seers, Bangor, treasurer.——At the annual meeting of the Montour County Medical Society, the following officers were elected: President, Dr. William H. Krickburn; vice-presidents, Drs. George A. Stock, Robert S. Patten; secretary and reporter, Dr. Cameron Schultz; corresponding secretary, Dr. Ida M. Ashenhurst; treasurer, Dr. Philip C. Newbaker; and censors, Drs. Philip C. Newbaker, Hugh B. Meredith and Edwin A. Curry, all of Danville.

Philadelphia.

Vital Statistics for July.—The report of the division of vital statistics shows that there were reported 2,786 deaths, 2,672 births, and 1,470 marriages during July.

Personal.—Dr. John W. Luther sailed for Europe August 18. ——Dr. and Mrs. Lewis H. Adler, Jr., have returned home after an extensive tour of the Northwest and Alaska.——Dr. Frederick P. Henry has sailed for Europe.

Public Baths Popular.—The hot weather in the early part of last week resulted in the largest attendance of the season at the public baths maintained by the city. The total number of bathers in the week were 677,842, of which 144,313 were men, 7,110 women, 502,652 boys, and 23,767 girls.

Bequests.—By the will of the late Abraham Reinheimer, contingent on the death of two brothers, $2,500 is to be distributed as follows: One-third to the Jewish Hospital, one-third to the Jewish Foster Home, one-sixth to the Jewish Maternity Association, and one-sixth to the Young Women's Union.

Medical Inspection for July.—The report of the Division of Medical Inspection of the Bureau of Health for July shows that for the month all inspections made, excluding schools, were 3,002; 355 fumigations were ordered, 148 cultures taken, 16 examined for special diagnosis. There were 89 injections of antitoxin made, and 151 vaccinations performed.

Bacteriologic Laboratory Report.—The report of the bacteriologic laboratory of the Bureau of Health for July shows that 666 cultures were examined for diphtheria bacilli, and that 426 specimens of suspected typhoid blood were examined. There were also examined 655 specimens of milk, and 100 specimens of sputum; 1,542,500 units of antitoxin were supplied, 10 disinfection tests were made, and 94 analyses were performed.

Increased Accommodations for Blockley.—Director Coplin of the Department of Public Health and Charities opened bids for beds, bedding, plumbing and other necessaries to accommodate 800 additional patients in the Philadelphia Hospital, money for which is to be taken from an appropriation of $126,000 made by council for fitting up the quarters in the Museum Building, to which about 800 paupers have been transferred. Repairs will also be made in the clinic room of the hospital and adjoining grounds.

Candy-Makers Held.—At the instance of B. H. Warren, State Dairy and Food Commissioner, twenty candy manufacturers of this city were arrested August 10 on the charge of selling impure candy and held in bail, ranging from $600 to $1,000. The firms were specifically charged with selling glucose, adulterated with sulphur dioxid and other injurious chemicals. Analysis of samples of grape sugar, made by Professor Lowell, showed the material to contain an amount of sulphur dioxid exceeding the maximum quantity allowed by the German government in the preservation of fruits. It was concluded, therefore, that the substance was injurious to health.

Insane Patients Increase.—According to W. M. Late Coplin, director of the Department of Health and Charities, the most recent statistics show that the number of insane patients cared for by the city during the past year has increased 7 per cent. This, it is found, is about the same increase as is found in and reported by other cities of the first class. At present the Philadelphia General Hospital is caring for 1,600 insane patients. The average weekly cost per patient is $2.76; of this amount $1.17 is paid by the city and $1.59 by the state. The report shows an increase of 109 over the preceding year, and the total increase during the past decade, Dr. Coplin states, is 75 per cent. During the past 13 years the increase in this city is about the same as is found in other cities in proportion to its population.

Health Report.—The report of the Bureau of Health shows a decrease in the number of deaths from all causes, although the current week's figures are in excess of the same period last year. The total number of deaths for the week were 498, as compared with 519 reported last week, and 438 during the corresponding week of 1905. The principal causes of death were: Typhoid fever 15; whooping-cough, 12; tuberculosis, 57; cancer, 12; apoplexy, 10; heart disease, 31; acute respiratory diseases, 22; diarrhea, 107; cirrhosis of liver, 6; appendicitis, 4; Bright's disease, 26; premature birth, 16; debility, 22; old age, 5; heat, and sunstroke, 8; traumatism, 12; and marasmus, 9. There were 189 cases of contagious disease reported, with 19 deaths, as compared with 154 cases and 21 deaths the preceding week.

Hospital Report.—During July 76 patients were admitted to the Methodist Episcopal Hospital. In the dispensary there were treated the following cases: Medical, 57; surgical, 533; gynecological, 9; eye, 87; ear, 27; nose and throat, 37; skin, 38; orthopedic, 7; and pediatric, 23. The total number of patients treated was 818; total visits to the dispensary, 3,271; recent accidents, 363; patrol cases, 8; and ambulance calls, 22. ——During July 56 patients were admitted to the Mount Sinai Hospital, which with the 26 patients under treatment at the beginning of the month, made a total of 82 treated. There were 37 discharged cured, 5 improved, 4 not improved, 1 left without permission, and 5 died, leaving 30 patients under treatment at the end of the month. In the out-patient department 3,837 visits were paid, 1,407 of this number being new patients; 260 of the new patients were medical, 444 surgical, 144 eye, 75 nose, throat and ear, 237 children, 73 skin, 24 nervous diseases, and 48 gynecological; 466 cases were treated in the emergency ward, 39 being patrol cases and one ambulance case.

WISCONSIN.

Goes Free.—Dr. George T. Dawley, New London, who has been held under bonds on the charge of having performed a criminal operation, was discharged at the hearing August 1.

New Officers.—At a meeting of the Second District Medical Society, held at Kenosha, August 16, Dr. Wiliam A. Fulton, Burlington, was elected president; Drs. William R. Cheever, Kenosha, and George H. Young, Elkhorn, vice-presidents and Dr. J. Russell Eastman, Kenosha, secretary. The next meeting of the society will be held in Burlington.

Personal.—Dr. Alexander Kremers, house physician at the Johnstone Emergency Hospital, Milwaukee, has resigned, and Dr. Oscar Lotz has been appointed temporarily in his place.—— Dr. John A. Rice, Merton, is reported to be seriously ill at his home.——Dr. Gustav A. Hipke, Milwaukee, has been appointed obstetrician of the Milwaukee Maternity Hospital.——Dr. Horace E. Mann, Marinette, has disposed of his interest in the Menominee River Hospital.

Rodermund Again.—Dr. M. J. Rodermund, formerly of Appleton, who received considerable notoriety five years ago on account of his spectacular attempt to prove that smallpox was not contagious, has reopened his "campaign of education," and has written to the Health Commissioner of Milwaukee asking that the city take immediate steps to get the present health laws repealed so that vaccination and quarantine would no longer be required. The health commissioner, very properly, has referred his communication to the editor of the official journal of the Wisconsin State Medical Society.

GENERAL.

Association of Seaboard Air-Line Railway Surgeons.—More than a hundred members of this association attended the annual session in Savannah, July 13 and 14. The following officers were elected: President, Dr. William A. Monroe, Sanford, N. C.; vice-presidents, Drs. James G. Wallace, Dade City, Fla., Hillory M. Wilder, Charlotte, N. C., and Everard H. Richardson, Atlanta, Ga.; secretary and treasurer, Dr. Jarrett W. Palmer, Ailey, Ga. (reëlected), and member of the executive committee, Dr. John H. Miller, Cross Hill, S. C. The 1907 meeting will be held at the Jamestown (Va.) Exposition at a date to be decided later.

Back Numbers of The Journal Wanted.—The entire editions of The Journal for July 14 and July 21 have been exhausted, and it would be a favor if any who do not wish to preserve their copies will send them to the American Medical Association, 103 Dearborn avenue, Chicago. To those who wish it, we will send another copy in exchange or will refund 10 cents for each copy sent. The name and the address of the sender should be on the wrapper.

Ophthalmologists To Meet.—The eleventh annual meeting of the Academy of Ophthalmology and Oto-Laryngology will be held at the Oakland Hotel, St. Clair, Mich. (fifty miles from Detroit), August 30 to September 1, under the presidency of Dr. Casey A. Wood, Chicago. The subjects on the program include lingual thyroids, various uses of paraffin, the uselessness of the spray and the electric cautery for the rhinologist, how to obtain reliable replies by letter from patients, maxillary sinus operations, middle-ear suppuration, oral and laryngeal tuberculosis, cleft palate, tonsilectomy, massage and electricity in atrophy of the optic nerve, eyestrain and crime, cataract extraction, etc. Some addresses will be given by visitors from England who are in this country to attend the British Medical Association meeting this week. Dr. Eugene Smith, Detroit, is chairman of the committee on arrangements.

Mississippi Valley Meeting.—The next meeting of the Mississippi Valley Medical Association will be held at Hot Springs, Ark., November 6-8, under the presidency of Dr. J. H. Carstens, Detroit. The annual address in medicine will be delivered by Dr. Frank Parsons Norbury, Jacksonville, Ill., on "Clinical Psychology," and the address on surgery by Dr. Florus F. Lawrence, Columbus, Ohio, on "Surgical Principles and Theories." The preliminary program shows an excellent series of papers on a wide variety of practical subjects by men from all parts of the Mississippi Valley. Communications should be addressed to the secretary, Dr. Henry E. Tuley, 111 West Kentucky street, Louisville, Ky.

CANADA.

Personal.—Dr. George A. Peters, professor of surgery in the University of Toronto and colonel of the Toronto Light Horse Brigade, is in England, where his recently invented self-recording target is attracting much attention from military experts.

Novia Scotia Society Meeting.—The fifty-third annual meeting of the Medical Society of Nova Scotia was held at Lunenburg, July 3 and 4. The following officers were elected for the ensuing year: President, Dr. J. B. Black, M.P., Windsor; vice-president, Dr. J. A. Sponagle, Middleton; second vice-president, Dr. W. H. McDonald, Rose Bay; secretary-treasurer, Dr. J. R. Corston, Halifax.

British Columbia Association Meets.—The seventh annual meeting of the British Columbia Medical Association was held in New Westminister, August 1 and 2. The attendance was representative from all over the province. The following were the officers elected: President, Dr. R. L. Fraser, Victoria; vice-president, Dr. J. M. Pearson, Vancouver; secretary, Dr. R. Eden Walker, New Westminister; treasurer, Dr. J. D. Helmcken, Victoria. It was decided to meet in Victoria in 1907.

BRITISH MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

As we go to press a great gathering of medical men is taking place in Toronto. The annual meeting of the British Medical Association is this year held there. Mr. Guy Elliston, secretary of the British Medical Association, who arrived in that city August 10, felt that conditions indicated that there would be held one of the best meetings in the history of the organization. Certainly the indications were that it would largely outstrip the Montreal meeting, when the organization before met in Canada. Dr. Dawson Williams, editor of the *British Medical Journal*, accompanied by a staff of stenographers, arrived in Toronto last week to take charge of the daily publication of the proceedings. A very fine and elaborate exhibit of instruments, pharmaceuticals, etc., was arranged under charge of Dr. Arthur Jukes Johnson. This was in the main building of Toronto University in the Queen's Park, and here also were located the offices of the secretary, treasurer, etc. The general information bureau was also located on the main floor of the building near the entrance. The president of the association, Dr. George Cooper Franklin, will be the guest of Dr. Arthur Jukes Johnson while in Toronto, they having been college mates together many years ago. Sir Victor and Lady Horsley are to be the guests of Dr. H. A. Bruce. There is an unusually large attendance of physicians from the United States. The Journal has several official representatives there and will publish a full report. As we outlined a few weeks ago, physicians from the United States have almost the lion's share of representation in the scientific proceedings, as the program of nearly every section shows. This is an unusual opportunity, nevertheless, to taste the particular British flavor which the meeting will have, and to compare its various aspects with those of the medical gatherings on this side of the line.

FOREIGN.

Swedish Committee for Cancer Research.—The Swedish Medical Association (*Svenska Läkaresällskapet*) has appointed a committee to make a special study of all matters concerning cancer. Prof. J. Berg of Stockholm has been made chairman.

Prizes for Antimalarial Measures.—The Italian government has given prizes of $100 each to five large landed proprietors who have taken pains to have the dwellings of their laborers thoroughly screened against mosquitoes. The list includes Prince Borghese and Countess Lecca.

New Edition of the German Pharmacopeia.—The German authorities have undertaken the revision of the Pharmacopeia and appeal to all interested to offer suggestions for the new edition. Communications should be sent to President Bumm of the Imperial Board of Health, Berlin.

Physician Appointed Warden of Penitentiary in Germany.—The physician hitherto in charge of the insane department of the penitentiary at Münster, Dr. Pollitz, has recently been appointed warden of the penitentiary at Düsseldorf, the first time in Prussia, it is said, that a medical man has been appointed to a post of this kind.

French Congress of Surgery.—The nineteenth annual congress of the French Société de Chirurgie is to be held at Paris, opening October 1. Three questions have been appointed for discussion: "Surgery of the Nerve Trunks," "Ectopia of the Testicles and Its Complications," and "Routes and Means of Access to the Thorax from the Operative Standpoint."

Protection of Medical Experts in Judicial Debates.—A recent decision of a Paris court declares that medical experts summoned by the court are "citizens charged with a public service," and as such come under the special protection of the law. The court condemned to fifteen days in prison an individual convicted of insulting the experts in a recent case before the Court of Appeals.

Degrees Conferred at Greifswald.—On the occasion of its four hundred and fiftieth anniversary, the university of Greifswald conferred honorary medical degrees on Dr. W. W. Keen, Philadelphia; H. Snellen, the Utrecht ophthalmologist; and E. Roux, director of the Pasteur Institute, Paris. An honorary degree in the department of philosophy was also conferred on Krehl of Strasburg. Other details of the celebration were mentioned recently on page 519.

Course in Practical Disinfection.—The authorities in Bavaria are much gratified with the success of a special course of lectures and demonstrations given this summer at Erlangen for physicians and others interested in the practical application of disinfection for houses, halls, etc. Twenty-seven persons took the course, including three physicians. The lectures were delivered by Professors Heim and Weichardt. Kirstein's quiz "Guide for Disinfectors" was recommended as the manual for study.

Medical Advertising in a Rhine Province.—The medical society at Metz has exerted influence to such effect that the governor of the Province of Lothringen or Lorraine has issued a decree prohibiting all public advertising or recommending of treatment of patients without a personal examination, the so-called distance treatment, and also of all advertising of articles, measures, contrivances or methods designed to serve in the prevention, cure or mitigation of disease in man and animals. At the same time all advertisements relating to sexual matters are forbidden. The *Münch. med. Wochschr.* for August 7 gives the details of the new decree.

Italian Congress of Internal Medicine.—The sixteenth congress of internal medicine will be held at Rome in October. The subjects on the order of the day are "Arteriosclerosis," with addresses by Riva of Parma and Devoto of Pavia; "Affections Resembling Typhoid and Malta Fever," addresses by Gabbi of Messina and Lucatello of Padua, and "Arthritism," to be presented by Castellino of Naples. The committee of organization has issued an appeal to all the medical schools throughout the country asking them to inaugurate research along the lines of these suggested topics, hoping that a large and valuable national contribution may thus be secured for the study of these subjects.

Unification of Formulæ for Heroic Drugs.—The *Semaine Méd.* states that eight countries have agreed to accept uniform formulæ for the preparation of the heroic drugs and have notified the Belgian government to that effect. The list includes France, Germany, Great Britain, Holland, Switzerland, Greece and Luxemburg. The original resolution has been amended to allow the formulæ to be modified to keep pace with the progress of medical and pharmaceutical science. It is hoped that this modification will enable all the powers to accept the unified standards. Great Britain, in expressing its willingness to sign the agreement, stipulated that each of its colonial possessions is to sign, suggest modifications or reject, independently of the mother country.

German Police Supervision of Artificial Mineral Waters.—Recent regulations of the police district of Giessen, Grand Duchy of Hesse, Germany, according to the *Apotheker-Zeitung*, No. 59, 1906, provide for police supervision of the factory and springs from which artificial mineral waters are to be made, for official testing of the chemicals and apparatus, and new tests whenever changes or extensions of the business are to be made. Tests must be made at least once a year. No material injurious to health must be introduced into the water by the chemicals or apparatus, and no lead or untinned copper pipes or vessels shall be used. The cost of regular inspection is borne by the community, but extraordinary inspection and tests must be paid for by the manufacturers. The manufacturer can demand a free certificate of the examinations. The provisions of the regulations are enforced by a fine of $7.50.

Successors to Guyon and Brouardel at Paris.—J. C. F. Guyon, the famous French authority on the affections of the genito-urinary organs, was born on the Ile de la Réunion, in the Indian Ocean, in 1831, and has thus reached the age limit, and is compelled to resign his professorship. Besides publishing an atlas of affections of the urinary passages and various collections of clinical lectures, etc., he has long issued the *Annales d. mal. d. organes génito-urinaires*, a semi-monthly journal and review. He is to be succeeded by his former assistant, Joaquin Albarran, who is also a native of a tropical island, Cuba. His works on tumors of the bladder and tumors of the kidney have won prizes offered by the Académie des Sciences, etc., and numerous articles have appeared from his pen since his first extensive work on the "Spontaneous Cure of Carcinoma," in 1883. Professor Thoinot, an eminent authority in legal medicine, has been appointed to the chair of this specialty left vacant by the death of Brouardel.

Experimental Inoculation of Man with Syphilis.—On page 1779 of the last volume, June 9, 1906, The Journal described Metchnikoff's successful therapeutic prevention of syphilitic infection of monkeys and of a senior in the Paris Medical School, who volunteered for the test, all being inoculated with virulent human material. One hour afterward a salve of one part calomel to three parts lanolin was rubbed into the site of the inoculation for eight minutes. The control animals all developed syphilis, but no traces have appeared on the calomel-treated man or monkeys. The young man is a descendant of Maisonneuve, the famous French surgeon, 1809-1897, and bears the same name. His syphilis experiences form the subject of his thesis, recently handed in. The Paris papers have written up Maisonneuve and his thesis, reproducing his portrait and expatiating on his heroism. Metchnikoff has permitted this early publicity given to the matter. Professors Gaucher and Roger have taken a most decided public stand against generalizing from a single case, warning against the evils liable to follow if the public is lulled into a false security in regard to syphilitic infection before the fact of the possibility of therapeutic prophylaxis is scientifically and definitely established.

Quackery in Germany.—In the *Deutsche Revue* for July (abst. in *Apotheker-Zeitung*, No. 59, 1906), E. Roth gives an array of statistics regarding the growth of quackery in Germany which are very interesting. In 1879 there were in Prussia, with the exception of Berlin, 269 quacks; in 1887, 389; and in 1898, 1,200. In 1876 the proportion of quacks to physicians was 1 to 24; in 1898, 1 to 11. In the capital the proportion in 1879 was 1 to 34; in 1898, 1 to 5. In this enumeration the druggists, midwives, etc., are not included, some of whom give medical advice in an illegitimate way. The circles from which the quacks of Berlin are recruited, according to the statements of Beerwald, are also characteristic. Of 124 men who had announced their occupation as healer, 10 per cent. were laborers, 20 per cent. artisans, 46 per cent. came from occupations concerned with trade and commerce, and only 24 per cent could be credited with more than a primary education. In regard to the female quacks, 58 per cent. were formerly servant girls, 24 per cent. confectioners, 10 per cent. working women 5 per cent. nurses, and 2 per cent. had no occupation. While in the last twenty years the population of Berlin has increased about 61 per cent. quackery boasts a growth of 1,600 per cent. These figures should be taken to heart, should be communicated to others, and a reform inaugurated. The following figures also throw a sidelight on quackery. Of all those engaged in treating disease who carry on their business without medical training, not less than 16.6 per cent. had been previously prosecuted in the courts and fined, indeed, according to Magnus these figures rise in some districts of Berlin to 33 1/3 per cent. Quackery had for its support in 1903 already 38 periodicals, while the *Hygienische Blätter*, the official organ of the German Society for the Repression of Quackery was issued first in 1904, although this antiquackery journal also had certain predecessors. It was described in The Journal recently on page 453 of the last volume, with the aims and work of the society.

French Congress of Alienists and Neurologists.—The sixteenth annual congress was held at Lille during the first week in August. The official records are published in the *Archives de Neurologie*, but a rather full report has already appeared in the *Semaine Médicale* of August 8. The principal subjects discussed were "The Blood in the Insane," "The Senile Brain," "The Responsibility of Hysterics," "Relations Between Trauma and General Paralysis," and "The Grave Prognostic Significance of the Lympho-Polynucleosis in the Cerebrospinal Fluid in Acute Ascending Spinal Paralysis." Dide of Rennes and Régis of Bordeaux, after describing their cytologic, bacteriologic and experimental researches on the blood of insane patients, come to the conclusion that the function of defense on the part of the blood is materially disturbed in the insane, and in cases of acute or subacute confusional psychoses, such as dementia præcox, general paralysis, etc. This disturbance has considerable pathogenic importance, but it does not seem to be permanent in the majority of cases. It is possible that a severe and protracted intercurrent infection may rearouse this defensive function. They refer to the improvement and even the cures realized by certain physicians who have not hesitated to inject insane patients with attenuated virus for this purpose. Régis advises comparative study of the blood and urine as affording instructive data. Sabrazés of Bordeaux does not believe that nervous disorders affect the composition of the blood to any extent when they are once established. He is convinced that the nerve centers suffice for themselves in the defense against toxi-infections. The leucocytes do not interfere except in certain infections, such as suppurative meningitis, abscess, etc. Several members told of invariably negative findings in examination of the liver, nerve centers, meninges, and blood of syphilitics in the search for the *Treponema pallidum*. Léri remarked in regard to the senile brain that senility and old age are by no means synonymous terms. Also that different organs and different parts of the same organ in the same individual may show senile changes varying in degree. He styles senility "the final outcome of all the exogenous and endogenous intoxications which have marked the course of the individual's existence." Anglade regards the nerve cell and the neuroglia cell as sisters at war throughout life. Morbid conditions diminish the resisting powers of the nerve cells while they exalt the activity of the neuroglia cell. The former reacts by dying, the latter by proliferating. It is interesting to see how in the end the neuroglia finally triumphs, with the help of all the causes which make for senility. In the decadent brain one element seems endowed with inexhaustible vitality, and this is the neuroglia. Grasset of Montpellier called attention to the preservation of the ability for voluntary movements in patients with cerebral paralysis from sclerosis who drag their feet along the ground, apparently incapable of a better gait, tripping at the least irregularity in the ground. When ordered to lift their thigh up high they find that they can do it easily and well. By taking each joint separately in this way it can be seen that the power of voluntary movement is well retained. The trouble seems to be in the motor automatism, the involuntary mechanism, while the power of voluntary movements is retained to a surprising extent. This distinguishes such cases from those of spinal paraplegia and bilateral cerebral hemiplegia. Meige recommends training such patients in voluntary movements as an effectual means to improve their gait. The discussion of the responsibility of hysterics elicited the usual conflicting views.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 11, 1906.

Precautions Against the Spread of Diphtheria in Schools.

The London County Council has adopted a recommendation from the education committee to the effect that during the presence of diphtheria in any district the committee should be authorized to refuse to readmit to school children excluded on account of diphtheria or sore throat until they have obtained a medical certificate of freedom from infection based on a bacteriologic examination. This certificate will be accepted either from general practitioners or from health officers.

Industrial Accidents.

The annual report of the chief inspector of factories has just been issued. It shows that 100,609 accidents occurred during the year 1905, of which 1,063 proved fatal. The number of cases of lead poisoning was 592, approximately the same as in the previous year. There were 59 cases of anthrax, an increase of 9 on the previous year. The mortality rate among these was also increased, 16 being fatal, against 10 in 1904. Probably this was due to 7 of the anthrax cases being of the internal variety instead of 1 in the previous year.

Typhoid Fever Due to Shellfish.

Dr. Collingridge, health officer for the City of London, has reported an outbreak of typhoid fever due to cockles. On June 29 he received information of a report of an outbreak of typhoid fever in West Ham. In 52 cases reported 24 of the patients had eaten cockles a short time before the attack. The majority of the cockles were purchased from a dealer at Billingsgate, who had obtained his supplies from Leigh-on-Sea. Between June 28 and 30, six samples of cooked cockles obtained from this source were submitted to Dr. Klein, the city bacteriologist, who examined them to determine whether or not they contained living organisms, which, like the *Bacillus proteus*, *Bacillus coli communis* and streptococci are killed by temperatures of from 154 to 158 F., and whether or not they contained living bacilli of the Gärtner typhoid group. In cultures made from the stomach of the fish, colonies of *Bacillus coli communis* and of streptococci were found in every case, and in two cases also the *Bacillus proteus*. One sample yielded the *Bacillus Gärtner*, or a microbe indistinguishable from it. Dr. Klein concluded that none of the six samples had been sufficiently heated and that they were therefore unsafe. The dealers were at once notified to discontinue the sale of cockles from Leigh-on-Sea, and the fishermen to refrain from sending any more to the market. So long ago as December, 1903, cockles from Leigh-on-Sea were condemned on account of sewage contamination, and it was determined they should be allowed on the market only on the understanding that they were efficiently cooked (raised to a temperature of 212 F. for three and one-half minutes). As it is now found that the fishermen can not be trusted to take this precaution, the corporation of London has absolutely prohibited the sale of cockles from Leigh-on-Sea in the market. As previously reported in The Journal, both cockles and oysters obtained from the estuary of the Thames have given rise to outbreaks of typhoid fever. The whole estuary is polluted with sewage. The facts have been reported to the local government board in support of the necessity for the long-delayed legislation for dealing with shellfish.

The Official Nomenclature of Disease.

The special committee of the Royal College of Physicians, appointed in 1902 to revise the nomenclature of disease, has presented its report, accompanied by copies of the fourth edition of the "Nomenclature of Diseases." The first edition was published in 1869 under the presidency of Sir Thomas Watson. The book is the standard work of reference authority on all questions of nomenclature, and physicians are directed by the registrar general to follow it in making returns as to the cause of death. The present edition has been ably edited by Dr. J. A. Omerod. The following are some of the most important changes: The enumeration of "Morbid States and Processes," which preceded the general classification of diseases, has been relegated to the appendix, since it is not intended to be used in making returns. The section entitled, "General Diseases," has been divided into four groups: (1) Infective diseases; (2) intoxications; (3) general diseases, not included in the two preceding groups; and (4) certain morbid conditions incident to various parts. In the first group pneumonia appears for the first time; formerly it appeared under local diseases. The true nature of epidemic diarrhea is now emphasized by terming it "infective enteritis." The use of the names, "membranous croup" and "membranous laryngitis" as synonyms for laryngeal diphtheria is forbidden, and the term croup is expunged from the list of diseases. The terms "febricula" and "simple continued fever" are omitted and their place is taken by "pyrexia of uncertain origin." The term "puerperal fever" is expunged. Pyemia, septicemia, or septic intoxication in the puerperium must be described as "puerperal pyemia," "puerperal fever," or "puerperal septic intoxication." Under the last term puerperal sparemia is to be included. The directions as regards vaccination in cases of smallpox are minute. In every case the presence or absence of marks of vaccination and their size, number and character are to be noted. Information is to be given as to whether the patient was (1) unvaccinated; (2) vaccinated in infancy only; (3) vaccinated after infancy; (4) vaccinated only after infection with smallpox; and (5) revaccinated. In returning various forms of tuberculosis the terms strumous and scrofulous are no longer to be used. The third group mentioned above includes anemia, cretinism, diabetes mellitus, exophthalmic goiter, gout, myxedema, purpura, rickets, and scurvy. In the fourth group are included malformations, the effects of parasites, poisons and new growths. In the classification of local diseases the use of names signifying symptoms is discouraged wherever it is possible to trace these to their causes. In particular it is recommended that diseases should be returned under such general causes-names as "convulsions," "apoplexy," "paralysis," etc., only when their causes are unknown. When the latter are ascertained the case is to be registered under this head of the primary disease, the secondary affection also being specified. In order to facilitate the correct registration of deaths the usual custom is to forward to every physician free of cost a copy of the work.

Ophthalmological Congress at Oxford.

On July 23, an ophthalmological congress was opened at Oxford; it was organized by Mr. R. W. Doyne, the reader in ophthalmology in the university. Among the foreign guests were Professor Dor, Lyons; Dr. A. Darier, Paris; Dr. Snellen, Utrecht; Dr. A. Antonelli, Paris; Dr. Pergens, Maeyseck; and Dr. Patry, Geneva. Several interesting demonstrations were given. Professor Gotch performed experiments illustrating chromatic aberration of the eye. Dr. Henderson Smith explained the opsonic index. Mr. P. A. Adams showed recent methods of determining the coagulation time of blood in reference to ophthalmic disorders. Mr. M. S. Mayou showed a set of water color drawings illustrative of ocular bacteriology. Mr. J. T. Gradon showed microscopic specimens of several phases of ocular embryology. Dr. Darier demonstrated subconjunctival injections as used by him in the treatment of diseases of the eye. Professor Dor read a paper on "The Treatment of Graves' Disease with Thymus Gland," and Mr. Nettleship one on "Some Hereditary Diseases of the Eye." At the Eye Hospital a demonstration was given chiefly of "Family Diseases of the Eye."

Correspondence

Hay-Fever Treatment by Dunbar's Remedies (Pollantin).

St. Paul, Minn., Aug. 15, 1906.

To the Editor:—In The Journal, August 4, appears a letter from Dr. Ingals, in which he relates his experience with the Dunbar remedies, and an editorial soliciting correspondence on the subject. I have used pollantin to a considerable extent, and find that while benefit is secured in a limited number of cases, it is without result in the large majority. This failure of pollantin to cure cases uniformly is characteristic of all the other so-called remedies for hay fever that have been tried for decades. It certainly suggests that the empirical search for a specific should be abandoned in favor of investigation into the nature and location of the disease. May there not be some good reason for the failure of pollantin and other remedies in that they have failed to reach the real seat of the trouble? May not the success of the remedy in a few cases be due to the fact that it has by accident, rather than design, penetrated to the structures that are involved in the production of hay fever?

During the past three years I have devoted myself to investigation of the antrum of Highmore, and my experience warrants me in the statement that hay fever is of organic origin, with a basic lesion situated in the antra, and I believe that any treatment which is not directed to removing the inflammation of those cavities will fail to cure hay fever. Treatment of the antra for hay fever has been uniformly successful at my hands. Treatment of the antra in unmistakable hay fever has controlled the seizures in three or six days, and in those cases in which asthma was present, it disappeared simultaneously with the other symptoms. The findings following irrigation of the antrum with a boric-acid solution are: First, a secretion resembling buttermilk, with particles of white curdy substance; second, a serous fluid tinged with milk color. The disappearance of this secretion is followed by complete relief of the symptoms of hay fever, together with those of neurasthenia and asthma. The relation of this secretion to hay fever is demonstrated by the fact that it is not found in the antra of normal persons. This secretion is produced by a secretory inflammation induced in the antrum by the entrance of pollen, dust and other exciting causes of hay fever. My experience teaches me that those suffering from hay fever have a much larger ostium than normal persons, thus favoring the entrance of pollen and other substances. May we not explain the presence of hay fever in some and its absence in others by the varying size of the maxillary ostium? It is impossible in the limits of a letter to do more than to hint at the nature, locus morbi and treatment of the disease, but in a report now in preparation the pathologic, anatomic and therapeutic facts of antral disease will be presented. The object of this communication is solely to endeavor to explain why pollantin and other so-called remedies fail to cure the distressing conditions, and to suggest that we have heretofore been directing our efforts to the wrong anatomic structures. Jacob E. Schadle.

LeMars, Iowa, Aug. 17, 1906.

To the Editor:—I have been very much interested in the recital of the various physicians' experiences in the use of pollantin. This is the third season I have used the serum in treating my hay-fever patients, and my experience with it has been very gratifying. I do not recall a single patient that has not been benefited by its use, and some have told me that they have enjoyed comparative freedom from attacks by using the serum and powder fairly regularly throughout the season. I very much deprecate the container used for the medicine. It is a great nuisance for the physician to be obliged to remove all the advertising matter, etc., before dispensing the serum. Can not these people be induced to put the medicine out in some other form? It seems to me that those containers were made especially for display on the drug-store counter. Some time since I had some correspondence with Fritchie Brothers on this very point, and it was, to say the least, amusing to read their very lame explanations of the reasons for so doing.

F. S. Clarke.

The Report of the Council on Medical Education.

To the Editor:—The recent report of the Council on Medical Education in The Journal A. M. A., June 16, 1906, page 1853, invites comment and suggestion. I am prompted to indulge in such comment because it seems to me that in this present time, full of great possibilities for advancement in medical education and practice, nothing will promote sure and rapid progress, and the avoidance of missteps, more certainly than a full and free discussion by all who are in any way related to, or interested in, the subject.

The decision of the Council to make its chief function that of co-ordinating the various forces at work among them, the medical schools and their associations, the literary colleges and medical examining boards, can not be too highly commended. It would have been a great mistake at this time to have attempted to force any arbitrary standards by drastic measures, such as the requirement that no physician, who failed to comply with certain standards, should be eligible for membership in the American Medical Association or in any of its constituent bodies. In this growing period of the Association the supreme effort should be to strengthen itself numerically by seeking the allegiance of every physician who is at all worthy of membership, and any action which would interfere with this movement would be unwise. In later years more radical measures and rigid standards may be indicated and may be possible of enforcement.

Most commendable also is the decision of the Council to carry on the work inaugurated by The Journal some years ago of gathering information in reference to the medical schools, the medical practice acts and state board rulings, and of the results of the examinations for licensure in the several states, etc. It seems to me, however, that in reference to the statistics of the examinations for licensure the fact should be again emphasized that these statistics must not be interpreted too literally, nor can the results be accepted as furnishing an accurate criterion of the relative merit of the several colleges. No one who is at all familiar with the character and the work of these schools can fail to discover that their relative rank, as they appear in the tables presented by the Council, bears little relation to their relative actual merit as teaching institutions. Some of the schools listed in the second group (showing from 10 to 20 per cent. of failures) or even the third group (over 20 per cent. of failures), are certainly not inferior to some of those which appear in Group I (having less than 10 per cent. of failures).

The reason for this is to be found in the wide discrepancy between the character of the examinations by the state boards—purely written tests as they are, almost without exception—and the practical, objective methods of teaching in vogue in the better medical colleges. For a quarter of a century now, there has been a gradual and steadily growing departure from the purely didactic and "cram" methods of instruction toward the methods which develop in the student the power to see, to hear, to feel, to do and to think, by the actual exercise of his faculties in the laboratory, the practical course and the clinic. While this movement has been going on, the character of the examinations has changed not at all, and they are at present so far removed from the modern methods of education as to afford an entirely inadequate and unfair test of the student's accomplishments or of his ability to practice his profession. It is difficult to understand why the examining boards have been so slow to realize this fact when one remembers that really effective and rational methods of examination for licensure have been practiced in all foreign countries for many years. Possibly the explanation is partly to be found in the personnel of the examining boards, which have been so largely composed of men with no experience or training as teachers or examiners. Certainly, it seems to me, that so long as the state board examinations are conducted on lines so antiquated and so foreign to the modern methods of education in the high-grade medical schools, just so long will the results of these examinations be no fair criterion of the merits of these schools or of their graduates.

The most important items of the report of the Council are the recommendations: 1, For an ideal standard of requirements, and 2, for a fixed, uniform medical curriculum. The ideal standard proposed by the committee comprises six years of study between graduation from a four-year high school and the reception of the degree of M.D. This arrangement proposes the addition of one year antecedent to one year subsequent to the present four-year medical curriculum, the antecedent year to be devoted to physics, chemistry, biology and German in preparation for the purely medical studies, while the closing year shall consist of practical work in a hospital or dispensary.

Few medical educators will dissent from the opinion that the time has come when a longer period than is now required must be given to preparation for the practice of medicine. The year of practical hospital training, already instituted by at least one American college, is of the utmost value, but not so indispensable as the provision for a more adequate preliminary training. Opinions will differ as to the sufficiency of one year of preparatory work beyond the high school, as requirement is already exacted in some colleges of two, three or four years, but all will welcome the addition of even one year of such work, provided, however, that it be done under such conditions and by such men as to insure its efficiency. And this is the point on which I wish to comment. To my mind the Council has made a grievous mistake in specifying that this preparatory year *may* be done in the medical school, *or* in a literary or scientific college. The failure to insist that these branches of general learning (for such physics, chemistry, biology and German surely are), must be taken in a college or university, where alone, with very rare exceptions in this country, they are properly taught, results in making this recommendation of the Council a step backward rather than forward, because it will tend still further to defer that time, which I think we all realize should be the goal of our desires, when every medical graduate will be a broadly cultured, a college-bred man. What will be the actual working of this scheme to permit the medical school to add another year to its curriculum, and to exact another annual tuition fee from its students, may easily be foreseen by all who know the history of similar attempts of medical schools in former years to give instruction in non-medical branches. It is true that in Germany the gymnasium graduate enters the medical school with little or no scientific training—or did so until ecently, but it is to be remembered that the situation in hat country is wholly different from our own, for every med-al school is an intimate and integral part of a university and he instruction in physics, chemistry and biology is in the ands of the university professors of these branches. The more trictly our own medical—purely professional—schools, devote hemselves to the teaching of the purely medical branches, and he more completely they rely on institutions of general learn-ng to do the preparatory work which belongs to them, the etter will be the results secured. We may be sure that if he order for this preparatory year is promulgated by the xamining boards as it is recommended by the Council, the ery first institutions in the field with a blatant advertisement f their superior facilities for giving such instruction will be he most poorly equipped medical colleges, and those of the owest standards. So far from operating to suppress the heaper schools, the extinction of which is so greatly to be esired, the effect will be to give them an additional hold on heir students and to enable them to secure fees for another ear of relatively inexpensive instruction. It is very much to e hoped that before the action of the National Confederation f Examining Boards requiring this preparatory year goes nto effect in 1910, it will be so amended as to specify that his work must be taken in a literary or scientific college. It s hard to understand why there should be so much eagerness n the part of some to eliminate the literary and scientific chools from our scheme of medical education. The medical chools and the medical profession need their coöperation quite s much as they need our support, and no ideal scheme of edical education can be constructed in this country which ails to include them as an integral part of the system. It is rue that there are poor and spurious colleges, as there are heap medical schools, though the proportion is not so large, ut these can be easily discovered and designated. The coun-il should reckon as one of its most important functions such n investigation and classification of the literary and scientific olleges.

I had intended to comment on the so-called ideal curriculum vhich has been proposed by the council, as well as on other ixed curricula which have been laid down, among them that f the Michigan State Board, and of the Association of merican Medical Colleges, but I have already trespassed too nuch on your space for one communication and must reserve his item for a later discussion. John M. Dodson.

Wants to Arrest "Patent Medicine" Man.

Albion, Mich., Aug. 20, 1906.

To the Editor:—I want information of one W. Thompson, the oil man." He was arrested here for practicing medicine vithout a license, gave bail for appearance at hearing, and did ot appear. He has since been in Ypsilanti, Mich., and Findlay, hio, and was last heard from in Windsor, Ont. He travels vith four comedians, sells from a wagon, and is a very smooth alker, of dark complexion, straight black hair, rather below nedium height, about 40 years of age. He sells a soap, a blood nedicine, and "Egyptian Oilio" (which is said to be colored asoline), claims to represent a quarter-million dollar com-any, and has five diplomas. The sheriff is prepared to get im anywhere in the United States. If some physician who elieves in protecting the public from swindling impostors will vire me on his appearance in any town we will be duly grate-ul and do the rest. George C. Hafford.

A Yellow Peril.—Under this head J. W. Croskey, in the *Medico-Chirurgical Journal,* May 20, includes trachoma which e says is more prevalent in Japan than in any other country, lthough it is also common in India and Egypt. In all these ountries its spread is favored by religious observances and uperstitions such as ablutions with use of a common towel. The danger is shown by the fact that the proportion of trahoma cases in immigrants at eastern ports is less than one in ,000, while at western ports it rises to nearly one in 60. Greater care in examination of immigrants and more stringent measures to prevent the spread of this disease are needed.

Miscellany

Effect of Alkalies and Other Drugs on the Efficiency of Pepsin.—While the therapeutic inefficiency of pepsin without the simultaneous presence of an acid, preferably hydrochloric acid, has been emphatically stated often enough so that it should be thoroughly understood, this ferment is still frequently prescribed in mixtures containing no acid and in combination with substances which destroy the enzyme, so as to defeat the purpose for which it was intended. Many neutral salts, alkaloidal and other substances have been shown to have a retarding influence on the action of pepsin, while digestion with strong alkali destroys the enzyme altogether. J. F. Tocher has investigated the action of dilute alkalin solutions, as well as that of morphin and bismuth, substances which are often prescribed in mixtures with pepsin. He gives the following conclusions: 1. Solutions of sodium bicarbonate, sodium, potassium and ammonium hydrates when added to solutions of pepsin in the cold have an immediate inhibitory or destructive influence on pepsin, according to the concentration. In ordinary concentrations the effect is to destroy the enzyme immediately. 2. Dilute solutions of caustic alkali immediately destroy the activity of dilute solutions of pepsin. One millimeter (1 c.c.) of decinormal ammonia (0.0017 gm., NH_3) is sufficient to destroy the proteolytic power of 5 mgr. of pepsin in 5 mm. (5 c.c.) of water. That is, a 0.1 per cent. solution of pepsin with an alkalinity equal to 0.017 per cent. has no proteolytic power whatever. On acidifying and digesting, the enzyme is found to be destroyed. Pepsin should, therefore, never be prescribed with alkalies. 3. Carbonate of bismuth precipitates pepsin from aqueous solutions; subnitrate of bismuth does not. 4. Compound mixtures containing solution of bismuth, morphin, carmin, etc., should contain no pepsin, since the activity of the enzyme is much retarded by the morphin and is destroyed proportionately to the amount of alkali present in solution.—*Pharmaceutical Journal,* July 28, 1906.

Ethyl Chlorid.—J. H. Chardecott, in the *Clinical Journal* for August, discusses the uses and abuses of this comparatively new anesthetic. It is interesting and somewhat instructive to note that the adoption of this anesthetic in England owes much of its progress to the advertisement of somnoform and that some of the abuses of the drug have been due to the misleading and unduly favorable reports sent out by these manufacturers. Chaldecott, after extensive use of ethyl chlorid, adheres in the main to the conclusions which he published in 1904: 1. It is the best anesthetic known for single-dose cases, viz., those in which anesthesia is induced, the mask removed and the operation performed without any further administration. The statement still holds good for children, but in adults he prefers the nitrous oxid and ethyl chlorid mixture, which he regards as an ideal anesthetic in cases requiring an available anesthesia of from forty seconds to two minutes. 2. It is certainly worthy of an extensive trial in all minor operations. He does not see any advantage in ethyl chlorid after the first few minutes of anesthesia, it being more difficult to secure an even degree of narcosis than with ether or chloroform, and the after-effects of continued administration being practically identical with those of chloroform. 3. It is a safe and rapid means of inducing anesthesia as a preliminary to chloroform. This conclusion must be modified in the light of recent fatalities from the drug, and the ethyl chlorid ether sequence should be substituted for the gas-ether sequence only under circumstances which contraindicate the use of nitrous oxid. 4. Although its effects are transient, it is doubtless a powerful anesthetic and should be carefully administered and the patient properly prepared. The following objections to this anesthetic have been raised and are considered by Chaldecott: 1. Uncertainty of action. This has generally been due to the administration with too much air. 2. Rigidity. This has not been true in the author's experience. 3. After-effects. These have largely been due to imprudent use, and when the drug is properly administered they are very slight. 4. Danger to life. It must be admitted that although the proportion of fatal results is infinitesimal compared with the number of actual administrations, the drug offers an appreciable mortality and this fact ought to discourage its haphazard administration by dentists who are not qualified medical men and who have had no training in administration of anesthetics.

Influence of Pregnancy on Deafness.—Pregnancy, according to W. Milligan, in the *Journal of Laryngology, Rhinology and Otology* for June, may be the occasion of deafness due to vasomotor disturbances, which are transient, passing away after the termination of the pregnancy, or it may cause progressive changes due to the aggravation of pre-existing septic processes in the ear, which extend to the nerves of hearing in consequence of the diminished resistance produced by the toxemia of pregnancy. Simple catarrhal troubles may also be so aggravated that the deafness becomes more pronounced. These changes occurring in successive pregnancies present an unfavorable prognosis, since treatment, either local or general, seems to exercise little influence in retarding the advance of the disease. In consideration of these facts Milligan raises the following queries: (1) The advisability or otherwise of young women already the victims of advanced chronic middle-ear catarrh, purulent or non-purulent, or of otosclerosis, entering into matrimony; (2) if marriage has already taken place and the existing deafness has been materially increased by a first pregnancy, the advisability or otherwise of suggesting means to prevent any further pregnancy, and (3) if in a case of advanced deafness, where previous pregnancies have invariably increased the existing deafness, whether it is advisable or justifiable to induce premature labor. [Premature labor at the seventh to eighth month might be permissible in aggravated cases, but under no circumstances should an abortion necessitating the death of the fetus be considered justifiable for an affection entailing only inconvenience and no serious danger to the life of the mother.—Ed.]

An African Cure for Sleeping Sickness.—In a letter to the editor of the *Journal of the Royal Army Medical Corps*, Major Smith, R.A.M.C., states that eight years ago, while serving in the Sherbro and Mendi country in Sierra Leone, he noticed many people with scarred necks, and on making inquiry he was told that the glands had been removed by native doctors to prevent or to cure sleeping sickness. The natives informed him that at one time sleeping sickness had been rather frequent in the neighborhood, but that after the people found that removal of the "nuts" or "banga" was efficacious the disease had become rare. Whether the removal of the glands in the earlier stages of the malady could be of service in treatment it is impossible to say, but scientific medicine, Major Smith states, has confirmed the native opinion that enlargement of the glands is an early symptom. He offered about 50 cents a head for the names and whereabouts of patients with sleeping sickness, but was unable to find one till 1901. The man was a creole-negro who had been to the Congo two years previously. Subsequently Major Smith saw two or three cases of sleeping sickness in the colony, but all had a history of having been to Fernando Po, Congo, or elsewhere down the coast. The last case he saw was under Dr. W. Renner in the Colonial Hospital in 1904, and from this he successfully inoculated the common "mango monkey" and a rat with blood which had been for two hours or so in diluting fluid.

Gold Wire for Sutures in Hernia.—Siegmund Arkel, Milan (*Medicinische Klinik*, March 18, 1906), calls attention to the use of gold wire for sutures in hernia operations as practiced by Tansini of Pavia. The comparative antiseptic action of gold is shown by a series of experiments *in vitro* and on rabbits by Vecchi (*Il Morgagni*, Nos. 7 and 8, 1905) of which Arkel gives an abstract. Tansini has used this material in 360 hernia operations without a single case of early or late suppuration, and the patients were able to leave the bed by the seventh day. Like results were obtained by Professor Titone at Palermo in 25 cases, and by the surgeons Crosti and Rossi in the general hospital of Milan, in 14 and 40 operations, respectively, in the same rooms and under the same conditions as operations in which silk or catgut had been used and followed by infection. The cost of the gold sutures is not prohibitive, as 50 cm. of the suture weighed only 12 centigrams, and 120 centigrams of gold only costs five lire (about 95 cents). The slightly greater cost over silk or catgut is not worth considering when one takes into account the durability and the lessened danger of infection from handling, etc.

Marriages

Frank M. Hagans, M.D., to Miss Maud Mangas, both of Lincoln, Ill., recently.

James A. McCracken, M.D., to Miss Mary Snyder, both of Kane, Pa., August 8.

John R. Murnan, M.D., to Miss Edith Kercheval, both of Covington, Ky., August 14.

Francis J. Jones, M.D., Providence, R. I., to Miss Alice M. Kelley of Boston, August 8.

V. D. Farmer, M.D., Parma, Mich., to Miss Grace Dutcher of Jackson, Mich., August 14.

Patrick J. Sullivan, M.D., to Miss Malvina Moran, both of Muskegon, Mich., August 8.

Joseph W. Jauch, M.D., to Mrs. Mary A. Hotchkiss, both of Los Angeles, Cal., August 7.

Kimsey C. Evans, M.D., Edgerton, Ind., to Miss Nellie Brady of Fort Wayne, Ind., August 4.

W. Frank Bell, M.D., Plain Dealing, La., to Miss Maude Mosby, at Easton, Md., August 8.

Stanley Castle, M.D., Springfield, Ill., to Miss Elsie Mary McDowell of Chicago, August 14.

James Christianson, M.D., Alden, Minn., to Miss Maud Brackney, at Washta, Iowa, August 15.

Norman Charles Bledsoe, M.D., Bisbee, Ariz., to Miss Marriet Gage of Los Angeles, Cal., August 9.

William H. Taylor, M.D., Philadelphia, to Miss Anna Evalynn Bullock of New York City, August 1.

Charles D. Wall, M.D., Chicago, to Miss Jessie D. Boone of Nashotah, Wis., at Davenport, Iowa, July 18.

John A. English Eyster, M.D., Baltimore, to Miss Mary Elizabeth Adams, at Middleburg, Va., August 8.

Harold W. Baker, M.D., Worthington, Minn., to Mrs. Maxwell Stevenson of New York City, in Worthington recently.

Deaths

James Brown McCaw, M.D. New York University, New York City, 1844; said to have been oldest physician of Richmond, Va.; professor of chemistry in the Medical College of Virginia, 1865, and later professor of practice of medicine, and for twelve years dean of the college and, at the time of his death, chairman of the board of visitors of the institution; a surgeon in the Confederate service during the Civil War, and in charge of the Chimbarazo Hospital, Richmond, in which were treated more than 76,000 patients during the war; editor of the *Virginia Medical Journal* from 1853 to 1861 and of the *Confederate States Medical and Surgical Journal* from 1864 to 1865; a charter member, one of the founders, and some time president of the Medical Society of Virginia, and some time president of the Academy of Medicine and Surgery, Richmond; president of the Richmond Eye and Ear Infirmary; who on his retirement from practice in 1901 was tendered a banquet at which he was presented with a handsome silver loving cup, died at the home of his son-in-law in Richmond, August 13, from senile debility, aged 83. Of six surviving children, two sons, Dr. David McCaw of Richmond and Major Walter D. McCaw, surgeon, U. S. Army (at present librarian and officer in charge of the library of the Surgeon-General's office, having succeeded the late Major Walter Reed in this position in 1903), are members of the medical profession representing the fifth generation of a remarkable line of Virginia physicians.

Charles Stockton Gauntt, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1844; the oldest alumnus of the University of Pennsylvania; after graduation a professor at Girard College; later he became a member of the faculty of the Jefferson Medical College; a surgeon during the Civil War, and connected at different times with many institutions as medical instructor, died at his home in Philadelphia, August 16, aged 83 years.

Daniel S. Ellis, M.D. College of Physicians and Surgeons, altimore, 1870; a member of the Medical Society of Virginia, nd surgeon to the Randolph-Macon College, Ashland, Vt., was rowned while crossing a swollen creek near home in Ashland, ll., in answer to a professional call, August 12, aged 52.

Charles Edwin Jakeway, M.D. Toronto University Medical aculty, 1871; died from asphyxiation at his home in Stanaer, nt., March 1. While getting hay for his horse at night his antern exploded, igniting the hay and straw in the loft and mothering him.

J. W. Ferguson, M.D. University of Louisville, Medical De-artment, 1889; a member of the American Medical Associa-ion, and a well-known practitioner of Bourbon County, Ky., ied at his home near Shawham, August 9, from malignant dis-ase, aged 49.

W. A. Goode, M.D. Atlanta (Ga.) Medical College, 1890; a nember of the North Carolina Legislature, in 1903, from leveland County, died at his home in Shelby, N. C., August 3, fter an illness of several weeks, from typhoid fever and ephritis.

Charles Albert Cochrane, M.D. Medical School of Maine at owdoin College, Brunswick 1856; a member of the Maine ledical Association, died at his home in Winthrop, Maine, from ngina pectoris, after an illness of a month, aged 73.

John Onins Pierce, M.D. Pennsylvania University of Medicine nd Surgery, Philadelphia, 1870; a veteran of the Civil War, ied at his home in Milford, Del., July 11, from paresis, after n illness of more than twelve years, aged 63.

William E. Chamberlin, M.D. Charity Hospital Medical Col-ge, Cleveland, 1870; a veteran of the Civil War, died at his ome in Akron, Ohio, August 11, from cerebral hemorrhage, fter an illness of seven weeks, aged 65.

Felix Maslowsky, M.D. Hospital Medical College Louisville, 875; a member of the Spencer County (Ind.) Medical Society, ied at his home in Mariah Hill, April 6, from dropsy, after n illness of two months, aged 61.

Melville B. Estes, M.D. University of California Medical De-artment, San Francisco, 1888; died at his home in Vallejo, uly 9, from lung disease, aggravated by shock due to the San rancisco earthquake, aged 47.

Samuel Ramsey, M.D. Cleveland Medical College, 1846; a eteran of the Mexican War, died at his home in Seattle, Vash., May 12, from senile debility, after an invalidism of our years, aged 81.

Charles Tylden Whaland, M.D. Maryland Medical College, altimore, 1905; of Chestertown, Md., died in the Maryland eneral Hospital, Baltimore, August 14, from spinal menin-itis, aged 22.

William H. Davis, M.D. Medical Department of Washington niversity, St. Louis, 1878; of Bethany, Ill., president of the chool board of that town, died in St. Louis, Mo., August 3, ged 51.

Jerome W. Flanders, M.D. Miami Medical College, Cincinnati, 868; a member of the Jefferson County Council, died suddenly t his home in Dupont, Ind., from heart disease, August 11, ged 59.

William Jacoby, M.D. Medical Department of Western Re-rve University, Cleveland, 1868; of Vernon Center, Minn., ied May 31, in St. Joseph's Hospital, Mankato, Minn., aged 88.

Robert Joseph Brevard, M.D. New York University, New ork City, 1872; twice mayor of Charlotte, died at his home Charlotte, N. C., after an illness of several weeks, aged 57.

James Brown Combs, M.D. Medical College, Cincinnati, 1851; ied at the home of his daughter in Washington, Iowa, recently, fter a short illness, from cerebral hemorrhage, aged 81.

Lorenzo D. Bartlett, M.D. Castleton (Vt.) Medical College, 862; died at his home in Keokuk, Iowa, August 14, from cere-ral hemorrhage, after an illness of four days, aged 81.

Howard Graham Wetmore, M.D. College of Physicians and urgeons in the City of New York, 1879; died at his home in igh View, N. Y., April 27.

William H. Kesla, M.D. College of Physicians and Surgeons, altimore, 1896; died at his home in Austin, Pa., in June, from iberculosis, aged about 35.

Lot S. Pennington, M.D. New York, 1837; died at his home Sterling, Ill., July 31, from senile debility, after an illness five years, aged 93.

Albert S. Hazard, M.D. State University of Iowa, College of ledicine, Iowa City, 1888; died at his home in La Vita, Colo., ine 12.

Alma L. Rowe, M.D. Northwestern University Women's Medical School, Chicago, 1893; died at her home in Forest, Miss., May 27.

R. L. Cooper, M.D. Jefferson Medical College, Philadelphia, 1852; died at his home in Shelbina, Mo., August 3, aged 80.

David L. Delk, M.D. Chattanooga (Tenn.) Medical College, 1897; died at his home in Oakdale, Tenn., August 12.

DEATH ABROAD.

A. Vincent, M.D., professor of hygiene and president of the cantonal board of health, died at Geneva, July 23. He recently served as vice-president of the international conference for revision of the Geneva Convention.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE PHYSICIAN'S LIBRARY AND THE FILING OF CLIPPINGS FROM JOURNALS.

Seneca, N. C., July 23, 1906.

To the Editor:—The editorial in The Journal, June 2, 1906, page 1698, regarding the use of our public libraries by physicians remote from the centers of medical education was timely and worthy of more than passing notice. I believe, however, that you can render the rank and file of the profession an equal service by suggesting the methods of greatest value in searching out and using the material we have at our own door—for instance, suggestions as to purchasing the best books and building one's own library. Again, if you could help the average physician to grasp a tithe of the knowledge which comes almost daily to his desk in the periodicals of more or less value you would render him a service. It is impossible to have all these numerous journals bound as a public library may do, and yet it is often necessary to refer to them. I have found that the average physician has no system whatever to aid him in quickly referring to a journal article a few months or a few years old. If you, or any one else, can furnish a tried and true method for a busy practitioner you will earn his lasting gratitude.

E. A. Hines.

Answer.—The standard text-books are landmarks, so to speak, of the state of medical science at the time of their publication. Unfortunately, however, in many departments of medicine they change too rapidly in successive editions, and the up-to-date physician, if he depends on them, is subjected to considerable expense in purchasing the latest and best revised editions. It is only through medical journals that one can keep accurately in step with the progressive science of medicine, and a file of one or two of the leading weeklies, containing, as they nowadays do, not only original articles summarizing the facts known on their subjects, but also abstracts and summaries of the current medical literature of the day, and all elaborately indexed for each volume, is almost indispensable in the physician's library. One can not, however, preserve all the periodical literature that comes to hand, though much of it is certainly deserving of preservation. In the numerous sample copies that every physician receives, there are often articles that he would like to have on hand for ready reference, and the best way for systematically preserving these is a classified series of clipping envelopes which can be improvised at a minimum of expense and very little trouble by any systematic man. If in addition to the clippings, a card index of articles and subjects in which one takes a special interest is kept, even if only on scratch-paper pads, little more will be required. We have known of elaborate papers, reasonably exhaustive in literary references, being prepared from just such memoranda, and there are probably many such. Of course, one can not trust to second-hand references in any really valuable work, though more of that is done than is often admitted, in Europe as well as in this country, as Virchow once pointed out. Such a card index, giving brief statements of the substance and points of interest in the articles referred to, will often be found very convenient. It is much better than trying to keep a commonplace book of the old style, as it is much more easily made without regard to time or place of working, and the cards or slips can be kept in any convenient drawer or box, or perhaps, as well, like the clippings, in labeled envelopes. Such notes can also be made at society meetings, and in libraries where pencil references are generally allowed, on the uniform size scratch-pads and filed away later with very little trouble. We believe that a simple system like this will be found as practical as any other and equally advantageous. We might add a word as to the usefulness of journal clubs. If several physicians residing near each other coöperate, each taking certain journals not subscribed for by the others, and exchanging among themselves, each keeping and binding those for which he subscribes, a considerable widening of the field of reading and note-taking can be accomplished.

MICROSCOPES.

Neal, Kan., Aug. 11, 1906.

To the Editor:—Can you recommend any make of microscope that is not too expensive and yet which can be relied on for histology and bacteriology work? Are American microscopes as good as foreign? B. L. Hale, M.D.

Answer.—American microscopes—Bausch & Lomb and Spencer—are as good as the more common foreign makes, among which the Leitz microscope is probably most widely used in this country. Bausch & Lomb sell microscopes in Europe, especially France. The best microscope, and also the most expensive, is the Zeiss, which is in great favor with investigators. Any one of the following microscopes will answer fully for the practitioner: Zeiss, Bausch & Lomb, Leitz, Spencer, Reichert. With ordinary care and in a temperate climate a new microscope of any of these makes should last at the very least twenty-five years with only minor repairs. If bought from a reliable agent, so that no fraud of any kind is practiced, which is very rarely possible, such a microscope can be relied on absolutely for histologic and bacteriologic work, provided, of course, that an adequate equipment of objectives is included. Three objectives and two eye-pieces with substage condensers and diaphragm are requisite for satisfactory work in clinical microscopy. Without the oil immersion objective many bacteria are seen only with difficulty, and two dry objectives, one low and one high power, are essential. The Bausch & Lomb microscope BBa is gotten up especially for the practitioner and has the lenses, etc. mentioned. It sells for $75.00 net. Leitz and Spencer have similar instruments, the Spencer at the same price, we believe, as the Bausch & Lomb, the Leitz being a little higher. The Zeiss comes at least 50 per cent. higher. We have given details so freely because the microscope is probably the most expensive single instrument that the practitioner must have and use in order to do himself and his patients justice, and some physicians in starting out may possibly postpone purchasing the microscope because of the impression that it is more expensive and more risky to buy than really is the case. To the modern progressive physician the microscope is as necessary as the stethoscope—and many think they must have various accessories that run into money, but while these may be advantageous, they are not absolutely necessary to enable one to do ordinary clinical work.

DOSAGE FOR INFANTS.

Neal, Kan., Aug. 13, 1906.

To the Editor:—I notice that in The Journal, Aug. 11, page 456, some one asks about dosage for infants under one year. My rule is this: Ascertain the weight of the baby and taking 150 pounds as the average weight of an adult, use the child's weight for the numerator and an average adult's weight for the denominator, thus: child's weight, 15 pounds; adult, 150; we have 15/150 = 1/10 of an adult dose. B. L. Hale.

McCammon, Idaho, Aug. 16, 1906.

To the Editor:—In all scientific works on animals the weight of the animal is considered in connection with the dose. I believe in following the same rule in regard to human beings. It is not natural to suppose a man weighing 95 pounds should be given the same dose as one who weighs twice as much; or a large strong child should be given the same dose as a small one, even though they be the same age. Yet this is frequently done when a dose is figured according to Young's rule. I usually consider that the medium dose of a drug is intended for an adult weighing 150 pounds and vary according to the percentage of that weight. Of course one must consider whether a slight or a strong action is required, and must remember the varying effects of certain drugs on children. J. W. Robinson, M.D.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, for the week ending August 18, 1906:

Appel, D. M., deputy surgeon-general, detailed for duty as member of examining board for promotion or advancement of medical officers, Army General Hospital, Presidio of San Francisco, Cal., during the temporary absence of Lieut.-Col. George H. Torney, deputy-surgeon-general.

Reed, Howard A., asst.-surgeon, relieved from temporary duty in the Department of California, and will report at once to medical superintendent, Army Transport Service, San Francisco, Cal., for duty on the transport *Logan*.

Smith, Lloyd L., asst.-surgeon, relieved from duty as surgeon, U. S. A., transport *Logan*, and ordered to West Point, N. Y., for duty.

Banister, J. M., deputy-surgeon-general, left Fort Riley, Kans., on 30 days sick leave of absence.

Clayton, J. B., asst.-surgeon, arrived at Camp of Instruction Fort Riley, Kans.

Usher, F. M. C., asst.-surgeon, left Fort Brady, Mich., en route t Camp of Instruction, Fort Benjamin Harrison, Ind.

Woodson, R. S., surgeon, left Fort McDowell, Cal., en route t Camp of Instruction, American Lake, Wash.

Purnell, H. S., asst.-surgeon, left Camp of Instruction, Islay Wyo., on leave of absence for 30 days.

Kirby-Smith, R. M., asst.-surgeon, upon arrival at San Francisco Cal., will report for duty at the Army General Hospital, Presidi of San Francisco, Cal.

Woodall, William P., asst.-surgeon, relieved from duty at Army General Hospital, San Francisco, Cal., and ordered to Camp Mabry, Tex., for duty. Upon the abandoment of Camp Mabry to proceed to Fort Clark, Tex., for duty.

Miller, E. W., asst.-surgeon, relieved from duty at Camp Mabry, Austin, Tex., and from duty at Fort Clark, Tex., and ordered t Fort Riley, Kans., for duty.

O'Connor, R. P., asst.-surgeon, relieved from duty at Army General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Leavenworth, Kans., for duty.

Buck, Carroll D., asst.-surgeon, relieved from duty at Fort Leavenworth, Kans., and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

Stedman, C. J., asst.-surgeon, upon arrival at Seattle, Wash., will proceed to Camp of Instruction, American Lake, Wash., for duty. Upon abandonment of camp, ordered to Fort Stevens, Ore., for duty.

Connor, C. H., asst.-surgeon, relieved from duty at Fort Stevens, Ore., and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

Hall, James F., asst.-surgeon, relieved from duty at Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Flagler, Wash., for duty.

Persons, E. E., asst.-surgeon, relieved from duty at Fort Flagler, Wash., and ordered to take first available transport sailing from San Francisco, Cal., to Manila, and upon arrival at the last named place to report in person to the commanding general, Philippines Division, for assignment to duty.

Bosley, John R., asst.-surgeon, upon arrival at Seattle, Wash., will proceed to Jefferson Barracks, Mo., for station and duty.

Lewis, W. F., asst.-surgeon, so much of par. 22, S. O. 282, War Department, Dec. 5, 1905, as details him for examiner of recruits is revoked.

Scott, George H., asst.-surgeon, now on leave at Denver, Colo., will proceed to Camp of Instruction, at the target and maneuver reservation, near Fort D. A. Russell, Wyo., for duty. Upon completion of which he will return to Denver, Colo. and resume his leave.

Murtagh, John A., asst.-surgeon, detail as examiner of recruits, San Francisco, Cal., is revoked.

Hartsock, F. M., asst.-surgeon, detail as examiner of recruits, New York City, is revoked.

Jones, Percy L., asst.-surgeon, detail as examiner of recruits, Portland, Me., is revoked.

Truby, Willard F., asst.-surgeon, left Fort Niagara, N. Y., with 3d Batt., 12th Inf., en route to Mount Gretna, Pa., for duty at Camp of Instruction.

Brechemin, Louis Jr., asst.-surgeon, arrived at Camp Tacoma, Murray, Wash., for duty.

Davidson, W. T., asst.-surgeon, arrived at Camp Tacoma, Murray, Wash., for duty.

Ireland, M. W., surgeon, left Washington, D. C., en route to the Army General Hospital, Presidio of San Francisco, Cal., on temporary duty.

Bartlett, C. J., asst.-surgeon, arrived at Camp Tacoma, American Lake, Wash., for duty.

Devereux, J. R., asst.-surgeon, relieved from duty at Fort Logan, Colo., and ordered to Army General Hospital, Washington Barracks, Washington, D. C., for duty.

Koerper, C. E., asst.-surgeon, relieved from duty at Army General Hospital, Washington Barracks, Washington, D. C., and ordered to Fort D. A. Russell, Wyo., for duty.

Howard, Deane C., asst.-surgeon, granted 20 days leave of absence.

Smith, Lloyd L., asst.-surgeon, granted 5 days leave of absence.

Kelly, John P., contract surgeon, reports arrival at Fort Miley, Cal., for temporary duty.

Chase, A. M., contract surgeon, reports at Camp of Instruction, Austin, Tex., for duty.

Tuttle, George B., contract surgeon, returned to Fort Columbia, Wash., from leave of absence.

Slayter, John T. H., contract surgeon, relieved from duty in the Philippines Division, to take effect about Oct. 10, 1906, and upon arrival at San Francisco, Cal., to report to the Military Secretary of the Army, for further orders.

Hammond, William G., dental surgeon, reports arrival at Fort Logan, Colo., for duty.

Richardson, George H., contract surgeon, when his services are no longer required on transport *Buford*, ordered to proceed to San Francisco, Cal., and report in person to the commanding general, Department of California, for assignment to duty.

Jenkins, Frederic E., contract surgeon, ordered to proceed from Hancock, Md., to San Francisco, Cal., and take transport to sail from the latter place on or about Sept. 5, 1906, for the Philippine Islands, and upon arrival at Manila to report in person to commanding general, Philippines Division, for assignment to duty.

Davis, Oscar F., contract surgeon, granted leave of absence for three months, to take effect upon being relieved from duty at Fort Des Moines, Iowa.

Reagles, James, contract surgeon, reports his arrival at Fort Keogh, Mont.

Miller, William G., contract surgeon, upon arrival at San Francisco, Cal., ordered to proceed to Fort D. A. Russell, Wyo., for duty.

McCallum, Francis M., contract surgeon, upon being relieved at Fort D. A. Russell, Wyo., by Contract Surgeon Miller, ordered to proceed to Camp McKinley, Honolulu, H. I., for duty.

Treuholtz, Clarence A., contract surgeon, ordered from General Hospital, Fort Bayard, N. Mex., to Fort Apache, Ariz., for temporary duty.

Pinquard, Joseph, contract surgeon, reports return to Fort Leavnworth, Kans., for duty.

Boak, S. D., dental surgeon, returned from leave of absence to Columbus Barracks, Ohio, for duty.

Jordan, Edward H., contract surgeon, ordered to proceed from Denver, Colo., to San Francisco, Cal., and take transport to sail rom the latter place on or about Sept. 5, 1906, for the Philippine slands, and upon arrival at Manila to report in person to the ommanding general, Philippines Division, for assignment to duty.

Merrick, John N., contract surgeon, reports return to duty at Fort Missoula, Mont.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the two weeks ending Aug. 11, 1906:

Longabaugh, 1., acting asst.-surgeon, appointed acting asst.-surgeon from Aug. 7, 1906.

Jones, A. McK., acting asst.-surgeon, appointed acting asst.-surgeon from Aug. 7, 1906.

Smith, H. L., acting asst.-surgeon, ordered to the Naval Hospital, Philadelphia.

Moore, J. M., surgeon, ordered to the *Puritan*.

Parker, E. G., surgeon, commissioned a surgeon in the Navy rom March 24, 1906.

Minter, J. M., asst.-surgeon, appointed an asst.-surgeon in the Navy from Aug. 1, 1906.

Downey, J. O., asst.-surgeon, appointed an asst.-surgeon in the Navy from Aug. 1, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioner officers of the Public Health and Marine-Hospital Service for the seven days ending Aug. 15, 1906.

Austin, H. W., surgeon, relieved from duty at Detroit, on arrival of Passed Asst.-Surgeon Grubbs at that port, and directed to proeed to San Francisco, relieving Surgeon H. W. Sawtelle and assumng command of the station at that port.

Mead, F. W., surgeon, granted leave of absence for one month, rom August 15.

White, J. H., surgeon, directed to proceed to Mobile, Ala., for pecial temporary duty, on completion of which, to rejoin station t New Orleans.

Woodward, R. M., surgeon, detailed to represent the Service at he meeting of the British Medical Association at Toronto, Canada, August 21 to 24.

Rosenau, M. J., passed asst.-surgeon, granted leave of absence for one day, August 11, under paragraph 189 of the Regulations.

Lavinder, C. H., passed asst.-surgeon, granted leave of absence for twenty-eight days, from August 11.

Grubbs, S. B., passed asst.-surgeon, on expiration of present leave of absence, relieved from duty at Cleveland, Ohio, and rected to proceed to Detroit, and assume temporary command of he Service at that port.

Anderson, J. F., passed asst.-surgeon, granted leave of absence or five days from August 7, on account of sickness.

Duffy, F., acting asst.-surgeon, granted leave of absence for even days, from August 14.

Dunn, James, acting asst.-surgeon, granted leave of absence for even days, from August 6, under paragraph 210, of the Regulations.

O'Reilly, W. J., acting asst.-surgeon, granted leave of absence for two days, from August 28.

Ranson, S. A., acting asst.-surgeon, granted leave of absence for hirty days, from September 24, and excused for a further period f sixty days, from October 24.

Savage, W. L., acting asst.-surgeon, granted leave of absence for hirty days, from August 11.

Sill, R. H., acting asst. surgeon, granted leave of absence for fteen days, from August 17.

Richardson, S. W., pharmacist, granted leave of absence for seven ays, from August 18, under paragraph 210 of the Regulations.

Scott, E. B., pharmacist, granted leave of absence for four days, rom July 26, on account of sickness.

Scott, E. B., pharmacist, granted leave of absence for three days, rom July 31, on account of sickness.

BOARD CONVENED.

Board convened to meet at Cebu, Philippine Islands, for the purose of examining Pharmacist C. R. McBride, to determine his fitess for promotion to the grade of Pharmacist of the Second-Class. Detail for the Board, Passed Asst.-Surgeon V. E. Heiser, Chairman; Passed Asst.-Surgeon Carroll Fox, Recorder. August 13, 1906.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, ave been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 17, 1906:

SMALLPOX—UNITED STATES.

Illinois: Galesburg, July 28-August 4, 2 cases.
Louisiana: New Orleans, July 28-August 4, 9 cases, 2 deaths.
Michigan: Detroit, July 28-August 4, 2 cases.
Missouri: St. Joseph, July 28-August 4, 1 case.
New Jersey: Elizabeth, June 30-July 7, 1 case.
New York: New York, August 4-11, 1 case.
Pennsylvania: Columbia, July 28-August 4, 1 case.
Texas: Greenville, March 26-August 6, 33 cases.
Washington: Spokane, July 1-31, 1 case.
Wisconsin: Appleton, July 28-August 4, 3 cases; Milwaukee, uly 14-21, 1 case; August 4-11, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, June 30-July 7, 1 case.
Argentina: Buenos Ayres, May 1-31, 197 deaths.
Brazil: Pernambuco, June 15-30, 2 deaths.
China: Hongkong, June 9-30, 4 cases, 3 deaths; Shanghai, June 23-30, 1 case, 1 death.
France: Paris, July 14-21, 8 cases.
Great Britain: Liverpool, July 21-28, 4 cases.
Chile: Antofagasta, June 21-July 5, 33 cases, 3 deaths.
India: Bombay, June 26-July 10, 7 deaths; Calcutta, June 23 30, 19 deaths; Madras, June 30-July 6, 4 deaths; Rangoon, June 23-30, 4 deaths.
Italy: General, July 12-19, 4 cases.
Russia: Moscow, June 30-July 21, 11 cases, 7 deaths; Odessa, July 14-21, 5 cases, 2 deaths; St. Petersburg, June 30-July 7, 6 cases, 2 deaths.
Siberia: Vladivostok, June 14-28, 2 cases.

YELLOW FEVER.

Cuba: Habana, August 15, 1 case.
Mexico: Merida, July 22-28, 12 cases, 7 deaths; Tierra Blanca, August 12, 1 case; Vera Cruz, July 22-28, 1 case, 1 death (imported from Merida).

CHOLERA.

Philippine Islands: Manila, June 23-30, 41 cases, 40 deaths; Provinces, June 23-30, 117 cases, 71 deaths.
India: Bombay, June 26-July 10, 78 deaths; Calcutta, June 23-30, 28 deaths; Karachi, July 1-8, 1 case, 1 death; Madras, June 30-July 6, 17 deaths; Rangoon, June 23-30, 4 deaths.

PLAGUE.

Australia: Brisbane, June 20, 1 case 1 death; Sydney, June 23, 1 case, 1 death.
Chile: Antofagasta, June 21-July 5, 5 cases, 1 death.
China: Hongkong, June 9-30, 112 cases, 93 deaths.
India: General, June 23-30, 896 cases, 769 deaths; Bombay, June 26-July 10, 74 deaths; Calcutta, June 23-30, 23 deaths; Karachi, July 1-8, 24 cases, 17 deaths; Rangoon, June 23-30, 137 deaths.
Japan: Formosa, June 1-July 10, 671 cases, 640 deaths.

Travel Notes

DISEASES AND HOSPITALS OF THE EAST COAST OF AFRICA.

NICHOLAS SENN, M.D.

Professor of Surgery in the University of Chicago; Professor and Head of the Surgical Department, Rush Medical College.

CHICAGO.

Salisbury, Mashonaland, June 8, 1906.

GERMANY'S BATTLE WITH TROPICAL DISEASES IN EAST AFRICA.

(*Concluded from page 532.*)

TUBERCULOSIS.

No cases of tuberculosis have been seen among the natives living on the mountain plateaus in the interior. On the lowlands, and especially on the coast, where natives come most frequently in contact with foreigners, isolated cases of pulmonary tuberculosis are beginning to come to the notice of physicians, and I saw a few cases in the hospitals I visited. There is every reason to fear that this disease will become more and more prevalent, despite the efforts made to prevent its spread. The lung appears to be the organ pre-eminently predisposed to infection, as all the physicians whom I have met on the coast have never seen any cases of glandular, bone or joint tuberculosis, and among the thousands of natives that came under my observation I failed to find any of the remote results of these affections in the form of scars, kyphosis and ankylosis.

RELAPSING FEVER AND SLEEPING DISEASE.

This disease has no connection whatever with malarial infection. It is a disease *per se*, caused by the bite of a tick found constantly in the huts of natives, more especially along the highways of inland trade and travel. The traveler can protect himself against this disease by avoiding stopping-places along caravan routes and entering native huts and by sleeping in a tent at least twenty to fifty feet away from any possible sources of coming in contact with the tick, and by insisting that his servants do the same.

The tsetse fly is the most formidable enemy of man and beast in East Africa. The commission appointed by the imperial government of Germany is now engaged in throwing more light on the disease caused by infection with the parasite carried and transmitted by this fly.

One of the earliest accounts of tsetse fly and the disease caused by it was given by Dr. David Livingston, the intrepid explorer and devoted missionary, fifty years ago, when he explored the upper Zambesi region. It is interesting reading just now and I will quote from it: "The tsetse fly, *Glossina* *morsitans*, is a little longer than the ordinary housefly and is nearly of the same color as the honey bee. The upper part of the body has three or four yellow bars across it; the wings project beyond this point considerably, and it is remarkably alert, avoiding most dextrously all attempts to capture it with the hand at common temperatures; in the cool of the mornings and evenings it is less agile. Its peculiar buzz when once heard can never be forgotten by the traveler. It is well known that the bite of this poisonous insect is certain death to the ox, horse and dog.

"The poison does not seem to be injected with a sting or by ova placed below the skin, for when one is allowed to feed freely on the hand it is seen to insert the middle prong of three portions, into which the proboscis divides, somewhat deeply into the true skin; it then draws it out a little way, and it assumes a crimson color as the mandibles come into brisk operation. The previously shrunken belly swells out, and if left undisturbed the fly quickly departs when it is full. A slight itching irritation follows, but not more than in the bite of a mosquito. In the ox this same bite produces no more immediate effects than in man. It does not startle him as the gadfly does, but a few days afterward the following symptoms supervene: The eye and nose begin to run, the coat shivers as if the animal were cold, a swelling appears under the jaw and sometimes at the navel; and, though the animal continues to graze, emaciation soon ensues, accompanied with a peculiar flaccidity of muscles, and proceeds unchecked until, perhaps, months afterward, purging comes on, and the animal, no longer able to graze, perishes in a state of extreme exhaustion. In the acute form the animal often perishes soon after the bite with staggering and blindness, as if the brain were affected by it."

He details the postmortem appearances as found in dead animals, from which he concludes the poison is in the blood. "The poison germ, contained in a bulb at the root of the proboscis, seems capable, although very minute in quantity, of reproducing itself, for the blood after death by tsetse is very small in quantity and scarcely stains the hands in dissecting." This was written half a century ago and much of it has been confirmed since by more extended and modern means of research.

F. Stuhlmann, of the Amani Institute in German East Africa, two hours by rail from Tanga, has written a classical article on the "Anatomy and Physiology of the Tsetse Fly." The amount of work done in obtaining the material for this article is simply stupendous and illustrates to perfection with what thoroughness the German scientists have undertaken the task assigned to them. He found the *Glossina fusca* more common at Amani than the *Glossina tachioroides* and *Glossina palpalis* of Uganda, and it is yet a question to be determined which one of the several varieties of tsetse fles is the most common cause of trypanosomiasis. He kept the flies for months in glass vessels covered with gauze and fed them, say every four or five days, by applying the gauze end of the glass to the skin of a heifer, so that the flies could sting the animal through the gauze cover. He studied the habits of the flies. When the fly alights on the skin it changes its place several times until it finds the right spot, when the puncture is quickly made and the suction is completed in from thirty to forty seconds. The sting feels like the prick of a needle, and the fly is full and withdraws the proboscis in one-half to three-quarters of a minute. He gives a most elaborate description of the proboscis and alimentary canal, which must be read in the original to be understood. In regard to the former he winds up by saying that it resembles that of the housefly in every particular, with the exception that the upper lip has a large, movable pair of labella, which in the ordinary fly are rudimentary. Until recently it was believed that the *Glossina morsitans* was the only cause of the sleeping disease that year after year has destroyed hundreds of herds of cattle and thousands of human beings. Koch is now of the opinion that the disease can also be communicated by the *Glossina fusca* and *Glossina pallidis*. However, further researches and observations are necessary to substantiate or to correct this view. Of the domestic animals only goats, sheep and fowls are immune to the tsetse-fly infection. Natives are much more susceptible to it than Europeans. So far the disease has proved uniformly fatal. It pursues an unusually chronic course, and the symptoms in many respects resemble those described by Livingston as he observed the disease in cattle. It begins as an acute affection, but passes into a chronic form, characterized by hebetude and somnolence, progressive anemia and emaciation. Professor Ollwig was the only physician on the coast that I met who had ever seen a case. Tsetse flies are very numerous in the neighborhood of Dar-es-Salaam, but evidently they do not carry the essential microbic cause of trypanosomiasis, probably because the wild buffalo, formerly so common here, has migrated further north in the direction of Lake Victoria Nyanza, a locality in which the sleeping disease is now most prevalent.

ANKYLSTOMIASIS.

This parasitic disease is extremely prevalent among the natives all along the East Coast of Africa, but Europeans are seldom affected with it. I saw a number of cases in every hospital I visited. Progressive anemia and emaciation are the constant results. Thymol in half-dram doses has so far been employed in its treatment, but the results have not been satisfactory, as relapses only too often follow an apparent cure in consequence of incomplete removal of the essential parasitic cause. Oil of eucalyptus, praised recently by a Dutch physician, is now on trial in the hospital for natives at Dar-es-Salaam. My traveling companion, Dr. L. L. Seaman, made a specialty of this disease in Porto Rico and is enthusiastic over the curative effects of beta-naphthol in half-dram doses, followed twelve hours later by a brisk saline cathartic. This remedy will be given a trial in the hospitals here.

BUBONIC PLAGUE.

This, one of the pests of the tropics, threatens German East Africa from the north. It had its origin in the interior of Africa about the source of the Nile, whence it spread to Uganda and finally reached the northern boundary of German East Africa, where two foci were established. The strict sanitary measures employed and the quarantine enforced to prevent its further spread will undoubtedly prove eminently successful.

APPENDICITIS.

After visiting the hospitals at Mombasa, Tanga and Dar-es-Salaam and conversing with the physicians, I learned that none of them had ever seen a case of appendicitis among the blacks, and most of them had lived on the coast from two to twelve years, and in the aggregate had examined thousands of cases. The relaxing effects of the climate, the notorious laziness of the people, but more especially the almost exclusive vegetable and fruit diet, go far to explain the almost complete immunity to the disease that afflicts so frequently Europeans and Americans and fills the case books and the operating rooms of our surgeons.

CARCINOMA.

From all the information I could gather from physicians on the East Coast of Africa and at Zanzibar, carcinoma is almost unknown as a disease of the blacks in the tropic region of Africa. On close inquiry I was able to find only two well-authenticated cases, one of carcinoma of the stomach at Dar-es-Salaam and the second a case of epithelioma of the lower lip, observed by Dr. Friedrichsen, of Zanzibar.

The diagnosis in the first case was confirmed at the operation performed, and in the second case by the clinical course of the disease, which was characterized by all the clinical symptoms of this disease from the beginning to the fatal termination. The radical operation recommended by the physician when the disease was still in an operable stage was refused, and it pursued its usual relentless course. It was this exemption from carcinoma of the natives living in the tropics and in the Arctic regions that led me to the conclusion that carcinoma is caused largely by unknown climatic and dietetic influences, for the international study of which I made a plea in one of the general sessions of the International Medical Congress at Lisbon.

(To be continued.)

Number	College	Examined—Passed	Examined—Failed	Percentage of Failures	No. of States having Representatives	Number
88	Ensworth Medical College.—R					
89	Barnes Medical College.—R	30	11	26.8	13	89
90	Marion Sims-Beaumont College of Medicine.—R	59	5	7.8	11	90
91	St. Louis College of Physicians and Surgeons.—R	28	1	3.5	5	91
92	American Medical College.—E	3	1	25.0	3	92
93	Homeopathic Medical College of Missouri.—H	3	0	0.	2	93
94	Medical Department, Washington University.—R	34	0	0.	9	94
95	University of the State of Missouri.—R	3	0	0.	3	95
	NEBRASKA.					
96	University of Nebraska College of Medicine.—R	1	4	80.0	4	
97	John A. Creighton Medical College.—R	6	1	14.2	5	
98	Lincoln Medical College of Cotner University.—E	1	2	66.7	1	
	NEW HAMPSHIRE.					
99	Dartmouth Medical College.—R	13	0	0.	3	
	NEW YORK.					
100	Albany Medical College.—R	45	0	0.	4	
101	College of Physicians and Surgeons.—R	114	4	3.4	9	
102	Cornell University Medical College.—R	58	0	0.	7	
103	Eclectic Medical College.—E	12	2	14.2	2	
104	Long Island College Hospital.—R	62	4	6.0	4	
105	New York Homeopathic Medical College and Hospital.—H	12	0	0.	2	
106	New York Medical College and Hospital for Women.—	8	0	0.	1	
107	University and Bellevue Hospital Medical College.—R	30	0	0.	5	
108	Syracuse University College of Medicine.—R	29	0	0.	1	
109	University of Buffalo, Medical Department.—R	31	0	0.	1	
	NORTH CAROLINA.					
110	Leonard Medical School, Shaw University.—R	10	10	50.0	8	
111	North Carolina Medical College.—R	23	4	14.8	2	
112	Medical Department, University of North Carolina.—R	6	1	14.2	1	
	OHIO.					
113	Western Reserve University Medical College.—R	21	0	0.	2	
114	Cleveland College of Physicians and Surgeons.—R	17	0	0.	2	
115	Cleveland Homeopathic Medical College.—H	22	0	0.	4	
116	Eclectic Medical Institute.—E	29	5	14.7	8	
117	Medical College of Ohio.—R	32	4	11.1	5	
118	Pulte Medical College.—H	4	0	0.	2	
119	Miami Medical College.—R	21	0	0.	2	
120	Ohio Medical University.—R	36	4	10.0	5	
121	Starling Medical College.—R	29	1	3.3	2	
122	Toledo Medical College.—R	6	0	0.	1	
	OREGON.					
123	University of Oregon; Medical Department.—R	18	13	41.9	3	
124	Medical Department, Willamette University.—R	5	3	37.5	1	
	PENNSYLVANIA.					
125	Temple College of Philadelphia, Dept. of Medicine.—R	1	0	0.	1	
126	University of Pennsylvania, Department of Medicine.—R	87	2	2.2	10	
127	Hahnemann Medical College and Hospital.—H	38	0	0.	8	
128	Jefferson Medical College.—R	155	7	4.3	22	
129	Woman's Medical College of Pennsylvania.—R	28	2	6.7	10	
130	Medico-Chirurgical College of Philadelphia.—R	80	15	15.7	11	
131	Western Pennsylvania Medical College.—R	64	2	3.0	3	131
	SOUTH CAROLINA.					
132	Medical College of the State of South Carolina.—R	19	0	0.	2	132
	TENNESEE.					
133	Tennessee Medical College.—R	10	1	9.0	1	133
134	Knoxville Medical College.—R	0	1	100.0	1	134
135	Medical Department of University of Nashville.—R	38	4	9.5	10	135
136	Vanderbilt University Medical Department.—R	17	2	10.5	7	136
137	University of Tennessee, Medical Department.—R	11	10	47.6	5	137
138	Meharry Medical College.—R	22	16	42.1	11	138
139	Memphis Hospital Medical College.—R	31	6	16.2	7	139
140	University of the South.—R	7	3	30.0	6	140
141	Chattanooga National Medical College.—R	....	....	....	....	141
142	Chattanooga Medical College.—R	15	13	46.4	7	142
143	University of West Tennessee, Medical Department.—R	0	2	100.0	1	143
	TEXAS.					
144	Medical Department Fort Worth University.—R	3	0	0.	2	144
145	University of Texas Department of Medicine.—R	10	0	0.	1	145
146	Baylor University College of Medicine.—R	4	2	33.3	5	146
147	Dallas Medical College.—R	....	....	....	....	147
148	Gate City Medical College, Texarkana.—R	1	2	66.7	1	148
149	Southwestern University Medical College, Dallas.—R	1	1	50.0	2	149
150	College of Physicians and Surgeons, Dallas.—R	1	0	0.	1	
	VERMONT.					
151	University of Vermont Medical Department.—R	38	1	2.5	5	
	VIRGINIA.					
152	Medical College of Virginia.—R	31	5	13.8	5	
153	University College of Medicine.—R	40	1	2.4	3	
154	University of Virginia Department of Medicine.—R	28	0	0.	7	
	WISCONSIN.					
155	Milwaukee Medical College.—R	19	1	5.0	2	
156	Wisconsin College of Physicians and Surgeons.—R	11	2	15.3	1	
157	Canadian Colleges	38	6	13.6	13	
158	Foreign	4	1	20.0	3	
159	Undergraduates and Miscellaneous	0	1	100.0	1	
	Totals by States	....	....	....	....	
	Totals—Registered on Credentials or by Reciprocity	....	....	....	....	
	Totals—Examined—Passed	3552	....	....	....	
	Totals—Examined—Failed	....	466	....	....	
	Percentage of Failures	....	....	11.6	....	

Figures in italics shows those registered on credentials.

* Examination consists of an oral or written examination.

† Report for October examination missing.

TABLE A.—PHYSICIANS EXAMINED BY STATE BOARDS DURING THE CALENDAR YEAR 1905.

Number.	Name of College.	Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
	ALABAMA.							
1	Birmingham Medical College.—R	9	....	9	0	0.	2	1
2	Medical College of Alabama.—R	46	....	41	5	10.9	7	2
	ARKANSAS.							
3	Medical Department Arkansas University.—R	3	....	2	1	33.3	3	3
	CALIFORNIA.							
4	Cooper Medical College.—R	54	*5*	40	9	18.4	7	4
5	Medical Department University of California.—R	24	*1*	21	2	8.7	6	5
6	California Medical College.—E	12	*2*	4	6	60.0	5	6
7	Hahnemann Medical College of the Pacific.—H	16	....	11	5	31.2	3	7
8	College of Physicians and Surgeons, San Francisco.—R	41	*8*	19	14	42.4	6	8
9	Oakland College of Medicine and Surgery.—R	....	....	....	....	....	....	9
10	College of Medicine, University of Southern California.—R	29	....	16	13	44.8	4	10
11	College of Physicians and Surgeons, Los Angeles.—R	2	....	2	0	0.	1	11
	COLORADO.							
12	Denver and Gross College of Medicine.—R	52	*30*	16	6	27.3	12	12
13	Denver Homeopathic College.—H	7	*5*	2	0	0.	2	13
14	Colorado School of Medicine.—R	17	*7*	10	0	0.	8	14
	CONNECTICUT.							
15	Yale University, Department of Medicine.—R	30	....	30	0	0.	7	15
	DISTRICT OF COLUMBIA.							
16	George Washington University, Department of Medicine	70	*2*	56	12	17.6	14	16
17	Georgetown University, School of Medicine.—R	35	....	27	8	22.8	15	17
18	Howard University, Medical Department.—R	39	....	28	11	28.2	17	18
	GEORGIA.							
19	Atlanta College of Physicians and Surgeons.—R	17	....	12	5	29.4	9	19
20	Georgia College of Eclectic Medicine and Surgery.—E	6	*1*	1	4	80.0	4	20
21	Medical College of Georgia.—R	5	....	4	1	20.0	3	21
	ILLINOIS.							
22	American Medical Missionary College.—R	20	....	17	3	15.0	12	22
23	Bennett College of Eclectic Medicine and Surgery.—E	40	....	32	8	20.0	11	23
24	Chicago Homeopathic Medical College.—H	18	*1*	10	7	41.2	11	24
25	College of Medicine and Surgery.—Ph.M.	15	....	7	8	53.3	4	25
26	College of Physicians and Surgeons, Chicago.—R	302	*3*	273	26	8.7	28	26
27	Hahnemann Medical College and Hospital.—H	79	*1*	65	13	16.7	18	27
28	Harvey Medical College.—R	18	....	16	2	11.1	3	28
29	Hering Medical College.—H	24	*1*	19	4	17.4	9	29
30	Illinois Medical College.—R	59	....	42	17	28.8	22	30
31	Jenner Medical College.—R	22	*1*	15	6	28.6	5	31
32	Northwestern University Medical School.—R	191	*1*	180	10	5.1	27	32
33	Rush Medical College.—R	254	*4*	229	21	8.4	30	33
34	National Medical University	24	....	23	1	4.2	7	34
35	American College of Medicine and Surgery.—E	51	....	43	8	17.6	9	35
36	Dearborn Medical College, Chicago.—R	29	....	28	1	3.4	2	36
	INDIANA.							
37	Central College of Physicians and Surgeons.—R	28	....	22	6	21.4	4	37
38	Medical College of Indiana.—R	100	....	83	17	17.0	6	38
39	Physio-Medical College of Indiana.—Ph.M.	12	....	5	7	41.1	4	39
40	Eclectic Medical College of Indiana.—E	7	....	5	2	28.6	4	40
41	Fort Wayne College of Medicine.—R	16	....	10	6	37.5	4	41
42	Indiana University School of Medicine.—R	4	....	4	0	0.	2	42
	IOWA.							
43	Drake University College of Medicine.—R	18	....	14	4	22.2	5	43
44	Keokuk Medical College, College of Physicians and Surgeons.—R	90	....	64	26	28.9	15	44
45	Sioux City College of Medicine.—R	15	....	15	0	0.	2	45
46	State University of Iowa, Homeopathic Medical Dept.—H	3	....	3	0	0.	2	46
47	State University of Iowa, Medical Department.—R	91	*2*	81	8	8.9	14	47
	KANSAS.							
48	College of Physicians and Surgeons of Kansas City.—R	5	*1*	4	0	0.	4	48
49	Kansas Medical College.—R	25	....	22	3	12.0	5	49
50	School of Medicine, University of Kansas.—R	....	....	....	....	....	....	50
	KENTUCKY.							
51	Hospital College of Medicine.—R	47	....	25	22	46.8	17	51
52	Kentucky School of Medicine.—R	58	....	34	24	41.4	24	52
53	Louisville Medical College.—R	38	....	22	16	23.8	14	53
54	Louisville National Medical College.—R	1	....	1	0	0.	1	54
55	Southwestern Homeopathic Medical College.—H	3	....	1	2	66.7	1	55
56	Medical Department, University of Louisville.—R	47	....	31	16	37.1	18	56
57	Kentucky University, Medical Department.—R	35	....	18	17	48.6	16	57
	LOUISIANA.							
58	Flint Medical College of New Orleans University.—R	12	....	2	10	83.3	3	58
59	Tulane University, Medical Department.—R	91	*1*	80	10	11.1	15	59
	MAINE.							
60	Medical School of Maine, Bowdoin College.—R	24	....	24	0	0.	3	60
	MARYLAND.							
61	Baltimore Medical College.—R	127	....	92	35	27.6	26	61
62	Baltimore University School of Medicine.—R	59	....	20	39	66.1	15	62
63	College of Physicians and Surgeons of Baltimore.—R	97	....	81	16	16.5	25	63
64	Medical Department, Johns Hopkins University.—R	64	*2*	62	0	0.	25	64
65	Southern Homeopathic Medical College.—H	16	....	14	2	12.5	5	65
66	University of Maryland, School of Medicine.—R	117	*3*	83	31	27.3	17	66
67	Woman's Medical College of Baltimore.—R	7	*1*	6	0	0.	6	67
68	Maryland Medical College.—R	115	*1*	52	62	54.4	18	68
	MASSACHUSETTS.							
69	Boston University School of Medicine.—H	18	....	15	3	16.7	7	69
70	College of Physicians and Surgeons.—R	31	....	18	13	41.9	10	70
71	Harvard University Medical School.—R	116	....	113	3	2.6	18	71
72	Tufts College Medical School.—R	76	....	69	7	9.2	9	72
	MICHIGAN.							
73	Detroit College of Medicine.—R	29	....	24	5	17.2	11	73
74	Detroit Homeopathic Medical College.—H	1	....	1	0	0.	1	74
75	Michigan College of Medicine and Surgery.—R	4	....	3	1	25.0	3	75
76	Grand Rapids Medical College.—R	2	....	1	1	50.0	2	76
77	University of Michigan Dept. of Medicine and Surgery.—R	136	*1*	119	16	11.8	24	77
78	University of Michigan Homeopathic Medical College.—H	13	....	13	0	0.	6	78
	MINNESOTA.							
79	College of Homeopathic Med. and Surg., Univ. of Minn.—H	2	....	2	0	0.	1	79
80	College of Medicine and Surgery, Univ. of Minnesota.—R	123	....	109	14	11.4	13	80
81	Medical Department of Hamline University.—R	36	....	22	14	38.9	8	81
	MISSOURI.							
82	Medico-Chirurgical College.—R	12	....	10	2	23.1	6	82
83	University Medical College of Kansas City.—R	62	*1*	53	8	13.1	14	83
84	Kansas City Hahnemann Medical College.—H	7	....	5	2	28.6	3	84
85	Kansas City Medical College.—R	44	....	36	8	18.2	9	85
86	Eclectic Medical University.—E	3	....	2	1	33.3	2	86
87	Central Medical College.—R	20	....	15	5	25.0	5	87
88	Ensworth Medical College.—R	21	*1*	10	10	50.0	7	88
89	Barnes Medical College.—R	73	....	48	25	34.2	23	89
90	Marion Sims-Beaumont College of Medicine.—R	93	....	79	14	15.0	17	90
91	St. Louis College of Physicians and Surgeons.—R	45	....	37	8	17.8	12	91
92	American Medical College.—E	13	....	9	4	30.8	7	92
93	Homeopathic Medical College of Missouri.—H	6	....	6	0	0.	5	93
94	Medical Department, Washington University.—R	61	*1*	52	8	13.1	20	94
95	University of the State of Missouri.—R	14	....	13	1	7.7	6	95
	NEBRASKA.							
96	University of Nebraska College of Medicine.—R	20	*3*	12	5	23.5	9	96
97	John A. Creighton Medical College.—R	15	*2*	11	2	15.4	10	97
98	Lincoln Medical College of Cotner University.—E	6	....	3	3	50.0	4	98
	NEW HAMPSHIRE.							
99	Dartmouth Medical College.—R	19	....	18	1	5.3	6	99
	NEW YORK.							
100	Albany Medical College.—R	56	....	56	0	0.	7	100
101	College of Physicians and Surgeons.—R	229	*1*	219	9	3.9	26	101
102	Cornell University Medical College.—R	79	....	79	0	0.	10	102
103	Eclectic Medical College.—E	16	....	13	3	18.7	2	103
104	Long Island College Hospital.—R	90	. .	80	10	11.1	8	104
105	New York Homeopathic Medical College and Hospital.—H	27	....	25	2	7.4	7	105
106	New York Medical College and Hospital for Women.—	12	....	10	2	16.7	4	106
107	University and Bellevue Hospital Medical College.—R	84	*1*	72	11	13.2	20	107
108	Syracuse University College of Medicine.—R	33	....	32	1	3.0	4	108
109	University of Buffalo, Medical Department.—R	59	....	58	1	1.7	9	109
	NORTH CAROLINA.							
110	Leonard Medical School, Shaw University.—R	46	....	21	25	54.3	10	110
111	North Carolina Medical College.—R	30	....	22	8	26.7	2	111
112	Medical Department, University of North Carolina.—R	9	....	8	1	11.1	1	112
	OHIO.							
113	Western Reserve University Medical College.—R	32	*1*	28	3	9.7	9	113
114	Cleveland College of Physicians and Surgeons.—R	19	*1*	17	1	5.5	3	114
115	Cleveland Homeopathic Medical College.—H	35	....	32	3	8.6	10	115
116	Eclectic Medical Institute.—E	56	....	44	12	21.4	14	116
117	Medical College of Ohio.—R	54	....	46	8	14.8	12	117
118	Pulte Medical College.—H	15	....	9	6	40.0	8	118
119	Miami Medical College.—R	28	....	27	1	3.6	6	119
120	Ohio Medical University.—R	58	....	49	9	15.5	11	120
121	Starling Medical College.—R	45	....	37	8	17.8	11	121
122	Toledo Medical College.—R	10	....	9	1	10.0	3	122
	OREGON.							
123	University of Oregon, Medical Department.—R	36	....	17	19	52.8	3	123
124	Medical Department, Willamette University.—R	13	....	7	6	46.1	3	124
	PENNSYLVANIA.							
125	Temple College of Philadelphia, Dept. of Medicine.—R	2	....	2	0	0.	2	125
126	University of Pennsylvania, Department of Medicine.—R	182	....	172	10	5.5	27	126
127	Hahnemann Medical College and Hospital.—H	53	....	51	2	3.7	10	127
128	Jefferson Medical College.—R	231	*1*	217	13	5.6	35	128
129	Woman's Medical College of Pennsylvania.—R	52	....	50	2	3.8	17	129
130	Medico-Chirurgical College of Philadelphia.—R	128	....	103	25	19.5	10	130
131	Western Pennsylvania Medical College.—R	94	....	81	13	13.8	8	131
	SOUTH CAROLINA.							
132	Medical College of the State of South Carolina.—R	34	....	27	7	20.6	8	132
	TENNESSEE.							
133	Tennessee Medical College.—R	22	...	17	5	22.7	6	133
134	Knoxville Medical College.—R	7	....	1	6	85.7	5	134
135	Medical Department of University of Nashville.—R	60	....	49	11	18.3	14	135
136	Vanderbilt University Medical Department.—R	37	....	30	7	18.9	13	136
137	University of Tennessee, Medical Department.—R	38	....	22	16	42.1	14	137
138	Meharry Medical College.—R	58	....	33	25	43.1	16	138
139	Memphis Hospital Medical College.—R	86	....	55	31	36.0	9	139
140	University of the South.—R	60	*1*	32	27	45.8	16	140
141	Chattanooga National Medical College.—R	....	....	....	....	....	....	141
142	Chattanooga Medical College.—R	44	....	21	23	52.3	11	142
143	University of West Tennessee, Medical Department.—R	2	....	0	2	100.0	1	143
	TEXAS.							
144	Medical Department Fort Worth University.—R	4	....	3	1	25.0	3	144
145	University of Texas Department of Medicine.—R	12	....	12	0	0.	3	145
146	Baylor University College of Medicine.—R	7	....	4	3	42.8	5	146
147	Dallas Medical College.—R	3	....	1	2	66.7	2	147
148	Gate City Medical College, Texarkana.—R	5	....	2	3	60.0	2	148
149	Southwestern University Medical College, Dallas.—R	2	....	1	1	50.0	2	149
150	College of Physicians and Surgeons, Dallas.—R	1	....	1	0	0.	1	150
	VERMONT.							
151	University of Vermont Medical Department.—R	88	....	76	12	13.6	14	151
	VIRGINIA.							
152	Medical College of Virginia.—R	53	*1*	40	12	23.1	9	152
153	University College of Medicine.—R	57	....	52	5	8.8	4	153
154	University of Virginia Department of Medicine.—R	65	....	59	6	9.1	15	154
	WISCONSIN.							
155	Milwaukee Medical College.—R	21	....	19	2	9.5	2	155
156	Wisconsin College of Physicians and Surgeons.—R	17	....	14	3	17.7	4	156
157	Canadian Colleges	152	....	126	26	17.1	28	157
158	Foreign	152	....	111	41	29.9	28	158
159	Undergraduates and Miscellaneous	462	*11*	205	246	54.4	22	159
	Totals by States	7618	....	....	....	....	....	
	Totals—Registered on Credentials or by Reciprocity	....	*111*	....	....	....	....	
	Totals—Examined—Passed	....	....	5963	....	....	....	
	Totals—Examined—Failed	....	....	....	1544	....	....	
	Percentage of Failures	....	....	....	....	20.6	....	

Number	State	Totals by States	Totals—Registered on Credentials or by Reciprocity	Totals—Examined—Passed	Totals—Examined—Failed	Percentage of Failures
1	Alabama.	153	....	131	22	14.4
2	Arizona.	42	....	35	7	16.7
3	Arkansas.	146	....	88	58	39.0
4	California.	271	....	144	127	46.5
5	*Colorado.	375	*38*	283	54	14.4
6	Connecticut.	83	....	66	17	20.4
7	Delaware.	28	....	20	8	28.5
8	D. of Columbia.	90	....	67	23	25.5
9	Florida.	27	....	24	3	11.1
10	Idaho.	61	....	46	15	3.5
11	Illinois.	795	....	759	36	4.5
12	Indiana.	312	....	249	63	20.1
13	Iowa.	235	....	205	30	12.7
14	Kansas.	192	....	163	29	15.4
15	Kentucky.	42	....	38	4	9.5
16	Louisiana.	120	....	105	15	12.5
17	Maine.	71	....	68	3	4.2
18	Maryland.	195	....	120	75	38.4
19	Massachusetts.	337	....	274	63	18.7
20	Michigan.	87	....	82	5	5.7
21	Minnesota.	163	....	124	39	23.9
22	Mississippi.	251	....	113	138	54.9
23	Montana.	48	....	31	17	35.4
24	Nebraska.	27	....	16	11	40.7
25	Nevada.	37	*37*	....	....	....
26	New Hampshire.	20	....	15	5	25.0
27	†New Jersey.	72	....	55	17	23.6
28	New York.	756	....	705	51	6.7
29	North Carolina.	132	....	92	40	30.3
30	North Dakota.	79	....	72	7	8.8
31	Ohio.	221	....	213	8	3.6
32	Oklahoma.	81	....	53	28	34.5
33	Oregon.	134	....	68	66	49.2
34	Pennsylvania.	638	....	540	98	13.7
35	Rhode Island.	66	....	47	19	28.8
36	South Carolina.	66	....	44	22	33.3
37	South Dakota.	61	*9*	41	11	21.0
38	Tennessee.	121	....	86	35	28.9
39	Texas.	190	....	117	73	38.4
40	Utah.	40	....	32	8	20.0
41	Vermont.	44	....	43	1	2.2
42	Virginia.	198	*8*	140	50	25.2
43	Washington.	175	....	141	34	18.8
44	West Virginia.	204	....	109	95	46.5
45	Wisconsin.	100	....	95	5	5.0
46	Wyoming.	32	*19*	12	1	3.1

Figures in italics shows those registered on credentials.
* Examination consists of an oral or written examination.
† Report for October examination missing.

TABLE B.—GRADUATES OF 1905 EXAMINED BY STATE BOARDS DURING 1905.

Number.	Name of College.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
		Alabama.	Arizona.	Arkansas.	California.	*Colorado.	Connecticut.	Delaware.	D. of Columbia	Florida.	Idaho.	Illinois.	Indiana	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Massachusetts.	Michigan.	Minnesota.	Mississippi.	Montana.	Nebraska.	Nevada.	New Hampshire	†New Jersey.	New York.	North Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	South Carolina	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.							
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F							
	ALABAMA.
1	Birmingham Medical College.—R.	7 0																																															7		7	0	0.	1	1
2	Medical College of Alabama.—R.	28 2																					2 1																									33		30	3	9.0	2	2
	ARKANSAS.
3	Medical Department Arkansas University.—R.			1 0													1 0																																2		2	0	0.	2	3
	CALIFORNIA.
4	Cooper Medical College.—R.				27 4																				*3 0*																			3 0				37	*3*	30	4	11.7	3	4
5	Medical Department University of California.—R.				12 2																																										14		12	2	14.2	1	5
6	California Medical College.—E.				0 2																				*2 0*																					4	*2*	0	2	100.0	2	6
7	Hahnemann Medical College of the Pacific.—H.				8 2																																										10		8	2	20.0	1	7
8	College of Physicians and Surgeons, San Francisco.—R.				4 8																				*5 0*								1 1										1 0				20	*5*	6	9	60.0	4	8
9	Oakland College of Medicine and Surgery.—R.																																																					9
10	College of Medicine, University of Southern California.—R.				10 11							1 0																																			22		11	11	50.0	2	10
11	College of Physicians and Surgeons, Los Angeles.—R.				2 0																																										2		2	0	0.	1	11
	COLORADO.
12	Denver and Gross College of Medicine.—R.				0 1	*28 0*									1 0										1 0				1 0																					32	*28*	3	1	25.0	5	12
13	Denver Homeopathic College.—H.					*3 0*																																									1 0	4	*3*	1	0	0.	2	13
14	Colorado School of Medicine.—R.					*4 0*					1 0																																				5	*4*	1	0	0.	2	14
	CONNECTICUT.
15	Yale University, Department of Medicine.—R.						9 0																													1 0											10		10	0	0.	2	15
	DISTRICT OF COLUMBIA.
16	George Washington University, Department of Medicine								28 6			1 0	1 0						1 0		1 0	1 0	1 0			*1 0*									3 0								1 0					45	*1*	38	6	13.6	10	16
17	Georgetown University, School of Medicine.—R.				0 1		0 1	1 0	5 2											1 0		1 0		1 0																										13		9	4	30.7	7	17
18	Howard University, Medical Department.—R.								2 1			1 0		1 0					3 0																	1 1														10		8	2	20.0	5	18
	GEORGIA.
19	Atlanta College of Physicians and Surgeons.—R.	4 0		1 0												1 0							1 0																										7		7	0	0.	4	19
20	Georgia College of Eclectic Medicine and Surgery.—E.																																																					20
21	Medical College of Georgia.—R.									2 0																																					2		2	0	0.	1	21
	ILLINOIS.
22	American Medical Missionary College.—R.														1 0									0 1																							2		1	1	50.0	2	22
23	Bennett College of Eclectic Medicine and Surgery.—E.											24 0																						0 1							1 0			1 0				27		26	1	3.7	4	23
24	Chicago Homeopathic Medical College.—H.																																																					24
25	College of Medicine and Surgery.—Ph.M.											5 3																																			8		5	3	37.5	1	25
26	College of Physicians and Surgeons, Chicago.—R.				1 1	2 0						153 0	4 0	7 2												1 0	*1 0*				4 0		1 0	0 1	1 0		1 0	2 1		1 0	3 0			2 0		15 1		205	*1*	198	6	2.9	17	26
27	Hahnemann Medical College and Hospital.—H.				0 1	1 0						42 0	1 1	2 0							1 0	0 1												1 0																51		48	3	5.8	8	27
28	Harvey Medical College.—R.											15 1																																			16		15	1	6.2	1	28
29	Hering Medical College.—H.											9 0																							1 0														10		10	0	0.	2	29
30	Illinois Medical College.—R.										1 0	14 2	5 2	0 1	1 0	1 0							0 1									1 0													2 0			31		25	6	19.3	9	30
31	Jenner Medical College.—R.											11 3																																			14		11	3	21.3	1	31
32	Northwestern University Medical School.—R.				3 1	2 0					1 0	89 0	4 0	8 0	2 0		1 0				1 0	5 0							1 0		2 0		1 0								3 0			1 0		10 0		135		134	1	0.7	16	32
33	Rush Medical College.—R.	0 1				2 0					1 0	59 0	4 0	5 0				1 0			2 0	2 0	0 1								2 0	1 0												1 0		6 0		88		86	2	2.3	14	33
34	National Medical University											10 0	1 0	1 0																																	12		12	0	0.	3	34
35	American College of Medicine and Surgery.—E.				0 2							33 3	2 0																				1 0						1 0										42		37	5	11.9	5	35
36	Dearborn Medical College, Chicago.—R.											28 0																																			28		28	0	0.	1	36
	INDIANA.
37	Central College of Physicians and Surgeons.—R.												21 4			1 0																															26		22	4	15.3	2	37
38	Medical College of Indiana.—R.												76 12																																		88		76	12	13.6	1	38
39	Physio-Medical College of Indiana.—Ph.M.												4 3																																		7		4	3	42.8	1	39
40	Eclectic Medical College of Indiana.—E.												3 1																																		4		3	1	25.0	1	40
41	Fort Wayne College of Medicine.—R.												9 4																																		13		9	4	30.7	1	41
42	Indiana University School of Medicine.—R.																																																					42
	IOWA.
43	Drake University College of Medicine.—R.													11 0																																	11		11	0	0.	1	43
44	Keokuk Medical College, College of Physicians and Surgeons.—R.					1 0						0 2	1 0	44 4	2 0							0 1										1 0													1 1				58		50	8	13.7	8	44
45	Sioux City College of Medicine.—R.													13 0																																	13		13	0	0.	1	45
46	State University of Iowa, Homeopathic Medical Dept.—H.																																																					46
47	State University of Iowa, Medical Department.—R.													68 0																		1 0															69		69	0	0.	1	47
	KANSAS.
48	College of Physicians and Surgeons of Kansas City.—R.														2 0																																2		2	0	0.	1	48
49	Kansas Medical College.—R.					2 0					1 0				15 0																																18		18	0	0.	3	49
50	School of Medicine, University of Kansas.—R.																																																					50
	KENTUCKY.
51	Hospital College of Medicine.—R.	1 0				1 0							2 0		2 0	3 0																									1 0		1 1		1 2				15		12	3	20.0	8	51
52	Kentucky School of Medicine.—R.		1 0									2 0	3 0			1 0					1 1		1 0												1 0										3 2				16		13	3	18.7	8	52
53	Louisville Medical College.—R.	2 0				1 0						1 0	2 2				1 2						0 1							2 0							0 1					0 2						1 1				19		10	9	47.3	10	53
54	Louisville National Medical College.—R.																																																					54
55	Southwestern Homeopathic Medical College.—H.												0 1																																		1		0	1	100.0	1	55
56	Medical Department, University of Louisville.—R.	1 0										2 0	2 1		2 0	1 0			0 1				1 1					0 1														5 1						2 2				23		16	7	30.4	10	56
57	Kentucky University, Medical Department.—R.	1 0										1 0												1 2		1 0					0 1					1 0				0 1	1 0			1 0		2 2				15		9	6	40.0	10	57
	LOUISIANA.
58	Flint Medical College of New Orleans University.—R.			1 1													1 1							0 3																									7		2	5	71.4	3	58
59	Tulane University, Medical Department.—R.	6 0		1 0	0 1					2 0							45 0							5 3							2 0				1 0				2 0			6 0										74		70	4	5.4	10	59
	MAINE.
60	Medical School of Maine, Bowdoin College.—R.																	17 0																													17		17	0	0.	1	60
	MARYLAND.
61	Baltimore Medical College.—R.	1 0					1 0	3 0	1 0	1 0								1 0	10 4	1 7										1 2	1 0	1 0		1 0			19 4	3 0	1 0					1 0	1 1		3 2				71		51	20	28.1	18	61
62	Baltimore University School of Medicine.—R.							0 3								1 0		0 1		1 1																		2 1										1 2				13		5	8	61.5	5	62
63	College of Physicians and Surgeons of Baltimore.—R.						3 0					1 0							9 0	5 0	1 0							5 0	0 1	1 1		1 0			9 7	5 0						1 0	2 0		6 0				58		49	9	15.5	14	63
64	Medical Department, Johns Hopkins University.—R.	1 0			3 0									1 0				1 0	9 0												3 0		1 0	1 0			3 0													1 0		24		24	0	0.	10	64
65	Southern Homeopathic Medical College.—H.							2 0											8 0																2 0														12		12	0	0.	3	65
66	University of Maryland, School of Medicine.—R.						1 0			1 0									34 10	2 0											9 2						4 1	1 1						1 0	2 0		3 0				72		58	14	19.4	10	66
67	Woman's Medical College of Baltimore.—R.																		2 0																												2		2	0	0.	1	67
68	Maryland Medical College.—R.	2 0					0 2	0 1									1 0		8 22	0 1			1 0													3 5		0 1			1 2				1 0		12 2				65		29	36	55.3	12	68
	MASSACHUSETTS.
69	Boston University School of Medicine.—H.																	2 0		3 0				1 0																									6		6	0	0.	3	69
70	College of Physicians and Surgeons.—R.																	3 0	1 0	3 5																2 0													14		9	5	35.7	4	70
71	Harvard University Medical School.—R.					1 0				1 0								3 0		44 0							1 0		1 0							2 0								1 0				54		54	0	0.	8	71
72	Tufts College Medical School.—R.						1 2										1 0		46 4							1 0									2 0						1 0						58		52	6	10.3	6	72
	MICHIGAN.
73	Detroit College of Medicine.—R.												1 0								5 0						1 0																							7		7	0	0.	3	73
74	Detroit Homeopathic Medical College.—H.																																																					74
75	Michigan College of Medicine and Surgery.—R.																																																					75
76	Grand Rapids Medical College.—R.																																																					76
77	University of Michigan Dept. of Medicine and Surgery.—R.					1 0				2 0			1 0	1 0							43 0							1 0	2 0		1 0	1 0			2 0															55		55	0	0.	10	77
78	University of Michigan Homeopathic Medical College.—H.																				3 0								1 0			3 0	1 0																	8		8	0	0.	4	78
	MINNESOTA.
79	College of Homeopathic Med. and Surg., Univ. of Minn.—H.																																																					79
80	College of Medicine and Surgery, Univ. of Minnesota.—R.																					61 12									5 0							2 0						1 0		1 0		82		70	12	14.6	5	80
81	Medical Department of Hamline University.—R.																					7 2									3 0																12		10	2	16.6	2	81
	MISSOURI.
82	Medico-Chirurgical College.—R.			1 0											6 0																			0 2										1 0				10		8	2	20.0	3	82
83	University Medical College of Kansas City.—R.					1 0								2 0	29 0																			4 1																37		36	1	2.7	4	83
84	Kansas City Hahnemann Medical College.—H.														1 1																																2		1	1	50.0	1	84
85	Kansas City Medical College.—R.														25 0							0 1												1 1												3 0				31		29	2	6.4	4	85
86	Eclectic Medical University.—E.														1 1																			1 0																3		2	1	33.3	2	86
87	Central Medical College.—R.					0 1					1 0				7 2										0 2																								13		8	5	38.4	4	87
88	Ensworth Medical College.—R.													0 2	5 3											*1 0*																					11	*1*	5	5	50.0	3	88
89	Barnes Medical College.—R.					3 2						17 1	1 0	3 0	2 0	0 1								1 0	1 1						0 2							1 1		0 1		1 0		0 2				41		30	11	26.8	13	89
90	Marion Sims-Beaumont College of Medicine.—R.			1 0		2 0						45 2	0 1		4 0		1 0						1 0										2 0							0 1	2 1			1 0				64		59	5	7.8	11	90
91	St. Louis College of Physicians and Surgeons.—R.											24 1		1 0	1 0	1 0																								1 0									29		28	1	3.5	5	91
92	American Medical College.—E.											1 0			0 1																										2 0							4		3	1	25.0	3	92
93	Homeopathic Medical College of Missouri.—H.											2 0			1 0																																3		3	0	0.	2	93
94	Medical Department, Washington University.—R.		1 0	1 0							1 0	25 0	1 0		2 0																1 0											1 0				1 0		34		34	0	0.	9	94
95	University of the State of Missouri.—R.				1 0																			1 0									1 0																3		3	0	0.	3	95
	NEBRASKA.
96	University of Nebraska College of Medicine.—R.				0 1																			0 1	0 2																							[illegible] 0	5		1	4	80.0	4	96
97	John A. Creighton Medical College.—R.													2 0												0 1								2 0					1 0								1 0				7		6	1	14.2	5	97
98	Lincoln Medical College of Cotner University.—E.																								1 2																								3		1	2	66.7	1	98
	NEW HAMPSHIRE.
99	Dartmouth Medical College.—R.																			9 0							3 0																1 0						13		13	0	0.	3	99
	NEW YORK.
100	Albany Medical College.—R.																	1 0		2 0									41 0													1 0						45		45	0	0.	4	100
101	College of Physicians and Surgeons.—R.	1 0					1 0			1 0				1 0						3 0							1 0	6 0	99 4							1 0													118		114	4	3.4	9	101
102	Cornell University Medical College.—R.	1 0			1 0												1 0											1 0	52 0				1 0			1 0															58		58	0	0.	7	102
103	Eclectic Medical College.—E.																												12 0																	0 2				14		12	2	14.2	2	103
104	Long Island College Hospital.—R.																			2 0								0 1	60 2							0 1															66		62	4	6.0	4	104
105	New York Homeopathic Medical College and Hospital.—H.																				1 0								11 0																						12		12	0	0.	2	105
106	New York Medical College and Hospital for Women.—																												8 0																						8		8	0	0.	1	106
107	University and Bellevue Hospital Medical College.—R.																			1 0	1 0								26 0			1 0				1 0															30		30	0	0.	5	107
108	Syracuse University College of Medicine.—R.																												29 0																						29		29	0	0.	1	108
109	University of Buffalo, Medical Department.—R.																												31 0																						31		31	0	0.	1	109
	NORTH CAROLINA.
110	Leonard Medical School, Shaw University.—R.	3 0																					1 1					0 1		3 5		1 0					0 1						2 1		0 1				20		10	10	50.0	8	110
111	North Carolina Medical College.—R.																													22 4							1 0															27		23	4	14.8	2	111
112	Medical Department, University of North Carolina.—R.																													6 1																					7		6	1	14.2	1	112
	OHIO.
113	Western Reserve University Medical College.—R.																															20 0			1 0																21		21	0	0.	2	113
114	Cleveland College of Physicians and Surgeons.—R.						1 0																									16 0																			17		17	0	0.	2	114
115	Cleveland Homeopathic Medical College.—H.											2 0																	3 0			11 0			6 0																22		22	0	0.	4	115
116	Eclectic Medical Institute.—E.					2 0						3 0	5 3	0 1	2 0	4 0																10 1			3 0																34		29	5	14.7	8	116
117	Medical College of Ohio.—R.					2 0										1 0																28 2			1 0										0 2				36		32	4	11.1	5	117
118	Pulte Medical College.—H.																															3 0											1 0						4		4	0	0.	2	118
119	Miami Medical College.—R.												1 0																			20 0													1 0				21		21	0	0.	2	119
120	Ohio Medical University.—R.																												0 1			32 0			1 2												2 1		1 0	40		36	4	10.0	5	120
121	Starling Medical College.—R.												1 0																			28 1																	30		29	1	3.3	2	121
122	Toledo Medical College.—R.											6 0																																			6		6	0	0.	1	122
	OREGON.
123	University of Oregon, Medical Department.—R.																																	15 13												2 0			1 0	31		18	13	41.9	3	123
124	Medical Department, Willamette University.—R.																																	5 3															8		5	3	37.5	1	124
	PENNSYLVANIA.
125	Temple College of Philadelphia, Dept. of Medicine.—R.																																	1 0															1		1	0	0.	1	125
126	University of Pennsylvania, Department of Medicine.—R.					1 0	1 0	1 0							1 0				2 0		4 0								3 0	5 0						68 2								1 0					89		87	2	2.2	10	126
127	Hahnemann Medical College and Hospital.—H.							2 0	1 0											2 0										2 0	1 0			1 0			28 0								1 0						38		38	0	0.	8	127
128	Jefferson Medical College.—R.				0 1		2 0	3 0		1 0	2 0	2 0	1 0	2 0				3 0		8 0				1 0			1 1	8 0	2 0	4 0		4 0			104 5	2 0	2 0			1 0		1 0			1 0			162		155	7	4.3	22	128
129	Woman's Medical College of Pennsylvania.—R.																1 0	1 0		1 0	1 0							1 0	1 0	1 0		1 0			20 2														30		28	2	6.7	10	129
130	Medico-Chirurgical College of Philadelphia.—R.		1 0			1 0		2 0										2 0		1 0									7 2		1 0		2 0		1 0	61 13	1 0												95		80	15	15.7	11	130
131	Western Pennsylvania Medical College.—R.											3 0								1 0																60 2														66		64	2	3.0	3	131
	SOUTH CAROLINA.
132	Medical College of the State of South Carolina.—R.												1 0																									18 0												19		19	0	0.	2	132
	TENNESSEE.
133	Tennessee Medical College.—R.																																						10 1										11		10	1	9.0	1	133
134	Knoxville Medical College.—R.																																						0 1										1		0	1	100.0	1	134
135	Medical Department of University of Nashville.—R.	6 0		1 0											1 0	1 0	4 0						4 1																4 0		13 2	3 1					1 0				42		38	4	9.5	10	135
136	Vanderbilt University Medical Department.—R.	4 0								1 0						2 0							1 1										1 1						6 0	2 0									19		17	2	10.5	7	136
137	University of Tennessee, Medical Department.—R.															4 1							1 1																0 1		6 6	0 1									21		11	10	47.6	5	137
138	Meharry Medical College.—R.	7 2		4 0		2 0				1 2					2 0		0 1				0 1		2 3																0 1		2 5	2 1									38		22	16	42.1	11	138
139	Memphis Hospital Medical College.—R.	3 0		1 0													8 0						11 5										1 0						2 1	5 0											37		31	6	16.2	7	139
140	University of the South.—R.	3 0					0 1	1 0									3 0																									0 1				0 1						10		7	3	30.0	6	140
141	Chattanooga National Medical College.—R.																																																					141
142	Chattanooga Medical College.—R.	10 2		1 0																			0 3																0 2		4 4	0 1									28		15	13	46.4	7	142
143	University of West Tennessee, Medical Department.—R.																																						0 2										2		0	2	100.0	1	143
	TEXAS.
144	Medical Department Fort Worth University.—R.																1 0																							2 0									3		3	0	0.	2	144
145	University of Texas Department of Medicine.—R.																																							10 0									10		10	0	0.	1	145
146	Baylor University College of Medicine.—R.	1 0		1 0						1 0													1 0																	0 2									6		4	2	33.3	5	146
147	Dallas Medical College.—R.																																																					147
148	Gate City Medical College, Texarkana.—R.																						1 2																										3		1	2	66.7	1	148
149	Southwestern University Medical College, Dallas.—R.			1 0																																				0 1									2		1	1	50.0	2	149
150	College of Physicians and Surgeons, Dallas.—R.																																1 0																1		1	0	0.	1	150
	VERMONT.
151	University of Vermont Medical Department.—R.				0 1	1 0												2 0		8 0																						27 0						39		38	1	2.5	5	151
	VIRGINIA.
152	Medical College of Virginia.—R.																													2 2		1 0			1 0								24 3		3 0				36		31	5	13.8	5	152
153	University College of Medicine.—R.																													6 0														32 0		2 1				41		40	1	2.4	3	153
154	University of Virginia Department of Medicine.—R.	2 0																	1 0				1 0																	1 0				17 0	1 0	5 0				28		28	0	0.	7	154
	WISCONSIN.
155	Milwaukee Medical College.—R.																					1 1																									18 0		20		19	1	5.0	2	155
156	Wisconsin College of Physicians and Surgeons.—R.																																													11 2		13		11	2	15.3	1	156
157	Canadian Colleges				1 1	11 0					1 0	3 0		4 0				2 0		4 3		2 0							3 0		5 0				2 0	0 1											0 1		44		38	6	13.6	13	157
158	Foreign				1 0															2 1																1 0														5		4	1	20.0	3	158
159	Undergraduates and Miscellaneous																		0 1																												1		0	1	100.0	1	159
	Totals by States	102	3	17	115	78	26	19	46	16	10	653	193	188	125	24	73	43	127	173	64	97	68	6	13	13	9	42	402	77	27	193	24	44	452	28	35	9	68	54	13	37	93	24	72	67	4	4066						
	Totals—Registered on Credentials or by Reciprocity					*35*																				*13*																							*48*					
	Totals—Examined—Passed	95	3	16	74	40	20	15	37	14	10	635	158	178	117	22	69	42	89	151	62	79	38	4	5		8	35	394	60	25	189	21	23	407	24	29	7	46	38	12	37	86	21	50	63	4			3552				
	Totals—Examined—Failed	7	0	1	41	3	6	4	9	2	0	18	35	10	8	2	4	1	38	22	2	18	30	2	8		1	7	8	17	2	4	3	21	45	4	6	2	22	16	1	0	7	3	22	4	0				466			
	Percentage of Failures	6.8	0.	5.8	35.0	3.8	23.0	21.0	19.5	11.7	0.	2.7	18.0	5.0	6.4	8.3	5.4	2.3	29.9	12.7	3.0	18.5	44.0	33.3	61.5		11.0	16.6	1.9	22.0	7.4	2.0	12.5	47.7	9.9	14.2	17.0	22.2	32.3	29.6	7.7	0.	7.5	12.5	30.5	5.9	0.					11.6		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46							

Figures in italics shows those registered on credentials.

* Examination consists of an oral or written examination.

† Report for October examination missing.

E BOARDS DURING 1905.

24 Nebraska.		25 Nevada.		26 New Hampshire		27 †New Jersey.		28 New York.		29 North Carolina.		30 North Dakota.		31 Ohio.		32 Oklahoma.		33 Oregon.		34 Pennsylvania.		35 Rhode Island.		36 South Carolina		37 South Dakota.		38 Tennessee.		39 Texas.		40 Utah.		41 Vermont.		42 Virginia.		43 Washington.		44 West Virginia.		45 Wisconsin.		46 Wyoming.		Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F							
																																														7		7	0	0.	1	1
																																														33		30	3	9.0	2	2
																																														2		2	0	0.	2	3
		3	*0*																																					3	0							37	*3*	30	4	11.7	3	4
																																														14		12	2	14.2	1	5
		2	*0*																																											4	*2*	0	2	100.0	2	6
																																														10		8	2	20.0	1	7
		5	*0*																			1	1																			1	0							20	*5*	6	9	60.0	4	8
																																																				9
																																														22		11	11	50.0	2	10
																																														2		2	0	0.	1	11
1	0							1	0																																					32	*28*	3	1	25.0	5	12
																																												1	0	4	*3*	1	0	0.	2	13
																																														5	*4*	1	0	0.	2	14
																								1	0																									10		10	0	0.	2	15
		1	*0*																					3	0																	1	0											45	*1*	38	6	13.6	10	16
																																														13		9	4	30.7	7	17
																						1	1																											10		8	2	20.0	5	18
																																														7		7	0	0.	4	19
																																																				20
																																														2		2	0	0.	1	21
																																														2		1	1	50.0	2	22
																		0	1													1	0					1	0							27		26	1	3.7	4	23
																																																				24
																																														8		5	3	37.5	1	25
1	0	*1*	*0*											4	0			1	0	0	1	1	0			1	0	2	1			1	0	3	0					2	0			15	1			205	*1*	198	6	2.9	17	26
																1	0																																	51		48	3	5.8	8	27
																																														16		15	1	6.2	1	28
																						1	0																											10		10	0	0.	2	29
														1	0																													2	0					31		25	6	19.3	9	30
																																														14		11	3	21.3	1	31
								1	0			2	0			1	0																					3	0					1	0			10	0			135		134	1	0.7	16	32
												2	0	1	0																													1	0			6	0			88		86	2	2.3	14	33
																																														12		12	0	0.	3	34
																1	0									1	0																					42		37	5	11.9	5	35
																																														28		28	0	0.	1	36
																																														26		22	4	15.3	2	37
																																														88		76	12	13.6	1	38
																																														7		4	3	42.8	1	39
																																														4		3	1	25.0	1	40
																																														13		9	4	30.7	1	41
																																																				42
																																														11		11	0	0.	1	43
												1	0																													1	1							58		50	8	13.7	8	44
																																														13		13	0	0.	1	45
																																																				46
														1	0																																			69		69	0	0.	1	47
																																														2		2	0	0.	1	48
																																														18		18	0	0.	3	49
																																																				50
																																		1	0			1	1			1	2					15		12	3	20.0	8	51
																						1	0																					3	2					16		13	3	18.7	8	52
										2	0									0	1									0	2									1	1					19		10	9	47.3	10	53
																																																				54
																																														1		0	1	100.0	1	55
						0	1																									5	1									2	2					23		16	7	30.4	10	56
1	0									0	1									1	0							0	1	1	0					1	0			2	2					15		9	6	40.0	10	57
																																														7		2	5	71.4	3	58
										2	0					1	0							2	0					6	0																	74		70	4	5.4	10	59
																																														17		17	0	0.	1	60
						1	2	1	0	1	0			1	0					19	4	3	0	1	0									1	0	1	1			3	2					71		51	20	28.1	18	61
																								2	1																			1	2					13		5	8	61.5	5	62
						5	0	0	1	1	1			1	0					9	7	5	0											1	0	2	0			6	0					58		49	9	15.5	14	63
								3	0			1	0	1	0					3	0																							1	0			24		24	0	0.	10	64
																						2	0																											12		12	0	0.	3	65
										9	2									4	1	1	1											1	0	2	0			3	0					72		58	14	19.4	10	66
																																														2		2	0	0.	1	67
																						3	5			0	1					1	2					1	0			12	2					65		29	36	55.3	12	68
																																														6		6	0	0.	3	69
																								2	0																									14		9	5	35.7	4	70
				1	0			1	0													2	0																	1	0							54		54	0	0.	8	71
				1	0																			2	0											1	0													58		52	6	10.3	6	72
				1	0																																											7		7	0	0.	3	73
																																																				74
																																																				75
																																																				76
						1	0	2	0			1	0	1	0					2	0																											55		55	0	0.	10	77
								1	0					3	0	1	0																																	8		8	0	0.	4	78
																																																				79
												5	0															2	0											1	0			1	0			82		70	12	14.6	5	80
												3	0																																					12		10	2	16.6	2	81
																		0	2																			1	0							10		8	2	20.0	3	82
																4	1																																	37		36	1	2.7	4	83
																																														2		1	1	50.0	1	84
																1	1																									3	0							31		29	2	6.4	4	85
																1	0																																	3		2	1	33.3	2	86

REVIOUS, EXAMIN

18	19	20	21	22	23
Maryland.	Massachusetts.	Michigan.	Minnesota.	Mississippi.	Montana.
F	P F	P F	P F	P F	P F

39	40	41	42	43	44	45	46							
as.	ah.	rmont.	rginia.	ashington.	est Virginia.	isconsin.	yoming.	tals.	gistered on redentials.	xamined—assed.	amined—ailed.	rcentage of ailures.	of States aving Repre- entatives.	umber.

88	Ensworth Medical College.—R
89	Barnes Medical College.—R
90	Marion Sims-Beaumont College of Medicine.—R
91	St. Louis College of Physicians and Surgeons.—R
92	American Medical College.—E
93	Homeopathic Medical College of Missouri.—H
94	Medical Department, Washington University.—R
95	University of the State of Missouri.—R
	NEBRASKA.
96	University of Nebraska College of Medicine.—R
97	John A. Creighton Medical College.—R
98	Lincoln Medical College of Cotner University.—E
	NEW HAMPSHIRE.
99	Dartmouth Medical College.—R
	NEW YORK.
100	Albany Medical College.—R
101	College of Physicians and Surgeons.—R
102	Cornell University Medical College.—R
103	Eclectic Medical College.—E
104	Long Island College Hospital.—R
105	New York Homeopathic Medical College and Hospital.—H
106	New York Medical College and Hospital for Women.—
107	University and Bellevue Hospital Medical College.—R
108	Syracuse University College of Medicine.—R
109	University of Buffalo, Medical Department.—R
	NORTH CAROLINA.
110	Leonard Medical School, Shaw University.—R
111	North Carolina Medical College.—R
112	Medical Department, University of North Carolina.—R
	OHIO.
113	Western Reserve University Medical College.—R
114	Cleveland College of Physicians and Surgeons.—R
115	Cleveland Homeopathic Medical College.—H
116	Eclectic Medical Institute.—E
117	Medical College of Ohio.—R
118	Pulte Medical College.—H
119	Miami Medical College.—R
120	Ohio Medical University.—R
121	Starling Medical College.—R
122	Toledo Medical College.—R
	OREGON.
123	University of Oregon, Medical Department.—R
124	Medical Department, Willamette University.—R
	PENNSYLVANIA.
125	Temple College of Philadelphia, Dept. of Medicine.—R
126	University of Pennsylvania, Department of Medicine.—R
127	Hahnemann Medical College and Hospital.—H
128	Jefferson Medical College.—R
129	Woman's Medical College of Pennsylvania.—R
130	Medico-Chirurgical College of Philadelphia.—R
131	Western Pennsylvania Medical College.—R
	SOUTH CAROLINA.
132	Medical College of the State of South Carolina.—R
	TENNESSEE.
133	Tennessee Medical College.—R
134	Knoxville Medical College.—R
135	Medical Department of University of Nashville.—R
136	Vanderbilt University Medical Department.—R
137	University of Tennessee, Medical Department.—R
138	Meharry Medical College.—R
139	Memphis Hospital Medical College.—R
140	University of the South.—R
141	Chattanooga National Medical College.—R
142	Chattanooga Medical College.—R
143	University of West Tennessee, Medical Department.—R
	TEXAS.
144	Medical Department Fort Worth University.—R
145	University of Texas Department of Medicine.—R
146	Baylor University College of Medicine.—R
147	Dallas Medical College.—R
148	Gate City Medical College, Texarkana.—R
149	Southwestern University Medical College, Dallas.—
150	College of Physicians and Surgeons, Dallas.—R
	VERMONT.
151	University of Vermont Medical Department.—R
	VIRGINIA.
152	Medical College of Virginia.—R
153	University College of Medicine.—R
154	University of Virginia Department of Medicine.—R
	WISCONSIN.
155	Milwaukee Medical College.—R
156	Wisconsin College of Physicians and Surgeons.—R
157	Canadian Colleges
158	Foreign
159	Miscellaneous Medical Colleges
	Totals by States
	Totals—Registered on Credentials or by Reciprocity
	Totals—Examined—Passed
	Totals—Examined—Failed
	Percentage of Failures

Figures in italics shows those registered on credentials.

* Examination consists of an oral or written examination

† Report for October examination missing.

		4	50.0	4	90
	1	2	66.7	2	91
	4	2	33.3	2	92
	1	0	0.	1	93
	7	3	30.0	9	94
	6	1	14.3	1	95
	5	0	0.	3	96
					97
	....	....	.....	......	98
	3	1	25.0	4	99
	3	0	0.	2	100
1	18	0	0.	10	101
	....	....	.....	......	102
	....	....	.....	......	103
	3	4	57.1	6	104
	3	1	25.0	4	105
	1	1	50.0	2	106
	13	10	43.4	13	107
	0	1	100.0	1	108
	4	1	20.0	4	109
	0	1	100.0	1	110
	....	....	.....	......	111
	....	....	.....	......	112
	5	3	37.5	7	113
1	....	....	.....	1	114
	5	3	37.5	6	115
	9	0	0.	7	116
	8	5	38.4	8	117
	2	3	60.0	3	118
	3	1	25.0	3	119
	6	1	14.3	4	120
	5	5	50.0	8	121
	2	0	0.	1	122
	1	0	0.	1	123
	1	0	0.	1	124
					125
	20	5	20.0	14	126
	1	1	50.0	2	127
	17	5	22.7	11	128
	4	0	0.	4	129
	4	3	43.0	4	130
	8	3	50.0	5	131
	2	0	0.	2	132
	3	1	25.0	3	133
	....	....	.....	......	134
	4	0	0.	4	135
	7	6	46.1	10	136
	2	2	50.0	4	137
	2	1	33.3	2	138
	3	6	66.7	7	139
	2	0	0.	3	140
1	....	....	.....	......	141
	0	2	100.0	1	142
	....	....	.....	......	143
	....	....	.....	......	144
	1	0	0.	1	145
	....	....	.....	......	146
	....	....	.....	......	147
	....	....	.....	......	148
	....	....	.....	......	149
	....	....	.....	......	150
	15	6	28.6	8	151
	3	0	0.	3	152
	....	....	.....	......	153
	9	2	18.2	8	154
	1	0	0.	1	155
	0	1	100.0	1	156
	26	2	7.1	17	157
	55	27	32.9	22	158
	6	4	40.0	5	159
..	....	....	.....	......	
19	....	....	.....	......	
..	575	....	.....	......	
..	....	296	.....	......	
..	....	....	34.0	......	

TABLE C.—GRADUATES OF 1900 TO 1905 INCLUSIVE, EXAMINED BY STATE BOARDS DURING 1905.

Number.	Name of College.	Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
	ALABAMA.							
1	Birmingham Medical College.—R.	8	....	8	0	0.	2	1
2	Medical College of Alabama.—R.	41	....	37	4	9.7	2	2
	ARKANSAS.							
3	Medical Department Arkansas University.—R.	1	....	1	0	0.	1	3
	CALIFORNIA.							
4	Cooper Medical College.—R.	45	5	38	7	15.5	4	4
5	Medical Department University of California.—R.	23	1	20	2	9.0	5	5
6	California Medical College.—E.	12	2	4	6	60.0	5	6
7	Hahnemann Medical College of the Pacific.—H.	15	....	11	4	26.7	2	7
8	College of Physicians and Surgeons, San Francisco.—R.	39	6	19	14	42.3	6	8
9	Oakland College of Medicine and Surgery.—R.	....	....	....	....	....	....	9
10	College of Medicine, University of Southern California.—R.	29	....	16	13	44.8	4	10
11	College of Physicians and Surgeons, Los Angeles.—R.	2	....	2	0	0.	1	11
	COLORADO.							
12	Denver and Gross College of Medicine.—R.	48	29	14	5	26.3	11	12
13	Denver Homeopathic College.—H.	6	4	2	0	0.	3	13
14	Colorado School of Medicine.—R.	15	7	8	0	0.	7	14
	CONNECTICUT.							
15	Yale University, Department of Medicine.—R.	29	....	29	0	0.	6	15
	DISTRICT OF COLUMBIA.							
16	George Washington University, Department of Medicine.	66	1	54	11	16.9	14	16
17	Georgetown University, School of Medicine.—R.	30	....	22	8	26.7	11	17
18	Howard University, Medical Department.—R.	34	....	26	8	23.5	13	18
	GEORGIA.							
19	Atlanta College of Physicians and Surgeons.—R.	12	....	9	3	25.0	7	19
20	Georgia College of Eclectic Medicine and Surgery.—E.	3	....	0	3	100.0	2	20
21	Medical College of Georgia.—R.	3	....	3	0	0.	2	21
	ILLINOIS.							
22	American Medical Missionary College.—R.	20	....	17	3	15.0	12	22
23	Bennett College of Eclectic Medicine and Surgery.—E.	30	....	27	3	10.0	5	23
24	Chicago Homeopathic Medical College.—H.	10	....	6	4	40.0	7	24
25	College of Medicine and Surgery.—Ph.M.	13	....	7	6	46.1	3	25
26	College of Physicians and Surgeons, Chicago.—R.	278	2	259	17	6.1	25	26
27	Hahnemann Medical College and Hospital.—H.	65	1	56	8	12.5	16	27
28	Harvey Medical College.—R.	18	....	16	2	11.1	3	28
29	Hering Medical College.—H.	21	....	19	2	9.5	7	29
30	Illinois Medical College.—R.	54	....	41	13	24.1	17	30
31	Jenner Medical College.—R.	22	1	15	6	28.6	5	31
32	Northwestern University Medical School.—R.	175	....	172	3	1.7	22	32
33	Rush Medical College.—R.	205	2	193	10	4.9	28	33
34	National Medical University.	22	....	21	1	4.5	6	34
35	American College of Medicine and Surgery.—E.	50	....	43	7	14.0	8	35
36	Dearborn Medical College, Chicago.—R.	29	....	28	1	3.4	2	36
	INDIANA.							
37	Central College of Physicians and Surgeons.—R.	27	....	22	5	18.5	3	37
38	Medical College of Indiana.—R.	98	....	81	17	17.3	6	38
39	Physio-Medical College of Indiana.—Ph.M.	7	....	4	3	42.8	1	39
40	Eclectic Medical College of Indiana.—E.	6	....	4	2	33.3	3	40
41	Fort Wayne College of Medicine.—R.	14	....	10	4	28.0	2	41
42	Indiana University School of Medicine.—R.	4	....	4	0	0	2	42
	IOWA.							
43	Drake University College of Medicine.—R.	14	....	13	1	7.1	2	43
44	Keokuk Medical College, College of Physicians and Surgeons.—R.	70	....	55	15	21.4	12	44
45	Sioux City College of Medicine.—R.	15	....	15	0	0.	2	45
46	State University of Iowa, Homeopathic Medical Dept.—H.	1	....	1	0	0	1	46
47	State University of Iowa, Medical Department.—R.	75	....	74	1	1.3	7	47
	KANSAS.							
48	College of Physicians and Surgeons of Kansas City.—R.	4	1	3	0	0.	3	48
49	Kansas Medical College.—R.	21	....	20	1	4.8	6	49
50	School of Medicine, University of Kansas.—R.	....	....	....	....	....	....	50
	KENTUCKY.							
51	Hospital College of Medicine.—R.	40	....	21	19	47.5	14	51
52	Kentucky School of Medicine.—R.	35	....	22	13	38.2	16	52
53	Louisville Medical College.—R.	26	....	14	12	44.0	13	53
54	Louisville National Medical College.—R.	1	....	1	0	0.	1	54
55	Southwestern Homeopathic Medical College.—H.	3	....	1	2	66.7	1	55
56	Medical Department, University of Louisville.—R.	35	....	22	13	37.1	13	56
57	Kentucky University, Medical Department.—R.	35	....	18	17	48.4	16	57
	LOUISIANA.							
58	Flint Medical College of New Orleans University.—R.	12	....	2	10	83.3	3	58
59	Tulane University, Medical Department.—R.	88	1	78	9	10.2	13	59
	MAINE.							
60	Medical School of Maine, Bowdoin College.—R.	20	....	20	0	0	3	60
	MARYLAND.							
61	Baltimore Medical College.—R.	120	....	85	35	29.1	25	61
62	Baltimore University School of Medicine.—R.	52	....	16	36	69.2	13	62
63	College of Physicians and Surgeons of Baltimore.—R.	92	....	76	16	17.3	22	63
64	Medical Department, Johns Hopkins University.—R.	61	1	60	0	0.	24	64
65	Southern Homeopathic Medical College.—H.	14	....	13	1	7.1	4	65
66	University of Maryland, School of Medicine.—R.	116	....	85	31	26.7	16	66
67	Woman's Medical College of Baltimore.—R.	6	1	5	0	0	5	67
68	Maryland Medical College.—R.	115	....	54	61	53.0	18	68
	MASSACHUSETTS.							
69	Boston University School of Medicine.—H.	17	....	15	2	4.8	6	69
70	College of Physicians and Surgeons.—R.	31	....	18	13	41.9	10	70
71	Harvard University Medical School.—R.	101	....	101	0	0.	14	71
72	Tufts College Medical School.—R.	73	....	67	6	8.2	8	72
	MICHIGAN.							
73	Detroit College of Medicine.—R.	21	....	18	3	14.2	10	73
74	Detroit Homeopathic Medical College.—H.	....	....	....	....	....	....	74
75	Michigan College of Medicine and Surgery.—R.	2	....	1	1	50.0	2	75
76	Grand Rapids Medical College.—R.	2	....	1	1	50.0	2	76
77	University of Michigan Dept. of Medicine and Surgery.—R.	111	....	107	4	3.6	21	77
78	University of Michigan Homeopathic Medical College.—H.	13	....	13	0	0.	6	78
	MINNESOTA.							
79	College of Homeopathic Med. and Surg., Univ. of Minn.—H.	1	....	1	0	0	1	79
80	College of Medicine and Surgery, Univ. of Minnesota.—R.	115	....	101	14	12.1	9	80
81	Medical Department of Hamline University.—R.	35	....	21	14	40.0	7	81
	MISSOURI.							
82	Medico-Chirurgical College.—R.	12	....	10	2	16.7	8	82
83	University Medical College of Kansas City.—R.	51	1	47	3	6.0	10	83
84	Kansas City Hahnemann Medical College.—H.	4	....	3	1	25.0	2	84
85	Kansas City Medical College.—R.	36	....	33	3	8.3	7	85
86	Eclectic Medical University.—E.	3	....	2	1	33.3	2	86
87	Central Medical College.—R.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	87
88	Ensworth Medical College.—R.	16	1	8	7	46.6	5	88
89	Barnes Medical College.—R.	59	....	43	16	27.1	17	89
90	Marion Sims-Beaumont College of Medicine.—R.	85	....	75	10	11.8	17	90
91	St. Louis College of Physicians and Surgeons.—R.	42	....	36	6	11.6	10	91
92	American Medical College.—E.	7	....	5	2	28.6	6	92
93	Homeopathic Medical College of Missouri.—H.	5	....	5	0	0	4	93
94	Medical Department, Washington University.—R.	51	1	45	5	9.8	16	94
95	University of the State of Missouri.—R.	7	....	7	0	0	6	95
	NEBRASKA.							
96	University of Nebraska College of Medicine.—R.	15	1	9	5	35.7	9	96
97	John A. Creighton Medical College.—R.	15	2	11	2	15.3	9	97
98	Lincoln Medical College of Cotner University.—E.	6	....	3	3	50.0	5	98
	NEW HAMPSHIRE.							
99	Dartmouth Medical College.—R.	15	....	15	0	0.	8	99
	NEW YORK.							
100	Albany Medical College.—R.	53	....	53	0	0	5	100
101	College of Physicians and Surgeons.—R.	210	....	201	9	4.3	23	101
102	Cornell University Medical College.—R.	79	....	79	0	0	10	102
103	Eclectic Medical College.—E.	16	....	13	3	18.7	2	103
104	Long Island College Hospital.—R.	83	....	77	6	7.2	5	104
105	New York Homeopathic Medical College and Hospital.—H.	24	....	23	1	4.2	4	105
106	New York Medical College and Hospital for Women.—	10	....	10	0	0	3	106
107	University and Bellevue Hospital Medical College.—R.	61	1	59	1	1.7	12	107
108	Syracuse University College of Medicine.—R.	32	....	32	0	0	3	108
109	University of Buffalo, Medical Department.—R.	54	....	54	0	0.	6	109
	NORTH CAROLINA.							
110	Leonard Medical School, Shaw University.—R.	45	....	21	24	53.3	10	110
111	North Carolina Medical College.—R.	30	....	22	8	26.6	2	111
112	Medical Department, University of North Carolina.—R.	9	....	8	1	11.1	1	112
	OHIO.							
113	Western Reserve University Medical College.—R.	25	1	24	0	0	5	113
114	Cleveland College of Physicians and Surgeons.—R.	18	....	17	1	5.9	2	114
115	Cleveland Homeopathic Medical College.—H.	27	....	27	0	0	7	115
116	Eclectic Medical Institute.—E.	47	....	35	12	25.5	11	116
117	Medical College of Ohio.—R.	41	....	38	3	7.3	6	117
118	Pulte Medical College.—H.	8	....	7	1	12.5	5	118
119	Miami Medical College.—R.	24	....	24	0	0	3	119
120	Ohio Medical University.—R.	51	....	43	8	15.7	10	120
121	Starling Medical College.—R.	36	....	33	3	8.3	7	121
122	Toledo Medical College.—R.	8	....	7	1	12.5	3	122
	OREGON.							
123	University of Oregon, Medical Department.—R.	36	....	17	19	52.7	3	123
124	Medical Department, Willamette University.—R.	11	....	5	6	55.5	1	124
	PENNSYLVANIA.							
125	Temple College of Philadelphia, Dept. of Medicine.—R.	2	....	2	0	0	2	125
126	University of Pennsylvania, Department of Medicine.—R.	157	....	152	5	3.1	23	126
127	Hahnemann Medical College and Hospital.—H.	51	....	50	1	1.9	9	127
128	Jefferson Medical College.—R.	209	1	200	8	3.8	34	128
129	Woman's Medical College of Pennsylvania.—R.	46	....	44	2	4.3	16	129
130	Medico-Chirurgical College of Philadelphia.—R.	121	....	99	22	18.2	10	130
131	Western Pennsylvania Medical College.—R.	88	....	78	10	11.3	6	131
	SOUTH CAROLINA.							
132	Medical College of the State of South Carolina.—R.	32	....	25	7	23.3	6	132
	TENNESSEE.							
133	Tennessee Medical College.—R.	17	....	14	3	17.6	8	133
134	Knoxville Medical College.—R.	7	....	1	6	85.7	5	134
135	Medical Department of University of Nashville.—R.	56	....	45	11	19.6	12	135
136	Vanderbilt University Medical Department.—R.	25	....	23	2	8.0	10	136
137	University of Tennessee, Medical Department.—R.	34	....	20	14	41.2	12	137
138	Meharry Medical College.—R.	55	....	31	24	43.6	16	138
139	Memphis Hospital Medical College.—R.	77	....	52	25	29.9	8	139
140	University of the South.—R.	57	....	30	27	47.3	15	140
141	Chattanooga National Medical College.—R.	....	....	....	....	....	....	141
142	Chattanooga Medical College.—R.	42	....	21	21	50.0	11	142
143	University of West Tennessee, Medical Department.—R.	2	....	0	2	100.0	1	143
	TEXAS.							
144	Medical Department Fort Worth University.—R.	4	....	3	1	25.0	3	144
145	University of Texas Department of Medicine.—R.	11	....	11	0	0	2	145
146	Baylor University College of Medicine.—R.	7	....	4	3	42.8	5	146
147	Dallas Medical College.—R.	3	....	1	2	66.6	2	147
148	Gate City Medical College, Texarkana.—R.	5	....	2	3	60.0	2	148
149	Southwestern University Medical College, Dallas.—R.	2	....	1	1	50.0	2	149
150	College of Physicians and Surgeons, Dallas.—R.	1	....	1	0	0.	1	150
	VERMONT.							
151	University of Vermont Medical Department.—R.	67	....	61	6	8.9	12	151
	VIRGINIA.							
152	Medical College of Virginia.—R.	50	....	38	12	24.0	7	152
153	University College of Medicine.—R.	57	....	52	5	8.7	4	153
154	University of Virginia Department of Medicine.—R.	54	....	50	4	7.4	13	154
	WISCONSIN.							
155	Milwaukee Medical College.—R.	20	....	18	2	10.0	2	155
156	Wisconsin College of Physicians and Surgeons.—R.	16	....	14	2	12.5	3	156
157	Canadian Colleges	121	....	100	21	19.3	24	157
158	Foreign	72	....	57	15	21.1	18	158
	Totals by States	6280	....	....	....	....	....	
	Totals—Registered on Credentials or by Reciprocity		70					
	Totals—Examined—Passed			5208				
	Totals—Examined—Failed				1002			
	Percentage of Failures					16.1		

Figures in italics shows those registered on credentials.

* Examination consists of an oral or written examination.

† Report for October examination missing.

TABLE D.—GRADUATES OF THE YEAR 1899, OR PREVIOUS, EXAMINED BY STATE BOARDS DURING 1905.

Number.	Name of College.	Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
	ALABAMA.							
1	Birmingham Medical College.—R.	1	....	1	0	0.	1	1
2	Medical College of Alabama.—R.	5	....	4	1	20.0	5	2
	ARKANSAS.							
3	Medical Department Arkansas University.—R.	2	....	1	1	50.0	2	3
	CALIFORNIA.							
4	Cooper Medical College.—R.	6	*2*	2	2	50.0	5	4
5	Medical Department University of California.—R.	1	....	1	0	0.	1	5
6	California Medical College.—E.	....	....	....	....	....	....	6
7	Hahnemann Medical College of the Pacific.—H.	1	....	0	1	100.0	1	7
8	College of Physicians and Surgeons, San Francisco.—R.	2	*2*	0	0	0.	1	8
9	Oakland College of Medicine and Surgery.—R.	....	....	....	....	....	....	9
10	College of Medicine, University of Southern California.—R.	....	....	....	....	....	....	10
11	College of Physicians and Surgeons, Los Angeles.—R.	....	....	....	....	....	....	11
	COLORADO.							
12	Denver and Gross College of Medicine.—R.	4	*1*	2	1	33.3	2	12
13	Denver Homeopathic College.—H.	1	*1*	....	....	....	1	13
14	Colorado School of Medicine.—R.	2	....	2	0	0.	2	14
	CONNECTICUT.							
15	Yale University, Department of Medicine.—R.	1	....	1	0	0.	1	15
	DISTRICT OF COLUMBIA.							
16	George Washington University, Department of Medicine.	4	....	3	1	25.0	2	16
17	Georgetown University, School of Medicine.—R.	5	....	5	0	0	4	17
18	Howard University, Medical Department.—R.	5	....	2	3	60.0	5	18
	GEORGIA.							
19	Atlanta College of Physicians and Surgeons.—R.	5	....	3	2	40.0	3	19
20	Georgia College of Eclectic Medicine and Surgery.—E.	3	*1*	1	1	50.0	3	20
21	Medical College of Georgia.—R.	2	....	1	1	50.0	2	21
	ILLINOIS.							
22	American Medical Missionary College.—R.	....	....	....	....	....	....	22
23	Bennett College of Eclectic Medicine and Surgery.—E.	10	....	5	5	50.0	7	23
24	Chicago Homeopathic Medical College.—H.	8	*1*	4	3	42.8	6	24
25	College of Medicine and Surgery.—Ph.M.	2	....	0	2	100.0	2	25
26	College of Physicians and Surgeons, Chicago.—R.	24	*1*	14	9	39.1	13	26
27	Hahnemann Medical College and Hospital.—H.	14	....	9	5	35.7	8	27
28	Harvey Medical College.—R.	....	....	....	....	....	....	28
29	Hering Medical College.—H.	4	*1*	1	2	66.6	3	29
30	Illinois Medical College.—R.	5	....	1	4	80.0	4	30
31	Jenner Medical College.—R.	....	....	....	....	....	....	31
32	Northwestern University Medical School.—R.	16	*1*	8	7	46.7	11	32
33	Rush Medical College.—R.	49	*2*	36	11	23.4	17	33
34	National Medical University.	2	....	2	0	0.	2	34
35	American College of Medicine and Surgery.—E.	1	....	0	1	100.0	1	35
36	Dearborn Medical College, Chicago.—R.	....	....	....	....	....	....	36
	INDIANA.							
37	Central College of Physicians and Surgeons.—R.	1	....	0	1	100.0	1	37
38	Medical College of Indiana.—R.	2	....	2	0	0.	1	38
39	Physio-Medical College of Indiana.—Ph.M.	5	....	1	4	80.0	3	39
40	Eclectic Medical College of Indiana.—E.	1	....	1	0	0.	1	40
41	Fort Wayne College of Medicine.—R.	2	....	0	2	100.0	2	41
42	Indiana University School of Medicine.—R.	....	....	....	....	....	....	42
	IOWA.							
43	Drake University College of Medicine.—R.	4	....	1	3	75.0	3	43
44	Keokuk Medical College, College of Physicians and Surgeons.—R.	21	....	9	12	57.1	11	44
45	Sioux City College of Medicine.—R.	....	....	....	....	....	....	45
46	State University of Iowa, Homeopathic Medical Dept.—H.	2	....	2	0	0.	2	46
47	State University of Iowa, Medical Department.—R.	16	*2*	7	7	50.0	10	47
	KANSAS.							
48	College of Physicians and Surgeons of Kansas City.—R.	1	....	1	0	0.	1	48
49	Kansas Medical College.—R.	4	....	2	2	50.0	1	49
50	Schools of Medicine, University of Kansas.—R.	....	....	....	....	....	....	50
	KENTUCKY.							
51	Hospital College of Medicine.—R.	7	....	4	3	42.8	6	51
52	Kentucky School of Medicine.—R.	23	....	12	11	47.8	16	52
53	Louisville Medical College.—R.	12	....	8	4	33.3	7	53
54	Louisville National Medical College.—R.	....	....	....	....	....	....	54
55	Southwestern Homeopathic Medical College.—H.	....	....	....	....	....	....	55
56	Medical Department, University of Louisville.—R.	12	....	9	3	25.0	9	56
57	Kentucky University, Medical Department.—R.	....	....	....	....	....	....	57
	LOUISIANA.							
58	Flint Medical College of New Orleans University.—R.	....	....	....	....	....	....	58
59	Tulane University, Medical Department.—R.	3	....	2	1	33.3	3	59
	MAINE.							
60	Medical School of Maine, Bowdoin College.—R.	4	....	4	0	0.	2	60
	MARYLAND.							
61	Baltimore Medical College.—R.	7	....	7	0	0.	6	61
62	Baltimore University School of Medicine.—R.	7	....	4	3	42.8	5	62
63	College of Physicians and Surgeons of Baltimore.—R.	5	....	5	0	0.	5	63
64	Medical Department, Johns Hopkins University.—R.	3	....	3	0	0.	3	64
65	Southern Homeopathic Medical College.—H.	2	....	1	1	50.0	2	65
66	University of Maryland, School of Medicine.—R.	1	....	1	0	0.	1	66
67	Woman's Medical College of Baltimore.—R.	1	....	1	0	0.	1	67
68	Maryland Medical College.—R.	....	....	....	....	....	....	68
	MASSACHUSETTS.							
69	Boston University School of Medicine.—H.	1	....	0	1	100.0	1	69
70	College of Physicians and Surgeons.—R.	....	....	....	....	....	....	70
71	Harvard University Medical School.—R.	15	....	12	3	20.0	11	71
72	Tufts College Medical School.—R.	3	....	2	1	33.3	2	72
	MICHIGAN.							
73	Detroit College of Medicine.—R.	9	....	7	2	22.2	5	73
74	Detroit Homeopathic Medical College.—H.	1	....	1	0	0.	1	74
75	Michigan College of Medicine and Surgery.—R.	1	....	1	0	0.	1	75
76	Grand Rapids Medical College.—R.	....	....	....	....	....	....	76
77	University of Michigan Dept. of Medicine and Surgery.—R.	25	*1*	12	12	50.0	8	77
78	University of Michigan Homeopathic Medical College.—H.	....	....	....	....	....	....	78
	MINNESOTA.							
79	College of Homeopathic Med. and Surg., Univ. of Minn.—H.	1	....	1	0	0.	1	79
80	College of Medicine and Surgery, Univ. of Minnesota.—R.	8	....	8	0	0.	6	80
81	Medical Department of Hamline University.—R.	1	....	1	0	0.	1	81
	MISSOURI.							
82	Medico-Chirurgical College.—R.	....	....	....	....	....	....	82
83	University Medical College of Kansas City.—R.	11	....	6	5	45.4	9	83
84	Kansas City Hahnemann Medical College.—H.	3	....	2	1	33.3	2	84
85	Kansas City Medical College.—R.	8	....	3	5	62.5	5	85
86	Eclectic Medical University.—E.	....	....	....	....	....	....	86
87	Central Medical College.—R.	3	....	3	0	0.	[illegible]	87
88	Ensworth Medical College.—R.	5	....	2	3	60.0	3	88
89	Barnes Medical College.—R.	14	....	5	9	64.3	9	89
90	Marion Sims-Beaumont College of Medicine.—R.	8	....	[illegible]	4	50.0	4	90
91	St. Louis College of Physicians and Surgeons.—R.	3	....	1	2	66.7	2	91
92	American Medical College.—E.	6	....	4	2	33.3	2	92
93	Homeopathic Medical College of Missouri.—H.	1	....	1	0	0.	1	93
94	Medical Department, Washington University.—R.	10	....	[illegible]	3	30.0	9	94
95	University of the State of Missouri.—R.	7	....	[illegible]	1	14.3	1	95
	NEBRASKA.							
96	University of Nebraska College of Medicine.—R.	5	....	5	0	0.	3	96
97	John A. Creighton Medical College.—R.	....	....	....	....	....	....	97
98	Lincoln Medical College of Cotner University.—E.	....	....	....	....	....	....	98
	NEW HAMPSHIRE.							
99	Dartmouth Medical College.—R.	4	....	3	1	25.0	4	99
	NEW YORK.							
100	Albany Medical College.—R.	3	....	3	0	0.	2	100
101	College of Physicians and Surgeons.—R.	19	*1*	18	0	0.	10	101
102	Cornell University Medical College.—R.	....	....	....	....	....	....	102
103	Eclectic Medical College.—E.	....	....	....	....	....	....	103
104	Long Island College Hospital.—R.	7	....	3	4	57.1	6	104
105	New York Homeopathic Medical College and Hospital.—H.	4	....	3	1	25.0	4	105
106	New York Medical College and Hospital for Women.—	2	....	1	1	50.0	2	106
107	University and Bellevue Hospital Medical College.—R.	23	....	13	10	43.4	13	107
108	Syracuse University College of Medicine.—R.	1	....	0	1	100.0	1	108
109	University of Buffalo, Medical Department.—R.	5	....	4	1	20.0	4	109
	NORTH CAROLINA.							
110	Leonard Medical School, Shaw University.—R.	1	....	0	1	100.0	1	110
111	North Carolina Medical College.—R.	....	....	....	....	....	....	111
112	Medical Department, University of North Carolina.—R.	....	....	....	....	....	....	112
	OHIO.							
113	Western Reserve University Medical College.—R.	8	....	5	3	37.5	7	113
114	Cleveland College of Physicians and Surgeons.—R.	1	*1*	....	....	....	1	114
115	Cleveland Homeopathic Medical College.—H.	8	....	5	3	37.5	6	115
116	Eclectic Medical Institute.—E.	9	....	9	0	0.	7	116
117	Medical College of Ohio.—R.	13	....	8	5	38.4	8	117
118	Pulte Medical College.—H.	5	....	2	3	60.0	3	118
119	Miami Medical College.—R.	4	....	3	1	25.0	3	119
120	Ohio Medical University.—R.	7	....	6	1	14.3	4	120
121	Starling Medical College.—R.	10	....	5	5	50.0	8	121
122	Toledo Medical College.—R.	2	....	2	0	0.	1	122
	OREGON.							
123	University of Oregon, Medical Department.—R.	1	....	1	0	0.	1	123
124	Medical Department, Willamette University.—R.	1	....	1	0	0.	1	124
	PENNSYLVANIA.							
125	Temple College of Philadelphia, Dept. of Medicine.—R.	....	....	....	....	....	....	125
126	University of Pennsylvania, Department of Medicine.—R.	25	....	20	5	20.0	14	126
127	Hahnemann Medical College and Hospital.—H.	2	....	1	1	50.0	2	127
128	Jefferson Medical College.—R.	22	....	17	5	22.7	11	128
129	Woman's Medical College of Pennsylvania.—R.	4	....	4	0	0.	4	129
130	Medico-Chirurgical College of Philadelphia.—R.	7	....	4	3	43.0	4	130
131	Western Pennsylvania Medical College.—R.	6	....	3	3	50.0	5	131
	SOUTH CAROLINA.							
132	Medical College of the State of South Carolina.—R.	2	....	2	0	0.	2	132
	TENNESSEE.							
133	Tennessee Medical College.—R.	4	....	3	1	25.0	3	133
134	Knoxville Medical College.—R.	....	....	....	....	....	....	134
135	Medical Department of University of Nashville.—R.	4	....	4	0	0.	4	135
136	Vanderbilt University Medical Department.—R.	13	....	7	6	46.1	10	136
137	University of Tennessee, Medical Department.—R.	4	....	2	2	50.0	4	137
138	Meharry Medical College.—R.	3	....	2	1	33.3	2	138
139	Memphis Hospital Medical College.—R.	9	....	3	6	66.7	7	139
140	University of the South.—R.	3	*1*	2	0	0.	3	140
141	Chattanooga National Medical College.—R.	....	....	....	....	....	....	141
142	Chattanooga Medical College.—R.	2	....	0	2	100.0	1	142
143	University of West Tennessee, Medical Department.—R.	....	....	....	....	....	....	143
	TEXAS.							
144	Medical Department Fort Worth University.—R.	....	....	....	....	....	....	144
145	University of Texas Department of Medicine.—R.	1	....	1	0	0.	1	145
146	Baylor University College of Medicine.—R.	....	....	....	....	....	....	146
147	Dallas Medical College.—R.	....	....	....	....	....	....	147
148	Gate City Medical College, Texarkana.—R.	....	....	....	....	....	....	148
149	Southwestern University Medical College, Dallas.—	....	....	....	....	....	....	149
150	College of Physicians and Surgeons, Dallas.—R.	....	....	....	....	....	....	150
	VERMONT.							
151	University of Vermont Medical Department.—R.	21	....	15	6	28.6	8	151
	VIRGINIA.							
152	Medical College of Virginia.—R.	3	....	3	0	0.	3	152
153	University College of Medicine.—R.	....	....	....	....	....	....	153
154	University of Virginia Department of Medicine.—R.	11	....	9	2	18.2	8	154
	WISCONSIN.							
155	Milwaukee Medical College.—R.	1	....	1	0	0.	1	155
156	Wisconsin College of Physicians and Surgeons.—R.	1	....	0	1	100.0	1	156
157	Canadian Colleges	28	....	26	2	7.1	17	157
158	Foreign	82	....	55	27	32.9	22	158
159	Miscellaneous Medical Colleges.	10	....	6	4	40.0	5	159
	Totals by States	890	....	....	....	....	....	
	Totals—Registered on Credentials or by Reciprocity	....	79	....	....	....	....	
	Totals—Examined—Passed	....	....	575	....	....	....	
	Totals—Examined—Failed	....	....	....	296	....	....	
	Percentage of Failures	....	....	....	....	34.0	....	

	State	Totals by States	Totals—Registered on Credentials or by Reciprocity	Totals—Examined—Passed	Totals—Examined—Failed	Percentage of Failures
1	Alabama.	15	....	10	5	33.3
2	Arizona.	12	....	9	3	25.0
3	Arkansas.	9	....	8	1	11.1
4	California.	62	....	20	42	67.7
5	*Colorado.	182	*1*	145	36	19.8
6	Connecticut.	7	....	4	3	42.8
7	Delaware.	2	....	2	....	....
8	D. of Columbia.	5	....	2	3	60.0
9	Florida.	4	....	3	1	25.0
10	Idaho.	19	....	10	9	47.3
11	Illinois.	29	....	23	6	20.6
12	Indiana.	9	....	6	3	33.3
13	Iowa.	9	....	5	4	44.4
14	Kansas.	29	....	16	13	44.8
15	Kentucky.	7	....	6	1	14.2
16	Louisiana.	13	....	8	5	38.4
17	Maine.	9	....	9	....	....
18	Maryland.	5	....	2	3	60.0
19	Massachusetts.	35	....	22	13	37.1
20	Michigan.	4	....	3	1	25.0
21	Minnesota.	16	....	12	4	25.0
22	Mississippi.	6	....	3	3	50.0
23	Montana.	13	....	6	7	53.8
24	Nebraska.	1	....	0	1	100.0
25	Nevada.	11	*11*	....	....	....
26	New Hampshire.	1	....	1	....	....
27	†New Jersey.	8	....	5	3	37.5
28	New York.	68	....	43	25	36.7
29	North Carolina.	12	....	9	3	25.0
30	North Dakota.	9	....	9	....	....
31	Ohio.	12	....	9	3	25.0
32	Oklahoma.	29	....	12	17	58.6
33	Oregon.	34	....	16	18	52.9
34	Pennsylvania.	29	....	20	9	31.0
35	Rhode Island.	9	....	6	3	33.3
36	South Carolina.	1	....	0	1	100.0
37	South Dakota.	15	....	10	5	33.3
38	Tennessee.	19	....	15	4	21.0
39	Texas.	13	....	7	6	46.1
40	Utah.	12	....	8	4	33.3
41	Vermont.	2	....	2	....	....
42	Virginia.	14	....	14	....	....
43	Washington.	60	....	41	19	31.7
44	West Virginia.	9	....	6	3	33.3
45	Wisconsin.	6	....	5	1	16.6
46	Wyoming.	10	*7*	3	....	....

Figures in italics shows those registered on credentials.

* Examination consists of an oral or written examination

† Report for October examination missing.

D BY STATE BOARDS DURING 1905.

4	25 Nevada.		26 New Hampshire		27 †New Jersey.		28 New York.		29 North Carolina.		30 North Dakota.		31 Ohio.		32 Oklahoma.		33 Oregon.		34 Pennsylvania.		35 Rhode Island.		36 South Carolina		37 South Dakota.		38 Tennessee.		39 Texas.		40 Utah.		41 Vermont.		42 Virginia.		43 Washington.		44 West Virginia.		45 Wisconsin.		46 Wyoming.		Totals.	Registered on Credentials.	Examined—Passed.	Examined—Failed.	Percentage of Failures.	No. of States having Representatives.	Number.
F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F							
																											1	0																	1	....	1	0	0.	1	1
									1	0					1	0													0	1															5	....	4	1	20.0	5	2
															0	1																													2	....	1	1	50.0	2	3
	2	*0*											0	1			0	1																											6	*2*	2	2	50.0	5	4
																																													1	....	1	0	0.	1	5
																																																			6
																	0	1																											1	....	0	1	100.0	1	7
	2	*0*																																											2	*2*	0	0	0.	1	8
																																																			9
																																																			10
																																																			11
																															2	1											*1*	*0*	4	*1*	2	1	33.3	2	12
																																													1	*1*	....	....	....	1	13
																																													2	....	2	0	0.	2	14
																																													1	....	1	0	0.	1	15
																			0	1															3	0									4	....	3	1	25.0	2	16
																			2	0															1	0									5	....	5	0	0.	4	17
																													0	1					1	0									5	....	2	3	60.0	5	18
							1	0	0	1																	2	0																	5	....	3	2	40.0	3	19
																											1	0															*1*	*0*	3	*1*	1	1	50.0	3	20
																																													2	....	1	1	50.0	2	21
																																																			22
											1	0													0	1											1	2							10	....	5	5	50.0	7	23
	1	*0*									1	0																																	8	*1*	4	3	42.8	6	24
															0	1																													2	....	0	2	100.0	2	25
															1	0									1	0					0	1					1	0					*1*	*0*	24	*1*	14	9	39.1	13	26
					0	1																															1	0			1	0			14	....	9	5	35.7	8	27
																																																			28
	1	*0*																																											4	*1*	1	2	66.6	3	29
							0	1									0	1																											5	....	1	4	80.0	4	30
																																																			31
	1	*0*							1	0							1	2							1	0											1	1							16	*1*	8	7	46.7	11	32
	1	*0*							1	0	1	0			0	2	2	1											1	0	1	0					2	2			0	1	*1*	*0*	49	*2*	36	11	23.4	17	33
																																									1	0			2	....	2	0	0.	2	34
																																													1	....	0	1	100.0	1	35
																																																			36
																																													1	....	0	1	100.0	1	37
																																													2	....	2	0	0.	1	38
																																					1	1							5	....	1	4	80.0	3	39
																																													1	....	1	0	0.	1	40
																																													2	....	0	2	100.0	2	41
																																																			42
															1	1	0	1							0	1																			4	....	1	3	75.0	3	43
1							0	1							0	1																					1	1							21	....	9	12	57.1	11	44
																																																			45
							1	0																																					2	....	2	0	0.	2	46
	1	*0*													0	1									1	0					0	1					0	1					*1*	*0*	16	*2*	7	7	50.0	10	47
							1	0																																					1	....	1	0	0.	1	48
																																													4	....	2	2	50.0	1	49
																																																			50
									0	1					1	0													1	1															7	....	4	3	42.8	6	51
							1	0							0	2			1	0							2	0									0	2	1	1					23	....	12	11	47.8	16	52
																											2	0											0	2					12	....	8	4	33.3	7	53
																																																			54
																																																			55
																													1	0							0	1							12	....	9	3	25.0	9	56
																																																			57
																																																			58
																																													3	....	2	1	33.3	3	59
																																													4	....	4	0	0.	2	60
							1	0	1	0																					1	0													7	....	7	0	0.	6	61
							1	1									1	0									1	0																	7	....	4	3	42.8	5	62
							1	0							1	0															1	0					1	0							5	....	5	0	0.	5	63
																			1	0																									3	....	3	0	0.	3	64
																	0	1																											2	....	1	1	50.0	2	65
																											1	0																	1	....	1	0	0.	1	66
																																													1	....	1	0	0.	1	67
																																																			68
																																													1	....	0	1	100.0	1	69
																																																			70
					1	0	1	1	1	0											0	1			1	0					1	0					1	0							15	....	12	3	20.0	11	71
							1	0																																					3	....	2	1	33.3	2	72
													1	0			1	0																			2	1							9	....	7	2	22.2	5	73
																																			1	0									1	....	1	0	0.	1	74
																																													1	....	1	0	0.	1	75
																																																			76
							1	0									1	1																			7	3					*1*	*0*	25	*1*	12	12	50.0	8	77
																																																			78
																																											1	0	1	....	1	0	0.	1	79
																									1	0											3	0							8	....	8	0	0.	6	80
																	1	0																											1	....	1	0	0.	1	81
																																																	....		82
															1	0	1	0			0	1																							11	....	6	5	45.4	9	83
															1	1																													3	....	2	1	33.3	2	84
																	0	1																			2	2							8	....	3	5	62.5	5	85

MEDICAL SCHOOLS OF THE UNITED STATES

Below is given a brief description of the medical colleges in the United States that are legally chartered to confer the degree of doctor of medicine, and whose diplomas are recognized by at least one state licensing board. The list includes the sectarian as well as the regular colleges, as their graduates are physicians in the eyes of the law. The information given is, as a rule, obtained from the catalogues and has been submitted to the dean of each school for his inspection and approval. Colleges which belong to the American or the Southern Medical College Association or other organization of colleges have requirements for admission of students according to the rules of these associations, unless their requirements are higher, in which case a statement is made to that effect. Extracts from these rules are given at the close of the list of colleges.

ALABAMA.

Alabama, population 1,828,697, has two medical colleges, the Medical College of Alabama and the Birmingham Medical College, located in Mobile and in Birmingham. The population of Mobile is 40,686 and of Birmingham 42,087. Board and room may be obtained from $12 to $20 per month.

Birmingham.

Birmingham Medical College.—This school was incorporated in 1894 and is situated in Birmingham. The clinical advantages are good. The Hillman, St. Vincent's, Pratt and County hospitals are accessible to the students. The laboratories are well equipped. There are 19 professors and 9 assistants, total 28. The school is a member of the Southern Medical College Association. The course of instruction embraces four separate sessions of six months each. The fees are $75 for each of the first three years and $100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1905-6, 72; graduates, 8. Next session open Oct. 3, 1906, and closes April 3, 1907.

Mobile.

Medical College of Alabama.—This is the Medical Department of the University of Alabama, organized in 1859. The city Hospital furnishes free clinical material. The faculty consists of 8 professors and 9 lecturers, 17 in all. It is well equipped with building, laboratories, dispensary, etc. It is a member of the Southern Medical College Association. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. George A. Ketchum. Total registration, 1905-6, 158; graduates 29. The forty-first session will begin Oct. 1, 1906, and will close April 30, 1907.

ARKANSAS.

Arkansas, population 1,311,564, has two medical colleges, both located in Little Rock, a city of 42,036 people. Board and lodging cost from $13 to $18 per month.

Little Rock.

University of Arkansas Medical Department.—This college was organized in 1879 as the Arkansas Industrial University Medical Department. The teaching body consists of 15 professors and 20 lecturers and assistants, total 35. Hospital facilities are furnished by Logan H. Roots Memorial Hospital, St. Vincent's Infirmary and Pulaski County Hospital, the latter having a capacity of 200 beds. The course of study covers four years of seven months each. Dr. F. L. French, Little Rock, is Secretary. The fees are: Matriculation $5, paid but once; annual fees $60, and graduation $25. Total number of students at last session, 176; graduates, 26. The next course of lectures begins Oct. 1, 1906, and ends May 1, 1907.

College of Physicians and Surgeons.—This college was organized in 1906 and has a faculty of 21. It will occupy the buildings formerly used by the Maddox Seminary. The Dean is Dr. J. P. Runyan and the Secretary, Dr. W. P. Illing. The first session will begin Oct. 1, 1906.

CALIFORNIA.

California, population 1,485,053, has nine medical colleges. Six are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Cooper Medical College, Medical Department of the University of California, California Medical College, Hahnemann Medical College of the Pacific, the College of Physicians and Surgeons and the West Coast. The clinical facilities of San Francisco are good. Board and lodging can be obtained for from $20 to $30 a month. The College of Medicine of the University of Southern California is situated in Los Angeles, population 116,420. Board and lodging can be obtained in that city for $4 a week and upward. The Oakland College of Medicine and Surgery is in Oakland, population 70,386.

Oakland.

Oakland College of Medicine and Surgery.—Organized in 1902; first class graudated in 1905. The fifth session of this school will begin Aug. 21, 1906, and end May 14, 1907. The length of the course is nine months. The classes are limited to ten students each. The Registrar is Dr. Edward N. Ewer. The faculty numbers 28. Tuition is $160 yearly. Total registration, 1905-6, 10; graduates, 4. The next session begins Aug. 21, 1906, and ends May 14, 1970.

San Francisco.

Cooper Medical College.—This school was organized in 1858, though its present name was not adopted until 1882. The faculty consists of 17 professors and 44 lecturers, instructors, etc., 61 in all. Lane Hospital, adjoining the college, the City and County Hospital, containing 464 beds, and the college dispensary furnish clinical material. The minimum requirements for admission are a certificate showing that applicant has passed the regular examination for admission to the University of California, or its equivalent, or graduation from an accredited high school, academy, or preparatory school. The college itself does not hold entrance examinations. The college building supplies large laboratory and lecture-room facilities. The curriculum covers a graded course of four years of eight and a half months each. Fees: Matriculation, $5; course fee for each year, $150; laboratory fee for each year, $10; breakage deposit each year, $10; graduation fee, $25; no other charges. The Dean is Dr. Henry Gibbons, Jr. Total registration for 1905-6 was 138; graduates, 30. The next session opens Aug. 15, 1906, and will close May 8, 1907.

University of California Medical Department.—This department of the State University was organized in 1872, and has a faculty composed of 18 professors, 44 associates and assistants, a total of 62. The City and County Hospital, which admits students of this school not only to the clinics proper, but also to its wards for study, and the college dispensary furnish good clinical material. The course covers graded work for four years of nine months each. This school is a member of the Association of American Medical Colleges. Two full college years' work is required for all applicants for admission. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean is Dr. Arnold A. D'Ancona. Total registration for 1905-6, was 90; graduates, 19. The thirty-fourth session opens Aug. 15, 1906, and will close May 15, 1907.

College of Physicians and Surgeons of San Francisco.—This school was organized in 1896 and has a faculty of 28 professors and 15 associate professors and teachers, a total of 43. The hospital facilities consist of the City and County Hospital, the California General Hospital, with 50 beds, and St. Winifred Hospital, with 50 beds. The daily clinics at the new college building furnish abundant material of every description. Applicants for matriculation must show a high school diploma or equivalent credentials, or be examined by the State Superintendent of Public Instruction in high school studies. The college building recently completed is well supplied with laboratories and lecture rooms. Attendance upon four terms of at least 30 teaching weeks each, is required for graduation. Fees, $100 per year. The Dean is Dr. D. A. Hodghead. Registration for 1905-6 was 145; graduates, 30. The next session opens Sept. 17, 1906, and closes May 17, 1907.

Hahnemann Medical College of the Pacific.—Homeopathic. This school was organized in 1884, and has a faculty of 19 professors and 23 lecturers, instructors, etc., in all 42. The Pacific Homeopathic Polyclinic, the Hahneman Hospital, the San Francisco Nursery for Homeless Children, Marie Kip Orphanage, accommodating, respectively, 45, 75 and 120 beds; Fabiola Hospital and the City and County Hospital, furnish the clinical material for study. Matriculants must possess the equivalent of a high school education. One year after entrance is permitted in which the student may complete conditions in Latin. The college is registered and accredited with New York State Regents and the Illinois and Michigan State Boards of Health. The course includes four years of seven months each. Total fees for the first year, $155, and $100 for each of the other three years. The Dean is Dr. James W. Ward, 606 Sntter St., San Francisco. Total registration for 1905-6, was 24; graduates, 4. The twenty-fourth session begins Sept. 12, 1906, and will close May 23, 1907.

California Medical College.—Eclectic. This school was organized in 1884 and has a faculty of 10 professors and 25 lecturers, and instructors, a total of 35. The clinical material is supplied by the Buena Vista and City and County Hospitals. Applicants for admission not holding diploma or certificate are examined. The course has been extended to cover four years of eight months each. Total fees are about $110 for each of the first three years and $40 for the fourth year. The Dean is Dr. D. Maclean. Total registration for 1905-6 was 36; graduates, 10. The next session begins Oct. 2, 1906, and ends May 16, 1907.

West Coast Medical College.—Organized in 1900 as the Pacific Coast College of Medicine. Name changed to the above in 1902. Had 31 graduates in 1903. Course was five years of seven months each. Destroyed by the earthquake and fire, April, 1906. The Dean is Dr. C. W. W. von Tiedemann.

Los Angeles.

University of Southern California College of Medicine.—This school was organized in 1885, and has a faculty of 29 professors and 19 instructors, 48 in all. The County Hospital having 200 beds, the Sisters' Hospital of 150 beds, the Children's Hospital of 20 beds, and a college dispensary furnish clinical material. Applicants for admission must give evidence of matriculation in a university or graduation from an accredited high school, academy, preparatory school or a California State Normal School, or a certificate from the Deputy State Superintendent of Schools, that applicant has filled the requirements of the Association of American Medical Colleges, of which this college is a member. This college gives no admission examinations. The building is provided with laboratories, amphitheater and lecture rooms, and a new clinical laboratory, erected in 1904, costing, with equipment, $25,000. The Barlow Medical Library building will be opened Oct. 5, 1906. A graded course, covering four years of thirty-two weeks each, is offered. The total fees for the first year are $145; second and third, $150 each, and $40 for the fourth year. The Dean is Dr. Walter Lindley. Total registration for 1905-6 was 128; graduates, 28. The next session opens Oct. 4, 1906, and closes June 13, 1907.

College of Physicians and Surgeons.—This school was organized in 1903. The length of each course is eight and one-half months. The faculty numbers 37 in all, 24 professors, 6 associate professors, 3 lecturers, and 4 instructors, besides a corps of clinical assistants. The registration for 1905-6 was 31; graduates, 3. The next session begins Oct. 4, 1906, and ends June 18, 1907. The Dean is Dr. Charles W. Bryson, Delta Bldg., Los Angeles.

COLORADO.

Colorado, with a population of 539,700, has three medical colleges. Two of these, Denver and Gross College of Medicine and Denver Homeopathic College, are in Denver, which has a population of 144,588; the other, the Colorado School of Medicine, is at Boulder, population 6,150. The clinical facilities in Denver available to the two colleges are the Denver County Hospital, which has a capacity of 300 beds; St. Joseph's Hospital, with 300 beds, and St. Luke's Hospital, with 75 beds. The Public Library contains 10,000 volumes on medicine. Board can be obtained in Denver for $5 a week and upward.

Denver.

The Denver and Gross College of Medicine.—This is the Medical Department of the University of Denver, and was organized in 1902 by the union of the Gross Medical College (organized 1887) and the Denver College of Medicine (organized 1880). The clinical advantages are the college dispensary, the Denver County Hospital, St. Luke's Hospital, St. Anthony's Hospital, St. Joseph's Hospital, National Jewish Hospital for Consumptives, Home for Dependent Children and the City Contagious Hospital and Mercy Sanitarium. The faculty is made up of 36 professors, 40 assistants and instructors, a total of 76. Its location is central, and the buildings are well arranged for laboratory, dispensary and didactic work. The course is graded and covers four years of eight months. The college is a member of the Association of American Medical Colleges. Final examinations at the end of each year are held. Fees for the first year are $115. For the second year, $116. Third year, $101. Fourth year, $126. Total registration, 1905-6, was 100; graduates, 26. The twenty-fifth session will begin Sept. 11, 1906, and close May 18, 1907. The Dean is Dr. S. G. Bonney.

Denver Homeopathic College.—This college, organized in 1894, beside clinical privileges in the hospital of the city and county of Denver, has exclusive privileges for clinical work in the Denver Homeopathic Hospital, the Haven, the Belle Lenox Nursery, and the Tabernacle Free Dispensary. The faculty numbers 26 professors and 7 lecturers and instructors, 33 in all. The requirements for admission are, "possession of a diploma from a literary college, university, an academy, a normal or high school; a first-grade teacher's certificate, or a previous matriculation at some reputable literary or medical college." The course of study consists of four years of eight months each. The year is divided into semesters. Examinations are held at the end of each semester in the work completed. A five-year scholarship may be had for $300 payable in advance, otherwise the tuition is $100 a year for the first, second and third years. Senior year, $75. There is a matriculation fee of $5, payable once. The Dean is Dr. Joseph B. Kinley. Total registration for 1905-6 was 23; the number of graduates, 5. The twelfth session begins Sept. 17, 1906, and will close May 8, 1907.

Boulder.

Colorado School of Medicine.—This is the Medical Department of the University of Colorado, and was opened in 1883. The University Hospital, under the control of the state, is equipped to accommodate 40 patients, and furnishes free clinical material. Both hospital and dispensary clinics are offered and the sanatorium located at Boulder offers additional advantages in this line. The faculty embraces 18 professors and 9 lecturers and assistants, a total of 27. The laboratories are well equipped and commodious. A separate building is devoted to the study of anatomy and another one is used for medical work exclusively. A complete four-year course of study in a recognized high school, or its equivalent, is required for admission. This school is a member of the Association of American Medical Colleges. The work embraces a graded course of four years of nine months each. The tuition is $50 per year; there are no other fees. The Dean is Dr. Luman M. Giffin. Total registration for 1905-6 was 70; graduates, 16. The twenty-fifth session begins Sept. 11, 1906, and closes June 7, 1907.

CONNECTICUT.

Connecticut, with a population of 908,420, has only one medical college, located in New Haven, population 114,600. Board and lodging cost $4.50 and upward per week.

New Haven.

Yale Medical School.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. In 1879 a new charter changed the name to the one now used, and in 1884 the Connecticut Medical Society, which, from the granting of the first charter, had taken University authorities assumed full control. The clinical advantages are embraced under the New Haven Hospital, which contains 175 beds and is the general hospital for New Haven; the Springside Hospital, which is connected with the city almshouse, and the State Hospital for the Insane, located in Middletown, about twenty-five miles distant, which, with its 1,800 patients, offers an opportunity for special instruction in insanity in addition to the clinics. Beside these, the University has just completed a $100,000 building for the dispensary service, which offers good material for clinical teaching. The faculty embraces 12 professors, lecturers and assistants, 42, a total of 54. The lecture rooms and laboratories are large and well equipped. Matriculants are admitted without examination, provided that they have received a degree in arts or sciences, that they present certificates showing that they have successfully prosecuted the subjects of the examination at some college, high school, academy or preparatory school approved by the faculty, or that they have passed matriculation examinations equivalent to those required at some approved professional school. The course covers a four-year graded curriculum, nine months constituting a school year; the first two years the fundamental branches are studied, the third year is devoted to a systematic teaching of medicine, surgery, obstetrics and pharmacology, and in the fourth year clinical work, with medicine, surgery and the specialties, is presented. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second, $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. During the session of 1905-6, there were 134 matriculants and 25 graduates. The ninety-fourth session opens Sept. 27, 1906, and closes June 26, 1907.

DISTRICT OF COLUMBIA.

Washington, population 293,217, has three medical colleges: George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department. Washington offers to the student of medicine many advantages. The Army Medical Museum, the Museum of Hygiene, the National Museum, the library in the surgeon-general's office, the Toner Medical Library, and Museum of Hygiene, in all over 125,000 volumes on medicine, open to the medical student a most profitable field. The clinical advantages offered by the various hospitals are good. Owing to the many boarding houses and hotels, board and lodging can be had at reasonable rates.

Washington.

The George Washington University, Department of Medicine.—This school was organized in 1821 as the Department of Medicine of Columbian College, which in 1873 became Columbian University, and in 1904, by an act of Congress, changed its name to the George Washington University. In connection with the Department of Medicine is the University Hospital, established and maintained to afford clinical facilities for the students of the school. Beside the University Hospital, the Garfield Hospital, the Children's Hospital, the Central Dispensary and Emergency Hospital, the Providence Hospital, the Columbia Hospital, the Episcopal Eye and Ear Hospital, the U. S. Government Hospital for the Insane, and the Lutheran Eye and Ear infirmary afford additional opportunities and are utilized for clinical instruction. Attendance on clinics is obligatory on third and fourth-year students. The faculty is composed of 38 professors and 41 demonstrators, instructors and assistants. This school is a member of the Association of American Medical Colleges. The laboratories are modern and equipped with all the needed apparatus for thorough work and instruction. The college library contains 2,000 volumes as well as the best current medical periodicals. Beginning with the session of 1909-10 matriculants must present credentials of two years' satisfactory work in an approved college of liberal arts or its equivalent. A combined course of six years' work, leading to the degrees of A.B. and M.D. is offered. The course of instruction is graded and extends through four years, each scholastic year consisting of eight months. Written and practical examinations are held during the term and written and oral in all subjects at the end of the school year. The total fees for the first year are $157; for the second year $152; for the third year, $112, and for the fourth year, $162. A breakage deposit of $5 is required. The Dean is Dr. W. F. R. Phillips, 1607 16th St. N. W. New and commodious buildings were erected and occupied in 1902. The total registration of students for the session of 1905-6 was 280; graduates, 51. The eighty-fifth session begins Sept. 26, 1906, and closes June 5, 1907.

Georgetown University School of Medicine.—This school organized in 1850, controls the Georgetown University Hospital, which affords excellent facilities for clinical teaching and ward classes. Clinics are also held for the benefit of the students in Providence Hospital, containing 500 beds, at the Government Hospital for the Insane, containing over 2,000 beds; in the Children's Hospital, the Central Dispensary, Emergency Hospital and the Garfield Hospital. Attendance on clinical instruction is obligatory in the third and fourth years. The faculty contains 19 professors, 35 instructors and assistants, total 54. This school is a member of the Association of American Medical Colleges. The building is conveniently located and contains spacious and well-ventilated lecture rooms, laboratories and library; the laboratories are equipped with the most approved instruments and appliances. The complete course of study extends over four terms of eight and one-half months each. Examinations are held at the end of each session. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T St. The registration for 1905-6 was 102; graduates, 20. The next term opens on Sept. 27, 1906, and ends June 11, 1907.

Howard University Medical Department.—This institution was organized in 1867, and "in conformity with the spirit of the organic law of the University, is open to all, without regard to sex or race, who are qualified by good moral character, proper age and suitable education." The removal of any racial distinction has been taken advantage of by colored students, who compose a majority of those in attendance, but a number of white students are also receiving instruction. The Freedman's Hospital is a general hospital of 300 beds. The faculty comprises 17 professors and 27 lecturers and assistants, 44 in all. This college is a member of the Association of American Medical Colleges. Students are required to attend four courses of lectures in separate years of eight months each. The fees of each session are $80, plus $2 per part for dissecting material, and $10 for graduation. Board can be had at the school dining hall for $9 a month, and a room in the dormitory for $15 a term. The Dean is Dr. Robert Reyburn, 2129 F St. Registration for 1905-6 was 157; graduates, 29. The thirty-ninth session begins Oct. 1, 1906, and closes June 1, 1907.

GEORGIA.

Georgia, population 2,216,331, has four medical colleges; Medical College of Georgia, located in Augusta, population 41,283; Atlanta College of Physicians and Surgeons, Atlanta School of Medicine, and Georgia School of Eclectic Medicine and Surgery, are in Atlanta, a manufacturing city of 96,550 population. Board and lodging may be obtained for from $3 to $5 per week.

Augusta.

Medical College of Georgia.—This school was organized as a medical academy in 1829, and in 1873 was made the Medical Department of the University of Georgia. Its faculty includes 14 professors and 14 assistants, 28 in all. The course is four years of seven months each. Applicants for admission must, by examination, certificate or diploma, show that they possess educational qualifications equal to those required for second grade teachers in public schools; if they are deficient on examination, however, they are admitted, and they may remove the conditions any time before they appear for graduation. The City Hospital, with 130 beds; Lamar Hospital, with 80 beds; the Polyclinic and the Hospital for Contagious Diseases supply clinical material. Fees for the first two years are $75 each; third year, $100, and $130 for the last year. The Dean is Dr. Joseph Eve Allen. The total enrolment for 1905-6 was 118; graduates, 30. The seventy-fifth session begins Oct. 1, 1906, and closes May 1, 1907.

Atlanta.

Atlanta College of Physicians and Surgeons.—This school was formed in 1898 by the consolidation of the Atlanta Medical College, organized in 1854, with the Southern Medical College, organized in 1879. It has a faculty of 16 professors and 17 assistants, a total of 33. Clinical facilities are furnished by the Grady Hospital, which is the general hospital for Atlanta, clinics are free to the graduating class. First course students are required to “give satisfactory evidence to the faculty of such educational qualifications as will be deemed necessary for the successful prosecution of their medical studies. These requirements will be similar to those of other reputable medical colleges in the country.” The course of study covers four years of seven months each and is graded. The buildings are large and a new building for didactic lectures and clinical work has been added. Fees: First and second years, $75 each; third and fourth, $100 each. The Dean is Dr. W. S. Elkins, 29 Luckie St. Total registration of students for 1905-6 was 182; graduates, 52. Next session begins Oct. 1, 1906, and closes April 30, 1907.

Georgia College of Eclectic Medicine and Surgery.—This school was organized in 1839, and has a faculty of 16. The college dispensary, Grady Hospital and Georgia Eclectic Hospital furnish clinical material. Applicants for admission must adhere to the requirements established in the National Confederation of Eclectic Colleges, of which this college is a member. The curriculum covers four years of six months each. The Proctor is Dr. Elzie B. Thomas, 121 Park St., West End. Total number of students for 1905-6 was 57; graduates, 15. The next session opens Oct. 3, 1906, and closes April 1, 1907 (about).

Atlanta School of Medicine.—This school was organized in 1905. A new building is now being constructed which will be completed by Sept. 15, 1906. Session of 1905-6 covered six months, which hereafter will be extended to seven months. Enrolment for 1905-6 was 220. Number of graduates, 21. Next session begins Sept. 26, 1906 and ends April 30, 1907. The Dean is Dr. Geo. H. Noble. The Proctor is Dr. Edward G. Jones.

ILLINOIS.

Illinois, population 4,821,550, has thirteen medical colleges, all located in Chicago, a city of 1,873,880 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, Hahnemann Medical College, Bennett College of Eclectic Medicine and Surgery, College of Physicians and Surgeons, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, American College of Medicine and Surgery, and Dearborn Medical College. Room and board cost $3 a week and upward.

Colleges in Illinois have to admit students in conformity with the minimum requirements of the Illinois State Board of Health, as follows: “A diploma or certificate of graduation from a high school, or a certificate signed by a principal of a regularly organized high school or by the examiner of the faculty of a recognized literary or scientific college or university, or by the state superintendent of public instruction, or a superintendent of public schools, of having successfully passed an examination in all the several branches embraced in the curriculum of a four years' high school course. The matriculation examination shall not be conducted by any member of the faculty of the medical college. The Illinois State Board of Health will require each applicant for a state certificate to present documentary evidence of his preliminary education, together with his medical diploma, when taking the examination of the board.” These conditions will govern all persons admitted to the freshman year on or after Jan. 1, 1903.

All persons admitted to the study of medicine after Jan. 1, 1910, must have had, in addition to the four years' high school course, at least one year of nine months either in a college chartered to grant liberal degrees or in a preliminary year to a medical college, this year to be devoted to the study of physics, chemistry, biology and languages.

Chicago.

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 to 1898, and in the latter year became affiliated with the University of Chicago. The faculty is composed of 69 professors, 185 associates, instructors, etc., a total of 254. Good clinical facilities are furnished by Cook County Hospital, caring for about 20,000 patients yearly; Presbyterian Hospital, with 250 beds; a college dispensary, and an obstetric department. In addition to these, extramural clinical courses are offered at the West Side Hebrew Dispensary, St. Luke's Hospital, St. Anthony's Hospital, the Alexian Brothers' Hospital, Illinois Charitable Eye and Ear Infirmary and Chicago Isolation Hospital. Bedside instruction is given. The requirements for admission are those of admission to the better universities or colleges, and, in addition thereto, two years of college work. This college work must have included thorough courses in college chemistry (inorganic, organic and qualitative analysis), college physics and biology, all with laboratory work, a reading knowledge of German or of French. The laboratories and their equipment are adequate. The curriculum covers graded work for four years of three quarters each, a quarter being three months. A fifth year, consisting of a hospital internship or of a fellowship in one of the departments is offered, but, for the present is optional. A continuous session is held, but credit for more than three quarters can not be obtained in any calendar year. A combined course for six years confers degrees of both science and medicine. All freshman and sophomore studies are given at the University of Chicago. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidentals amounting to from $2 to $5 annually. The Deans are Dr. Frank Billings, 100 State St., and Dr. John M. Dodson, 34 Washington St. Total registration, 1905 6 was 450; graduates, 83. The fiscal year begins July 1; final examinations are held at the end of each quarter.

College of Physicians and Surgeons.—This school was organized in 1881, and in 1896 became the Medical Department of the University of Illinois. The faculty is composed of 42 professors, 156 assistants and instructors, a total of 198. The West Side Hospital, containing 125 beds; Cook County Hospital, and a college dispensary and maternity clinic supply most of the clinical material, but under certain conditions students of this school are admitted to the following hospitals for clinical study: Augustana, Baptist, Chicago, Woman's, Samaritan, Alexian Brothers', St. Mary's and the Chicago Lying-in. This school is a member of the Association of American Medical Colleges. The laboratory, amphitheater and lecture-room space and equipment are excellent. The collegiate year is divided into two terms: the winter term of thirty-six weeks and the summer term of twelve weeks, of actual teaching. Attendance on the winter term is required in order to secure credit for a year's work, and attendance on four winter terms is required for graduation. Attendance on the summer term is optional, and the work is supplementary to the work of the winter term. Students may obtain credit for work done in certain branches, but attendance on this term does not apply on the required thirty-six months' attendance necessary for graduation. The fees are $145 each for the first two years, $150 for the third, and $175 for the fourth year. The Dean is Dr. William E. Quine, 103 State St. Total registration for 1905-6 was 556; graduates, 210. The fall term begins Sept. 25, 1906, and ends June 4, 1907.

Northwestern University Medical School.—This school was organized in 1859 as the Medical Department of Lind University, became independent as the Chicago Medical College in 1864, and in 1869 assumed its present relation as Medical Department of Northwestern University. The faculty comprises 38 professors and 78 assistants and instructors, in all 116. Wesley Hospital, with 225 beds; Mercy Hospital, containing 400 beds; Provident Hospital, 100 beds; St. Luke's, 200 beds; the Chicago Lying-in Hospital, and a college free dispensary furnish opportunities for clinical study to students of this college exclusively. Cook County and the People's hospitals are also open to them for study. Applicants for admission must, by diploma, certificate or examination, show possession of the educational requirements required to enter the College of Liberal Arts of Northwestern University. The laboratory and lecture room facilities are ample and the equipment is good. The course of study covers graded work for four years of thirty-six weeks each. Optional summer laboratory and clinical courses are also given. Final examinations are held at the end of each semester. The fees for each year are $175, and a matriculation fee of $5, paid once, is charged. The Dean is Dr. N. S. Davis, Chicago Savings Bank Bldg. The total registration for 1905-6 was 580; graduates, 125. The next session opens Oct. 2, 1906, and closes June 2, 1907.

American Medical Missionary College.—This school was organized in 1895 and has the primal object of educating men and woman as missionary physicians. The faculty numbers 27. The didactics and laboratory work, covering the first two years, are carried on at Battle Creek, Mich., and the clinical studies in Chicago. A hospital with 20 beds, in connection with the college, together with a free college dispensary with an obstetric department, supply material for practical work. The college is a member of the Association of American Medical Colleges. The course covers four years of nine months each. Total fees are $105 for each of the four years. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1905-6 was 80; graduates, 22. The twelfth session opens Sept. 18, 1906, and closes June 17, 1907.

Illinois Medical College.—This school, organized in 1894, has a faculty of 34 professors and 16 assistants, a total of 50. A college dispensary and Cook County Hospital are available for clinical study. The requirements of admission include a high school diploma or its equivalent. The college is a member of the Association of American Medical Colleges. Attendance for seven months during each year is necessary for graduation. Total fees are about $125 for each year. The Dean is Dr. B. B. Eads, 103 State St. Total registration for 1905-6 was 192; graduates, 48. The next fall term begins Sept. 4, 1906.

Jenner Medical College.—This is a day and evening school, organized in 1892. The faculty consists of 46 professors and 7 assistants, 53 in all. Cook County Hospital and college dispensary supply clinical material. The course covers four years of 40 weeks each and embraces laboratory, didactic and clinical instruction. The total fees each year are $100, with a $5 matriculation fee, paid but once. The Registrar is Dr. J. G. Tyssowski, 196 Washington St. Total enrolment for 1905-6 was 250; graduates, 38. The next session begins Sept. 3, 1906, and will end June 27, 1907.

Dearborn Medical College.—This school was organized in 1903, with a faculty of 38 professors and 4 assistants, a total of 42. The instruction, which is given in the evening only, extends over a period of five years of ten months each. Cook County Hospital, Samaritan Hospital and a college dispensary supply the clinical material. The total fees are: $5 matriculation fee, $110 tuition, and $10 laboratory deposit. The Dean is Dr. L. Blake Baldwin; the Secretary, Dr. J. L. Wells. Total registration for 1905-6 was 221; graduates, 35. The next session begins Sept. 3, 1906, and ends June 24, 1907.

Hahnemann Medical College.—Homeopathic. This school was organized in 1855, and has a faculty of 80. Hahnemann Hospital and a college dispensary supply clinical material. The requirements for admission are a high school diploma or its equivalent. The course is four years of eight months each. Fees: Matriculation, paid once, $5; each semester, $50, and hospital tickets, $5 each for third and fourth years. The Registrar is Dr. W. Henry Wilson. Total registration 1905-6 was 178; graduates, 58. The next session begins Oct. 1, 1906, and ends May 29, 1907.

Hering Medical College.—Homeopathic. This school was organized in 1892. Dunham Medical College, organized in 1895, was consolidated with it in August, 1902. In January, 1905, it purchased the Chicago Homeopathic College Building at 350 South Wood St., opposite Cook County Hospital, which it now occupies. The faculty comprises 40 professors and 25 associates, lecturers, etc., in all 65. Hering College Hospital, Chicago Homeopathic, Frances Willard and Cook County hospitals supply clinical facilities. The course covers four years of eight months each. The total fees for a full course are $300 if paid in advance, or $100 per year. The Dean is Dr. H. C. Allen. Total registration for 1905-6 was 48; graduates, 14. The fourteenth session begins Sept. 3, 1906, and ends May 3, 1907.

College of Medicine and Surgery.—Physio-Medical. This school was organized in 1896, and has a faculty of 40 professors and 3 assistants. The college dispensary supplies material for clinical work. The course covers four years of eight months each. Fees for the first, second and third years, $110 each, and $115 for the fourth. The Secretary is Dr. John C. McCandless, 6536 Ingleside Ave. Total registration for 1905-6 was 40; graduates, 5. The next session begins Sept. 26, 1906, and ends May 17, 1907.

Bennett College of Eclectic Medicine and Surgery.—This school, organized in 1868, has a faculty of 40 professors and 12 assistants, 52 in all. The Bennett, Cook County and Baptist hospitals and a college dispensary supply clinical facilities. Matriculants must present a diploma or certificate or pass a satisfactory examination "in conformity with the minimum requirements of the State Board of Health." The course covers four years of thirty weeks each. This school is a member of the National Confederation of Eclectic Medical Colleges. Fees for each year are $100, with a matriculation fee, paid once, of $5. The Dean is Dr. A. L. Clark, Elgin, Ill. Total registration, 1905-6 was 166; graduates, 52. The thirty-ninth session begins Sept. 25, 1906, and ends May 7, 1907.

American College of Medicine and Surgery.—This school was founded in 1901 and has a faculty of 65. The requirements for entrance are graduation from an accredited high school or equivalent. The course is four years of eight months each. Frances E. Willard and Cook County hospitals supply clinical material. The Secretary is Dr. J. N. Roe. The annual fee is $100; matriculation fee is $5; a total fee for one year, with board, room, light and heat, is $208. The enrolment, 1905-6 was 189; graduates, 23. The next session begins Sept. 24, 1906, and closes May 21, 1907.

National Medical University.—This school was organized in 1891, and its courses include instruction in the methods of all the so-called schools of practice, including manual therapeutics. The faculty numbers 75. The requirements for entrance are in accordance with the requirements of the Illinois State Board of Health. Each year is divided into four quarters of thirteen weeks each, attendance on three quarters constituting one college year. The fees are $200 per year. The Dean is Dr. L. D. Rogers, 533 Wells St. Total matriculants for 1905-6 were 249; graduates, 29. The autumn quarter will begin Oct. 1, 1906.

INDIANA.

Indiana, population 2,516,462, has five medical colleges. Four are situated in Indianapolis, a city of 191,033 people: The Indiana Medical College, the Eclectic Medical College, the Physio-Medical College of Indiana and the State College of Physicians and Surgeons. The clinical facilities of Indianapolis are good, and board and lodging can be obtained from $3 a week and upward. The School of Medicine, Indiana University, is situated in Bloomington, a city of 5,000.

Indianapolis.

Indiana Medical College, The School of Medicine of Purdue University.—Organized in 1869 as The Medical College of Indiana, Medical Department of the University of Indianapolis. In September, 1905, consolidated with Purdue University, The Central College of Physician and Surgeons and the Ft. Wayne College of Medicine, and assumed above title. Total number of students for 1905-6, 339; number graduated, 122. This college is a member of the Association of American Medical Colleges. Total fees, per term, $75. The faculty embraces 50 professors and 60 lecturers, demonstrators and assistants. Four years graded course.

Eclectic Medical College of Indiana.—This school was organized in 1900 and has a teaching force of 24. The course is four years of seven months each. Fees: For each year, $15, or for all four, $225; $25 for graduation. Total registration, 1905-6, 20; graduates, 6. The Dean is Dr. T. M. Culver, 723 So. Meridian St.; the Secretary is Dr. F. M. Wright, 1120 E. 10th St. The next session begins Sept. 21, 1906, and ends April 21, 1907.

Physio-Medical College of Indiana.—This school was organized in 1873 and has a faculty of 36. The course is four years of eight months each. Total fees for each year are $90. The Secretary is Dr. C. T. Bedford, Newton-Claypool Bldg. Total enrolment, 1905-6 was 23; graduates, 6. The next session begins Sept. 11, 1906, and closes May 9, 1907.

The State College of Physicians and Surgeons.—In affiliation with the Indiana University. This school was organized this year. The faculty, as selected, is to consist of 26 professors, 10 assistants and 15 special lecturers, a total of 51. The college expects to equip its own hospital and polyclinic. The minimum requirements for admission are to be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The first two years are to be given at Indiana University, Bloomington, while the junior and senior years are to be given at the College building, in Indianapolis, and will consist mainly of clinical instruction. The Dean is Dr. Allison Maxwell, and the Secretary is Dr. John F. Barnhill.

Bloomington.

Indiana University School of Medicine.—This school was organized in 1903, and gives the first two years of the regular four years' medical course. The year is nine months long. Two years of specified collegiate work in sciences and languages are required for entrance. The members of the faculty give their entire time to the teaching and investigation of their respective subjects. All the work of the school is university in character. The laboratory equipment is the best obtainable. The school is a member of the Association of American Medical Colleges. The faculty consists of 9 professors and 7 assistants, a total of 16. President W. L. Bryan is the Acting Dean. Dr. B. D. Myers, Secretary. The enrolment in 1905-6 was 21. The next session begins Sept. 18, 1906, and ends June 14, 1907.

IOWA.

Iowa, population 2,231,853, has five medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 7,987. In Des Moines, population 62,139, is the College of Medicine of Drake University. In Sioux City, population 31,701, is the Sioux City College of Medicine. In Keokuk, population 14,803, is Keokuk Medical College, College of Physicians and Surgeons. Board and lodging may be had in Des Moines for $15 a month and upward and in the other cities named for from $2.50 to $5 per week.

Des Moines.

Drake University College of Medicine.—This school was organized in 1882 under the name of the Iowa College of Physicians and Surgeons. In 1900 it became affiliated with Drake University. The faculty consists of 20 professors and 30 assistants, a total of 50. The Mercy and Methodist hospitals, 200 beds, and a large dispensary clinic furnish clinical material. The college is a member of the Association of American Medical Colleges. The requirements for admission, after the 1st of July, 1905, will be a full four years' high school course or its equivalent. The work covers a graded course of four years of nine months each. The total fees for the first two years are $107 each, including laboratory and dissecting material; for the last two years, $89 each, including hospital fees. The Dean is Dr. D. S. Fairchild. The total registration for 1905-6 was 81; graduates, 10. The next session begins Sept. 17, 1906, and ends June 13, 1907.

Iowa City.

College of Medicine of the State University of Iowa.—This department was organized in 1870. The faculty is made up of 10 professors, 18 lecturers, demonstrators and assistants, a total of 28. The University Hospital, built in 1897 at a cost of $50,000, supplies the clinical material. The school is a member of the Association of American Medical Colleges. The course of study covers four years of thirty-six weeks each, embracing graded laboratory, didactic and clinical work. New laboratories have been erected, histology, embryology, anatomy, physiology, pharmacology, pathology, bacteriology and clinical medicine. Combined courses leading to more than one degree are offered. Total fees for each year are $50. The Dean is Dr. James R. Guthrie, Dubuque; Vice-Dean, Dr. Walter L. Bierring, Iowa City. Total number of students registered for 1905-6 was 267; graduates, 50. The thirty-seventh session opens Sept. 18, 1906, and ends June 12, 1907.

College of Homeopathic Medicine of the State University of Iowa.—This was organized in 1877. The faculty is composed of 12 professors and 12 lecturers and assistants, a total of 24, but some of these are of the faculty of the College of Medicine. The requirements for admission and the work, with the exception of that pertaining to homeopathy, are the same as those for the College of Medicine of the State University of Iowa. The fees are also the same. The Dean is Dr. George Royal, Des Moines. Total registration for 1905-6 was 47; graduates, 8. The thirtieth session begins Sept. 18, 1906, and will end June 12, 1907.

Keokuk.

Keokuk Medical College, College of Physicians and Surgeons.—In 1849 the College of Physicians and Surgeons, Keokuk, was organized, and four years later it became the Medical Department of the University of Iowa, continuing as such until 1870, when the original name was resumed. By the union in 1899 of this college with the Keokuk Medical College, organized in 1890, the present school under the above name was founded. The clinical material is good. St. Joseph's Hospital, having 100 beds and a splendid equipment, is open to the student for study and the clinics held there are large and varied. The faculty is composed of 21 professors and 7 assistants and demonstrators, 28 in all. This college is a member of the Association of American Medical Colleges. The studies embrace a graded course of four years of eight months each. The total fees for the first year are $66; for the second, $61; for the third, $64, and $61 for the last year. The Secretary is Dr. C. E. Ruth. Total registration for 1905-6 was 170; graduates, 50. The next session begins Sept. 18, 1906, and ends May 14, 1907.

Sioux City.

Sioux City College of Medicine.—This school was organized in 1891. The faculty numbers 26. Clinical material is supplied by St. Joseph's Mercy and Samaritan Hospitals and a college dispensary. This college is a member of the Association of American Medical Colleges. The system of study embraces a four-year graded course, eight months being a school year. Final examinations are held at the close of each course of instruction. Matriculation fee, paid but once, $5; tuition, each year, $48; hospital fees, $5, and graduating fee, $20. The President is Dr. J. N. Warren. Total number of students registered, 1905-6, was 72; graduates, 14. The seventeenth sessions opens Sept. 13, 1906, and will close May 2, 1907.

KANSAS.

Population 1,600,000, has two medical colleges. Kansas Medical College is in Topeka, population 35,388, and the School of Medicine of the University of Kansas, giving its first two years in Lawrence, population 11,123, and the last two years in Rosedale, a suburb of the two Kansas Citys, population 250,000. Board and lodging in all these places may be had for $3 to $5 per week.

Lawrence and Kansas City.

University of Kansas School of Medicine.—Was organized in 1880. In 1899 the preclinical course of two years was established. In 1905 it merged with three Kansas City schools, viz., the Kansas City Medical College, founded in 1869; the College of Physicians and Surgeons, founded in 1893, and the Medico-Chirurgical College, founded in 1896. This school is a member of the Association of American Medical Colleges. The faculty, including lecturers and clinical assistants, numbers 117. Each yearly term is thirty-six weeks in length, dividing into two semesters. The laboratories in Lawrence are extensive and well equipped. In Rosedale the laboratory for chemical pathology is a brick-and-stone structure, 50x100 feet, of three stories; besides this, the school has three dispensaries, the beginnings of a hospital of its own and the use of one public and three private hospitals. Of the faculty named above, nineteen are on salary. A combined course of six years is offered, conferring, after six years, the degrees of A.B. and M.D. The total fees are, for the first two years, $60 per year (and for non-residents of the state $70); for the last two years, $100 per year. The Dean at Lawrence is Dr. Merwin T. Sudler. The Dean of the clinical department at Kansas City is Dr. George Howard Hoxie. The number of students registered for 1905-6 was 150; graduates, 57. The next session begins Sept. 12, 1906, and will end June 5, 1907.

Topeka.

Kansas Medical College, Medical Department of Washburn College.—This college, organized in 1890, has a faculty of 28 professors and 12 lecturers and assistants, 40 in all. Good material for both medical and surgical clinics is found in Chirst's Hospital, with 100 beds, and Topeka State Hospital; the dispensary in the college building also supplies material for class demonstration. The college is a member of the Association of American Medical Colleges. The college building affords ample laboratory and lecture-room space. The course of study is a graded one, covering four years of thirty weeks each. Individual instruction is especially aimed at. The total fees are $70 each year. The Dean is Dr. William S. Lindsay; Secretary, Dr. William McVey. The total registration for 1905-6 was 90; graduates, 18. The seventeenth session begins Sept. 4, 1906, and will close April 17, 1907.

KENTUCKY.

Kentucky, population 2,147,174, has seven medical colleges. They are all situated in Louisville, a city of 215,945 inhabitants, and are as follows: University of Louisville Medical Department, Kentucky School of Medicine, Louisville Medical College, Hospital College of Medicine, Southwestern Homeopathic Medical College, Kentucky University Medical Department and the Louisville National Medical College. Board and lodging in Louisville cost from $3 to $4 per week.

Louisville.

Kentucky School of Medicine.—This school was organized in 1850 and has a faculty composed of 20 professors, 27 lecturers, instructors and assistants, a total of 47. It is a lineal descendant of the Medical Department of Transylvania University, then situated at Lexington, Ky. The College Hospital, City Hospital and the college dispensary furnish the facilities for clinical study. The student is brought directly into contact with the patient through dispensary and bedside work by dividing the classes into sections. This college is a member of the Association of American Medical Colleges. The laboratories and their equipment are good. The curriculum embraces a four years' course of 28 weeks each. The fees for the first three years are $75 each; for the four year, $100. The Dean is Dr. W. H. Wathen, 628½ Fourth Avenue. Total number of students registered for 1905-6 was 275; graduates, 48. The next session begins Dec. 15, 1906, and will end July 12, 1907.

Louisville Medical College.—This school was organized in 1869 and has a faculty of 12 professors and 18 instructors and assistants, 30 in all. The City Hospital, College Infirmary and a dispensary offer good clinical facilities. Applicants for admission must show by diploma, certificate or examination that they are sufficiently proficient in English, arithmetic, algebra, physics and such Latin as would be acquired in one year's study. The laboratories and lecture rooms are ample. The course of study covers four years of six months each. The fees are $75 each year, with graduating fee of $25. The Secretary is Dr. Irvin Abell. Total registration for 1905-6 was 216; graduates, 54. The next session opens Dec. 11, 1906, and closes July 1, 1907.

Hospital College of Medicine.—This school is the medical department of Central University of Kentucky and was organized in 1873. The faculty is composed of 16 professors and 35 assistants, lecturers, etc., a total of 51. The Gray Street Infirmary, City Hospital and a well-equipped college dispensary present good facilities for clinical study. This college is a member of the Association of American Medical Colleges. Laboratory work, which is a prominent feature of the course, is thorough and practical. The laboratories and amphitheaters are ample in equipment and capacity, and the hospital advantages give opportunity for personal bedside instruction. The course covers four years of seven months each. Total fees for each of first three years, $75, and $100 for the fourth year. The Dean is Dr. P. Richard Taylor. Total enrolment for 1905-6 was 338; graduates, 94. The thirty-third session opens Dec. 1, 1906, and closes July 1, 1907.

Kentucky University Medical Department.—This school was reorganized in 1898. The faculty is composed of 17 professors and 25 lecturers, demonstrators, etc., 42 in all. Broadway Infirmary, the City Hospital and the college dispensary furnish clinical material. The school is a member of the Association of American Medical Colleges. The buildings provide ample facilities for clinical, laboratory and didactic instruction. The course of study embraces graded work for four years of thirty weeks each. Tuition is $75 per session and $25 graduation fees. The Dean is Dr. Thomas C. Evans, 654 Fourth Ave. Total number of students registered in 1905-6 was 284; graduates, 82. The next session begins Jan. 1, 1907, and ends July 31, 1907.

University of Louisville Medical Department.—This school was organized in 1837 under the name Louisville Medical Institute, and in 1846 assumed its present title. It has a faculty of 12 professors and 22 lecturers, demonstrators, etc., a total of 34. The University Hospital, City Hospital, Sts. Mary and Elizabeth Hospital, together with the college dispensary, furnish good clinical material. The course covers graded work for four years of seven months each. Total fees: First three years, $75 each, and fourth, $100. The Dean is Dr. J. M. Bodine. Total registration for 1905-6 was 213; graduates, 47. The seventieth session begins Oct. 1, 1906, and ends May 1, 1907.

Louisville National Medical College.—Colored. This was chartered in 1888 and shows a teaching force of 25. There is a four-year course, seven months to the year; the fees are $58, $58, $55 and $50 for the four years respectively. The Dean is Dr. E. S. Porter, Tenth and Walnut. The attendance, 1905-6, was 50; graduates, 7. The next session opens Oct. 2, 1906, and ends May 17, 1907.

Southwestern Homeopathic Medical College.—This college was organized in 1892 and has a faculty of 17 professors and 10 lecturers and assistants, 27 in all. A college dispensary supplies clinical material. The curriculum covers four years of seven months each. Total fees: First and second years, $80; third, $70, and $65 for the fourth. The Dean is Dr. A. L. Mouroe. Total number of students for 1905-6 was 16; graduates, 6. Next session opens Sept. 26, 1906, and closes April 24, 1907.

LOUISIANA.

Louisiana, having a population of 1,381,625, contains two medical colleges: Medical Department of the Tulane University of Louisiana and New Orleans University. They are both situated in New Orleans, a city of 300,625 people. The cost of room and board is from $16 to $22 a month.

New Orleans.

Medical Department of the Tulane University of Louisiana.—This school was organized in 1834 as the Medical College of Louisiana, and became by law, in 1847, the Medical Department of the University of Louisiana, and in 1884 the Medical Department of the Tulane University of Louisiana. The faculty and all other instructors number over 50. By acts of legislature the Charity Hospital, with 900 beds, has been opened to the students of this school for clinical study, not only in medicine and surgery, but also in obstetrics and gynecology. In the year 1905 there were 9,074 cases treated in the wards of this hospital; these were indoor patients; and in addition 19,429 outdoor patients were treated in the free dispensary department. The Milliken Memorial Hospital, with a capacity for 200 children, is also available for study of clinical cases. Bedside instruction is given by the attending physicians to these hospitals, and postmortem examinations are held before the students. The laboratories are large and well equipped, and the lecture rooms and recitation rooms are ample. The course of study covers four terms of twenty-eight weeks each. Total fees for the first two years are $135 each and for the third and fourth $145 and $170 respectively. The Dean is Dr. Stanford E. Chaille, P. O. Drawer 261. The total number of students registered for 1905-6 was 458; graduates, 102. The seventy-third session begins Oct. 8, 1906, and will close May 8, 1907.

Flint Medical College of New Orleans University.—Colored. This school was organized in 1889 as the Medical College of New Orleans University. Name changed to the above in 1901. The faculty is made up of 10 professors, 6 lecturers and instructors, 16 in all. Four of the professors devote all their time to teaching and research. Clinical material is supplied by the Sarah Goodridge Hospital and by an outdoor clinic. This college is a member of the Association of American Medical Colleges. The curriculum covers a graded course of four years, twenty-six weeks each. The laboratories and lecture rooms are ample. Examinations are held monthly. Total fees, $50 each year. The Dean is Dr. A. D. Bush, 1566 Canal St. Total enrolment for 1905-6 was 54; graduates, 8. The seventeenth college year begins Oct. 1, 1906, and will end April 15, 1907.

MAINE.

Maine, population 694,466, has one medical college, located in Portland, population 52,656. Board and lodging cost from $3 to $5 a week.

Portland.

Medical School of Maine.—This, the Medical Department of Bowdoin College, was organized in 1820. It has 16 professors and 19 instructors, total 35. Students of the first and second years are instructed in Brunswick, a town of 6,800 inhabitants. The third and fourth year classes are taught in Portland, where are situated the Maine General Hospital and other clinical advantags. Applicants for admission, unless they possess diplomas, are examined in English, arithmetic, algebra, geometry, United States History, physics, chemistry and Latin. The course covers four years of eight months each. The total fees are $120 for the first year; for the second and third, $110, and $110 for the fourth year. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1905-6 was 82; graduates, 17. The next session opens Oct. 25, 1906, and closes June 26, 1907.

MARYLAND.

Maryland, with a population of 1,188,044, contains eight medical colleges, all located in Baltimore, a city with 531,313 inhabitants. They are as follows: School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore University School of Medicine, Baltimore Medical College, Women's Medical College, Southern Homeopathic Medical College, Johns Hopkins Medical School and Maryland Medical College. The Bay View Hospital, having a capacity for 2,000 patients, is open to students for clinical instruction and furnishes good opportunities for practical demonstration. Board and lodging can be obtained for from $3 to $5 per week.

Baltimore.

Johns Hopkins Medical School.—This is the Medical Department of Johns Hopkins University, and was organized in 1893. The faculty comprises 11 professors, 71 lecturers, clinical professors, associate professors, associates, instructors and assistants, a total of 82. The Johns Hopkins Hospital and Dispensary furnishes abundant and varied clinical material; the lying-in department of the hospital, opened in 1896, is in successful operation. The requirements for admission demand that the applicant either has (*a*) completed the chemical-biologic course which leads to the A.B. degrees in the university; (*b*) graduated at an approved college or scientific schcol and can furnish evidence of an acquaintance with Latin and a fair reading knowledge of French and German, and a knowledge of physics, chemistry and biology, such as may be obtained from a year's course, including laboratory instruction. The school is a member of the Association of American Medical Colleges. The laboratories are large, well lighted and well equipped. The buildings are ample and built expressly for the purpose for which they are used. In the method of instruction special emphasis is laid on practical work in the laboratories, dispensary and wards of the hospital. The first two years are devoted mainly to practical work in the laboratories, combined with demonstrations, recitations and lectures, and during the remainder of the course opportunity for the personal study of cases is given. The work covers a graded course of four years, eight and a half months to the year. Final examinations, partly written and partly oral, include practical tests in laboratory and clinical work; the general character of the student's work is closely watched. The charge for tuition is $200 per annum, with no fees unless a microscope is rented; that fee is $5 a year. The Dean is Dr. William H. Howell, 232 West Lanvale St. Total registration in 1905-6 was 293; graduates, 84. The next session begins Oct. 3, 1906, and ends June 2, 1907.

University of Maryland School of Medicine.—This institution was organized in 1807 as the College of Medicine of Maryland, and in 1812, other faculties having been added, the whole was chartered under the name of the University of Maryland. The faculty is composed of 14 professors, 46 associates and lecturers, etc., a total of 60. The University Hospital, a part of which is used for a hospital for foreign seamen and another portion for a free city hospital, offers excellent clinical facilities. Besides this, the Presbyterian Eye, Ear and Throat Charity Hospital, in which 11,844 patients were treated in 1905; the Hospital for the relief of Crippled and Deformed Children, containing 40 beds; the Maternity Hospital and a college dispensary furnish material for clinical study. This schol is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are ample and well equipped. An entirely new laboratory building has just been erected. The fourth-year class, divided into sections, receives special training in practical laboratory work in a well-appointed clinical laboratory. Didactic, laboratory and clinical instruction, special attention being paid to bedside work, make up the system of teaching. The course covers four years of eight months each, and is graded. The total fees for the first two years are $135 each; for the third year, $125, and $155 for the final year. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1905-6 was 339; graduates, 83. The one hundreth session begins Oct. 1, 1906, and will terminate June 1, 1907.

Baltimore Medical College.—This college was organized in 1881 and has a faculty of 59. The clinical material is furnished by the Maryland General Hospital, having a capacity of 200 beds; the Maryland Lying-in Hospital; the Mount Hope Retreat, which presents good opportunity for the study of nervous and mental diseases, and a college dispensary, which, beside the great number of ambulatory patients treated, has an outdoor department that permits of the advanced student taking care of charity cases and carrying out his own treatment. This college belongs to the Association of American Medical Colleges. The college buildings afford ample laboratory, clinical and lecture-room space. Bedside teaching in the hospital wards is carried on in sections, and every member of the senior class is required to attend throughout the session. The course of study is graded and covers four years of eight months each. The Dean is Dr. David Streett. The total number of students registered in 1905-6 was 441; graduates, 97. The twenty-sixth session opens Sept. 20, 1906, and closes May 20, 1907.

College of Physicians and Surgeons.—This school was organized in 1872, and in 1878 Washington University School of Medicine, established in 1827, was consolidated with it. The faculty numbers 53. The clinical facilities, beside those afforded in common with other schools, are supplied by the Baltimore City Hospital, containing 225 beds; the Hospital for the Colored Race, containing 100 beds; the Nursery and Child's Hospital, with 150 beds; the Maryland Lying-in Asylum and a college dispensary. This school is a member of the Association of American Medical Colleges. The work covers a graded course of four years, eight months constituting a year. Total fees are $115, $115, $115 and $135 for the respective years. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1905-6 was 291; graduates, 65. The next session opens Oct. 1, 1906, and closes June 1, 1907.

Maryland Medical College.—This school was organized in 1898 and has a faculty of 19 professors, 25 associates, lecturers, etc,, 44 in all. The Franklin Square Hospital, West End Maternite and a college dispensary furnish clinical material. The course of study covers four years of nine months each. A matriculation fee of $5 and total laboratory fees for the four years of $55 are charged; tuition is $75 each year. The Dean is Dr. J. B. Schwatka, 1003 North Broadway. Total registration for 1905-6 was 124; graduates, 29. The ninth session begins Sept. 15, 1906, and closes May 3, 1907.

Woman's Medical College.—This school was organized in 1882 and has a faculty of 17 professors, 15 associates, assistants and lecturers, a total of 32. The Hospital of the Woman's Medical College and a college dispensary furnish general clinical material, while abundant special material is furnished by the Presbyterian, Eye and Ear and the Sheppard and Enoch Pratt (for mental cases) Hospitals. The college is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are equipped with all necessary apparatus; the practical work is emphasized. Eight months constitute a school year and the course covers graded work for four years. The total fees for the first three years are $106 each and $81 for the last year, with $30 graduation fee. The Dean is Dr. S. Griffith Davis, 1230 Light St. Total number registered fer 1905-6 was 33; graduates, 3. The twenty-fifth session opens Oct. 1, 1906, and closes May 31, 1907.

Southern Homeopathic Medical College.—This school was organized in 1890, with a faculty of 10 professors and 14 associates and lecturers, a total of 24. It now has a faculty, including professors, associates, lecturers and demonstrators, consisting of 37 in all. The clinical facilities are those offered by the Maryland Homeopathic Hospital and St. Luke's Hospital, which together have about 75 beds. There is also a polyclinic dispensary in the basement of the college building, which furnishes considerable lecture material; the obstetric department of the Maryland Homeopathic Hospital also furnishes clinical material. One of the features of the institution is the outdoor work done by the students, including a large amount of obstetric work. Applicants for matriculation must pass a satisfactory examination in English, arithmetic, geography, history and Latin, unless they possess satisfactory evidence that they have done a corresponding amount of work. The course covers graded work for four years of seven months each. The fees are $80 for the first year, $75 each for the second and third and $105 for the fourth year. The Dean is Dr. Eldridge C. Price, 1012 Madison Ave., and the Registrar is Dr. L. R. Palmer, 1021 Madison Ave. Total registration for 1905-6 was 18; graduates, 5. The sixteenth session begins Oct. 3, 1906, ends May 2, 1907.

Baltimore University School of Medicine.—This school, organized in 1884, has a faculty of 8 professors and 16 lecturers, demonstrators, etc., in all 24. The Baltimore University Hospital, Lying-in Hospital and the clinical material used in common with the other schools supply the facilities for practical work. The course is four years of nine months each. The fees are about $100 each year. The Dean is Dr. Hampson H. Biedler, 119 W. Saratoga St. Total registration for 1905-6 was 18; graduates, 7. The next session opens Sept. 6, 1906, and closes June 1, 1907.

MASSACHUSETTS.

Massachusetts, population 2,805,340, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 594,618 inhabitants. Board and lodging can be obtained from $5 to $7 per week.

Boston.

Medical School of Harvard University.—This was organized in 1782 and has a faculty of 32 professors, 113 associates and assistants, etc., a total of 145. Beside the clinical advantages mentioned, the Boston Lyin-in Hospital, the Boston Dispensary, where 43,918 patients were treated last year: the Infants' Hospital, the Children's Hospital, Long Island Hospital, containing 250 beds, and the Marine Hospital all furnish excellent opportunity to the student for clinical study. Students are also permitted to visit the Free Hospital for Women and Carney Hospital on application to the physicians on duty. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons, of suitable age and attainments, as may be admitted by special vote of the faculty in each case. Each candidate is required to hand in the original note book in which he recorded the work performed by him in qualitative analysis, and also to pass a written examination in theoretical and descriptive chemistry. If conditioned in chemistry one year is allowed in which to remove the condition. The laboratories and lecture rooms offer ample facilities and the equipment is good; special facilities are open to those desiring to pursue advanced or original work. The course of study covers four years of nine months each; the course is graded and each corelated group as taken up presents sufficient variety to avoid monotony. A series of written, oral and practical examinations are distributed throughout the course of study. Fees: Matriculation, $5; $200 each year. The Dean is Dr. William L. Richardson, 688 Boylston St. The total registration for 1905-6 was 292; graduates, 66. The 125th session begins Sept. 27, 1906, and ends June 26, 1907.

Tufts College Medical School.—This school was organized in 1893 as the Medical Department of Tufts College. It has a faculty of 30 professors, 55 assistants and lecturers. etc., a total of 85. Clinical material is furnished by the Boston City Hospital, Massachusetts Charitable Eye and Ear Infirmary, Free Home for Consumptives, Free Hospital for Women. Boston Dispensary, Cambridge Hospital, St. Elizabeth's Hospital, Carney Hospital and the college dispensary; the student has also the advantages derived from an out-department in connection with the Boston Dispensary. "Graduates of an approved high school, college or university and students having certificates of entrance to a college or university, or holding the State of New York Regents' certificate," also certain approved preparatory school graduates, are admitted without examination; all others must pass an examination in English, Latin, physics and mathematics, including elementary algebra and plane geometry, besides one elective subject to be chosen from American history, French, German, chemistry or biology. The laboratories and lecture rooms are ample in their equipment and capacity. Teaching is carried on by means of lectures, recitations and practical work in the laboratories and clinics; frequent examinations are held during a course and final examination on completing the subject. Graded instruction covering four years of eight months each makes up the full course. The total fees are $150 each year; dissecting material is furnished at cost. The Dean is Dr. Harold Williams. Total number of students for 1905-6 was 375; graduates, 73. The thirteenth session begins Sept. 26, 1906, and ends June 1, 1907.

College of Physicians and Surgeons.—This school was organized in 1880 and has a faculty of 27 professors and 18 lecturers and assistants, a total of 45. Clinical facilities are furnished by the North End Dispensary Hospital, Union General Hospital and the city and state institutions. This school is a member of the Association of American Medical Colleges. The course of study covers graded work for four years of nine months each. The total fees for the first year are $100 and for each of the other years about $110, with a graduation fee of $30. The Dean is Dr. C. H. Cobb, Hotel Oxford, Boston, and the Registrar is Dr. John H. Jackson, 155 Franklin St., Fall River. Total. students registered 1905-6, 134; graduates, 20. The twenty-seventh session begins Sept. 19, 1906, and ends June 21, 1907.

Boston University School of Medicine.—Homeopathic. This school was organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The faculty includes 23 professors, 36 associates and assistants, etc., a total of 59. Clinical material is furnished by the Massachusetts Homeopathic Hospital, containing 235 beds, an out-patient department, a maternity hospital and the Westborough Insane Hospital, 800 patients. Candidates who have taken their degrees in arts, philosophy or science are not examined; certificates of graduation from approved high and preparatory schools accepted in lieu of entrance examinations: all others are examined in English, Latin, French or German, history, mathematics, physics and chemistry. The instruction is graded and covers a period of four years, eight months each. Total fees for the first year are $105: for the second and third, $125 each, and for the last year $155. The Dean is Dr. John P. Sutherland, 302 Beacon St. Total registration for 1905-6 was 100; graduates, 23. The thirty-fourth session opens Oct. 4, 1906, and closes June 5, 1907.

MICHIGAN.

Michigan, population 2,420,982, has six medical colleges. Two of these, University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 16,033 people. Board and lodging cost from $2.50 to $5 a week. Detroit, a city of 309,653 inhabitants, contains three medical colleges, as follows: Detroit College of Medicine, Detroit Homeopathic College and the Michigan College of Medicine and Surgery. Board and room can be obtained for $3 a week and upward. Grand Rapids Medical College is located in Grand Rapids, population 91,630. Room and board cost from $3 to $3.50 a week.

Ann Arbor.

University of Michigan Department of Medicine and Surgery.—This was organized in 1850 and has a faculty composed of 19 professors, 40 associates, instructors, etc., a total of 59. The University Hospital, with nearly 200 beds, furnishes the clinical facilities. The requirements for admission provide that the applicant, either by certificate or examination, show a sufficient knowledge of the following: English grammar, rhetoric and composition; United States and general history; algebra, through quadratics, plane and solid geometry and plane trigonometry; physics, biology and chemistry, these subjects to be accompanied by laboratory work; German or French and Latin. The laboratories and their equipment are good and the training in them and in didactic work is thorough. The new medical building, accommodating the laboratories of hygiene, bacteriology, physiologic chemistry, pathology, histology, embryology and anatomy, is now completed and occupied. This school is a member of the Association of American Medical Colleges. The curriculum embraces four years of nine months each. A combined course leading to degrees in both arts and medicine in six years is offered. The total fees for Michigan students for the entire course of four years is about $300, and for others $350. The Dean is Dr. Victor C. Vaughan. Total registration for 1905-6 was 442; graduates, 70. Next session begins Sept. 25, 1906, and will end June 20, 1907.

Homeopathic College, University of Michigan.—This department of the university was organized in 1875 and has a faculty of 29 professors and 21 assistants, total 50; a part of the teaching force is from the other departments of the university. The Homeopathic Hospital, containing 140 beds, furnishes material for clinical teaching. The course covers four years of nine months each. The total fees for Michigan students are about $240 for the four years, and for other students about $295. The Dean is Dr. W. B. Hinsdale. The enrolment for 1905-6 was 80; graduates, 17. The next session begins Sept. 25, 1906, and closes June 20, 1907.

Detroit.

Detroit College of Medicine.—This school was formed in 1885 by the union of Detroit Medical College, organized in 1368, and the Michigan College of Medicine, established 1880. The faculty embraces 21 professors, 71 lecturers, instructors, etc., a total of 92. Clinical facilities are offered by the following hospitals: St. Mary's and Harper, each of which contains a free dispensary; Woman's St. Luke's, the Children's Free Hospital and the House of Providence. This school is a member of the Association of American Medical Colleges. The course covers four years of eight months each. The work includes laboratory, didactic and clinical study. Fees: Matriculation, paid once, $5; tuition, each term, $65; hospital and laboratory tickets, each $10, and diploma fee, $30. The Secretary is Dr. H. O. Walker. Total enrolment for 1905-6 was 173; graduates, 82. The next session begins Sept. 19, 1906, and will close May 30, 1907.

Michigan College of Medicine and Surgery—Saginaw Valley Medical College.—These two schools, organized in 1888 and 1896 respectively, were consolidated last year, to continue on the site of the former. The faculty numbers 51. Clinical facilities are offered by a college dispensary, the Emergency Hospital and Detroit Eye and Ear Infirmary. This school is a member of the Association of American Medical Colleges. The course covers graded work for four years of eight months each. The fees are about $80 to $95 per year; third year, $70, and $95 for the fourth year. The Dean is Dr. Hal. C. Wyman, 46 West Adams Ave. Total registration for 1905-6 was 68; graduates, 22. The next session begins Sept. 18, 1906, and will end May 17, 1907.

Detroit Homeopathic College.—This was organized in 1899 and has a faculty of 36. Grace Hospital and a college dispensary are available for study of clinical cases. Unless possessing at least a high school diploma applicants for admission will be examined by the state board. The course embraces work for four years of eight months each. Fees: From $70 to $90 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total enrolment for 1905-6 was 33; graduates, 15. The next session begins Sept. 15, 1906, and will close May 15, 1907.

Grand Rapids.

Grand Rapids Medical College.—This was organized in 1897. The faculty is made up of 27 professors and 6 assistants, in all 33. Clinical cases in the Union Benevolent Association, St. Mary's and Woman's hospitals and St. John's Orphan Asylum and a college dispensary are available for study. The course is four years of eight months each. The total fees are about $85 for each year. The Dean is Dr. G. L. McBride, 257 East Fulton St. Total registration for 1905-6 was 40; graduates, 12. The next session opens Sept. 12, 1906, and closes May 18, 1907.

MINNESOTA.

Minnesota, population 1,751,394, contains three medical colleges: Hamline University College of Medicine and the two medical departments of the University of Minnesota, viz., the College of Medicine and Surgery and the College of Homeopathic Medicine and Surgery. They are all situated in Minneapolis, which, together with St. Paul, which is in close proximity, has a population of 386,150. The various hospitals of Minneapolis and St. Paul furnish ample clinical material. The average cost of board and lodging is $20 a month.

Minneapolis.

College of Medicine and Surgery, University of Minnesota.—This department of the University of Minnesota was created in 1883, but at that time its only function was to examine for the degrees of B.M. or M.D. In 1888, by the consolidation and absorption of the Minnesota Hospital Medical College and the St. Paul Medical College, its present status was assumed. The faculty is composed of 30 professors and 75 instructors and assistants, a total of 105. The medical school occupies seven buildings, and its laboratories are excellent. Eight large hospitals in the Twin Cities, beside the university dispensary and St. Paul Dispensary, afford an abundant supply of material for clinical study. The curriculum covers four years of nine months each and the work is carefully graded. The entrance requirement of two years of university in addition to four years of high school work limits the number of students, but assures a high standard of the student body. This school is a member of the Association of American Medical Colleges. Total number of students registered in 1905-6 was 189; graduates, 43. Total fees for each year, $100. The Dean is Dr. F. F. Wesbrook. The next session opens Sept. 13, 1906, and closes June 9, 1907.

College of Homeopathic Medicine and Surgery.—This is a department of the University of Minnesota and was organized in 1888. The faculty comprises 19 professors and 14 assistants, 33 in all. Instruction in the primary branches is received, in common with the students of the College of Medicine and Surgery, from the professor of the department of medicine. The course is graded, extending over four years of nine months each. The total fees for the first two years are $100 each and $80 each for the last two years. The Dean is Dr. Eugene L. Mann. Total number of students registered in 1905-6 was 15; graduates, 1. The next session opens Sept. 13, 1906, and closes June 9, 1907.

Minneapolis College of Physicians and Surgeons.—Medical Department of Hamline University. This was organized in 1883. Its faculty is composed of 29 professors and 17 instructors, a total of 46. The laboratories and lecture rooms are large, well lighted and supplied with all the necessary equipment. Clinical work is offered to the student in City Hospital, Asbury Methodist Hospital, St. Barnabas and St. Mary's hospitals in Minneapolis, Luther Hospital, City and County and St. Joseph's in St. Paul and the college dispensary. This school belongs to the Association of American Medical Colleges. The course of study covers graded work for four years, eight and a half months making a year. Total fees, first year, $90; second year, $92.50, and for each of the last two $80. The Dean is Dr. George C. Barton. Total number of students, 1905-6, was 120; graduates, 27. The next session begins Sept. 18, 1906, and ends June 5, 1907.

MISSISSIPPI.

Mississippi, population 1,551,270, has two medical colleges: The Medical Department of the University of Mississippi, located at Oxford, a city of 2,000 inhabitants, and the Mississippi Medical College, at Meridian, with a population of 15,079.

Oxford.

University of Mississippi Medical Department.—This school was organized two years ago with 6 professors and 2 assistants, a total of 8. Each college term extends over nine months. Only two years of the medical course are given. The school is a member of the Association of American Medical Colleges. Dr. W. S. Leathers is the Acting Dean. The total registration in 1905-6 was 22; graduates, none. The next session begins Sept. 21, 1906, and ends June 7, 1907.

Meridian.

Mississippi Medical College.—Organized in 1906 with 15 professors and a corps of demonstrators. Buildings are in course of construction. The Dean is Dr. N. L. Clark. The first session will begin Oct. 1, 1906.

MISSOURI.

Missouri, population 3,106,665 has eleven medical colleges. St. Louis, population 612,279, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, Homeopathic Medical College of Missouri, Medical Department St. Louis University (Marion-Sims-Beaumont College of Medicine), Washington University Medical Department and Barnes Medical College. Board and lodging can be procured for from $3.50 to $5 a week. Kansas City, with 173,064 inhabitants, has three colleges, namely: University Medical College, the Hahnemann Medical College of Kansas City and Eclectic Medical University. Room and board can be obtained in this city for from $3 to $5 a week. Ensworth-Central Medical College is located in St. Joseph, population 110,479. Board and room can be had for from $3.50 to $5 a week. Department of Medicine of the University of Missouri is at Columbia, a town of 5,651. Board and lodging can be obtained at Columbia for from $2 to $5 a week.

Columbia.

Department of Medicine of the University of Missouri.—This department was organized at Columbia in 1872. The faculty includes 11 professors, 19 assistant professors, lecturers, etc., a total of 30. Clinical facilities are supplied by the Parker Memorial State Hospital. A new $40,000 building for the medical laboratories has recently been completed and has excellent equipment. Special emphasis is laid on thorough training in the scientific branches which constitute the foundation of medicine. Four years' course, nine months each, carefully graded. The university offers also a combined course of six years, conferring degrees in both arts and medicine. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. This school is a member of the Association of American Medical Colleges. There is no charge for tuition, the only expenses being a library fee of $10 each year and small laboratory fees. The Dean is Dr. A. W. McAlester. Total registration of students for 1905-6 was 98; graduates, 8. The next session opens Sept. 18, 1906, and closes June 7, 1907.

Kansas City.

University Medical College.—This was organized in 1881 as the University of Kansas City Medical Department, and in 1888 was reorganized under its present name. Its faculty comprises 29 professors and 41 lecturers and assistants, a total of 70. Clinical material is furnished by the University Hospital, owned by the college, with 100 beds; the City Hospital, German Hospital, Home for the Aged, containing 147 beds; the Sisters' Hospital, Scarritt and St. Margaret's hospitals, the Children's Home, St. Joseph's Orphan Asylum and the college dispensary and obstetric department. Instruction is given by means of lectures, recitations, demonstrations and laboratory work and clinics. The school is a member of the Association of American Medical Colleges. The college building, which has recently been enlarged, furnishes ample accommodations for laboratories and lecture rooms. The course of study covers four years of thirty weeks each and the work is graded. The total fees for each of the first two years are $100; for the third, $80 and $100 for the fourth year. The Dean is Dr. Samuel C. James, Bryant Bldg. The total number of student registered in 1905-6 was 235; graduates,, 54. The twenty-fifth session begins Sept. 6, 1906, and ends April 24, 1907.

Kansas City Hahnemann Medical College.—This school was formed by the union of the Kansas City Homeopathic Medical College, organized in 1888, and the Kansas City University College of Homeopathic Medicine and Surgery. It has a faculty of 37. The City Hospital, Homeopathic Hospital, the Sanitarium, Scarritt, University, Women and Children's, German, Bethany and Children's hospitals are open to its students for clinical study. The college dispensary and clinics also supply clinical material. Applicants for admission must show by diploma, certificate or examination that they have a sufficient knowledge of English, arithmetic, geography, United States history and Latin equal to one year's work. The course covers four years of seven months each. The Dean is Dr. Frank Elliott, 1023 Grand Ave. Total registration for 1905-6 was 76; graduates, 21. The next session begins Sept. 12, 1906, and closes April 15, 1907.

Eclectic Medical University.—This was organized in 1898, and has 25 in its faculty. The curriculum covers four years of seven months each. Fees, about $70 each year, with a graduation fee of $15. The Dean is Dr. Theodore Doyle. Total number of students for 1905-6 was 46; graduates, 16. The ninth session begins Sept. 11, 1906, and ends March 29, 1907.

St. Joseph.

The Ensworth Central Medical College.—This college was organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. The faculty is composed of 28 professors, 13 lecturers and assistants, 41 in all. The Ensworth Deaconess Hospital with 100 beds; St. Joseph's with 250 beds; City Hospital containing 40 beds; the State Hospital, No. 2, which is open to the students once a week, and a college dispensary furnish clinical material. Applicants for admission must show by certificate or diploma, or examination that they possess an education equal to that of a graduate from a high school. The building furnishes ample laboratory and lecture room facilities. The curriculum covers a graded course of four years of seven months each. The fees are $75 for each of the first three years; the fourth year, $95. The Secretary is Dr. T. E. Potter. Total enrolment for 1905-6, 149; graduates, 34. The next session opens Sept. 10, 1906, and will close about May 10, 1907.

St. Louis.

Washington University Medical Department.—This school was organized in 1891 from the St. Louis Medical College, which was founded in 1842. In 1899 the Missouri Medical College, organized in 1840, was added. The faculty comprises 39 professors, 35 lecturers and instructors, a total of 74. Clinical material is furnished by the St. Louis Mullanphy Hospital, Washington University Hospital and Dispensary, Washington University Lying-in Hospital, Bethesda Hospital and O'Fallon Dispensary. In addition to these, the City Hospital and Insane Asylum are used in common with the other schools. The Medical Department is a member of the Association of American Medical Colleges. The college buildings, of which there are two, furnish the best laboratory and lecture-room facilities. The course is four years of eight months each, and the system of study embraces laboratory, didactic and clinical teaching. The total fees for the first year are $126.25; second, $120.25; and for the third, $106.25, and fourth, $101.25. The Dean is Dr. Robt. Luedeking. Total registration of students for 1905-6 was 239; graduates, 55. The next session opens Sept. 28, 1906, and closes May 30, 1907.

St. Louis University Medical Department (Marion Sims-Beaumont College of Medicine).—The faculty is composed of 42 professors, 63 lecturers and assistants, a total of 105. Clinical facilities are offered by Alexian Brothers' Hospital, with 250 beds; Rebekah Hospital, having a capacity of 50 patients; Josephine Hospital, 50 beds; Mt. St. Rose Throat and Chest Hospital, 150 beds; St. John's Hospital, 125 beds; St. Ann's Lying-in Hospital, 200 beds; St. Mary's Infirmary, containing 150 beds; the City Hospital and Insane Asylum, each with a capacity of 600 patients. Grand Avenue Dispensary also furnishes good material for practical instruction. This school is a member of the Association of American Medical Colleges. The buildings afford ample laboratory and lecture-room space, and they are well equipped. The course of study embraces laboratory and clinical instruction, with recitations and lectures. The curriculum covers four years of seven months each. The total fees for the first year are $100; for the second, third and fourth, $95 each. The Secretary is Dr. H. W.

Loeb. 537 North Grand Ave. Total number of students registered for 1905-6 was 295; graduates, 116. The next session opens Oct. 1, 1906, and closes May 20, 1907.

St. Louis College of Physicians and Surgeons.—This school was organized in 1878, and has a faculty of 24 professors, 15 lecturers, instructors, etc., a total of 39. The resources for clinical instruction are Jefferson Hospital, which is open to students of this college only; City Hospital, with 600 beds; Female Hospital, having 250 beds; City Insane Asylum; City Poorhouse, and the college dispensary. This college is a member of the Association of American Medical Colleges. The laboratory and lecture-room space and the equipment are ample. The course of study covers four years of seven months each, and is graded. Total fees for the first year are $80; second and third, $75 each and $85 for the fourth year. The Dean is Dr. Waldo Briggs, 2600 Gamble St. Total number of students registered, 1905-6, was 278; graduates, 53. The next session begins Sept. 15, 1906, and ends May 1, 1907.

Barnes Medical College.—(Medical Department Barnes University.) This school was organized in 1892, and has a faculty of 37 professors and 25 lecturers and assistants, a total of 62. The clinical advantages are those offered by Centenary Hospital, with 150 beds; City Hospital, the college dispensary and the outdoor obstetrical department. The laboratories are well equipped and other facilities ample. The course of study includes graded work for four years of eight months each. The total fees for the first three years are $80 each year, and $90 for the fourth year. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Bldg. Total registration for 1905-6 was 385; graduates, 72. The next session opens Sept. 11, 1906, and closes May 10, 1907.

American Medical College.—Eclectic. This was organized in 1873, and has a faculty of 17 professors. St. Louis City Hospital and a college dispensary supply ample clinical material. The requirements for admission are those of the National Confederation of Eclectic Medical Colleges of which this college is a member. The course of study covers four years of seven months each. The total fees are: Tuition, $75 per year, dissecting material, $5 per year for four years, final examination and graduation fee $25. Total registration for 1905-6 was 63; graduates, 22. The Dean is Dr. M. M. Hamlin, 2906 Lawton Ave. The next session opens Sept. 17, 1906, and closes April 18, 1907.

Homeopathic Medical College of Missouri.—This was organized in 1857, and has a faculty of 26 professors and 6 assistants, total, 32. The curriculum covers four years of seven months each. Fees: First year, $80; second, $75, third, $60, and $75 for the fourth year. The Dean is Dr. L. C. McElwee, 1221 North Grand Ave. Total registration for 1905-6 was 46; graduates, 4. The next course begins Sept. 10, 1906, and ends April 20, 1907.

NEBRASKA.

Nebraska, population 1.066.300, has four medical colleges: The University of Nebraska College of Medicine and John A. Creighton Medical College of Omaha, population 113.361, and Lincoln Medical College, and the Nebraska College of Medicine at Lincoln, population 44,243. Board and lodging can be obtained for from $3 to $5 a week.

Lincoln and Omaha.

University of Nebraska College of Medicine.—This was organized in 1880 as the Omaha Medical College. In 1902 an affiliation was entered into with the University of Nebraska, the name being changed to the College of Medicine of the University of Nebraska. The first two years are given at Lincoln. The last two years are given only at Omaha. The faculty is composed of 26 professors and 34 lecturers and assistants, total 60. The Douglas County, Immanuel, Wise Memorial and Omaha Methodist hospitals, together with the college dispensary, furnish an abundance of material for clinical study and demonstration. The course consists of graded studies covering four years of eight months each. The method of instruction consists of didactic and clinical lectures, section clinics, demonstrations, recitations and laboratory work. The college building is well adapted to its purpose, the laboratories being well equipped and the lecture room commodious. The fees, including breakage deposits, are $90 for the first two years, and $100 for the last two years. The college is a member of the Association of American Medical Colleges. Total number of students enroled in 1905-6, 142; graduates, 7. The Secretary is Dr. Geo. H. Bicknell, Karboch Block, Omaha. The next annual session begins Sept. 20, 1906, and ends May 25, 1907.

Omaha.

John A. Creighton Medical College.—This school, organized in 1892, is the Medical Department of Creighton University, and has a faculty of 28 professors and 26 associates, lecturers and assistants, a total of 54. The clinical facilities are those of St. Joseph's Hospital, containing 300 beds and having a clinical amphitheater connected with it; St. Bernard's Hospital, with 256 beds; Omaha General Hospital, with 100 beds; Douglas County Hospital; Mercy Hospital, and the college dispensary. Clinical material is abundant and varied. The building, which was completed in 1898, contains excellent facilities for laboratory and lecture-room work, and the equipment is adequate. In the methods of instruction including clinical, didactic and laboratory work, special emphasis is laid on practical work. The school is a member of the Association of American Medical Colleges. The course of study embraces four years of eight months each. The total fees for the first two years are $90 each, and $85 for each of the last two years. The Dean is Dr. D. C. Bryant, McCague Bldg. Total number of students registered in 1905-6 was 172; graduates, 39. The fifteenth sessions begins Sept. 4, 1906, and ends May 4, 1907.

Lincoln.

Lincoln Medical College.—Eclectic. This was organized in 1889, and has a faculty of 22. The requirements for admission are those of the National Confederation of Eclectric Medical Colleges, of which this college is a member. The course of study covers four years of thirty weeks each. The total fees for the first year are $80; second, $75; third, $75, and $85 for the fourth year, or $250 for all four years together. The Secretary is Dr. Eail E. Boyd. Total number of students for 1905-6 was 71; graduates, 15. The next session begins Sept. 13, 1906, and ends April 27, 1907.

Nebraska College of Medicine.—This college was organized in 1905. Its faculty consists of 23 professors and 5 assistants, a total of 28. Its course covers four years of eight months each. The Dean is Dr. J. F. Stevens. Registration of students during 1905-6 was 10; no graduates. The second session begins Sept. 19, 1906, and ends June 1, 1907.

NEW HAMPSHIRE.

New Hampshire, population 411,588, contains one medical college, located in Hanover, population 1,884.

Hanover.

Dartmouth Medical School.—This is the Medical Department of Dartmouth College, and was organized in 1797. Its faculty is made up of 18 professors and 3 instructors, 21 in all. The Mary Hitchcock Memorial Hospital, a cottage hospital of 36 beds, supplies the clinical material. Applicants for admission must possess an education at least equivalent to graduation from a registered high school. The laboratories afford good facilities for work. The course covers four years of thirty-two weeks each. Fees: $100 each year. The Dean is Dr. William T. Smith. The total number of students registered for 1905-6 was 59; graduates, 10. The work for the first and second years begins with that of the academic department, commencing Sept. 20, 1906, and closing June 27, 1907; for the advanced classes it begins Aug. 15, 1906, and ends April 1, 1907.

NEW YORK.

New York State, population 7,268,894, has ten medical colleges. Seven of these, College of Physicians and Surgeons, Columbia University, Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College and the University and Bellevue Hospital Medical College, are located in New York City, population 3,716,139. This city, with its hospitals and dispensaries, offers abundant clinical material. Board and lodging can be obtained for from $5 to $7 a week.

Albany Medical College is in Albany, a city of 93,920 people, where board and room can be had for from $4 to $5 a week.

The University of Buffalo Medical Department is situated in Buffalo, population of 381,403. Here board and lodging can be obtained for from $3.50 to $5 per week.

The College of Medicine, Syracuse University, is in Syracuse, a city of 114,443 inhabitants. Board and lodging can be obtained for from $3.50 a week upward.

New York City.

College of Physicians and Surgeons.—This school was organized in 1807 and its present relation, that of Medical Department of Columbia University, was assumed in 1860. The faculty embraces 34 professors and 174 demonstrators, instructors, etc., a total of 208. The Vanderbilt Clinic, where 45,355 patients were treated during the year 1905, and which is equipped with all modern appliances for the study and treatment of disease, and Sloane Maternity Hospital, containing 124 beds, offer exclusive clinical advantages to students of this school. The college is strongly represented on the staffs of most of the general and special hospitals of New York. In them both required and optional practical instruction is given by clinical lectures, in the dispensaries, and at the bedside, all of which are prominent features of the curriculum. These hospitals are as follows: Roosevelt, Bellevue, New York, Presbyterian, St. Luke's, General Memorial, Hospital for the Ruptured and Crippled, St. Mary's Free Hospital for Children, Willard Parker, Scarlet Fever and Reception, Riverside, New York Eye and Ear Infirmary, foundling, and the Babies' Hospital. The laboratories, lecture rooms and amphitheaters are ample in equipment and accommodation; special provisions are made to equip each student thoroughly in each of the laboratories and thus make the work individual. The work is graded, covering four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250 and $275 for the fourth year. Total registration for 1905-6 was 450; graduates, 152. The next session begins Sept. 26, 1906, and ends June 12, 1907.

Long Island College Hospital.—This was organized in 1858 and has a faculty of 20 professors and 75 assistants, instructors, etc., a total of 95. Long Island College Hospital, containing 300 beds and connected with a four-story maternity hospital; Polhemus Memorial Clinic, Dudley Memorial and Hoagland Laboratory, completely equipped with the most modern apparatus, are all a part of the college. Beside the clinical facilities furnished by these, members of the faculty attend at Kings County, St. John's, Brooklyn, Norwegian, Williamsburg, Methodist Episcopal and the Brooklyn Eye and Ear hospitals, where the students are offered opportunities for clinical study. Many of these also contain outpatient departments, thus permitting advanced students to attend personally to cases. Bedside instruction is also given in the wards. The course covers four years of thirty weeks each. Fees: First year, $195; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1905-6, was 343; graduates, 72. The forty-ninth session opens Oct. 1, 1906, and closes June 6, 1907.

Cornell University Medical College.—This department of Cornell University was established in 1898. The faculty is composed of 45 professors and 162 instructors and assistants, a total of 207. The City Hospital, having 1,000 beds; Bellevue Hospital, New York Hospital, Presbyterian, Willard Parker and Reception with 200 beds; New York Skin and Cancer; St. Francis, having a capacity of 230 beds; St. Vincent's, with 200 beds; the Manhattan Eye and Ear Infirmary, in addition to a large college dispensary, furnish the clinical resources; the material is abundant and varied. The first two years of the course are taken at New York or at Ithaca, and the work is devoted to the fundamental scientific subjects. The last two years are spent mostly in practical and clinical work and the hospital advantages are utilized. The Loomis Laboratory, a five-story modern building, is well equipped and supplies ample practical laboratory facilities required in the advanced work. "The essential features of the entire system is the division of the classes of the several years into small sections." Fees: First year, $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1905-6 was 369; graduates, 59. The next session opens Sept. 26, 1906, and closes June 12, 1907.

University and Bellevue Hospital Medical College.—This is a department of the New York University, and was founded in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. The faculty is composed of 39 professors and 64 instructors, assistants, etc., in all 103. Bellevue and City Hospitals, hospitals of the workhouse and almshouse, Manhattan State Hospital for the Insane, Willard Parker and Reception hospitals, Riverside Hospital for Contagious Diseases, Randall's Island, Presbyterian, St. Luke's, St. Vincent's, General Memorial, Gouverneur, Columbus, Harlem, New York Foundling and the Society for the Lying-in hospitals, the New York Eye and Ear Infirmary and a large college dispensary are open to students of this school for a study of clinical cases. The Carnegie building, a five-story structure adjoining the college, is devoted to laboratory instruction and investigation, and, with the other two large college buildings, affords good laboratory and lecture-room facilities. A new six-story addition to the laboratory building has just been completed. The course of instruction covers four year sof eight months each. Actual clinical teaching, in conjunction with and founded on laboratory work, recitation and didactic teaching, is emphasized to the greatest possible degree. Fees: First year, $185; second and third, $180 each, and $195 for the fourth year. The Dean is Dr. Egbert Le Fevre. Total registration for 1905-6 was 481; graduates, 53. The next session opens Oct. 3, 1906, and closes June 6, 1907.

New York Homeopathic Medical College and Hospital.—This school, organized in 1858, has a faculty of 35 professors and 44 lecturers, instructors, etc., 79 in all. Flower Hospital, adjoining the college and having a completely equipped out-patient department; Metropolitan Hospital, New York Ophthalmic Hospital and the Laura Franklin Free Hospital for Children also furnish clinical facilities. The course covers four years of seven months each. Total fees for the first year, $130; second, $130; third, $125, and $155 for the fourth year. The Dean is Dr. W. H. King, 64 West Fifty-first St. Total students registered for 1905-6 was 110; graduates, 30. The next session begins Oct. 2, 1906, and ends May 16, 1907.

New York Medical College and Hospital for Women.—Homeopathic. This school was organized in 1863 and has a faculty of 17 professors, 21 lecturers and assistants, total 38. The college hospital and dispensary, the Memorial Hospital for Women, Metropolitan, Ophthalmic and the Laura Franklin Free Hospital for Children afford clinical material. The course covers four years of twenty-six weeks each. Fees: First year, $145; second, $140; third; $135, and $155 for the fourth year. The Dean is Dr. Helen Cooley Palmer, 5 West Eighty-second St. Total registration for 1905-6 was 20; graduates, 6. The next session opens Oct. 1, 1906, and closes May 14, 1907.

Eclectic Medical College of the City of New York.—This was organized in 1865 and has a faculty of 16 professors and 17 lecturers, demonstrators, etc., 33 in all. A college dispensary, Beachonian Dispensary, Manhattan and Red Cross Hospitals and Muncie Sanatorium supply clinical facilities. The work covers four years of seven months each. The total fees: First year, $125; second, $125; third, $125, and $155 for the fourth year. The Dean is Dr. George W. Boskowitz. Total registration for 1905-6 was 105; graduates, 15. The next session opens Sept. 27, 1906, and closes May 1, 1907.

Albany.

Albany Medical College.—This school was organized in 1838, and in 1873 it assumed its present relations as Medical Department of Union University. The faculty is composed of 15 professors and 65 lecturers, instructors and assistants, a total of 80. Albany, St. Peter's, Child's and County hospitals, South End Dispensary, Eye and Ear Infirmary and the Albany Hospital for Incurables, also the free dispensaries connected with each, are open to students for clinical study. The curriculum embraces graded work for four years of seven and one-half months each. Teaching is carried on in the laboratories, clinics and lecture rooms. Examinations are held twice a year in all subjects. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Dean is Dr. Samuel B. Ward. Total registration for 1905-6 was 165; graduates, 32. The next annual session opens Sept. 25, 1906, and closes May 7, 1907.

Buffalo.

University of Buffalo Medical Department.—This was organized in 1846 and has a faculty made up of 47 professors and 45 assistants, lecturers, etc., a total of 92. Buffalo General Hospital, Hospital of the Sisters of Charity, Erie County and German hospitals and the German Deaconess' Hospital supply ample clinical material for study. A college dispensary, recently organized, is also of value in practical work. The buildings and hospitals are well equipped for clinical and laboratory work. Bedside instruction is insisted on and the senior students are permitted to assist in operations and give anesthetics. This school is a member of the Association of American Medical Colleges. The course covers four years of eight months each. The tuition is $125 each year; this does not include laboratory fees. The Dean is Dr. Matthew D. Mann, 37 Allen St. Total registration for 1905-6 was 225; graduates, 44. The sixty first session opens Sept. 24, 1906, and closes May 31, 1907.

Syracuse.

College of Medicine, Syracuse University.—This school was organized in 1872 as the Medical Department of Syracuse University. The faculty is composed of 14 professors and 40 lecturers, instructors, etc., in all 54. Clinical facilities are furnished by St. Joseph's Hospital, Hospital of the Good Shepherd, Syracuse Hospital for Women and Children, Onondaga County Orphan Asylum and the Syracuse Free Dispensary. The laboratories and amphitheaters are large and well equipped. The curriculum embraces a four years' graded course, eight months making a school year. The average total fees for each of the four years is $167.25. The Dean is Dr. Gaylord P. Clark, 619 West Genessee St. Total number of students registered for 1905-6 was 153; graduates, 23. The next session opens Oct. 2, 1906, and closes June 12, 1907.

NORTH CAROLINA.

North Carolina, population 1,893,810, has four medical schools which grant degrees and one which gives only the first two years of the medical course. The Medical Department of the University of North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 13,934. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is located at Davidson, population 904, and at Charlotte, population 20,050. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill and Raleigh.

University of North Carolina Medical Department. — This school was organized in 1891 and formerly gave only the work of the first two college years at Chapel Hill. In 1902 the course was extended to four years by the establishment of a department at Raleigh, in which the last two years are given. Degrees are now conferred and the faculty in the completed school of medicine numbers 39. It is a member of the Association of American Medical Colleges. The number of students enroled in 1905-6 was 94, graduates, 11. Total fees are $85 per year. Board, room, light and heat may be had for from $84 to $102 per college year. The President is Dr. F. P. Venable, Chapel Hill. The Dean of the Department at Raleigh is Dr. H. A. Royster. The next session will begin Sept. 10, 1906, and end June 7, 1907.

Raleigh.

Leonard School of Medicine.—Colored. This department of Shaw University was established in 1882 by the American Baptist Home Mission Society to train colored students of medicine. It has a faculty of 10. A free hospital and dispensary supply clinical material. A preliminary entrance examination is given to applicants not possessing a certificate or diploma of educational requirements. The course covers four years of seven months each. The total fees for each year are $75. The dormitory plan is adopted generally, and board and room cost $2 a week. The Dean is Dr. James McKee. Total enrolment for 1905-6 was 147; graduates, 33. Next session opens Oct. 1, 1906, and closes May 1, 1907.

Davidson and Charlotte.

North Carolina Medical College.—This school was organized in 1893 and has a faculty of 16 professors and 8 assistants, a total of 24. The Presbyterian Hospital in Charlotte supplies the clinical facilities. The course covers four years of eight months each, the last two years being given at Charlotte. Fees: First three years, $85 each, and $100 for the fourth year. The President is Dr. J. P. Monroe, of Davidson. Dr. I. W. Faison, Charlotte, is Dean of the Charlotte faculty. The total registration for 1905-6 was 92; graduates, 24. The next session begins Sept. 6, 1906, and closes April 15, 1907.

Wake Forest.

Wake Forest School of Medicine.—This school was organized in 1902. It only gives the first two years of the medical course. Each annual course extends over nine months. The school is a member of the Association of American Medical Colleges. It has a faculty of 10 and last year enroled 20 students. The fees are $85 a year. The Dean is Dr. Frederick K. Cooke. The next session opens Aug. 29, 1906, and closes June 1, 1907.

NORTH DAKOTA.

North Dakota, population 319,146, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University. Only the first two years of the medical course are given, which may be elected as the last two years of the A.B. degree.

University.

University of North Dakota College of Medicine.—This department was organized in 1905. The faculty is composed of 5 professors and 7 instructors, a total of 12. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The completion of this work in a satisfactory manner entitles the student to the A.B. degree from this institution, and a certificate of completion of the medical subjects embraced in the course. The total fees for each of the medical subject years are $50. The Dean is M. A. Braunon. The enrolment during 1905-6, the first session, was 7. The second session begins Sept. 25, 1906, and closes June 13, 1907.

OHIO.

Ohio, population 4,157,545, has ten medical colleges. Four of these, the Medical College of Ohio, Eclectic Medical Institute, Miami Medical College and Pulte Medical College are located in Cincinnati, a city of 332,934 inhabitants. The clinical advantages of Cincinnati are good; beside many smaller hospitals, the Cincinnati Hospital is open to the students for study. Board can be procured in Cincinnati for from $3 to $5 per week. The Laura Memorial Woman's Medical College has ceased to exist.

Cleveland, population 414,950, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. The City Hospital, with 275 beds, is used in common by them for clinical study. Board and lodging can be had for from $2.50 to $5 a week.

Columbus, population 135,487, contains two; Starling Medical College and Ohio Medical University. Board and lodging cost from $2.50 to $5 per week.

Toledo, with 145,901 people, has one medical school, Toledo Medical College. It has good clinical advantages. Board and room can be had for from $3 to $5 a week.

Cincinnati.

Medical College of Ohio.—This is the Medical Department of the University of Cincinnati, organized in 1819, and has a faculty made up of 25 professors, 24 lecturers and assistants, a total of 49, there being also 34 clinicians to the dispensary. Good Samaritan Hospital, with 100 beds; Cincinnati Hospital, with 550 beds, furnish opportunities for bedside instruction, and a well-equipped college dispensary furnish clinical facilities. The buildings supply ample laboratory and lecture-room space and their equipment is good. The course of study is graded and covers four years of eight months each. This school is a member of the Association of American Medical Colleges. The lecture fees are $125 each year for each student entering after July 1, 1903; $100 each year for those who have matriculated prior to July 1, 1903. In addition there is a matriculation fee of $5, payable but once, and a graduation fee of $25. Total registration of students for 1905-6 was 137: graduates, 33. The Dean is Dr. F. Forchheimer. The next session begins Sept. 28, 1906, and ends June 1, 1907.

Miami Medical College.—This school was organized in 1852 and has a faculty of 22 professors and 29 lecturers and demonstrators, a total of 51. The clinical facilities are furnished by the Cincinnati Hospital and a college dispensary. This college is a member of the Association of American Medical Colleges. The curriculum embraces a four-year graded course of eight months each. The total fees are, for the first year, $130: for the second and third, $125, and $150 for the fourth year. The Dean is Dr. J. C. Oliver, 628 Elm St. The total registration for 1905-6 was 78; graduates, 24. The next session opens Oct. 1, 1906, and closes June 1, 1907.

Eclectic Medical Institute.—This school, organized in 1845, has a faculty of 17 professors and 12 lecturers and assistants, a total of 29. The Seton Hospital, Cincinnati Hospital and a college dispensary furnish clinical material. It is a member of the National Confederation of Eclectic Medical Colleges. The course covers four years of thirty-one weeks each. The fees are $75 for each year, with a graduation fee of $25. The Dean is Dr. Rolla L. Thomas, 792 East McMillan St. Total enrolment, 1905-6, was 116; graduates, 35. The next session begins Sept. 17, 1906, and closes April 17, 1907.

Pulte Medical College.—Homeopathic. This was organized in 1872 and has a teaching force of 20 professors and 14 assistants, 34 in all. Pulte Hospital, Cincinnati Hospital, Bethesda Hospital, Home of the Friendless and Foundlings and a college dispensary supply clinical material. The curriculum covers four years of seven months each. Fees: First year, $80; for the second and third, $75 each, and $100 for the fourth. The Dean is Dr. Charles E. Walton. Total enrolment for 1905-6 was 13; graduates, 3. The next session opens Oct. 3, 1906, and closes May 1, 1907.

Cleveland.

The Cleveland College of Physicians and Surgeons.—This school was organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. The faculty is composed of 31 professors, 30 lecturers, assistants, instructors, etc., 61 in all. Cleveland General Hospital, Cleveland City Hospital and a college dispensary are used for regular clinical teaching. St. Alexis, St. John's, St. Clair and Mount Sinai hospitals are utilized for extramural clinics. This school is a member of the Association of American Medical Colleges. The school is co-educational. The total annual fees are $130. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 785 Prospect St. Total enrolment for 1905-6 was 88; graduates, 22. The next term opens Oct. 1, 1906, and closes May 22, 1907.

Western Reserve University Medical College.—The Medical Department was organized in 1843. Its teaching faculty includes 22 professors, 34 lecturers, demonstrators and assistants, a total of 56. Clinical facilities are offered students of this school by Lakeside Hospital, having 250 beds; St. Vincent's Hospital, having about 150 beds; City Hospital, with 250 beds; St. Alexis Hospital, with 250 beds, and the Home of Maternity, with the dispensary service at Lakeside and Charity hospitals, and a tuberculous dispensary at the college. The laboratory chairs are endowed, the teachers devoting their entire time to teaching and research work. A clinical laboratory has recently been added, where a systematic course of instruction is given. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Ave. Total enrolment for 1905-6 was 85; graduates, 12. The next session begins Oct. 1, 1906, and closes June 13, 1907.

Cleveland Homeopathic Medical College.—This school was founded in 1897 by a consolidation of Cleveland University of Medicine and Cleveland Medical College, the former of which was incorporated in 1850, and is the second oldest homeopathic medical college in the United States. The faculty includes 35 professors and 18 adjuncts, lecturers, etc., 53 in all. The clinical facilities are obtained from the Cleveland Homeopathic Hospital, the Cleveland City Hospital, the Cleveland Maternity Hospital, and a college dispensary. The course embraces four years of thirty weeks each. Fees, $125 per year. The Dean is Dr. George H. Quay. Total number of students registered, 1905-6 was 50; graduates, 14. The next session opens Sept. 26, 1906, and closes May 15, 1907.

Columbus.

Ohio Medical University.—This school was organized in 1890, and has a faculty of 22 professors, 6 instructors, 5 assistants and 2 demonstrators, 35 in all. The Protestant Hospital, State Hospital, Ohio Penitentiary Hospital and a college dispensary provide material for clinical work. This school is a member of the Association of American Medical Colleges. The course is four years of 34 weeks each. Fees: First year, $105; second year, $100; third year, $100, and $110 for the fourth year. The Dean is Dr. George M. Waters. Total students for 1905-6 was 142; graduates, 42. The next session begins Sept. 11, 1906, and closes May 7, 1907.

Starling Medical College.—This school was organized in 1847 and has a faculty composed of 19 professors and 20 lecturers, associates, etc., a total of 39. St. Francis Hospital, which is under the control of this faculty; Hawkes' Hospital of Mt. Carmel, the Lawrence Hospital, St. Anthony Hospital and a college dispensary are available for clinical study. This college is a member of the Association of American Medical Colleges. The work covers four years of thirty weeks each. Fees: $100 per year; matriculation fee, $5: graduation fee, $10. The Dean is Dr. Charles S. Hamilton. Enrolment for 1905-6 was 86; graduates, 30. The sixtieth session opens Sept. 12, 1906, and closes May 9, 1907.

Toledo.

Toledo Medical College.—The school was organized in 1882, and in 1904 became the Medical Department of Toledo University. It has a faculty of 20 professors, 20 lecturers and assistants, in all 40. Toledo Hospital, St. Vincent's and Robinwood hospitals, Lucas County Infirmary Hospital, Toledo Hospital for the Insane, and a free dispensary supply clinical facilities. This college is a member of the Association of American Medical Colleges. The curriculum embraces four years of eight months each. The fees are $75 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. Park L. Myers, 2730 Monroe St. Total enrolment for 1905-6 was 22; graduates, 9. The next session opens Sept. 22, 1906, and closes May 11, 1907.

OKLAHOMA.

Oklahoma, population 398,331, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 2,225 inhabitants, and the College of Medicine of Epworth University, located at Oklahoma City, which has a population of 12,800.

Norman.

School of Medicine, University of Oklahoma.—This school was organized in 1903 and gives only the first two years of the medical course, each session extending over a period of nine months. Two courses are offered, one covering two years, at the completion of which a certificate is given: the other a combined course of four years, leading to the degree of B.S. Students are encouraged to take the latter course. The college has a faculty of 10. The school is a member of the Association of American Medical Colleges. Total registration for 1905-6 was 16. The Dean is Dr. R. P. Stoops; the Corresponding Secretary E. M. Williams. The next session begins Sept. 11, 1906, and ends June 13, 1907.

Oklahoma City.

College of Medicine Epworth University.—Organized in 1904, giving only the first year of the medical course. The full four years' course has been given since Oct. 1, 1905. The faculty consists of 15 professors and 12 assistants, instructors, etc., a total of 27. the Oklahoma City, and St. Anthony's hospitals, Amie Rescue Home and a college dispensary furnish material for clinical instruction. The laboratories are well supplied and the lecture rooms are large, well lighted and well ventilated. The entrance requirement is a high school diploma or its equivalent. The course of study embraces graded work for four years of seven months each. The total fees are about $70 each year. The Dean is Dr. A. K. West; Secretary, Dr. H. C. Todd. The registration for 1905-6 was 16; no graduates. The next session begins Oct. 7, 1906, and ends May 7, 1907.

OREGON.

Oregon, population 413,536, has two medical colleges: Medical Department Willamette University, located in Salem, a city of 4,258 people, and University of Oregon Medical Department, in Portland, a city of 98,655 population. Board and lodging may be obtained in Salem for from $3 to $5 per week and in Portland for from $4 to $6.

Salem.

Medical Department Willamette University.—The school was organized in 1864. The faculty consists of 16 professors and 3 assistants, a total of 19. Clinical facilities for study are supplied by Salem Hospital, and a college dispensary. This school is a member of the Association of American Medical Colleges. The course embraces four years' work of seven months each. Fees: First and second years, $110 each; third, $75, and $50 for the fourth year. The Dean is Dr. W. H. Byrd. Total enrolment for 1905-6 was 50; graduates, 15. The next session begins Oct. 1, 1906, and ends May 10, 1907.

Portland.

University of Oregon Medical Department.—This department of the State University was organized in 1887, and has a faculty of 14 professors and 22 assistants, lecturers, etc., a total of 36. Good Samaritan and St. Vincent's hospitals, containing 200 and 350 beds, respectively, and Multomah County Hospital furnish good material for clinical study. Out-patient clinics are held at Pilgrim Chapel. The requirements for admission are those of the Association of American Medical Colleges, but the members of the faculty do not hold examinations for entrance. The college building is modern and well equipped, presenting ample teaching facilities. The course is four years of seven and one-half months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Joseph. The total number of students for 1905-6 was 82; graduates, 16. The next session opens Sept. 17, 1906, and closes May 1, 1907.

PENNSYLVANIA.

Pennsylvania, population 6,302,115, has seven medical colleges. Of these Philadelphia, having a population of 1,367,716, contains six, as follows: University of Pennsylvania Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple College Department of Medicine. The clinical facilities of Philadelphia present abundant and varied material for study. Beside the individual hospitals connected with each of the schools the charity hospitals are open to all the students in common. Board and lodging cost from $4 a week upward.

The other school, Western Pennsylvania Medical College, is situated in Pittsburg, a city of 345,043 people. The cost of board and lodging is from $4 to $6 a week.

Philadelphia.

University of Pennsylvania Department of Medicine.—This is the first medical college established in this country, having been organized in 1765 as the Medical Department of the College of Philadelphia; the first degree was granted in 1768. When from the College of Philadelphia the University of Pennsylvania was organized in 1791, it became the Medical Department of the University, its present relation. The faculty is made up of 27 professors, 2 associate professors, 4 adjunct professors, 6 assistant professors, 106 demonstrators, lecturers, associates, instructors, etc., a total of 145. Abundant and varied clinical material is furnished by the University Hospital, capacity 300 beds, which treats over 14,000 cases annually; University Maternity Pavilion, with 50 beds; Philadelphia Hospital, containing 1,000 beds; Pennsylvania Hospital, Children's Hospital and the Southeastern Hospital and Dispensary. Special attention is paid to bedside instruction and to thoroughly practical work. Applicants for admission must furnish evidence of the education required to enter the academic department of the university. The buildings known as Medical Hall, Medical Laboratory Building, the laboratories of Pathology, Physiology and Pharmacology, the Laboratory of Hygiene, the Wistar Institute of Anatomy, and the Wm. Pepper Clinical Laboratory supply excellent laboratory and lecture room facilities and are well equipped. The course embraces study for four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total enrolment for 1905-6 was 577; graduates, 103. The next session opens Sept. 28, 1906, and closes June 19, 1907.

Jefferson Medical College of Philadelphia.—This school was organized in 1825, and has a faculty of 31 professors and 82 lecturers, demonstrators, etc., a total of 113. Jefferson Hospital, together with its maternity Department, are used exclusively by students of the school for clinical study. Bedside instruction is given daily to small sections of the senior class. In addition, the following hospitals are open for study of clinical cases: Pennsylvania, Philadelphia, St. Joseph's, German, Municipal and Wills Eye hospitals. The course of study covers graded work of four years of eight months each. The laboratories are large and well equipped, a new five-story laboratory building having recently been added; the lecture rooms and amphitheaters are also ample. A new fireproof hospital is now building, to cost $1,000,000, to be finished in 1906. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total number of students for 1905-6 was 617; graduates, 200. The next session opens Sept. 24, 1906, and closes June 4, 1907.

Medico-Chirurgical College of Philadelphia.—This school was organized in 1881, and has a faculty made up of 25 professors and 58 assistants, lecturers, etc., 83 in all. Opportunities for clinical study are offered exclusively to students of this school by the Medico-Chirurgical Hospital, with 125 beds, and its children's and maternity hospital, having 30 beds. In common with other schools, the following are used: Philadelphia, Pennsylvania, German, Samaritan, St. Joseph's, St. Agnes', St. Mary's, Methodist, Jewish and the Philadelphia Lying-in hospitals. With new laboratories, lecture rooms, a modern hospital and fine clinical amphitheater, this college is amply provided and the equipment is good. The work embraces four years of eight months each. Fees: $150 per annum; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. Total enrolment, 1905-6 was 467; graduates, 84. The next session opens Sept. 24, 1906, and will close June 1, 1907.

Woman's Medical College of Philadelphia.—This school was organized in 1850, and has a faculty of 10 professors and 37 assistants, lecturers, etc., in all 47. Clinical facilities are offered by the Hospital of the Woman's Medical College of Pennsylvania, Woman's Hospital, West Philadelphia Hospital for Women, German, Jewish, Children's and Philadelphia hospitals, Presbyterian Hospital, Wills Hospital for Diseases of the Eye, the Howard Hospital and the Philadelphia Lying-in Charity. The lecture room and laboratory equipment is good. The curriculum covers four years of eight months each. Fees: $140 each year. The Dean is Dr. Clara Marshall. Total enrolment for 1905-6 was 136; graduates, 25. The next session begins Sept. 26, 1906, and will end May 22, 1907.

Hahnemann Medical College and Hospital.—Homeopathic. This was organized in 1848 and has a faculty of 30 professors and 44 lecturers, instructors, etc., in all 74. Hahnemann College Hospital furnishes material for clinical work. The requirements for admission are those established by the Medical Council of Pennsylvania. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. Total number of students for 1905-6 was 186; graduates, 52. The Dean is Dr. Herbert L. Northrop. The next session begins Sept. 25, 1906, and will end May 24, 1907.

Medical Department of the Temple College.—This department was organized in 1901, and has a faculty of 18 professors and 32 assistants, etc., a total of 50. Instruction is given in the evening, and the course extends over five years of nine months each. The fees are $125 per year. The Dean is Dr. I. Newton Snively. The enrolment for 1905-6 was 101; graduates, 14. School opens Sept. 15, 1906, and closes June 11, 1907.

Pittsburg.

Western Pennsylvania Medical College.—This is the Medical Department of the Western University of Pennsylvania, and was organized in 1886. The faculty is composed of 47 professors and 57 associates, assistants, etc., 104 in all. Clinical material for study is furnished by a college dispensary, and the Emma Kaufman Clinic, Reineman Maternity Hospital, Mercy, South Side, Passavant and St. John's hospitals. This school is a member of the Association of American Medical Colleges. The course of study embraces graded work for four years of nine months each. Special attention is given to practical bedside work. The total fees are $150 for each year. The Dean is Dr. J. C. Lange. Total enrolment for 1905-6 was 307; graduates, 46. The next session begins Oct. 1, 1906, and will close June 12, 1907.

PHILIPPINE ISLANDS.

Manila.

University of Saint Thomas Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1871. The faculty consists of 19 professors. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Vetasquez; the Secretary of the medical department is Lic. Blas C. Alcuaz. Total registration for 1904-5 was 310; given degree of *licenciado*, 26; given M.D., 11. The course began July 2, 1905, and ended March 6, 1906.

SOUTH CAROLINA.

South Carolina, population 1,340,316, has one medical college, situated in Charleston, a city of 56,062 people. Board and room can be obtained for from $12 to $16 a month.

Charleston.

The Medical College of the State of South Carolina.—This school was founded in 1823. The faculty is made up of 10 professors and 10 assistants, etc., 20 in all. The clinical facilities are those offered by the New Roper Hospital, capacity 150 beds and having indoor and outdoor departments, where surgical, obstetrical and medical instruction is given. Applicants for matriculation must show diplomas of graduation from some literary or scientific institution of learning or certificates from some legally constituted high school or evidences of education satisfactory to the faculty. The course covers four years of six months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Edward F. Parker. Total enrolment for 1905-6 was 97; graduates, 8. The next session opens Oct. 2, 1906, and closes April 15, 1907.

TENNESSEE.

Tennessee, population 2,020,616, has eleven medical colleges. Of these the Medical Department of the University of Nashville, Vanderbilt University Medical Department, University of Tennessee Medical Department and Meharry Medical College are situated in Nashville, a city with a population of 80,865. The City Hospital, containing 100 beds, is used by all the schools in common for clinical study. Board and lodging cost from $3 to $4 a week.

Knoxville, population 34,344, contains two colleges, Tennessee Medical College and Knoxville Medical College. The cost of room and board in that city is from $2.50 to $4 a week.

Chattanooga Medical College and Chattanooga National Medical College are situated in Chattanooga, a city of 30,469 people. Board and lodging cost there from $2 a week upward.

Memphis Hospital Medical College and the College of Physicians and Surgeons are located in Memphis, population 113,669. Good board can be obtained for from $3 to $4 a week.

The University of West Tennessee is in Jackson, whose population is 15,852.

The other school, the Sewanee Medical College, is located at Sewanee, a mountain town of 600 people.

Nashville.

University of Nashville Medical Department.—This school, established in 1850, has a faculty of 11 professors and 12 lecturers, assistants, etc., in all 23. This school is a member of the Southern Medical College Association. The course of study covers four years of twenty-six weeks each. The tuition for each of the four years is $75. The Dean is Dr. William G. Ewing. Total enrolment for 1905-6 was 298; graduates, 42. The next session begins Oct. 1, 1906, and ends March 29, 1907.

Vanderbilt University Medical Department.—This school was founded in 1874, and in 1895, when the present medical building was completed, the course was extended, the standard raised. The present faculty of 35 consists of 20 professors and 15 lecturers, etc. The school is a member of the Southern Medical College Association. The course covers four years of seven months each. The minimum entrance requirement is a high school diploma or its equivalent. The total fees for the first three years are $105 each and $130 for the fourth year. The Dean is Dr. William L. Dudley. Total enrolment for 1905-6 was 197; graduates, 36. The next session begins on or about Oct. 1, 1906, and ends May 1, 1907.

University of Tennessee Medical Department.—This was organized in 1876 as the Nashville Medical College; its present relations were assumed in 1879. The faculty is composed of 16 professors and 10 lecturers, assistants, etc., 26 in all. The school is a member of the Southern Medical College Association. The course of study includes work for four years of seven months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. Paul F. Eve, 614 Broad St. Total enrolment for 1905 6 was 182 students; graduates, 25. The next session begins Oct. 1, 1906, and ends May 1, 1907.

Meharry Medical College.—Colored. This school was organized in 1876 as the Medical Department of Central Tennessee College, now Walden University, "for the purpose of furnishing to the colored people of the South an opportunity of obtaining a medical education." The faculty is made up of 12 professors and 13 instructors, demonstrators, etc., 25 in all. The work embraces a four-year graded course, seven months to the year. The total fees for the first three years are $50 each, and $60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1905-6 was 321; graduates, 68. The next session begins Sept. 5, 1906, and ends April 5, 1907.

Knoxville.

Tennessee Medical College.—This school was organized in 1889, and has a faculty of 14 professors and 12 assistants, 26 in all. This school is coeducational. The Tennessee Medical College is now the medical department of the Lincoln Memorial University. A new college building with large and well-filled laboratories has been completed. The Lincoln Memorial Hospital, owned and controlled by the faculty, adjoins the college building and furnishes material for clinical study. This school is a member of the Southern Medical College Association. The curriculum includes graded work for four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The Registrar is Dr. E. R. Zemp. Total number of students for 1905-6 was 80; graduates, 19. Next session begins Nov. 1, 1906, and closes about June 1, 1907.

Knoxville Medical College.—Colored. This school was established in 1900, following the discontinuance of the Medical Department of Knoxville College, organized in 1895. The teaching force comprises 12. The course covers four years of seven months each. Fees, $40 per year. The Secretary is Dr. H. M. Green. Total number of students for 1905-6 was 45; graduates, 4. The next session opens Nov. 10, 1906, and closes June 1, 1907.

Chattanooga.

Chattanooga Medical College.—This is the Medical Department of Grant University and was organized in 1889. The faculty consists of 10 professors and 16 instructors, demonstrators, etc., total 26. Adequate clinical facilities are afforded by the wards of Baroness Erlanger Hospital, a county asylum, an outdoor clinic maintained in the college building, and all material furnished by the city physician's office which the faculty desires to utilize. The scholastic requirements are those of the Southern Medical College Association, of which this school was a charter member and to which it belongs. These requirements involve a strictly graded course covering four years of seven months each. The total fees approximate $55 each session. The trustees materially added to the general facilities of the institution by the erection of another fine four-story building of brick and stone for the medical department three years ago, wherein much modern and elaborate equipment has been installed. The Dean is Dr. J. R. Rathmell. The total enrolment for the session of 1905-6 was 267; graduates, 33. The next session opens about Oct. 1, 1906, and ends April 30, 1907.

Memphis.

Memphis Hospital Medical College.—This school, organized in 1878, has a faculty of 10 professors and 18 assistants, beside quiz masters. Excellent clinical facilities are furnished by the City Hospital, Presbyterian Hospital, St. Joseph's Hospital and the East End Dispensary, the latter being located in the college building. The course includes graded work for four years of seven months each. The total fees for the first three years are $75; for the fourth, $100. The Dean is Dr. W. B. Rogers. Total registration for 1905-6 was 492; graduates, 82. The twenty-seventh annual session will begin Oct. 1, 1906, and close April 30, 1907.

College of Physicians and Surgeons.—This college was organized in 1906 and has a faculty of 20. The new building will be ready for the beginning of the first course of lectures, which will start October 1. The Memphis City Hospital is immediately opposite the college building. Access will also be had to St. Joseph's, Presbyterian and Lucy Brinkley hospitals. Laboratories will be well equipped. The course will cover four years of seven months each. The Dean is Dr. Heber Jones, Tennessee Trust Building.

Jackson.

Medical Department of the University of West Tennessee.—Colored. This school, organized in 1900, has a faculty of 10. The course is four years of seven months each. The fees are $40 per year; graduation, $10 extra. Registration for 1905-6 was 40; graduates, 4. The next session opens Sept. 24, 1906, and closes April 24, 1907.

Sewanee.

Medical Department of the University of the South.—This school was organized in 1892 and has a faculty of 21 members. It is a member of the Southern Medical College Association. The required curriculum is four courses of seven months each, with an interval of eleven months between matriculations. The requirements for entrance on the study are a recommendation from two well-known physicians and a certificate of a high school training. The Dean is Dr. J. S. Cain. Total enrolment for 1905-6 was 119; graduates, 28. The fourteenth course opened April 2, 1906, and closes Oct. 30, 1906.

TEXAS.

Texas, population 3,048,710, has seven medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 37,789 inhabitants. Good board and room can be procured for from $15 to $20 a month.

The Medical Department of Fort Worth University is at Fort Worth, population 27,192. The cost of board and room in that city is from $12 to $15 a month.

The Baylor University College of Medicine, the Medical Department of Southwestern University, the College of Physicians and Surgeons and the Physio-Medical College of Texas are situated in Dallas, population 44,159.

The Gate City Medical College is situated in Texarkana, having a population of 5,256.

Dallas.

Baylor University College of Medicine.—This is a new name for the University of Dallas Medical Department, which was organized in 1901. In June, 1903, it became the Medical Department of Baylor University at Waco. In 1905 it merged with the Dallas Medical College. The faculty numbers 20 professors and 16 assistants, total 36. Parland Hospital, with 90 beds; St. Paul's Sanitarium, Baptist Memorial Hospital and a college dispensary and hospital are utilized for clinical study. The course covers four years of seven months each. The school is a member of the Association of Southern Medical Colleges. The fees are $75 for each of the four years, with a matriculation fee of $5, paid once, and a graduation fee of $25. The Dean is Dr. E. H. Cary. Total registration for 1905-6 was 70; graduates, 8. The next session opens Oct. 1, 1906, and closes May 1, 1907.

Southwestern University Medical College.—This is the Medical Department of Southwestern University and was organized in June, 1903. It has a faculty of 17 professors and 14 instructors, total 31. The course of instruction is graded and covers four years in medicine and two in pharmacy. Requirements for admission are equivalent to those prescribed by the Association of American Medical Colleges. The fees are: Matriculation, $5, paid once; annual tuition, $75; graduation, $25. The hospitals represented by the faculty and open for clinical teaching are St. Paul's Sanitarium, City Hospital, Texas Baptist Memorial Hospital, Children's Home, Mission Home, Woman's Home, St. Joseph Orphanage, St. Matthew's Home for Children, Dr. H. K. Leake's Private Infirmary and Outdoor Clinic of the Settlement Home. The Dean is Dr. John O. McReynolds. Total registration, 1905-6, was 85; graduates, 7. The fourth session opens Oct. 1, 1906, and closes May 3, 1907.

College of Physicians and Surgeons.—This school was founded in 1904 as the Bell Medical College, and in 1905 the name was changed to the above. It has a total teaching staff of 15. The course of instruction extends over four years of six months each. The requirements for admission are the same as those prescribed by the Association of Southern Medical Colleges. Clinical instruction is given in the City Hospital, St. Paul Sanitarium and the college dispensary. The fees for the first three years are $80, and $105 for the fourth year. The Dean is Dr. Arthur C. Bell. Total registration for 1905-6 was 95; graduates, 18. The next session begins Oct. 2, 1906, and closes April 3, 1907.

Physio-Medical College of Texas.—This college was organized in 1902. It has a faculty of 22 professors and 4 assistants, total 26. The course is four years of thirty weeks each. The fees are, first year, $70; fourth year, $85; other years, $65. Enrolment, 1905-6, was 47; graduates, 11. The secretary is Dr. R. L. Spann. The next session opens Oct. 15, 1906, and closes May 15, 1907.

Galveston.

University of Texas Medical Department.—This department of the State University was organized in 1891 and has a faculty of 23. The John Sealy Hospital, also having an outdoor department, and St. Mary's Infimary supply good material for clinical study. Requirements for admission: (*a*) Admission Without Examination.—Graduates of approved schools and colleges, graduates of affiliated high schools, holders of first-grade state teachers' certificates and students of approved colleges and universities are admitted without entrance examination. (*b*) Admission on Examination.—Examinations on the following prescribed subjects are required to begin the study of medicine: English, 3½ units; history, 1½ units; algebra, 1½ units, and 1½ units in either geometry, Latin or physics. (A unit is a high-school course pursued for one session.) For full admission credit must be secured in five additional units from elective subjects in languages and sciences if Latin be included, or in six units if Latin be not included. Students who do not secure credit for all the electives at the time of entrance may do so during the summer vacations, but they must do so before they can become candidates for the degree. The curriculum embraces graded work for four years of eight months each. All laboratories are completely equipped. Fees: First year, $50; second and third, each $20, and $5 for the fourth. The Dean is Dr. William S. Carter. Total registration for 1905-6 was 189; graduates, 31. The next session begins Oct. 1, 1906, and ends May 31, 1907.

Fort Worth.

Medical Department of Fort Worth University.—This school was organized in 1894 and has a faculty of 15 professors and 22 lecturers, assistants, etc., in all 37. Clinical facilities are supplied by St. Joseph's Hospital, with 200 beds; the Benevolent Home, containing 75 beds; the Gelia Collins' Rescue Home, having 50 beds, and a college dispensary. The school is a member of the Southern Medical College Association. The course covers four years of seven months each. The total fees for each of the first three years are $75 and $100 for the fourth year. The Dean is Dr. Frank Gray. The total enrolment for 1905-6 was 192; graduates, 23. The next session opens Oct. 3, 1906, and closes May 3, 1907.

Texarkana.

Gate City Medical College.—The length of each course is seven months. The faculty numbers 20 professors and assistants. Registration, 1905-6, was 156; graduates, 40. The Dean is Dr. J. W. Decker. The next session begins Oct. 1, 1906, and ends May 4, 1907.

UTAH.

Utah, population 276,749, has one medical college, situated at Salt Lake City, which has 57,138 people. This college is the Medical Department of the University of Utah, which gives only the first two years of the medical course.

Salt Lake City.

University of Utah Department of Medicine.—This department was organized in 1906 and offers the first two years of the medical course, each year extending over thirty-six weeks. Two courses are offered, a two-year course of the standard medical course leading to a special certificate and a four-year course consisting of two years in the College of Arts, the two years in medicine being counted as the junior and senior years, which gives the A.B. degree and a special certificate. The medical faculty consists of 7 professors and 16 lecturers and assistants, a total of 23. Fees: V. Chamberlin, Ph.D. The enrolment for 1905-6, the first session, was 30. The second session begins Sept. 17, 1906, and ends June 6, 1907.

VERMONT.

Vermont, population 343,641, has one medical school, located at Burlington, a town of 19,885 people. Board and room cost from $3.50 to $5 a week.

Burlington.

University of Vermont College of Medicine.—This school was organized in 1822, but suspended from 1836 until 1854, when it was reorganized. The faculty consists of 21 professors and 21 assistants, instructors, etc., in all 42. The Mary Fletcher Hospital and a free dispensary furnish material for clinical instruction. Applicants for admission must be graduates of a four-year high school course or take an examination to show equivalent educational qualifications. The laboratory and lecture-room space and equipment are good. A new and commodious college building has just been completed and is now in use. The course of study embraces graded work for four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, H. L. White, A.M. Total registration of students for 1905-6 was 169; graduates, 47. The fifty-fourth session begins Dec. 1, 1906, and ends June 28, 1907.

VIRGINIA.

Virginia, population 1,854,184, has three medical colleges, situated in Charlottesville, population 6,449, and Richmond, population 86,148. The clinical facilities in Richmond are good. Board and room can be obtained for $18 a month and upward in Charlottesville, and from $12 to $20 a month in Richmond.

Charlottesville.

University of Virginia Department of Medicine.—This school was organized in 1827 and has a faculty of 24. A free dispensary and the new four-story hospital furnish clinical facilities. The requirements for admission are those of the Association of American Medical Colleges. The course is four years of nine months each. Fees: First year, $110; second, $100; third, $80, and $60 for the fourth year. The Dean is Dr. R. H. Whitehead. Total enrolment for 1905-6 was 122; graduates, 21. The eighty-second session opens Sept. 13, 1906, and closes June 11, 1907.

Richmond.

Medical College of Virginia.—This school was organized in 1838 as the Medical Department of Hampden Sidney College, Virginia. In 1854 it was granted a charter by the legislature of Virginia as an independent institution under its present name. In 1860 the college and its appurtenances were deeded to the State of Virginia in consideration of an appropriation on the part of the state of a sufficient sum to build a hospital, since which time it has continued as a state institution. During the war between the states it was the only medical college in the Confederacy which did not close its doors. It held two sessions a year during this period, and a large proportion of the surgeons of the Confederate Army were graduates of this school. Clinical material was formerly furnished by the Old Dominion Hospital, but more recently by the Memorial Hospital, opened in July, 1903, and the City Free Dispensary, both of which are under the exclusive control of the college. The State Penitentiary Hospital and other public charities and asylums of the city afford ample opportunity for additional clinical work. This school is a member of the Southern Medical College Association. The buildings are large and numerous and contain well-equipped laboratories and amphitheaters. The course embraces four years of nearly eight months each. The fees are $100 for each year, with an additional graduation fee of $30. The Dean is Dr. Christopher Tompkins. Total registration for 1905-6 was 242; graduates, 45. The next session begins Sept. 25, 1906, and will end May 14, 1907.

University College of Medicine.—This school was organized in 1893 and has a faculty of 19 professors, 41 lecturers, assistants, etc., a total of 60. Good clinical facilities are furnished by Virginia Hospital, with a maternity department and annex, which was built especially for the purpose of affording bedside instruction and is owned and operated by the college; Richmond Eye, Ear and Throat Infirmary, containing 34 beds; the City Hospital, City Jail, State Penitentiary and a college dispensary. Matriculation is in accord with the rules of the Association of American Medical Colleges and of the Southern Medical College Association, to both of which this college belongs. The laboratory and lecture-room space and equipment are ample, and some of the instructors devote their entire time to the laboratories. The school lays especial importance on the careful instruction and guidance of each student. The curriculum covers four years of thirty-four weeks each. The total fees are $100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. Landon B. Edwards. Total enrolment for 1905-6 was 205; graduates, 20. The next session begins Sept. 25, 1906, and ends May 23, 1907.

WEST VIRGINIA.

West Virginia, population 958,800, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 1,900 inhabitants.

Morgantown.

West Virginia University College of Medicine..—This school was organized in 1902 and gives only the first two years of the medical course. Each college term extends over nine months. The degree of M.D. is granted students after they finish the third and fourth years in Baltimore at the College of Physicians and Surgeons. The faculty consists of 5 professors and 4 assistants, 9 in all. The school is a member of the Association of American Medical Colleges. Tuition free to students residing in the state; for others, $37.50 per year. Dr. J. N. Simpson is the Dean and A. J. Collett the Secretary. Total registration in 1905-6 was 35. Next session begins Sept. 14, 1906, and closes June 14, 1907.

WISCONSIN.

Wisconsin, population 2,069,042, has two medical colleges, the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons. They are both situated in Milwaukee, a city of 312,736 people. Clinical facilities are furnished them in common by the County Hospital, with 300 beds, and the Milwaukee Hospital for the Insane. Board and lodging can be had for from $3 to $5 a week.

Milwaukee.

Milwaukee Medical College.—This school was organized in 1893 and has a faculty of 36 professors and 27 lecturers, instructors, etc., a total of 63. Good clinical material is furnished by Trinity and the County Hospitals, Milwaukee Hospital for the Insane and a college dispensary. This school is a member of the Association of American Medical Colleges. Ample laboratory and amphitheater facilities are afforded. The course covers four years of eight months each. The total fees are $125 each for the first three years and $135 for the fourth year. The President is Dr. William H. Earles. Total number of students for 1905-6 was 139; graduates, 15. The thirteenth session begins Sept. 18, 1906, and will close about May 14, 1907.

Wisconsin College of Physicians and Surgeons.—This college was organized in 1893 and has a faculty composed of 28 professors and 29 associates, assistants, etc., a total of 57. St. Joseph's Hospital, containing 150 beds; the college dispensary, the Milwaukee County Hospital and the Hospital for the Insane supply facilities for clinical study. The school is a member of the Association of American Medical Colleges. The laboratories and lecture rooms are well equipped. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $100; for the use of the microscope a fee of $2 is charged for each course.

The Secretary is Dr. W. H. Washburn. Total enrolment for 1905-6 was 86; graduates, 15. The next session begins Sept. 18, 1906, and ends May 16, 1907.

STANDARDS OF MEDICAL EDUCATION ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION, JULY, 1905.

THE IDEAL STANDARD.

The ideal standard to be aimed at from the present viewpoint should consist of: (a) Preliminary education sufficient to enable the candidate to enter our recognized universities. the passing upon such qualifications by the state authorities. (b) A five-year medical course, the first year of which should be devoted to physics, chemistry and biology, and such arrangements should be made that this year could be taken either in a school of liberal arts or in the medical school. Of the four years in pure medical work, the first two should be spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics and the specialties. (c) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years. which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

STANDARD NOW RECOMMENDED.

The standard of requirements now recommended prerequisite to the practice of medicine consists of five cardinal points, as follows:

1. Preliminary requirements to be a high school education or its equivalent, such as would admit the student to one of our recognized universities.

2. Preliminary requirements to be passed on by a state official, such as the superintendent of public instruction, and not by an official of the medical college.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

HISTORY.

1. The above standards are the result of three conferences held by the Council on Medical Education of the American Medical Association at Philadelphia, December, 1904; at Chicago, April, 1905, and at Portland, July, 1905.

2. The Chicago meeting was a conference with representatives of (a) state examining and licensing boards, (b) government medical services, (c) associations of medical colleges and of (d) colleges of liberal arts.

3. Standards were reported to the American Medical Association, referred to a special reference committee and later adopted by the Association at the fifty-sixth annual session, held at Portland, Ore., July 10 to 14, 1905.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

The requirements for admission and graduation to be maintained by colleges holding membership in this Association and the minimum course of study prescribed are as follows:

ARTICLE III.

Section 1.—Every college holding membership in this Association shall demand of each student, under the condition hereinafter stated, as a minimum requirement for admission to the medical course:

(*a*) A bachelor's degree from an approved college or university.

(*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of foreign language, of which one must be Latin, two years (4 points) of mathematics, two years (4 points) of English, one year (2 points) of history, two years (4 points) of laboratory science and six years (12 points) of further credit in language, literature, history or science.

(*c*) An examination in the following branches:

A. Required (18 points): Mathematics (4 points), English (4 points), History (2 points), Language (2 must be Latin), 4 points, Science (taken from physics, chemistry, botany, zoölogy), 4 points.

B. Optional (to 12 points): English, 2 points; History, 6 points; Language, 6 points; Manual Training, 2 points; Mechanical Drawing, 1 point; Natural Science (botany, biology, zoölogy), 2 points; Physical Science (chemistry, physics), 2 points; Trigonometry, 1 point; Astronomy (1), Civics (1), Geology (1), physical Geography (1), Physiology and Hygiene (1), Political Economy (1).

(One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks.)

(*d*) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states not having a board of examiners, may be accepted in lieu of any part of this examination.

Sec. 2.—This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located. In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

Sec. 3.—A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Sec. 4.—Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member of this Association shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications and to the exact work he has done in said college.

Sec. 5.—Candidates for the degree of doctor of medicine shall have attended four courses of study in four calendar years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course.

Sec. 6.—Credit may be given to the holder of a bachelor's degree from an approved college or university for any work in the medical branches which he has successfully completed in his college course only so far as it is the full equivalent of corresponding work in the medical curriculum. The holder of such bachelor's degree may also be given time credits of not exceeding one year, provided that such student has had at least 40 hours in physics, 144 hours in chemistry, 24 hours in osteology, 292 hours in human or comparative anatomy, 124 hours in histology, 85 hours in embryology, 145 hours in physiology and 46 hours in materia medica: provided that the applicant for such time credits satisfies the professors of the chairs mentioned in the medical school as to his proficiency in these fisrt-year medical studies, and satisfies the examiner, as provided for in Section 2, Article III, that his studies for which the degree was conferred include the above requirements. Such student may be allowed to complete a course for the medical degree in not less than 31 months, provided he completes the remainder of the medical curriculum in that time.

Sec. 7.—A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Sec. 8.—Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent. or its equivalent in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

ARTICLE V.

Section 1.—The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the following table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

CURRICULUM.

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total.
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Pactice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60

Continued on page 632.

Name and Location of College.	Population of city in which college is located.	Number of students registered session of 1905-6.		Graduates 1906.		Total number of teachers.	Weeks in college year.	Total graduates all colleges in state 1906.	Total students in all colleges in state 1905-6
		Men.	Women.	Men.	Women.				
ALABAMA								37	230
Birmingham Med. Coll., Birmingham.—R	42,087	72	...	8	..	28	24	...	...
Medical College of Alabama, Mobile.—R	40,686	158	...	29	..	17	24	...	...
ARKANSAS								26	176
Arkansas University, Little Rock.—R	42,036	175	1	26	..	38	28	...	...
CALIFORNIA								128	563
Cooper Med. Coll., San Francisco.—R	355,919	117	19	23	7	61	35	...	...
University of California, San Francisco.—R	355,919	81	9	17	2	62	36	...	...
California Medical College, San Francisco.—E†	355,919	†	...	10	..	26	30	...	...
Hahnemann Medical College, San Francisco.—H	355,919	23	1	4	..	32	33	...	...
College of P. and S., San Francisco.—R	355,919	131	14	25	5	43	32	...	...
Oakland Coll. of Med. and Surg., Oakland.—R	70,386	8	2	4	..	27	35	...	...
University of Southern California, Los Angeles.—R	116,420	117	10	27	1	55	32	...	...
College of P. and S., Los Angeles.—R	116,420	28	3	3	..	36	32	...	...
COLORADO								47	193
Denver and Gross Coll. of Med., Denver.—R	144,588	91	9	24	2	76	33	...	...
Denver Homeo. Coll., Denver.—H	144,588	13	10	3	2	32	32	...	...
Colorado School of Medicine, Boulder.—R	6,150	62	8	14	2	27	36	...	...
CONNECTICUT								25	134
Yale University Med. Dept., New Haven.—R	114,600	134	...	25	..	64	36	...	...
DISTRICT OF COLUMBIA								100	539
George Washington University, Washington.—R	293,217	280	...	51	..	79	33	...	...
Georgetown University, Washington.—R	293,217	102	...	20	..	73	32	...	...
Howard University Medical Dept., Washington.—R	293,217	145	12	28	1	33	32	...	...
GEORGIA								118	569
Atlanta College of P. and S., Atlanta.—R	96,550	180	...	52	..	33	26	...	...
Atlanta School of Medicine, Atlanta.—R	96,550	220	...	21	..	38	28	...	...
Georgia Coll. of Ecl. Med. and Surg., Atlanta.—E	96,550	56	1	15	..	14	23	...	...
University of Georgia, Augusta.—R	41,283	113	...	30	..	25	28	...	...
ILLINOIS								743	3,199
American Med. Missionary Coll., Chicago.—R	1,873,880	53	27	16	7	28	36	...	...
Bennett Coll. of Ecl. Med. and Surg., Chicago.—E	1,873,880	145	21	48	4	52	29	...	...
Coll. of Med. and Surg., Chicago.—Ph.M	1,873,880	30	10	4	1	43	30	...	...
College of P. and S., Chicago.—R	1,873,880	513	43	196	14	198	33	...	...
Hahnemann Med. Coll., Chicago.—H	1,873,880	178	...	47	11	80	31	...	...
Hering Medical College, Chicago.—H	1,873,880	48	...	12	2	55	32	...	...
Illinois Med. Coll., Chicago.—R	1,873,880	187	5	48	..	50	28	...	...
Jenner Med. Coll., Chicago.—*	1,873,880	230	20	37	1	53	38	...	...
Northwestern University, Chicago.—R	1,873,880	580	...	125	..	116	34	...	...
Rush Medical College, Chicago.—R	1,873,880	428	22	79	4	254	34	...	...
National Medical University, Chicago	1,873,880	234	15	26	3	75	36	...	...
American Coll. of Med. and Surg., Chicago.—R	1,873,880	178	11	21	2	65	30	...	...
Dearborn Med. Coll., Chicago.—R*	1,873,880	208	13	34	1	42	39	...	...
INDIANA								134	403
Indiana Medical College, Indianapolis.—R	191,033	328	11	117	5	97	32	...	...
Physio-Med. Coll. of Indiana, Indianapolis.—Ph.M	191,033	20	3	4	2	34	28	...	...
Eclectic Med. Coll. of Indiana, Indianapolis.—E	191,033	20	...	6	..	24	28	...	...
Indiana Univ. School of Med., Bloomington.—R	5,000	21	...	...	..	16	35	...	...
IOWA								133	637
Drake Univ. Coll. of Med., Des Moines.—R	65,754	74	7	10	..	50	35	...	...
Keokuk Med. Coll. of P. and S., Keokuk.—R	14,803	163	7	48	2	28	30	...	...
Sioux City Coll. of Med., Sioux City.—R	31,701	72	...	12	2	26	36	...	...
State Univ. of Iowa, Homeo. Dept., Iowa City.—H	7,987	46	1	8	..	24	36	...	...
State Univ. of Iowa, Med. Dept., Iowa City.—R	7,987	258	9	49	2	28	36	...	...
KANSAS								75	252
Kansas Medical College., Topeka.—R	35,388	86	4	17	1	40	30	...	...
School of Med., Univ. of Kansas, Kansas City.—R	55,348	157	5	55	2	109	34	...	...
KENTUCKY								238	1,392
Hospital College of Medicine, Louisville.—R	215,945	338	...	94	..	58	28	...	...
Kentucky School of Med., Louisville.—R	215,945	270	5	47	1	47	28	...	...
Louisville Medical College, Louisville.—R	215,945	216	...	54	..	30	26	...	...
Louisville National Med. Coll., Louisville.—R	215,945	49	1	7	..	32	20	...	...
Southwestern Homeo. Med. Coll., Louisville.—H	215,945	16	...	6	..	27	28	...	...
University of Louisville, Louisville.—R	215,945	213	...	47	..	36	28	...	...
Kentucky University, Louisville.—R	215,945	284	...	82	..	42	28	...	...
LOUISIANA								110	512
Flint Medical College, New Orleans.—R	300,625	53	1	8	..	16	26	...	...
Tulane University, New Orleans.—R	300,625	458	...	102	..	59	26	...	...
MAINE								17	82
Medical School of Maine, Portland.—R	52,656	82	...	17	..	34	32	...	...
MARYLAND								372	1,564
Baltimore Medical College, Baltimore.—R	513,313	441	...	97	..	58	32	...	...
Baltimore Univ. School of Med., Baltimore.—R	513,313	18	...	7	..	24	34	...	...
College of P. and S., Baltimore.—R	513,313	298	...	65	..	50	32	...	...
Johns Hopkins University, Baltimore.—R	513,313	268	25	76	8	82	33	...	...
Southern Homeo. Med. Coll., Baltimore.—H	513,313	13	5	3	2	24	28	...	...
University of Maryland, Baltimore.—R	513,313	339	...	83	..	60	32	...	...
Woman's Med. College, Baltimore.—R	513,313	...	33	...	2	32	32	...	...
Maryland Med. College, Baltimore.—R	513,313	124	...	29	..	44	30	...	...
MASSACHUSETTS								185	901
Boston University School of Med., Boston.—H	594,618	75	25	19	4	59	32	...	...
College of P. and S., Boston.—R	594,618	122	12	20	..	45	36	...	...
Harvard University Med. School, Boston.—R	594,618	292	...	69	..	145	36	...	...
Tufts Medical College, Boston.—R	594,618	327	48	56	17	85	33	...	...
MICHIGAN								218	772
Detroit College of Medicine, Detroit.—R	309,653	173	...	82	..	84	33	...	...
Detroit Homeo. Med. Coll., Detroit.—H	309,653	26	7	12	3	36	28	...	...
Mich. Coll. of Med. and Surg., Detroit.—R	309,653	72	3	21	1	57	30	...	...
Grand Rapids Med. College, Grand Rapids.—R	91,630	36	4	11	1	33	28	...	...
Univ. of Mich. Dept. of Med., Ann Arbor.—R	16,033	347	22	64	6	59	36	...	...
Univ. of Mich. Homeo. Dept., Ann Arbor.—H	16,033	82	...	15	2	50	36	...	...
MINNESOTA								71	324
Univ. of Minn., Homeo. Dept., Minneapolis.—H	214,112	14	1	...	1	33	35	...	...
Univ. of Minn., Dept. of Med., Minneapolis.—R	214,112	185	4	42	1	101	35	...	...
Hamline University, Minneapolis.—R	214,112	116	4	25	2	47	34	...	...
MISSISSIPPI								...	22
University of Mississippi, Oxford.—R	2,000	22	...	...	..	8	34	...	...

* Evening Colleges. † Records destroyed by fire April 18, 1906.

Name and Location of College.	Population of city in which college is located.	Number of students registered session of 1905-6.		Graduates 1906.		Total number of graduates.	Weeks in college year.	Total graduates all colleges in state 1906.	Total students in all colleges in state 1905-6.
		Men.	Women.	Men.	Women.				
MISSOURI.								454	1,910
Univ. Med. Coll., Kansas City.—R.	173,064	235	...	54	..	70	30	...	...
Kansas City Hahn. Med. Coll., Kansas City.—H.	173,064	71	5	19	2	38	28	...	...
Eclectic Med. Univ., Kansas City.—E.	173,064	40	6	15	1	25	26	...	...
Ensworth Central Med. Coll., St. Joseph.—R.	110,479	149	...	34	..	41	28	...	...
Barnes Med. Coll., St. Louis.—R.	612,279	356	29	67	5	60	31	...	...
St. Louis University, St. Louis.—R.	612,279	295	...	115	..	106	30	...	...
St. Louis College of P. and S., St. Louis.—R.	612,279	278	...	53	..	46	30	...	...
Amer. Med. Coll., St. Louis.—E.	612,279	57	6	19	3	17	28	...	...
Homeo. Med. Coll. of Missouri, St. Louis.—H.	612,279	46	...	4	..	32	29	...	...
Washington University, St. Louis.—R.	612,279	239	...	55	..	76	32	...	...
Univ. of Missouri, Columbia.—R.	5,651	94	4	6	2	28	34	...	...
NEBRASKA.								61	395
University of Nebraska, Omaha.—R.	113,361	134	8	6	1	60	32	...	...
Creighton Medical College, Omaha.—R.	113,361	169	3	39	..	55	32	...	...
Lincoln Med. College, Lincoln.—E.	44,243	63	8	14	1	22	29	...	...
Nebraska College of Medicine, Lincoln.—R.	44,243	10	...	...	..	81	34	...	...
NEW HAMPSHIRE.								10	59
Dartmouth Medical College, Hanover.—R.	1,884	59	...	10	..	21	30	...	...
NEW YORK.								487	2,421
Albany Medical College, Albany.—R.	93,920	165	...	33	..	80	29	...	...
College of P. and S., New York.—R.	3,716,139	450	...	152	..	208	34	...	...
Cornell University, New York.—R.	3,716,139	345	24	53	6	207	34	...	...
Eclectic Medical College, New York.—E.	3,716,139	88	17	13	2	33	28	...	...
Long Island College Hospital, New York.—R.	3,716,139	343	...	72	..	95	32	...	...
New York Homeo. Med. College, New York.—H.	3,716,139	110	...	30	..	89	29	...	...
New York Woman's Med. Coll., New York.—H.	3,716,139	...	20	...	6	38	29	...	...
University and Bellevue Med. Coll., New York.—R.	3,716,139	481	...	53	..	108	32	...	...
Syracuse University, Syracuse.—R.	114,443	144	9	21	2	65	33	...	...
University of Buffalo, Buffalo.—R.	381,403	214	11	40	4	92	33	...	...
NORTH CAROLINA.								68	355
Leonard Medical School, Raleigh.—R.	13,934	147	...	33	..	10	28	...	...
University of North Carolina, Raleigh.—R.	13,934	96	...	11	..	37	35	...	...
North Carolina Med. Coll., Charlotte.—R.	20,050	92	...	24	..	24	35	...	...
Wake Forest School of Med., Wake Forest.—R.	823	20	...	...	..	10	35	...	...
NORTH DAKOTA.								...	7
University of North Dakota, University.—R.		7	...	...	..	12	34	...	...
OHIO.								224	815
Western Reserve University, Cleveland.—R.	414,950	85	...	12	..	56	33	...	...
Cleveland Coll. of P. and S., Cleveland.—R.	414,950	81	7	18	4	61	30	...	...
Cleveland Homeo. Med. Coll., Cleveland.—H.	414,950	43	7	11	3	51	30	...	...
Eclectic Med. Institute, Cincinnati.—E.	332,934	111	5	35	..	29	28	...	...
Medical College of Ohio, Cincinnati.—R.	332,934	133	4	33	..	75	32	...	...
Pulte Med. Coll., Cincinnati.—H.	332,934	10	3	3	..	34	30	...	...
Miami Medical College, Cincinnati.—R.	332,934	75	3	21	3	51	32	...	...
Ohio Medical University, Columbus.—R.	135,487	135	7	39	3	36	31	...	...
Starling Med. College, Columbus.—R.	135,487	86	...	30	..	39	31	...	...
Toledo Med. College, Toledo.—R.	145,901	20	...	9	..	31	30	...	...
OKLAHOMA.								...	32
University of Oklahoma, Norman.—R.	3,682	16	...	...	..	10	36	...	...
Epworth Univ. Med. Dept., Oklahoma City.—R.	12,800	14	2	...	..	23	29	...	...
OREGON.								31	132
University of Oregon, Portland.—R.	98,655	70	12	16	..	36	30	...	...
Willamette University, Salem.—R.	4,258	50	...	15	..	19	28	...	...
PENNSYLVANIA								440	2,391
Temple Coll. of Med., Philadelphia.—R.*	1,367,716	94	7	12	2	50	35	...	...
University of Pennsylvania, Philadelphia.—R.	1,367,716	577	...	103	..	145	35	...	...
Hahnemann Medical College, Philadelphia.—H.	1,367,716	186	...	52	..	74	32	...	...
Jefferson Medical College, Philadelphia.—R.	1,367,716	617	...	200	..	113	33	...	...
Woman's Medical College, Philadelphia.—R.	1,367,716	...	136	...	25	47	31	...	...
Medico-Chirurgical Coll., Philadelphia.—R.	1,367,716	467	...	...	..	84	33	...	...
Western Pennsylvania Med. Coll., Pittsburg.—R.	345,043	300	7	45	1	104	33	...	...
PHILIPPINE ISLANDS.								37	310
San Tomaso University, Manila.—R.	150,000	310	...	37	..	19	32	...	...
SOUTH CAROLINA.								6	99
Med. Coll. of South Carolina, Charleston.—R.	56,062	97	2	6	..	20	26	...	...
TENNESSEE.								341	2,043
Tennessee Med. College, Knoxville.—R.	34,344	79	3	18	1	26	28	...	...
Knoxville Medical College, Knoxville.—R.	34,344	45	...	4	..	12	26	...	...
University of Nashville, Nashville.—R.	82,711	298	...	42	..	23	24	...	...
Vanderbilt University, Nashville.—R.	82,711	197	...	36	..	32	28	...	...
University of Tennessee, Nashville.—R.	82,711	182	...	25	..	24	28	...	...
Meharry Medical College, Nashville.—R.	82,711	305	16	64	4	26	28	...	...
Memphis Hospital Med. Coll., Memphis.—R.	113,669	492	...	82	..	32	28	...	...
University of the South, Sewanee.—R.	440	119	...	28	..	21	29	...	...
Chattanooga Medical College, Chattanooga.—R.	30,469	265	2	32	1	28	27	...	...
University of West Tennessee, Jackson.—R.	15,852	40	...	4	..	10	28	...	...
TEXAS.								136	834
Fort Worth University, Fort Worth.—R.	27,192	190	2	24	..	33	28	...	...
University of Texas, Galveston.—R.	31,742	182	7	30	1	23	32	...	...
Baylor University, Dallas.—R.	44,159	69	1	8	..	31	28	...	...
Physio-Med. Coll. of Texas, Dallas.—Ph.M.	44,159	41	6	11	..	26	28	...	...
Southwestern University Med. Coll., Dallas.—R.	44,159	81	4	4	..	31	28	...	...
College of P. and S., Dallas.—R.	44,159	89	6	18	..	15	28	...	...
Gate City Med. Coll., Texarkana.—R.	5,256	156	...	40	..	20	25	...	...
UTAH.									30
Univ. of Utah, Dept. of Med., Salt Lake City.—R.	57,138	30	...	...	..	23	35	...	...
VERMONT.								47	170
Univ. of Vermont, Burlington.—R.	19,855	170	...	47	..	43	27	...	...
VIRGINIA.								86	569
Medical College of Virginia, Richmond.—R.	86,148	242	...	45	..	48	30	...	...
University College of Medicine, Richmond.—R.	86,148	205	...	20	..	60	32	...	...
University of Virginia, Charlottesville.—R.	6,449	122	...	21	..	28	35	...	...
WEST VIRGINIA.								...	35
University of West Virginia, Morgantown.—R.		35	...	...	..	9	36	...	...
WISCONSIN.								30	225
Milwaukee Medical College, Milwaukee.—R.	312,736	133	6	15	..	63	31	...	...
Wisconsin Coll. of P. and S., Milwaukee.—R.	312,736	84	2	14	1	57	31	...	...

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* Evening College.

Name of College.	Alabama, 569.	Arizona, 9.	Arkansas, 463.	California, 393.	Colorado, 161.	Connecticut, 274.	Delaware, 54.	Dist. Colum., 132.	Florida, 107.	Georgia, 576.	Idaho, 41.	Illinois, 2,383.	Indian Ter., 140.	Indiana, 815.	Iowa, 828.	Kansas, 473.	Kentucky, 891.	Louisiana, 489.	Maine, 175.	Maryland, 414.	Mass., 923.
Birmingham Medical College.—R	68	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Medical College of Alabama.—R	137	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department Arkansas University.—R	...	1	156	...	...	...	...	...	...	...	...	...	9	...	...	...	...	2	...	...	...
Cooper Medical College.—R	1	...	1	82	...	...	...	...	...	...	...	2	...	1	3	1	...	...	3	...	2
Med. Dept. Univ. of California.—R	...	...	...	58	...	...	...	...	...	...	1	1	...	...	3	1	1	...	...	2	1
California Medical College.—E	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hahnemann Medical Coll. of the Pacific.—H	...	...	...	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
College of Phys. and Surg., San Francisco.—R	...	...	...	110	1	...	...	1	...	...	...	2	...	1	1	...	...	...	...	...	...
Oakland Coll. of Med. and Surgery.—R	...	...	...	9	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Coll. of Med., Univ. of So. California.—R	1	1	1	26	4	1	...	...	...	...	1	6	...	6	6	2	2	...	2	4	3
College of Phys. and Surg., Los Angeles.—R	...	1	...	8	...	...	...	...	...	...	...	...	...	2	1	3	1	...	...	...	...
Denver and Gross Coll. of Medicine.—R	...	...	...	...	48	...	...	...	...	...	...	11	...	1	2	3	...	...	...	1	1
Denver Homeopathic College.—H	...	...	...	...	16	...	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...
Colorado School of Medicine	...	...	...	2	38	...	...	...	...	...	1	3	...	2	3	...	...	...	3	...	...
Yale University, Department of Medicine.—R	...	...	...	...	...	86	...	1	...	...	...	1	...	...	2	...	...	...	1	...	15
George Washington Univ., Dept. of Med.—R	1	...	...	3	2	5	...	50	2	3	...	10	...	6	3	2	5	6	3	17	5
Georgetown Univ., School of Medicine.—R	...	...	...	...	...	4	2	22	...	...	...	1	...	1	1	...	...	1	1	2	14
Howard University, Medical Department.—R	2	...	...	...	...	...	1	30	3	8	...	3	...	2	1	3	...	3	...	6	...
Atlanta College of Phys. and Surg.—R	22	...	1	...	...	...	...	...	6	123	...	...	...	...	...	...	2	3	...	...	...
Atlanta School of Medicine.—R	26	...	...	...	...	...	...	...	13	152	...	...	...	...	...	...	...	1	...	...	...
Georgia Coll. of Eclectic Med. and Surg.—E	6	...	...	...	...	...	...	...	4	42	...	...	1	...	...	...	...	...	...	...	...
Medical College of Georgia.—R	...	...	...	...	1	...	...	...	2	92	...	...	...	...	...	...	...	...	...	...	1
American Medical Missionary College.—R	...	...	...	4	...	1	...	...	...	...	...	2	...	1	5	3	...	1	1	...	...
Bennett Coll. of Eclectic Med. and Surg.—E	...	...	3	1	1	1	1	...	...	...	1	68	...	12	4	2	3	...	...	...	...
Illinois Medical College.—R	1	...	2	...	...	...	...	...	...	1	1	62	1	32	3	1	2	1	...	...	...
College of Medicine and Surgery.—Ph.M	1	...	...	...	...	...	...	...	...	...	...	17	...	...	5	...	...	...	...	...	...
College of Physicians and Surgeons.—R	...	...	1	1	3	...	...	1	1	1	2	316	1	27	30	10	3	3	1	...	...
Hahnemann Med. Coll. and Hospital.—H	...	...	...	1	...	...	...	...	...	...	...	80	...	15	12	11	1	...	...	...	1
Hering Medical College.—H	...	...	...	...	...	1	2	1	...	...	...	23	...	2	3	2	...	...	...	1	...
Jenner Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	250	...	...	...	...	...	...	...	...	...
Northwestern University Med. School.—R	...	...	...	3	5	...	...	...	...	...	6	303	...	21	52	9	1	2	...	...	...
Rush Medical College.—R	1	3	2	9	2	...	...	...	...	...	2	164	1	40	39	11	3	1	...	...	1
National Medical University	...	...	...	...	...	...	...	...	...	...	...	249	...	...	...	...	...	...	...	...	...
American Coll. of Med. and Surgery.—R	...	...	1	1	...	...	...	...	...	...	...	51	...	29	9	...	2	...	...	...	1
Dearborn Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	221	...	...	...	...	...	...	...	...	...
Indiana Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	13	...	295	1	...	1	...	...	...	...
Physio-Medical College of Indiana.—Ph.M	...	...	...	...	...	...	...	...	...	...	...	1	...	15	...	...	1	...	...	...	...
Eclectic Medical College of Indiana.—E	...	...	...	...	...	...	...	...	...	...	...	...	...	20	...	...	...	...	...	...	...
Indiana University School of Medicine.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	21	...	...	...	...	...	...	...
Drake University Coll. of Medicine.—R	...	...	...	...	2	...	...	...	...	...	...	2	...	1	60	4	...	...	...	...	...
Keokuk Med. Coll. of Phys. and Surgs.—R	...	...	...	1	...	...	...	...	...	...	1	35	...	...	93	6	...	...	...	...	...
Sioux City Coll. of Med.—R	...	...	...	...	...	...	...	...	...	...	...	3	...	1	45	...	...	...	...	...	...
State Univ. of Iowa, Homeo. Med. Dept.—H	...	...	...	...	...	...	...	...	...	...	...	2	...	...	38	1	...	...	...	...	...
State Univ. of Iowa, Med. Department.—R	...	...	...	...	2	...	...	...	...	...	...	4	...	...	242	...	...	...	...	...	1
Kansas Medical College.—R	...	...	...	...	1	...	...	...	...	...	...	...	1	1	...	77	...	...	...	...	...
School of Medicine, Univ. of Kansas.—R	...	...	...	...	1	...	...	...	...	...	...	2	...	...	2	111	1	...	...	...	...
Hospital College of Medicine.—R	...	...	4	2	...	...	...	...	...	...	...	10	1	31	1	...	222	7	...	...	1
Kentucky School of Medicine.—R	2	1	6	...	...	...	...	...	3	4	4	5	...	25	...	...	123	7	...	...	2
Louisville Medical College.—R.*	8	...	4	...	1	...	...	...	3	5	...	2	6	18	2	8	46	8	...	...	...
Louisville National Medical College.—R	...	...	...	...	...	...	...	...	1	2	...	...	1	5	...	...	36	...	...	...	...
Southwestern Homeopathic Med. College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...	...	...	...
Medical Dept. Univ. of Louisville.—R	2	...	4	...	1	1	...	...	...	...	...	4	2	21	2	2	111	4	...	...	...
Kentucky University Medical Dept.—R	7	...	4	...	...	...	...	...	2	4	...	3	1	28	4	1	136	3	1	...	1
Flint Med. Coll. of New Orleans Univ.—R	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	33	...	...	...
Tulane University, Medical Department.—R	43	...	15	...	...	...	...	...	3	9	...	...	1	...	...	...	...	216	...	...	...
Medical School of Maine, Bowdoin Coll.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	74	...	6
Baltimore Medical College.—R	5	...	...	4	...	33	...	1	2	6	...	2	...	1	1	...	...	2	15	56	61
Baltimore Univ. School of Medicine.—R	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	9	2
College of Phys. and Surgs. of Baltimore.—R	3	...	1	...	...	13	2	...	1	4	...	...	...	2	...	...	...	...	3	41	22
Johns Hopkins Medical School.—R	7	...	4	11	2	17	1	4	3	7	...	3	...	5	11	2	3	...	8	50	6
Southern Homeopathic Medical College.—H	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	1	...	...	6	...
Woman's Medical College of Baltimore.—R	...	...	...	...	...	2	...	...	...	1	...	...	...	2	...	...	...	...	...	13	...
University of Maryland, School of Med.—R	...	...	1	...	...	6	5	...	5	9	...	...	...	2	...	1	1	...	2	131	6
Maryland Medical College.—R	2	...	...	...	...	4	2	1	1	1	...	1	1	1	...	...	...	1	2	43	2
Boston University School of Medicine.—H	...	...	...	1	...	1	...	1	1	...	...	...	...	1	...	...	...	1	5	...	55
College of Physicians and Surgeons.—R	...	...	...	...	...	4	3	...	...	1	...	...	...	...	...	...	...	1	5	...	85
Harvard University Medical School.—R	1	...	1	6	3	2	...	...	...	...	...	5	...	...	1	1	2	...	6	1	193
Tufts College Medical School.—R	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	12	...	313
Detroit College of Medicine.—R	...	...	...	...	...	...	...	1	...	...	1	...	...	3	...	...	1	...	...	...	...
Detroit Homeopathic Medical College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Michigan College of Med. and Surgery.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...
Grand Rapids Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Univ. of Michigan Dept. of Med. and Surg.—R	2	...	...	3	2	1	...	...	1	1	2	23	...	28	9	1	4	...	...	...	2
Univ. of Mich., Homeo. Medical College.—H	...	...	...	...	...	...	...	...	...	...	...	2	...	3	...	...	...	...	...	...	...
Coll. of Hom. Med. and Surg., U. of Minn.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
College of Med. and Surg., Univ. of Minn.—R	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...
Medical Dept. of Hamline Univ.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Dept., Univ. of Mississippi, Oxford.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department, Washington Univ.—R	1	...	9	...	2	...	...	...	...	...	1	55	3	1	1	2	1	...	...	1	...
Univ. Med. Coll. of Kansas City.—R	...	1	...	1	6	...	...	...	...	...	...	7	6	...	4	85	...	1	...	...	...
Kansas City Hahnemann Med. Coll.—H	...	...	...	...	...	...	...	...	1	...	...	5	...	2	3	23	2	...	...	...	...
Nebraska College of Medicine.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eclectic Medical University.—E	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	1	10	...	...	...	...
Ensworth Central Medical College.—R	...	...	...	...	1	...	...	...	...	...	1	3	1	...	12	28	...	...	...	...	...
Barnes Medical College.—R	1	...	12	1	2	...	...	...	...	...	4	84	7	3	5	9	6	1	1	...	1
Marion-Sims-Beaumont Coll. of Med.—R	...	...	6	...	1	...	...	...	...	...	1	90	1	5	8	13	1	1	...	1	1
St. Louis Coll. of Phys. and Surgs.—R	...	...	6	...	2	...	...	...	...	1	...	90	6	3	18	1	5	...	...	...	...
American Medical College.—E*	...	...	8	1	1	...	...	...	...	...	1	6	...	...	...	...	...	1	...	...	...
Homeo. Med. College of Missouri.—H	...	...	3	...	...	...	...	...	...	...	...	12	...	3	3	1	...	...	...	...	...
Dept. of Med. of the Univ. of Missouri	...	...	1	...	1	...	1	...	...	...	...	3	...	1	4	2	1	...	...	...	...
Univ. of Nebraska Coll. of Med.—R	...	...	1	...	...	1	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...
John A. Creighton Med. College.—R	...	...	...	1	...	...	...	...	...	...	1	1	...	1	37	2	1	...	...	...	...
Lincoln Med. Coll. of Cotner University.—E	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	5	...	...	...	...	...
Dartmouth Medical College.—R	...	...	...	...	...	7	...	1	...	...	...	1	...	...	...	...	...	...	5	...	15
Albany Medical College.—R	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	2

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*Totals exact; distribution based on that of last year.

Michigan, 589.	Minnesota, 391.	Mississippi, 624.	Missouri, 1,087.	Montana, 37.	Nebraska, 406.	N. Hamp., 107.	New Jersey, 499.	New Mexico, 23.	New York, 2,361.	Nevada, 23.	N. Carolina, 492.	N. Dakota, 61.	Ohio, 975.	Oklahoma, 115.	Oregon, 161.	Penna., 2,115.	R. Island, 104.	S. Carolina, 273.	S. Dakota, 79.	Tennessee, 689.	Texas, 1,026.	Utah, 101.	Vermont, 127.	Virginia, 582.	Washington, 105.	W. Virginia, 358.	Wisconsin, 499.	Wyoming, 9.	Foreign, 551.	P. Is., Ha., P. R., 325.	Total, 25,204.
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...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	158
...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	3	...	...	...	...	...	1	...	...	...	176
...	3	...	1	...	...	...	...	...	3	5	...	...	2	...	5	3	1	...	1	...	1	2	...	...	...	...	...	...	15	...	138
2	1	...	...	1	...	...	...	...	2	4	...	...	2	...	1	...	...	...	...	...	...	...	...	...	2	...	...	...	7	...	90
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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...	...	...	...	1	1	...	...	...	1	...	...	...	...	...	6	...	...	...	...	...	...	6	...	...	5	...	...	...	8	2	146
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
3	2	...	4	...	3	...	4	...	6	...	...	...	5	...	4	3	...	...	...	...	2	...	1	2	4	...	3	...	15	...	127
...	...	...	4	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	6	...	31
...	...	1	3	...	2	...	1	2	4	...	...	...	2	...	...	5	...	...	1	...	...	1	1	...	1	1	4	...	4	...	109
1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	23
1	2	1	...	...	...	...	1	...	3	...	1	...	3	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	3	...	70
1	...	...	...	...	1	...	1	...	9	...	...	...	...	...	2	1	1	1	...	...	...	...	2	...	...	...	1	...	8	...	134
5	2	3	6	...	3	2	7	...	20	...	16	1	7	3	1	22	...	4	1	2	6	5	1	28	...	4	3	...	5	...	280
2	...	...	...	...	...	1	...	...	12	...	...	1	1	...	...	12	10	...	...	...	...	...	...	6	...	3	1	...	3	1	102
...	...	2	1	...	...	...	1	...	3	...	4	...	2	...	...	11	2	10	...	5	4	...	...	18	...	5	...	...	27	...	157
...	...	6	...	...	...	...	...	...	1	...	5	...	...	...	...	...	...	7	...	...	2	...	...	...	...	...	...	...	2	...	180
...	...	6	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	9	...	...	...	4	...	...	...	...	...	...	...	...	220
...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	57
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14	1	...	1	...	2	...	1	...	2	...	1	...	7	...	2	3	1	...	1	1	...	...	1	...	...	2	2	...	20	...	80
6	6	1	3	...	7	...	...	...	5	...	...	...	8	...	3	12	...	...	2	...	1	1	...	...	...	...	8	...	6	...	166
5	1	3	1	...	1	...	...	...	1	...	...	4	7	...	...	1	...	...	...	1	4	2	...	...	1	5	6	...	2	...	152
2	3	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	2	...	5	...	40
12	15	2	9	7	...	...	...	...	3	10	1	1	15	...	2	...	...	2	6	1	4	1	...	...	5	...	54	...	5	...	556
10	3	1	1	...	3	...	...	...	5	...	...	...	6	...	...	2	...	...	2	...	...	1	...	2	3	...	10	...	8	...	178
2	1	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	1	1	...	...	...	4	...	48
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	250
18	13	1	4	1	11	...	2	1	2	...	2	10	11	...	7	2	...	...	13	2	4	5	...	...	5	2	55	...	7	...	580
13	11	2	9	3	10	1	...	1	4	...	...	7	20	3	3	4	...	...	2	2	7	2	...	...	5	...	45	1	10	6	456
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	249
16	8	...	2	3	5	...	...	...	4	...	...	2	18	...	1	11	1	...	1	...	...	2	...	...	2	3	10	...	6	...	189
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	221
2	...	...	...	1	...	...	...	...	1	...	...	...	19	...	...	1	...	...	1	1	1	...	...	...	...	...	2	...	...	...	339
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...	1	...	3	1	1	...	...	...	2	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	81
1	3	...	16	...	1	...	1	...	...	...	1	1	...	2	...	...	...	...	2	...	...	...	...	...	...	1	4	...	1	...	170
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1	3	...	...	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	6	...	...	...	...	...	1	...	4	...	...	...	267
...	...	...	2	...	...	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	1	1	...	...	2	...	...	...	...	...	90
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3	4	2	9	1	2	1	4	...	3	1	2	...	8	...	...	3	...	...	...	5	20	...	4	...	3	15	2	...	1	...	275
1	...	22	3	...	...	...	...	1	4	...	3	...	5	4	...	5	...	2	...	4	26	...	...	4	1	18	1	...	1	...	216
...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...	50
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...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	82
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3	2	2	101	...	3	...	...	2	...	...	...	...	1	5	1	3	...	...	1	...	5	3	...	...	5	3	14	1	8	...	292
...	2	1	78	1	1	...	...	...	...	...	...	...	...	6	2	2	...	...	...	...	10	...	...	...	3	...	...	...	2	...	240
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College of Physicians and Surgeons.—R	4	...	...	5	1	10	...	...	1	3	...	4	...	3	1	2	1	...	4	1	12
Cornell University Medical College.—R	1	...	...	1	...	2	...	...	...	...	...	1	...	...	1	...	1	...	3	...	6
Eclectic Medical College.—E	...	...	...	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Long Island College Hospital.—H	...	...	...	...	...	5	2	1	1	...	...	...	...	...	...	...	...	...	...	2	1
New York Homeo. Med. Coll. and Hosp.—H	...	...	...	1	...	6	...	1	...	...	...	...	...	...	3	...	...	...	...	...	2
N. Y. Med. Coll. and Hosp. for Women.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Univ. and Bellevue Hosp. Medical Coll.—R	...	...	...	...	1	22	...	...	1	...	...	1	...	4	...	...	...	...	1	1	4
Syracuse Univ. Coll. of Med.—R	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2
University of Buffalo, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
Leonard Medical School.—R	10	...	2	...	...	...	...	2	4	11	...	...	1	...	...	...	...	1	...	2	...
Wake Forest School of Medicine.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
North Carolina Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Dept., Univ. of N. Carolina.—R	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...
Western Reserve University Med. Coll.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	1	...	...	...	...	2
Cleveland Coll. of Physicians and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Cleveland Homeopathic Med. College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Eclectic Medical Institute.—E	...	...	1	...	1	...	...	...	1	...	...	7	...	9	2	1	13	...	...	...	...
Medical College of Ohio.—R	...	...	...	...	...	...	...	1	1	...	...	3	...	8	...	...	20	...	...	...	...
Pulte Medical College.—H	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
Miami Medical College.—R	1	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	4	...	...	...	...
Ohio Medical University.—R	...	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	1
Starling Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Toledo Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
College of Medicine, Epworth University.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
School of Med., University of Oklahoma.—R	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...
University of Oregon, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Department, Willamette Univ.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Temple Coll. of Phila., Dept. of Medicine.—R	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
University of Pennsylvania, Dept. of Med.—R	4	...	2	1	1	2	6	1	2	1	1	2	...	7	6	1	4	1	2	4	21
Hahnemann Med. Coll. and Hospital.—H	...	...	...	2	...	1	3	5	...	...	...	...	...	...	1	2	1	...	...	2	2
Jefferson Medical College.—R	1	...	3	2	...	10	11	1	1	6	3	7	...	3	3	1	3	...	2	3	15
Woman's Med. Coll. of Pennsylvania.—R	...	...	...	1	1	1	1	4	...	...	...	1	...	...	...	2	3	...	3	...	3
Medico-Chirurgical Coll. of Philadelphia.—R	...	...	...	...	...	3	3	...	...	...	...	1	...	...	1	...	3	1	1	1	3
Western Pennsylvania Medical College.—R	...	...	...	1	...	...	...	...	...	...	...	4	...	3	...	...	...	...	...	...	...
San Tomaso University, Manila.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Med. Coll. of State of South Carolina.—R	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Tennessee Medical College.—R	...	...	...	...	...	...	...	...	...	1	...	...	1	1	...	...	7	...	...	...	...
Knoxville Medical College.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Medical Dept., University of Nashville.—R	43	...	13	...	...	...	...	...	4	3	...	1	1	1	...	...	9	34	...	...	...
Vanderbilt University, Med. Department.—R	23	...	8	2	...	...	...	...	...	9	...	1	...	2	...	...	15	8	...	...	1
University of Tennessee, Medical Dept.—R	10	...	8	...	...	1	...	...	...	...	...	3	...	...	...	...	20	4	...	...	...
Meharry Medical College.—R	19	...	21	...	1	...	...	...	14	27	...	8	1	1	...	6	15	6	...	1	...
Memphis Hospital Medical College.—R	24	...	60	1	...	...	...	...	1	...	...	...	14	...	...	2	2	80	...	...	...
University of the South.—R	14	...	1	...	...	...	1	...	4	12	...	1	...	...	...	...	1	14	...	...	1
Chattanooga Medical College.—R	51	...	4	2	2	3	...	...	8	12	3	4	4	1	2	...	4	3	...	2	1
Univ. of West Tennessee, Med. Dept.—R	...	...	9	...	...	...	...	...	...	...	...	...	2	...	...	...	...	3	...	...	...
Med. Dept., Ft. Worth University.—R	1	...	5	1	...	...	...	...	...	...	...	...	12	1	1	1	...	4	...	...	...
University of Texas, Dept. of Med.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Baylor University College of Medicine.—R	...	...	1	...	...	...	...	...	...	2	...	...	6	...	...	...	...	2	...	...	...
Physio-Medical Coll. of Texas.—Ph. M	...	...	3	...	...	...	...	...	...	1	...	...	7	1	...	...	...	...	...	...	...
Gate City Medical College.—R	3	...	45	...	...	...	...	...	...	...	...	...	17	1	...	1	...	13	...	...	...
Southwestern Univ. Medical College.—R	...	1	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
College of Physicians and Surgeons.—R	...	...	14	1	1	...	...	...	...	...	...	1	16	...	...	2	...	2	...	...	1
University of Vermont, Medical Dept.—R	...	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	...	5	...	21
Medical College of Virginia.—R	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
University of Utah, Medical Dept.—R	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
University College of Medicine.—R	1	...	...	1	...	...	2	...	1	5	...	...	...	...	...	...	...	...	...	1	...
Univ. of Virginia, Dept. of Medicine.—R	3	...	3	...	...	2	1	...	1	1	...	1	...	1	...	...	3	...	...	7	...
University of West Virginia.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Milwaukee Medical College.—R	...	...	...	...	...	1	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...
Wisconsin Coll. of Phys. and Surgs.—R	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

CURRICULUM.—*Concluded from page 627.*

	No. of Hours of Lectures.	Hours of Labora-tory.	Hours of Clinics.	Ttotal.
Nose and throat	30	..	30	60
Mental and Nervous Diseases	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases	30	..	30	60
Dermatology and Syphilis	20	..	20	40
Hygiene and Public Health	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

The following colleges are members:

College of Medicine University of Southern California, Los Angeles, Cal.; University of California Medical Department, San Francisco, Cal.; Colorado School of Medicine, University of Colorado, Boulder, Colo.; Denver and Gross College of Medicine, Medical Department of the University of Denver, Denver, Colo.; Yale University Department of Medicine (Yale Medical School), New Haven, Conn.; George Washington University Department of Medicine, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C.; Howard University Medical Department, Washington, D. C.; American Medical Missionary College, Battle Creek, Mich., and Chicago, Ill.; College of Medicine of the University of Illinois (College of Physicians and Surgeons), Chicago, Ill.; Illinois Medical College, Chicago, Ill.; Indiana Medical College, School of Medicine, Purdue University, Indianapolis, Ind.; University of Indiana School of Medicine, Bloomington, Ind.; Drake University College of Medicine, Des Moines, Iowa; College of Medicine University of Iowa, Iowa City, Iowa; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa; Sioux City College of Medicine, Sioux City, Iowa; Kansas Medical College, Medical Department of Washburne College, Topeka Kan.; School of Medicine University of Kansas, Lawrence, Kan.; Hospital College of Medicine, Louisville, Ky.; Kentucky School of Medicine, Louisville, Ky.; Kentucky University Medical Department, Louisville, Ky.; Louisville Medical College, Louisville, Ky.; Flint Medical College, Medical Department New Orleans University, New Orleans, La.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; College of Physicians and Surgeons, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, Mich.; Hamline University College of Medicine, Minneapolis, Minn.; Medical Department University of Mississippi, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; Medical Department St.Louis University (Marion-Sims-Beaumont College of Medicine), St. Louis, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; John A. Creighton Medical College, Medical Department of Creighton University, Omaha, Neb.; University of Nebraska College of Medicine, Lincoln and Omaha, Neb.; University of Buffalo Medical Department, Buffalo, N. Y.; University of North Carolina Medical Department, Raleigh, and Chapel Hill, N. C.; Wake Forest College of Medicine, Wake Forest, N. C.; Medical College of Ohio, Medical Department

Michigan, 589.	Minnesota, 391.	Mississippi, 624.	Missouri, 1,087.	Montana, 37.	Nebraska, 406.	N. Hamp., 107.	New Jersey, 499.	New Mexico, 23.	New York, 2,361.	Nevada, 23.	N. Carolina, 492.	N. Dakota, 61.	Ohio, 975.	Oklahoma, 115.	Oregon, 161.	Penna., 2,115.	R. Island, 104.	S. Carolina, 273.	S. Dakota, 79.	Tennessee, 689.	Texas, 1,026.	Utah, 101.	Vermont, 127.	Virginia, 582.	Washington, 105.	W. Virginia, 378.	Wisconsin, 499.	Wyoming, 9.	Foreign, 551.	P. Is., Ha., P. R., 325.	Total, 25,204.
...	2	2	2	...	...	1	65	...	263	2	1	...	8	...	3	10	5	3	...	2	3	1	2	1	1	1	3	...	17	...	450
...	...	1	1	...	...	1	35	...	293	...	...	...	4	...	1	4	3	...	...	...	1	...	...	...	...	...	...	...	8	1	369
...	...	...	...	...	...	...	6	...	95	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	105
1	...	...	1	...	...	...	29	...	292	...	...	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	5	...	343
...	...	...	...	...	...	...	16	...	76	...	...	...	1	...	...	2	...	...	...	...	1	...	...	...	...	...	...	...	1	...	110
...	...	...	...	...	...	...	7	...	12	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	20
...	1	...	...	1	...	1	57	...	353	...	...	...	4	...	...	5	...	...	...	2	1	2	3	...	1	...	...	2	13	...	481
...	...	...	...	...	...	...	...	...	138	...	...	...	...	...	...	4	...	...	...	...	...	...	1	...	2	...	...	...	4	...	153
...	...	...	...	...	...	...	...	...	215	...	...	...	2	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	225
...	...	6	1	...	...	...	2	...	1	...	48	...	...	...	...	6	...	10	...	...	2	...	...	29	...	1	...	...	8	...	147
...	...	...	...	...	...	...	...	...	...	...	19	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	20
...	...	...	...	...	...	...	...	...	...	...	88	...	...	...	...	...	...	3	...	...	...	...	...	1	...	...	...	...	...	...	92
...	...	...	...	...	...	...	1	...	1	...	85	...	...	...	...	1	...	1	...	...	...	...	...	5	...	...	...	...	...	...	96
...	1	...	...	...	...	...	...	...	3	...	...	...	64	...	...	8	...	...	...	...	...	...	...	...	...	1	...	...	...	...	85
...	...	...	...	...	...	1	...	...	...	...	...	...	76	...	...	3	...	...	...	1	...	...	...	...	...	...	...	...	5	...	88
1	...	...	...	...	...	...	...	...	5	...	...	...	33	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	1	...	50
...	1	...	...	...	...	...	1	...	5	...	...	...	36	...	...	14	...	...	...	1	4	...	...	...	...	19	...	...	...	...	116
...	...	...	...	...	...	1	...	...	...	...	...	...	90	1	...	...	...	1	...	1	...	1	...	...	...	2	1	...	6	...	137
...	...	...	...	...	...	...	...	...	...	...	...	...	9	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	13
1	...	...	...	...	...	...	...	...	...	...	...	...	67	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	78
...	...	...	...	...	...	...	1	...	...	...	1	...	125	...	...	6	...	...	...	...	...	...	...	...	...	2	...	...	2	...	142
...	...	...	...	1	...	...	...	...	...	...	...	1	83	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	86
1	...	...	...	...	...	...	...	...	...	...	...	...	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	20
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...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	54	1	...	...	...	...	...	...	...	...	18	...	2	...	4	...	82
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	50
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	89	...	...	...	...	...	...	...	4	...	...	...	...	6	...	101
1	3	2	...	...	...	5	48	...	16	...	7	...	18	...	1	354	3	2	...	...	9	1	1	3	6	9	...	...	19	...	577
...	...	...	...	...	...	...	18	...	14	...	...	...	7	...	...	123	...	...	...	...	...	...	...	...	1	...	...	...	4	...	186
...	1	1	3	...	2	2	45	...	15	...	17	...	19	1	6	384	3	1	3	...	5	4	1	5	1	10	1	1	11	...	617
...	...	2	1	...	2	1	11	...	8	...	1	...	2	...	1	66	2	2	...	1	1	...	...	1	1	...	...	...	12	...	135
3	...	...	1	...	1	...	33	...	14	...	1	...	2	...	...	382	1	...	...	1	...	3	...	...	...	1	...	...	7	...	467
...	...	...	2	...	...	...	...	...	2	...	...	...	14	...	...	267	...	...	...	...	...	...	...	...	...	14	...	...	...	...	307
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	310	310
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	95	...	...	...	...	...	...	...	...	...	...	...	...	97
...	...	1	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	1	...	62	...	...	...	4	1	...	...	...	...	...	82
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	45	...	...	...	...	...	...	...	...	...	...	45
...	...	66	...	...	...	...	...	...	3	...	4	...	...	...	...	...	...	14	...	82	17	...	...	...	...	3	...	...	...	...	298
...	...	14	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	82	17	...	...	1	...	...	2	...	2	...	197
...	...	16	3	...	...	...	...	...	...	...	6	...	...	...	...	1	...	4	...	94	10	...	...	...	...	...	...	...	2	...	182
...	...	51	18	...	...	...	1	...	...	...	4	...	4	5	...	2	...	20	...	56	33	...	...	...	...	1	...	...	6	...	321
...	...	198	5	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	71	31	...	...	...	...	...	...	...	...	...	492
...	1	15	1	...	...	...	1	...	...	...	5	...	...	...	...	4	...	5	...	17	18	...	...	2	...	1	...	...	...	...	119
2	...	8	...	...	...	...	8	1	5	...	10	...	2	...	...	3	1	5	...	83	6	2	...	10	1	5	1	...	8	...	267
...	...	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11	7	...	...	...	...	...	...	...	...	...	40
...	...	...	...	...	...	...	...	1	...	...	...	...	...	20	...	...	...	...	...	...	144	...	...	...	...	...	...	...	1	...	192
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	188	...	...	...	...	...	...	...	...	...	189
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	59	...	...	...	...	...	...	...	...	...	70
...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	...	...	...	...	...	...	...	...	...	47
...	1	2	3	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	67	...	...	...	...	...	...	...	...	...	156
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	81	...	...	...	...	...	...	...	...	...	85
...	...	...	1	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...	1	44	...	...	1	...	...	...	...	4	2	95
...	...	...	...	...	...	17	4	...	27	...	...	...	...	...	...	2	...	...	...	...	...	...	82	...	...	...	...	...	5	...	170
...	...	...	...	2	...	...	...	...	1	...	21	...	2	...	...	2	...	7	...	1	2	...	...	176	...	23	...	...	1	...	242
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	29	...	...	...	...	...	...	...	...	30
...	...	...	...	...	...	...	5	1	1	...	43	...	...	...	...	1	...	1	...	1	...	...	...	133	...	6	...	...	2	...	205
...	1	5	...	1	...	1	1	...	3	...	2	...	1	...	...	5	...	2	...	6	1	...	...	63	...	4	1	...	2	...	122
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	32	...	...	...	...	35
7	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	2	...	...	...	...	1	...	...	119	...	2	...	139
1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	84	...	...	...	86

University of Cincinnati, Cincinnati, Ohio; Miami Medical College, Cincinnati, Ohio; Cleveland College of Physicians and Surgeons, Medical Department Ohio, Wesleyan University, Cleveland, Ohio; Western Reserve University Medical College, Cleveland, Ohio; Ohio Medical University, Columbus, Ohio; Toledo Medical College, Toledo, Ohio; University of Oklahoma Medical Department, Norman, Okla.; University of Oregon Medical Department, Portland, Ore.; Willamette University Medical Department, Salem, Ore.; Western Pennsylvania Medical College, Medical Department Western University of Pennsylvania, Pittsburg, Pa.; Meharry Medical College, Medical Department Walden University, Nashville, Tenn.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; Milwaukee Medical College, Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, Wis.

The secretary-treasurer of the Association is Dr. Fred C. Zapffe, 1764 Lexington Street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION.

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

SECTION 3.—He must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school. The minimum preliminary education required by the Southern Medical College Association shall be, after Jan. 1, 1906, a grammar school education and two years' successful attendance at a recognized preparatory school or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates issued in such cases must have the conditions printed plainly on the face of each.

The following colleges are members:

Medical Department University of Tennessee, Nashville, Tenn.; Medical Department University of Nashville, Nashville, Tenn.; Medical Department University of the South, Sewanee, Tenn.; Medical Department Vanderbilt University, Nashville, Tenn.; Medical Department Fort Worth University, Fort Worth, Texas; Medical College of Virginia, Richmond, Va.; Tennessee Medical College, Knoxville, Tenn.; Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; University College of Medicine, Richmond, Va.; Medical Department Baylor University, Dallas, Texas; Medical Department, University of Mississippi, Oxford, Miss.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.

The secretary-treasurer is Dr. G. C. Savage, Nashville, Tenn.

AMERICAN INSTITUTE OF HOMEOPATHY.

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

COLLEGES AND MEDICAL GRADUATES.

By cities, arranged according to the population. (Population estimated by Census Bureau, 1903.)

City.	Population.	Number of Medical Colleges and of Graduates.											
		1901		1902		1903		1904		1905		1906	
		Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.	Colls.	Grads.
New York	3,716,139	7	307	7	313	7	391	7	378	7	422	7	387
Chicago	1,873,880	15	736	15	775	14	850	15	824	14	786	13	743
Philadelphia	1,367,716	5	422	6	400	6	469	6	442	6	469	6	394
St. Louis	612,279	6	331	6	252	6	334	6	350	6	326	6	321
Boston	594,618	4	184	4	234	4	204	4	237	4	171	4	185
Baltimore	531,313	8	358	8	433	8	404	8	472	8	250	8	371
Cleveland	414,950	3	85	3	89	3	88	3	75	3	59	3	48
Buffalo	381,403	1	46	1	38	1	45	1	54	1	37	1	44
San Francisco	355,919	6	109	6	104	5	118	5	116	5	100	5	93
Pittsburg	345,043	1	73	1	57	1	79	1	51	1	53	1	46
Cincinnati	332,934	6	137	5	133	5	156	4	107	4	97	4	95
Milwaukee	312,736	2	54	2	47	2	66	2	51	2	57	2	29
Detroit	309,653	3	74	3	67	3	95	3	106	3	92	3	119
New Orleans	300,625	2	116	2	57	2	87	2	96	2	90	2	110
Washington	293,217	4	77	4	75	4	94	3	120	3	115	3	100
Louisville	215,945	8	190	8	199	7	278	7	263	7	345	7	369
Minneapolis	214,112*	3	89	3	98	3	110	3	88	3	85	3	71
Indianapolis, Ind.	191,033	4	78	4	87	4	112	4	112	4	116	3	134
Kansas City, Mo.	173,064†	7	173	6	89	6	139	6	154	5	135	3	91
Toledo, Ohio	145,901	1	8	1	10	1	14	1	7	1	7	1	9
Denver, Colo.	144,588	3	40	2	45	2	39	2	39	2	37	2	31
Columbus, Ohio	135,487	2	77	2	93	2	107	2	74	2	67	2	72
Los Angeles, Cal.	116,420	1	19	1	14	1	27	2	24	2	29	2	31
New Haven, Conn.	114,600	1	18	1	20	1	27	1	23	1	22	1	25
Syracuse, N. Y.	114,443	1	19	1	19	1	29	1	31	1	31	1	23
Memphis, Tenn.	113,669	1	189	1	171	1	195	1	153	1	51	1	82
Omaha, Neb.	113,361	2	50	2	75	2	67	2	57	2	61	2	46
St. Joseph, Mo.	110,479	2	10	2	25	2	37	2	32	2	39	1	34
Portland, Ore.	98,655	1	11	1	20	1	10	1	16	1	26	1	16
Atlanta, Ga.	96,550	2	67	2	132	2	36	2	48	2	62	3	88
Albany, N. Y.	93,920	1	28	1	26	1	33	1	41	1	52	1	33
Grand Rapids, Mich.	91,630	1	17	1	47	1	16	1	....	1	5	1	12
Richmond, Va.	86,148	2	119	2	21	2	79	2	66	2	86	2	65
Nashville, Tenn.	82,711	4	272	4	123	4	158	4	162	4	213	4	171
Oakland, Cal.	70,386	..	....	..	....	..	....	..	....	..	....	1	4
Des Moines, Iowa	65,754	1	14	1	10	1	11	1	13	1	12	1	10
Charleston, S. C.	56,062	1	32	1	4	1	21	1	23	1	28	1	6
Kansas City, Kan.	55,348†	1	31	1	27	1	10	1	11	1	3	1	57
Portland, Me.	52,656	..	....	..	....	1	20	1	22	1	18	1	17
Ft. Wayne, Ind.	48,031	1	4	1	9	1	5	1	5	1	13	..	....
Lincoln, Neb.	44,243	1	12	1	21	1	16	1	22	1	15	2	15
Dallas, Tex.	44,159	2	23	3	32	3	35	5	65	4	69	4	41
Birmingham, Ala.	42,087	1	15	1	8	1	22	1	5	1	16	1	8
Little Rock, Ark.	42,036	1	20	1	11	1	12	1	19	1	28	1	26
Augusta, Ga.	41,283	1	30	1	47	1	7	1	26	1	14	1	30
Saginaw, Mich.	41,151	1	24	1	41	1	34	..	....	..	....	..	....
Mobile, Ala.	40,686	1	38	1	13	1	12	1	38	1	31	1	29
Topeka, Kan.	35,388	1	....	1	16	1	13	1	24	1	23	1	18
Knoxville, Tenn.	34,344	2	39	2	26	2	14	2	18	2	19	2	23
Galveston, Tex.	31,742	1	6	1	13	1	35	1	23	1	23	1	31
Sioux City, Iowa	31,701	1	5	1	10	1	12	1	12	1	14	1	14
Chattanooga, Tenn.	30,469	2	56	2	48	2	42	2	38	1	39	1	33
Ft. Worth, Tex.	27,192	1	27	1	17	1	5	1	9	1	21	1	24
Charlotte, N. C.	20,050	..	....	..	....	..	....	1	17	1	26	1	24
Burlington, Vt.	19,855	1	15	1	32	1	31	1	55	1	48	1	47
Ann Arbor, Mich.	16,033	2	91	2	92	2	105	2	122	2	73	2	87
Jackson, Tenn.	15,852	..	....	..	....	..	....	1	3	1	6	1	4
Keokuk, Iowa	14,803	1	51	1	52	1	56	1	47	1	50	1	50
Raleigh, N. C.	13,934	2	1	2	21	2	27	2	25	2	30	2	44
Iowa City, Iowa	7,987	2	51	2	47	2	46	2	58	2	74	2	59
Charlottevile, Va.	6,449	1	53	1	53	1	25	1	31	1	41	1	21
Boulder, Colo.	6,150	1	9	1	13	1	8	1	17	1	6	1	16
Columbia, Mo.	5,651	1	11	1	....	1	12	1	10	1	8	1	8
Texarkana, Tex.	5,256	..	....	..	....	..	....	1	26	1	26	1	40
Brunswick, Me.	5,210	1	40	1	4	..	....	..	....	..	....	..	....
Salem, Ore.	4,258	1	5	1	5	1	7	1	8	1	7	1	15
Hanover, N. H.	1,884	1	27	1	15	1	14	1	13	1	12	1	10
Davidson, N. C.	904	1	8	1	18	1	10	..	....	..	....	..	....
Sewanee, Tenn.	440	1	102	1	81	1	38	1	24	1	36	1	28
Totals	....	156	5,423	155	5,174	152	5.698	155	5,698	151	5,592	148	5,327
Cities of 100,000 or more	....	109	4,069	107	4,019	104	4,661	104	4,536	102	4,319	97	4,103
Cities of 50,000 to 100,000	....	14	591	14	410	15	394	15	402	15	505	17	479
Cities of 25,000 to 50,000	....	17	299	18	312	18	264	19	304	17	325	17	292
Cities of 10,000 to 25,000	....	6	158	6	197	6	219	8	269	8	233	8	256
Cities of less than 10,000	....	10	306	10	236	9	160	9	187	9	210	9	197

* With population of St. Paul figures would be 386,150.

† Kansas City, Mo., and Kansas City, Kan., are adjoining, and together have 228,412 population.

1. English Composition.—Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics.—Arithmetical exercises in (a) vulgar fractions, (b) decimals, (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system. Mensuration.—(a) Definition of terms, (b) exercises under the more fundamental rules.

3. Geography.—General facts about North America.

4. History.—General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language.—(a) Grammar, (b) four books of Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are: Hahnemann Medical College of the Pacific; Denver Homeopathic Medical College; Hahnemann Medical College, Chicago; Hering Medical College; Homeopathic Medical Department of the State University of Iowa; Southwestern Homeopathic College, Louisville, Ky.; Kansas City Hahnemann

Medical College; Southern Homeopathic Medical College, Baltimore, Md.; Boston University School of Medicine; Homeopathic Medical College of University of Michigan; Detroit Homeopathic College; College of Homeopathic Medicine and Surgery of University of Minnesota; Homeopathic Medical College of Missouri; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The secretary is Dr. Charles Gatchell, 100 State Street, Chicago.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES.

The following are the present minimum requirements for admission to colleges members of this Association:

1. Good English education, to be attested by (a) first-grade teacher's certificate, or (b) a diploma from a graded high school or literary or scientific college or university, or (c) regents' medical student's certificate, or (d) entrance examination covering a high school course including an elementary knowledge of natural history, physics and Latin.

2. Graduates from pharmaceutical, dental and veterinary colleges *may be* allowed one year's time on a four-year medical course only on condition that they comply with the entrance requirements and pass all examinations and perform all laboratory work embraced in the course of study of the freshman year. One year's advanced standing *may be* given students with degrees from a recognized literary college.

3. The course of instruction shall consist of a four-year graded course or its equivalent, as herein prescribed, including four sessions of seven months each in four different calendar years.

The following colleges are members of this Association:

American Medical College, St. Louis, Mo.; Bennett College of Eclectic Medicine and Surgery, Chicago, Ill.; California Medical College, San Francisco, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Kansas City Eclectic Medical University, Kansas City, Mo.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum Street, Cincinnati, Ohio.

State Boards of Registration

COMING EXAMINATIONS.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Illinois May Report.—Dr. J. A. Egan, secretary of the Illinois Board of Health, reports the written examination held at East St. Louis May 2-4 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 136, of whom 114 passed and 22 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Number Examined.
St. Louis University (Marion-Sims-Beaumont Med. Coll.)	(1905) 1; (1906)	55, 56
College of P. and S., St. Louis	(1906)	13
Barnes Med. Coll.	(1905) 1; (1906)	16, 17
Washington University	(1906)	26
Homeopathic Med. Coll. of Missouri	(1906)	1
American Med. Coll. of Missouri	(1906)	1

FAILED.

College.	Year Grad.	Number Examined.
Barnes Med. Coll.	(1903) 1; (1906)	6, 7
College of P. and S., St. Louis	(1906)	10
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	5

Rhode Island July Report.—Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the written examination held at Providence, July 5-6, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 30, of whom 23 passed, including 1 non-graduate, and 7 failed, including 2 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Yale University	(1898) 87; (1903)	82.3
Georgetown University	(1903)	75.1
Medical School of Maine	(1897)	76
Boston University	(1905) 75.9,	76.9
College of P. & S., Boston	(1906)	86.7
Harvard Univ. Med. School	(1904) 88.9; (1906) 78, 88,	88.6
Tufts Coll. Med. School	(1906)	79.3
College of P. S., Baltimore	(1902) 83.9; (1906) 75.1, 75.4, 81,	81.3.
College of P. & S., New York	(1906) 75.5;	83.1
Cornell University	(1905)	77.9
University Med. Coll., New York*	(1896)	75
Laval University	(1906)	79.4

FAILED.

College.	Year Grad.	Per Cent.
Maryland Med. Coll.	(1906)	61.5
Laval University	(1904) 65.8; (1905) 59.5, 62.7,	73.7

* Now the University and Bellevue Hospital Medical College.

Reference Table

Of State Board Reports published in The Journal from Jan. 6 to Aug. 18, 1906, inclusive:

State.	Date of Exam.	Jour. Page.	Jour. Date.	With Exam. ques.
Alabama	1905	745	March 10.	No.
Arizona	Oct. and Jan.	676	March 3.	No.
	April.	1,558	May 19.	No.
Arkansas	January.	455	February 10.	No.
	April.	1,784	June 9.	Yes.
California	December.	293	January 27.	No.
Connecticut	November.	59	January 6.	No.
	March	1,132	April 14.	No.
Delaware.	June.	294	January 27.	No.
	June	381	August 4	No.
Dist. of Columbia	October	59	January 6.	No.
	January	1,052	April 7.	No.
	April	1,638	May 26.	No.
Florida	October	294	January 27.	Yes.
	April	1,638	May 26.	No.
Georgia	April	1,785	June 9.	Yes.
	April	1,961	June 23.	No.
Idaho	April	1,558	May 19.	Yes.
Illinois	October	142	January 13.	No.
	January	1,052	April 7.	No.
	April	294	July 28.	No.
Indian Territory	April	1,307	April 28.	No.
Indiana	October	59	January 6.	No.
Iowa	December	455	February 10.	No.
	March	1,308	April 28.	No.
Kansas	October	532	February 17.	No.
	May	294	July 28.	Yes.
Kentucky	October	60	January 6.	No.
	May	1,961	June 23.	Yes.
Louisiana	November	377	February 3.	No.
	May	1,962	June 23.	No.
Maine	March	1,308	April 28.	No.
	July	533	August 18.	No.
Maryland	December	825	March 17.	No.
Massachusetts	November	60	January 6.	No
	March and May	64	July 7.	No.
Michigan	October	60.	January 6.	No.
	May	533	August 18.	Yes.
Minnesota	January	607	Feb. 24.	No.
	April	1,638	May 26.	Yes.
Mississippi	May	1,962	June 23.	No.
Missouri	December	142	January 13.	Yes.
Montana	April	1,308	April 28.	No.
Nebraska	February	907	March 24.	No.
New Hampshire	January	677	March 3.	No.
North Carolina	May	140	July 14.	Yes.
North Dakota	October	60	January 6.	No.
	January	455	February 10.	No.
	April	1,308	April 28.	No.
	July	381	August 4.	Yes.
Ohio	December	455	February 10.	No.
Oklahoma	December	979	March 31.	No.
	March	1,468	May 12.	No.
	June	295	July 28.	No.
Oregon	January	677	March 3.	No.
Pennsylvania	December	907	March 24.	No.
	June	139	July 14.	Yes.
Rhode Island	January	455	February 10.	No.
	April	1,468	May 12.	No.
South Carolina	June	64	July 7.	No.
South Dakota	July	455	February 10.	Yes.
	January	607	February 24.	Yes.
Tennessee	May	534	August 18.	No.
Texas	October	60	January 6.	No.
Utah	October	60	January 6.	No.
	January	908	March 24.	No.
	April	1,468	May 12.	No.
Vermont	January	456	February 10.	No.
Virginia	December	608	February 24.	No.
Washington	January	980	March 31.	Yes.
West Virginia	April	1,963	June 23.	No.
Wisconsin	January	677	March 3.	No.
Wyoming	January	608	February 24.	No.
	June	64	July 7.	No.

Minnesota June Report.—Dr. W. S. Fullerton, secretary of the Minnesota State Board of Medical Examiners, reports the written examination held at St. Paul, June 5-7, 1906. The number of subjects examined in was 15; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 65, of whom 54 passed and 11 failed. The following colleges were represented:

PASSED.

College.	Year of Graduation.	Medicine.	Surgery.	Obstetrics & Gynecology.	Materia Medica.	Anatomy and Histology.	Physiology.	Chem. Toxical & Urinalysis.	Pathology & Bacteriology.	Prev. Med. & Med. Juris.	General Average.
N. W. Univ. M. S..	'06	86	91	86	76	99	93	85	89	80	87.2
N. W. Univ. M. S..	'06	76	88	82	86	96	76	68	78	75	80.5
N. W. Univ. M. S..	'06	81	89	82	90	98	81	92	82	75	85.5
Coll. P. & S. Ch'go.	'06	77	84	80	68	80	86	65	83	75	77.5
Hamline Univ. ...	'06	83	83	81	95	91	94	77	85	74	84.7
Hamline Univ. ...	'06	78	87	81	73	85	81	70	80	75	80.
Hamline Univ. ...	'06	77	90	83	88	83	90	89	81	75	84.
Hamline Univ. ...	'06	78	79	78	91	85	92	78	76	73	81.1
Hamline Univ. ...	'06	86	89	81	91	91	85	77	87	78	85.
Hamline Univ. ...	'06	78	88	83	94	90	90	81	80	76	84.4
Hamline Univ. ...	'06	77	85	81	87	83	75	80	82	73	80.3
Hamline Univ. ...	'06	79	85	82	95	88	90	88	77	76	84.4
Hamline Univ. ...	'06	78	80	78	83	80	76	83	78	75	79.
Hamline Univ. ...	'06	73	81	86	88	77	86	67	75	75	78.6
Hamline Univ. ...	'06	84	85	88	89	91	94	90	82	77	86.6
Hamline Univ. ...	'06	78	73	87	81	80	75	71	75	74	77.2
Hamline Univ. ...	'06	77	72	74	80	82	78	89	77	77	79.4
Hamline Univ. ...	'06	79	83	89	87	79	85	84	80	76	82.4
Hamline Univ. ...	'06	89	86	80	83	83	94	77	77	76	82.7
Hamline Univ. ...	'06	79	87	82	84	85	80	73	77	77	80.4
Hamline Univ. ...	'06	87	84	81	79	87	89	70	86	75	82.
Hamline Univ. ...	'06	80	79	87	75	82	81	60	88	76	78.6
Univ. of Minn....	'06	80	88	90	82	91	90	65	77	76	82.1
Univ. of Minn....	'06	75	72	94	90	85	79	83	72	75	80.5
Univ. of Minn....	'06	75	60	87	93	89	83	95	85	76	82.4
Univ. of Minn....	'06	76	81	89	88	89	81	88	75	73	82.2
Univ. of Minn....	'06	78	74	78	83	86	85	89	80	78	81.3
Univ. of Minn....	'06	80	79	88	83	82	80	76	87	73	80.8
Univ. of Minn....	'06	78	75	83	74	76	81	76	77	73	77.
Univ. of Minn....	'06	79	89	88	92	86	80	84	80	78	84.
Univ. of Minn....	'06	72	79	88	72	78	79	72	81	75	77.3
Univ. of Minn....	'06	76	93	90	90	91	95	72	89	76	85.7
Univ. of Minn....	'06	76	75	77	85	91	86	77	75	77	79.8
Univ. of Minn....	'06	75	88	84	88	89	80	83	82	75	82.6
Univ. of Minn....	'06	78	88	91	90	88	79	83	80	76	83.5
Univ. of Minn....	'06	78	69	80	83	74	81	81	80	78	78.2
Univ. of Minn....	'06	79	89	88	79	91	75	82	89	76	83.1
Univ. of Minn....	'06	79	88	97	96	91	87	85	84	77	87.1
Univ. of Minn....	'06	77	93	89	88	77	80	65	73	76	79.7
Univ. of Minn....	'06	82	88	96	89	87	87	84	83	76	85.2
Univ. of Minn....	'06	78	73	85	90	92	82	95	80	76	83.4
Univ. of Minn....	'06	76	85	75	72	87	89	78	83	74	79.8
Univ. of Minn....	'06	83	75	92	89	89	99	87	84	74	85.7
Univ. of Minn....	'06	76	80	67	81	88	88	80	84	75	79.8
Univ. of Minn....	'06	76	86	84	89	79	78	65	77	77	77.8
Univ. of Minn....	'06	82	79	94	93	91	90	71	84	76	84.4
Univ. of Minn....	'06	61	81	84	80	83	76	65	75	76	75.6
Univ. of Minn....	'06	78	79	85	71	89	83	67	76	74	78.8
Univ. of Minn....	'06	88	74	94	83	96	95	95	90	76	87.8
Univ. of Minn....	'05	75	77	90	81	75	75	78	75	75	77.8
Univ. of Minn.(!)	'06	81	82	86	75	77	85	73	82	78	79.8
Univ. of Toronto.	'06	83	84	95	72	85	78	83	71	76	80.7
Univ. of Toronto.	'05	79	81	88	69	85	78	95	82	78	81.6
Queen's Univ. Ont.	'05	77	74	76	85	82	90	61	75	68	76.4
FAILED.											
Hamline Univ. ...	'06	75	68	70	62	80	60	59	75	66	69.4
Hamline Univ. ...	'06	75	81	77	31	75	75	65	75	74	69.7
Hamline Univ. ...	'06	75	83	83	51	89	78	70	75	75	75.5*
Hamline Univ. ...	'05	75	57	71	78	71	78	60	59	64	69.1
Univ. of Minn....	'06	75	73	77	88	55	74	60	77	75	72.6
Univ. of Minn....	'06	76	65	80	66	40	80	96	79	77	73.2
Univ. of Minn....	'06	73	77	80	50	75	97	73	79	75	75.4*
Univ. of Minn....	'06	75	69	74	46	81	78	55	68	72	68.6
Univ. of Minn....	'06	75	86	73	52	81	75	60	75	75	72.4
Barnes Med. Coll.	'05	42	57	76	21	26	64	51	48	72	50.7
Jefferson M. C....	'97	66	68	77	75	53	75	55	89	73	70.1

* Failed to obtain passing mark in important branches.

The following questions were asked:

MATERIA MEDICA AND THERAPEUTICS.

1. What are the therapeutic uses of spiritus glycerylis nitratis? Give the symptoms produced in man by full therapeutic doses. 2. Distinguish between the following, by giving the officinal name and physical properties of each: (a) Mercurous and mercuric iodid; (b) Mercurous and mercuric chlorid. 3. Write a short description of serum antidiphthericum, giving prophylactic and curative dosage, frequency of dosage, and manner of using. 4. Outline the treatment of a case of syphilis after diagnosis is certain. (a) To what stage is mercury particularly applicable? (b) In what stage is potassium iodid most beneficial? (c) What do you understand by mixed treatment? To what stage is it best suited? Write a prescription for it. 5. Write a brief description of adrenalin, giving source, physical properties, physiologic action, field of usefulness and method of use. 6. What is hyoscin hydrobromid? Give its physiologic action, chief use, and dosage. 7. What is the principal alkaloid of physostigma? Name its official salts, with dose of each; its physiologic antidotes; its chief therapeutic use. 8. Give a safe dosage rule in prescribing for children. 9. Give the adult dose with frequency of repetition of the following: (a) acid hydrocyanic. dil.; (b) aconitin (crystalized); (c) fl. ext. gelsemium; (d) liq. potassium arsenitis; (e) sodium nitrite; (f) morphia acetate; (g) chloral hydrate; (h) sodium salicylate; (i) strychnia sulphate; (j) res. podophyllum. 10. Criticise the following prescription:

℞. Morphiæ sulphat .... gr. iii
Hydrarg. chlorid. corrosiv. .... gr. i
Potas. iodid. .... dram ii
Aq. pur. .... ℥ii
Elix. simp. q. s. ad........................... ℥iii
M. Sig.: A teaspoonful in water three times a day.

HOMEOPATHIC MATERIA MEDICA.

1. Compare aconite, veratrum viride, gelsemium and ferrum phos. in febrile conditions. 2. Mention four of the most prominent remedies in the treatment of pneumonia and give indications for the use of the same. 3. Give indications for the use of sepia, graphites, arsenicum, mezereum and rhus in affections of the skin. 4. Name four of the principal remedies that may be used for whooping-cough and differentiate. 5. Compare sepia and pulsatilla; sepia and lilium tigrinum. 6. Give an outline of the use of rhus tox. 7. Give an outline of the use of cuprum metalicum. 8. Compare belladonna, glonoin and melilotus. 9. Differentiate belladonna, rhus tox., cantharis in facial erysipelas. 10. Name five principal remedies for coughs, with their indications.

SURGERY.

1. Colles' fracture—mechanism of origin, anatomic findings, symptoms and treatment. 2. Give in detail treatment of impending death from chloroform anesthesia. 3. Pes planus—symptoms, differential diagnosis and treatment. 4. Fracturæ colli femoris—symptoms subjective and objective, measurements, prognosis and treatment. 5. Describe briefly three (3) surgical diseases of the knee joint characterized by pain and swelling, and name three non-surgical diseases of the knee joint characterized by the same symptoms. 6. Differentiate in parallel columns between perforated duodenal ulcer; perforated typhoid intestinal ulcer and perforative appendicitis. 7. (a) Name ten (10) surgical diseases characterized by abdominal pain. (b) Name ten (10) non-surgical diseases characterized by abdominal pain. 8. Name five (5) surgical diseases peculiar to women characterized by abdominal pain and state briefly the treatment of each. 9. Panophthalmitis—causes, prognosis and treatment. 10. Give indications for enucleation of eye.

OBSTETRICS.

1. Describe the perineal body? What other structures constitute the pelvic floor. 2. Explain fully the mechanism of the second stage of normal labor. 3. Give principal causes of abortion, both local and constitutional; also prophylactic treatment for same. 4. How would you manage a case of transverse presentation with arm prolapsed? 5. What method do you advise to prevent laceration of the perineum? Describe fully its immediate repair in case of laceration.

DISEASES OF WOMEN.

1. Give causes and symptoms of acute ovaritis. 2. Describe fully a recognized operation for cystocele. 3. Give usual modes of infection and symptoms of general septic peritonitis. 4. Give symptoms of movable kidney; divide into subjective and objective. Treatment. 5. What are the most frequent local and general disturbances attending the menopause?

PHYSIOLOGY.

1. Locate and describe, and give function of kidney. 2. Same of cerebellum. 3. Same of parotid gland. 4. Give physiology of digestion of albuminoids. 5. Same of hydrocarbons. 6. Define and describe leucocytes. 7. Describe and explain normal heart sounds. 8. What is lymph: chyle; chyme? 9. Localize five centers in brain. 10. Trace the various steps in the development of an impregnated ovum.

CHEMISTRY, TOXICOLOGY AND URINALYSIS.

1. Give simple test for presence of sodium, potassium, strontium. 2. Give symptoms and treatment of carbolic acid poisoning. 3. Give sources, symptoms and treatment of ptomain poisoning. 4. Give two reliable tests for glycosuria. 5. Given a sample of urine to be analyzed, what would be your first procedure and what might you learn by it? 6. What is the signification of acetone in the urine? 7. What substances constitute the so-called "halogen group?" What is their leading chemical characteristic? 8. What do you understand by atomic weight? 9. What do you understand by chemical affinity? 10. How could you separate a mixture of oxygen and nitrogen?

MEDICAL JURISPRUDENCE.

1. Differentiate rigor mortis from the rigidity of hysteria and catalepsy. 2. How would you determine whether death was due to drowning or to some other cause and the body subsequently submerged? 3. To what extent is a physician protected by law in refusing on the witness stand to divulge the secrets of his patient? 4. What, in a medicolegal sense, constitutes malpractice? 5. What is monomania? Give two forms.

PREVENTIVE MEDICINE.

1. What precautions would you suggest to protect against whooping cough and measles during an epidemic? 2. What method would you suggest to insure pure milk supply for a community? 3. What measures would you adopt during a diphtheria epidemic to prevent contagion? 4. What is the cause of typhoid fever and where found? 5. What prophylactic measures would you recommend for the prevention of cholera infantum?

MEDICINE.

1. Give the symptoms, duration and prognosis of tubercular meningitis. 2. What physical signs warrant the diagnosis of aortic stenosis? 3. Contrast acute miliary tuberculosis with typhoid fever. 4. Define psoriasis. 5. What are the early symptoms of congenital syphilis? 6. Describe paralysis agitans. 7. What are the late symptoms of chronic interstitial nephritis, including urinary analysis? 8. What is the incubation period of scarlet fever, of typhoid fever, of diphtheria? 9. Give the formula for a single feeding of cow's milk modified for an infant of six months. 10 Describe the three commonest intestinal worms.

PATHOLOGY.

1. In a case of cerebral hemorrhage with convalescence, describe changes going on in extravasated blood and its effect on surrounding brain substance. 2. Describe briefly pathologic changes of

stomach, liver, kidneys and arteries produced by chronic alcoholism. 3. Describe the two pathologic stages of parenchymatous nephritis. 4. Describe the morbid anatomy of a case of osteomyelitis of tibia. 5. In a case of vesicular emphysema what are the pathologic changes of lungs and heart?

ANATOMY AND HISTOLOGY.

1. Describe the thyroid gland, anatomically. 2. Describe the formation of the brachial plexus and give its branches. 3. Diagram and name the lobes and fissures of the cerebrum. 4. What is the mediastinal space? Give subdivisions and contents of each. 5. Describe the suprarenal body anatomically. 6. Describe the Malpighian body histologically. 7. Describe the cornea histologically. 8. Diagram a section of a typical artery and name the structures. 9. Describe a red blood corpuscle and give the number per cubic millimeter in normal blood. 10. Describe the corpuscle of Vater or Pacinian body by diagram.

BACTERIOLOGY.

1. Name the different kinds of bacteria that may be found in case of suppurative otitis media. 2. Describe shape and characteristics of tetanus bacilius. 3. Describe mode of infection with malaria. Mention its exciting agent. 4. Describe your own process of disinfection of sick room after diphtheria. 5. What is the Widal test in typhoid fever?

Utah July Report.—Dr. R. W. Fisher, secretary of the Utah State Board of Medical Examiners, reports the written examination held at Salt Lake City, July 2-3, 1906. The number of subjects examined in was 19; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 22, of whom 21 passed and 1 failed. The following colleges were represented:

College.	Year. Grad.	Per Cent
PASSED.		
College of P. & S., Chicago	(1906)	82, 93, 84, 85
College of P. & S., San Francisco	(1906)	89, 90
Northwestern Univ. Med. School	(1906)	81, 83
Rush Med. College	(1906)	87, 88
Hospital College of Med., Louisville	(1898)	83
University of Michigan	(1906)	85
University of Bellevue Hosp. Med. Coll	(1906)	81, 86
Creighton Med. Coll	(1905)	83
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1905)	*83
Ensworth Central Med. Coll	(1906)	84
Medico-Chirurgical Coll., Philadelphia	(1906)	87, 90
Jefferson Med. Coll	(1906)	86, 86
FAILED.		
St. Louis Univ. (Marion Sims-Beaumont Med. Coll.)	(1904)	61

* Second examination.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Erysipelas.

Erysipelas is not an infrequent infection, especially facial erysipelas. It begins most frequently as a primary lesion in the nose, gradually spreading to the face and the nearest glands in the neck. Within a space of a few hours the swelling may become so manifest as to close the patient's eyes and to cause the ears to swell out of proportion. Frequently the infection confines itself (and we say confines itself because no specific thus far has been found) to certain parts of the face, giving it the characteristic red, shiny appearance, or it may travel gradually to the scalp, neck and body. When the disease shows this tendency to travel it is very aptly called migratory. Just as this inclination to spread is rapid in its progress or slow, will the prognosis become more or less unfavorable, as the system will have more time to react and to eliminate the toxic material in the latter case and thus save the patient's strength.

A great deal has been written of the value of local treatment and the possibility of checking the extent of the infection by local applications or injections along the borders of the lesion. Other authorities place great stress on the value of internal treatment and at the same time express little confidence in local applications.

Locally, bichlorid of mercury dressings have been recommended in strength from 1 to 4,000 to 1 to 1,000. These dressings can not be applied properly to the face. The lead and opium lotion is recommended by some physicians, especially in those cases accompanied by burning and pain locally, and in some cases it has acted, seemingly, very efficiently. Iodin painted over the surface or around the edges is advised by some authorities, while others, still, recommend silver nitrate applied locally. With this latter preparation there is a possibility of injuring the epidermis, producing sloughing and a scar. The following combination, however, seems to be the most efficient local remedy:

℞.	Ichthyoli		
	Adipis lanolini hydrosi, āā	℥i	30

M. Ft. unguentum. Sig.: Apply locally and freely, followed by a dressing of plain sterilized gauze.

This preparation, owing to the absorption of the lanolin soon dries on the face, and consequently should be carefully washed off night and morning and a fresh dressing applied. While it is advisable to extend the ointment for a short distance beyond the diseased area, it does not check the extension of the infection. This combination, however, does seem to shorten the infection over the areas already involved, so that while new regions may be involved the older areas soon recover, and in a way this protects the vitality of the patient.

Osler is doubtful as to the value of internal treatment, but speaks of possible good being rendered by injections of solutions of bichlorid of mercury, carbolic acid, and the biniodid of mercury in strength of 2 per cent., a short distance beyond the border of the infection.

D. R. Brower, on the other hand, states that his experience has shown no value whatever in local applications, but he lauds the value of the tincture of the perchlorid of iron internally. He recommends this preparation in doses of twenty minims (1.30) each, at intervals of from two to three hours. At the same time, he emphasizes the value of whiskey in this infection, given in the form of eggnogs, five or six eggnogs a day, each containing one half an ounce (15.00) of whiskey.

It is probable that no medication has any value in cutting short the attack. Like pneumonia erysipelas is a self-limited disease, and the patient will recover if the system can be kept in a condition to withstand the effects of the poisons until the vitality of the organism has ceased.

Consequently, proper nursing is the keynote to success in such cases, by keeping the temperature down by bathing, and thus increasing the elimination, and likewise keeping the patient's strength up by proper nourishment. The circulation must be carefully watched, and if necessary strychnin or digitalis may be given for this purpose, administered in doses to meet the individual requirements.

Although the idea has been advanced that the field of infection may be limited by the local application of adhesive strips just beyond the borderline of the disease, experience has shown that such a procedure will not check its course, as the disease is spread through the subcutaneous tissue and not superficially over the surface of the skin.

Some authorities have advised applications of collodion for the same purpose, but its use has been without success. The value of such local measures have gained their unjustifiable reputations because, perhaps, the disease ceased to spread of its own accord simultaneously with such local applications.

The following combinations have also been suggested to be applied locally in the treatment of erysipelas:

℞.	Guaiacoli	ʒss	2
	Mentholis	gr. xv	1
	Linimenti camphoræ	℥ii	60

M. Apply over the affected areas every two hours.

In strong, robust individuals pilocarpin is an old-time remedy, its value lying in its ability to promote elimination by the skin. It may be given as folows:

℞.	Pilocarpinæ hydrochlor	gr. i	06
	Sacchari lactis	gr. xii	75

M. Ft. cap. No. viii. Sig.: One capsule every six hours.

Or,

℞.	Pilocarpinæ hydrochlor	gr. i	06
	Aquæ	ʒiss	6

M. Sig.: Ten drops hypodermically every hour until free diaphoresis occurs.

Or,

℞.	Liquoris plumbi subacetatis	f. ℥iii	90

M. Sig.: Add the entire amount to two quarts of warm sterile water and apply constantly on a soft cloth.

Radcliffe at one time stated that the following combination applied locally had almost specific properties:

℞.	Ichthyoli	f. ʒii	8
	Spts. etheris	f. ʒii	8
	Collodii	f. ℥iss	75

M. Sig.: To be applied locally.

Another combination suggested for local application is as follows:

R. Plumbi acetatis
Ammonii carb., āā ....ʒi 4
Aquæ rosæ ....℥viii 240
M. Sig.: Apply locally on lint to allay the irritation.

Medicolegal

Malpractice Liability Same as for Personal Injury.

The Supreme Court of Washington says that, in the malpractice case of Froman vs. Ayars, where it holds there was sufficient evidence to support a verdict for the plaintiff for $5,000 damages for failure to properly treat a compound fracture of the bones of his left leg, about two inches above the ankle joint, counsel made an interesting argument to the effect that this case should be distinguished from one which is brought to recover for ordinary personal injuries, where the injury is wholly due to the neglect of the defendant in the case. It was argued that in this case the primary cause of the result which came to the plaintiff was the running away of the team, for which the defendant physician was in no way responsible, and that the degree of the latter's responsible relation to the final outcome could not be as great as that of one whose negligence laid the first foundation for the injury.

The theory of the case, however, was that the final outcome to the plaintiff, by which he was deprived of a foot for the remainder of his life, would not have resulted if the defendant had properly applied his learning and skill. It was true, the plaintiff would have suffered pain and distress from the original injury, yet if the bones had properly united and the wound had healed, the suffering would have been but temporary, while as it was he must continue to suffer humiliation, inconvenience, and loss of earning power during the remainder of his life. If such a result would not have occurred but for the defendant's neglect, the court is not impressed that there was force in the logic of counsel's argument.

The defendant held himself as sufficiently skilled and learned to reasonably and properly treat the plaintiff's injury, and having undertaken to do so for a compensation, the duty was placed on him to bring to bear on such a treatment the reasonable and ordinary skill and care recognized by the members of his profession in general, as proper and necessary in such a case. He was neither required to exercise the highest grade of skill nor the highest degree of care, but only such as are recognized as ordinary and reasonable by the standards of his profession. The issue was made before the jury that he did not do this, and that his failure in that regard was the responsible cause of the final and serious result to the plaintiff.

Nor does the court think the award manifestly too large for a man 44 years of age at the time of the trial, the value of whose earning power should probably be viewed from the standpoint of a common laborer. His life expectancy at the time of his injury was admitted to be 26 years, and to pass through 26 years of life without a foot is a condition that it may be assumed no man, however humble his occupation, would be willing to accept for $5,000. There is seldom a case of this kind, or even one for ordinary personal injuries, when there does not seem to be some element of hardship either way the case may be decided; but such cases are triable by a jury and, when so tried, if there is reasonable evidence to support the verdict, it should not be reduced unless it is manifestly too large when all the facts and circumstances are considered.

Not Required to Provide Necessary Medical Attendance.

The Supreme Court of Oregon says that Miller vs. Beaver Hill Coal Co. was an action to recover for the breach of an alleged contract by which the company agreed to provide the plaintiff with necessary medical and surgical attention, at a hospital maintained by it, in case of his injury while in its employ. The evidence showed that the company had a hospital at its mine in charge of a physician at which its employés, and those of subcontractors paid through its office, were entitled to be cared for free in case of sickness or injury while in its service. For the support and maintenance of the hospital $1.50 a month was deducted from the wages of each employé by their consent, or at least without objection from them. The plaintiff, while at work for a subcontractor, was seriously injured by an iron splinter penetrating the abdominal wall. He was taken to the company's hospital and the wound examined by a physician temporarily in charge during the absence of the regular physician. The physician found the wound to be of such a character as to require a surgical operation which could not be performed by him alone or with the facilities at his command. He telephoned to the nearest town for assistance, but was unable to obtain a surgeon from that place and thereupon at the plaintiff's request telephoned to another place to a physician who went to the mine and performed the necessary operation. This physician charged the plaintiff $250 for his services, and, the company refusing to reimburse him therefor, this action was brought to recover the amount.

The court reverses a judgment rendered in favor of the plaintiff. It is of the opinion that the evidence fell far short of proving a contract by the company to provide the plaintiff with necessary medical and surgical attendance in case of injury. It says that the evidence merely showed that a certain sum each month was contributed by the plaintiff and his fellow employés, or exacted by the company, for the support and maintenance of a hospital for the use of the employés. There was no evidence that any statement or promise was made by the company to the plaintiff, or any of its employés, as to the object and purpose of the contribution or the benefit they would receive therefrom, other than that it was for hospital purposes. The transaction, therefore, under the testimony, constituted in law nothing more than a subscription by the plaintiff and the other employés for the charitable purpose of maintaining a hospital, where they could obtain such medical attendance and hospital accommodations as the fund thus subscribed would afford. A sick or injured employé was entitled to the use and benefit of the hospital and the medical services there provided, to the extent of the money contributed for that purpose, but he was not obliged to go to the hospital or to accept the accommodations. He could, if he chose, go elsewhere and employ physicians and attendants other than those provided by the company, and, if he did so, the company would not be liable to reimburse him therefor.

The only liability assumed by the company in collecting the fund was to expend it for the purpose for which it was subscribed, and no other. The mere fact that it received or exacted the contribution did not impose on it the absolute duty to furnish each contributor all the medical or surgical attendance that he might need or require, whether the fund provided was sufficient or not. The only duty of the company was to use ordinary care in the expenditure of the money and in the employment of physicians and surgeons in charge of the hospital, and it was not responsible for the negligence of the surgeon so employed in going away and leaving the hospital in charge of another.

Wills, Insanity in Ancestry, Suicide and Sanity.

The Court of Appeals of New York says, in the case of Roche vs. Nason, that the mere fact that a person came to his death by his own hand within a few days after he executed a codicil to his will did not justify an inference that it was drawn up or executed with suicidal intent. It says that we may guess or surmise that he contemplated suicide; but it is a matter of pure speculation, in the face of an equally strong probability that the thought of self-destruction never entered his mind until after the execution of the instrument. Moreover, it says that the fact that a person executes a will with this sin in contemplation does not necessarily imply any wrongdoing to be effected by his will. He disposes of his property after death as he might dispose of it during his lifetime. Again, the court says that there was testimony in this case from which it might be inferred that insanity had been manifested in the ancestry of the testator; but this proof would not properly lead to any inference of mental unsoundness on his part in the entire abire absence of evidence tending to show any manifestations of nental derangement during his life of 37 years. Mental deangement can not be predicted solely on the circumstance that ie killed himself. Insanity is not inferable from the mere act f suicide. Nor does the fact that a man has taken his own ife, alone and of itself and in the absence of any other evilence as to his mental condition, warrant the deduction that is mind was unsound at the time of the suicidal act, or prior hereto, or that he lacked testamentary capacity, for human xperience has often shown that sane men have taken their own ives.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 11.

1 *Does the Drinking of Water Give Typhoid Fever? R. C. Eccles, Brooklyn.
2 *Proper Limitations of the Medical and Surgical Treatment of Gastric Ulcer. G. W. McCaskey, Ft. Wayne, Ind.
3 Health and Mortality of the Cotton-Mill Operatives of Blackburn, England. F. S. Crum, East Orange, N. J.
4 Puerperal Types of Sepsis. W. S. Stone, New York.
5 *Study of Seventy Cases of Brain Tumor. A. C. Brush, Brooklyn, N. Y.
6 *Air Dilatation in the Treatment of Chronic Constipation. L. J. Hirschman, Detroit.
7 *Treatment of Injuries to the Extremities by Mechanotherapy. W. O. Rau, New York.

1. **Does Drinking of Water Cause Typhoid.**—Eccles declares that there is no reasonable room to doubt that the development of typhoid fever is connected with the use of infected water; but that typhoid fever results from the drinking of infected water is quite a different proposition. He then emphasizes the important part which flies play in carrying disease germs to food. It is easy to see how food may multiply disease germs to the danger point, but it is not evident, he declares, how any person could take the disease from water that thousands are drinking without the slightest injury.

2. **Treatment of Gastric Ulcer.**—McCaskey believes that every case of gastric ulcer ought, if possible, to have the benefit of careful medical treatment by an intelligent practitioner before the question of surgery has been considered at all. At the outset the case is medical, not surgical. There is no hard-and-fast rule by which the precise length of time can be decided during which medical treatment should be followed in intractable cases before surgical intervention is sought. Each case should be considered in its entirety. Repeated systematic, scientific study of stomach secretion and motility and the material obtained from the fasting stomach are of the greatest value to the physician who has the patient under his care.

5. **Study of Seventy Cases of Brain Tumor.**—Brush states that in twenty of his cases the most prominent early symptom was convulsive seizures. Next to such disorders defective vision was the most common early symptom for which the patient sought relief. Of his cases fourteen patients recovered under medicinal treatment, nineteen were improved by surgical means, thirteen died, twenty-six passed from observation as unimproved and eight are still under observation.

6. **Air Dilatation in Chronic Constipation.**—Hirschman believes that the direct stimulation of the atonic sigmoid and rectum by means of mechanical dilatation up to the present time has given the best results in cases of chronic constipation. He describes his simple pneumatic dilator for accomplishing this distension. In consists of a rubber bag with a stem, which is slipped over the distal end of a Wales bougie, No. 3-5, this bougie being canaled. Compressed air at a low pressure is allowed to enter the bag slowly and distension to any desired extent is produced. A cut-off valve easily regulates the distension. Instead of the compressed-air apparatus an ordinary atomizer bulb or a small bicycle pump may be used. The patient is placed in the Sims position for the treatment. This is repeated daily for from five days to a week. When defecation approaches the normal treatments are given on alternate days. The interval is gradually lengthened.

7. **Mechanotherapy.**—Rau speaks of the advantages of mechanotherapy in the treatment of injuries to the extremities. He describes the arthromotor and believes that its introduction is an important step forward in this field of treatment. This apparatus combines in one machine everything necessary for the treatment of the extremities. It gives passive as well as active movements, and can be fitted for every joint of the extremities. It can be regulated to go from the shortest to a full normal movement, and so as to begin a movement at any angle. Treatment is absolutely painless. In connection with the mechanical treatment, massage and, if possible, local application of heat should always be resorted to. The results of treatment in many cases have been very encouraging. Rau thinks that this treatment, when properly given, will greatly lessen the period of idleness following injuries to the extremities.

New York Medical Journal.

August 11.

8 *Puerperal Fever Treated by Uterovaginal Drainage. A. E. Gallant, New York.
9 *Résumé of Recent Literature Relating to the Suprarenal Glands and Their Application to Clinical Medicine. T. G. Davis, Los Angeles.
10 Gleanings Concerning Menstruation. J. Oliver, London, Eng.
11 *Chronic Atropin Poisoning. J. B. Tyrrell, Waterville, Minn.
12 Physiologic Actions and Therapeutic Uses of the Roentgen Rays. R. H. Boggs, Pittsburg, Pa.
13 *The Significance of the So-Called Occult Hemorrhages in the Diagnosis of Ulcer and Carcinoma of the Stomach. J. Friedenwald and L. J. Rosenthal, Baltimore.
14 Importance of Abdominal Examination Before Insurance. S. P. Gerhard, Philadelphia.
15 Importance of the Cystoscope in Diagnosis and Treatment of Diseases of the Urinary Organs. W. Ayres, New York.
16 Subsequent History of Thirty-two Cases of Chronic Gastric Ulcer Previously Reported. F. H. Murdoch, Pittsburg, Pa.
17 Functions of the Testicles. H. Richardson, Baltimore.

8. **Uterovaginal Drainage in Puerperal Fever.**—Gallant reports six cases in which use was made of his bivalve uterine drain with most excellent results.

9. **Function of Suprarenal Glands.**—Davis believes that we are warranted in concluding that an excess of epinephrin is a causative factor in the production of artero-capillary fibrosis and atheroma. He also calls attention to an unrecognized etiologic factor in the production of disease of the vascular system, namely, the sexual function. His attention was directed to this, he says, while studying the embryology and histology of the suprarenal gland. Its embryologic source and the arrangements of muscle fibers in the walls of the veins and the sinuses are suggestive of an erectile tissue and close relation to the generative apparatus.

11. **Chronic Atropin Poisoning.**—Tyrrell reports the case of a man who, because of a slight cloudiness in the center of the cornea, the result of the application of a caustic, or of granular lids, made use of a solution to make the pupil larger, so that he might see around the scar. He used this solution for fourteen years with good effect, so far as his eyes were concerned, but with disastrous results to his health. Under an appropriate treatment the patient made a complete recovery.

13. **Significance of Occult Hemorrhages in Stomach Affections.**—The observations of Friedenwald and Rosenthal agree in every respect with the conclusions arrived at by other investigators. Occult blood was not found in 92 examinations in 47 cases of chronic gastritis; in 42 examinations in 15 cases of atony of the stomach; in 108 examinations in 42 cases of hyperchlorhydria; in 21 examinations in 8 cases of hypersecretion; in 16 examinations in 9 cases of acute gastritis; in 57 examinations in 25 cases of nervous dyspepsia. So significant is the fact that they have frequently been enabled to rely on the constant absence of this sign as evidence sufficient to exclude the presence of ulcer and cancer, and on the other hand as evidence in favor of the presence of either a gastritis or some form of gastric neurosis.

Thirty-five cases of ulcer of the stomach were examined as to the presence of occult blood in the stools. This condition was found in 26, or 74 per cent. It was not noted, however, at every examination; most frequently, however, before the patient had been placed under treatment and when the pain and nausea were extreme; after the patient had been placed on the ulcer cure (rest in bed and a diet mainly of milk) for a period of days the occult bleeding usually disappeared. The continuance of occult bleeding after a faithful trial of the ulcer cure has been undertaken is indicative of the fact that a healing of the ulcer is impossible, and surgical interference must then be considered.

Twenty-three cases of cancer of the stomach were examined for occult bleeding: in but very few examinations was the absence of this sign noted. It was found constantly in 19 of the 23 cases, or 82.6 per cent.; in the other 4 this symptom was occasionally noted.

Boston Medical and Surgical Journal.

August 9.

18 *Stokes-Adams Disease. W. R. Steiner, Hartford, Conn.
19 Introduction to the Study of the Fundamental Cause of Splanchnoptosis—Abdominal Incompetence: A Developmental Factor. (To be continued.) A. C. Victor, Boston.
20 What Should Be the Attitude of Public Sanatoria Toward Cases of Tubercular Laryngitis; with Suggestions as to the General Plan of Treatment of Such Cases in Sanatoria. G. L. Richards, Fall River, Mass.
21 *Accident Litigation—the Popular Graft. F. C. Richardson, Boston.

18. **Stokes-Adams Disease.**—Steiner reports three cases. The first patient, a man, aged 77, had syncopal attacks, recurring in the same month at intervals of a year or more; slow pulse; venous pulsations in the neck; arteriosclerosis and cardiac hypertrophy. During the further progress of the disease there was a gradual improvement. The second patient, a man, aged 53, had one epileptiform seizure and one syncopal attack at the apparent onset of the disease. The pulse was slow; no venous pulsations in the veins of the neck; slight arteriosclerosis, with cardiac hypertrophy. A brief sojourn at Nauheim did not give any relief. The man died suddenly about two years after the apparent onset of the disease. During the course of the disease the pulse ranged from 37 to 19. Its most constant rate was 38. The third patient, a woman, aged 51 years, had syncopal attacks, with slow pulse, venous pulsations in the veins of the neck and cardiac hypertrophy. The pulse rate averaged about 40 a minute.

21. **Accident Litigation.**—From a considerable acquaintance with personal-injury cases and an analysis of 100 medicolegal cases Richardson is of the opinion that without the coöperative proof of objective symptoms physicians in a great majority of accident neuroses are justified in regarding the alleged injury as wilfully exaggerated or as belonging to the so-called litigation psychoses. The object of his paper is to point out the possibility and importance of differentiating these litigation psychoses from what may be called true traumatic neuroses, and thus avoiding the danger of contributing to injustice either to the claimant or to the defender. He says that litigation is undoubtedly a potent causative factor in the production and prolongation of functional neuroses, but those cases in which it is the chief cause present symptoms of a much milder grade and can usually be distinguished from those resulting from actual injury.

St. Louis Medical Review.

August 4.

22 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.
23 Case of Hematosalpinx—Rupture and Hemorrhage into the Peritoneal Cavity. L. T. Riesmeyer, St. Louis.

Lancet-Clinic, Cincinnati, Ohio.

August 4.

24 *Incontinence of Feces. L. J. Krouse, Cincinnati.
25 Abdominal Pain—Its Surgical Importance. E. O. Smith, Cincinnati.

August 11.

26 The Physician of To-Day. A. B. Davenport, Columbus.
27 Treatment of Chronic Constipation of Children. G. F. Butler, Chicago.

24. See abstract in THE JOURNAL, Aug. 11, 1906, p. 453.

Archives of Pediatrics, New York.

July.

28 The Tonsil as a Portal of Microbic and Toxic Invasion. A. Jacobi, New York.
29 Study of the Stools of Breast-Fed Infants in Relation to the Presence of Starch Enzyme. C. G. Kerley, H. N. Mason and H. A. Craig, New York.
30 Variation in the Fat Percentage of Mother's Milk as a Factor in Feeding. L. Taylor-Jones, Wash'ngton, D. C.
31 Food Value of Whey Proteids. C. F. Judson, Philadelphia.
32 Relative Frequency of Heart Disease in Children in Different Countries. G. W. Norris, Philadelphia.
33 Incidence of Disease in 1,000 Cases Among Children. F. P. Van Wart and F. S. Meara, New York.
34 Chronic Lymphatic Leukemia in a Child. T. Le Boutillier, Philadelphia.
35 What Has Been Accomplished in the Treatment of Summer Diarrhea of Children. W. L. Harris, Norfolk, Va.
36 A Case of Generalized Subcutaneous Emphysema, the Result of Miliary Tuberculosis in a Syphilitic Child. W. Mackenzie, Melbourne, Australia.
37 Case of Recurrent Vomiting with Acetonuria. A. W. Myers, Milwaukee.

The Ohio State Medical Journal, Columbus.

July.

38 Autointoxication from the Gastrointestinal Tract. J. C. Hemmeter, Baltimore, Md.

Journal Missouri State Medical Association, St. Louis.

July.

39 President's Address at the Missouri State Medical Association. D. C. Gore, Marshall, Mo.
40 Address in Medicine, Missouri State Medical Association. W. G. Moore, St. Louis.
41 Triumphs of American Surgery. C. H. Wallace, St. Joseph.

St. Louis Courier of Medicine.

July.

42 The Serum Disease. J. Zahorsky, St. Louis.

University of Pennsylvania Medical Bulletin, Philadelphia.

July.

43 Significance of the "Fibroglia" Fibrils: An Embryologic Study. A. F. Coca, Philadelphia.
44 Experimental Arteriosclerosis by Adrenalin Inoculations and the Effect of Potassium Iodid. W. T. Cummins and P. S. Stout, Philadelphia.
45 Treatment of Advanced Forms of Prolapse of the Uterus and Vagina. H. D. Beyea, Philadelphia.
46 *Clinical Examination of the Feces. J. D. Steele, Philadelphia.
47 Further Experimental Investigations into the Growth of Tumors. Development of Sarcoma and Carcinoma After the Inoculation of a Carcinomatous Tumor of the Submaxillary Gland in a Japanese Mouse. L. Loeb, Philadelphia.
48 Numerical Classification of Bacteria. D. H. Bergey and H. L. Bates, Philadelphia.

46. See abstract in THE JOURNAL, June 9, 1906, p. 1793.

Brooklyn Medical Journal.

July.

49 Honors That Have Come to the Medical Profession in America. W. Schroeder, Long Island.
50 A Comparative Study of Types of Mental Disease for the General Practitioner. O. M. Dewing, Long Island.
51 Headache as a Symptom in Intranasal Disease. S. H. Lutz, Brooklyn.
52 The Cesarean Operation. W. P. Pool, Brooklyn.

The Wisconsin Medical Journal, Milwaukee.

July.

53 Hematuria of Renal Origin. H. M. Christian, Philadelphia.
54 Toxemia of Pregnancy. R. G. Washburn, Milwaukee.
55 Poisoning by Coal Gas. J. Noer, Stoughton, Wis.

The Texas Medical News, Austin.

July.

56 Therapeutics of Static Electricity. G. D. Bond, Hillsboro, Tex.
57 Preventive Legislation Against Tuberculosis. C. Bell, New York.

Bulletin of Johns Hopkins Hospital, Baltimore.

July.

58 Baron Larrey. A Sketch. J. C. Da Costa.
59 Experience with Blood Cultures in the Study of Bacterial Infections. E. Libman, New York.

Bulletin of the Lying-in Hospital of New York.

June, 1906.

60 Forty-one Cases of Cesarean Section, with Modifications of the Technic. J. W. Markoe and A. B. Davis, New York.
61 Cervical Lymph Adenitis as Observed in the Babies' Clinic. E. L. Coolidge, New York.
62 Lobar Pneumonia, Followed by Miscarriage and Empyema. R. McPherson.
63 An Inexpensive Rubber Binder for the Compression of the Breasts. J. W. Markoe, New York.
64 Toxemia of Pregnancy. R. W. Lobenstine, New York.
65 Anemia in Pregnancy. F. E. Sondern, New York.

Detroit Medical Journal, Detroit.

July.

66 Importance of Public Health Work. F. M. Warner.
67 Art of Laryngoscopy. E. L. Shurly, Detroit.
68 Recent Progress in Gynecology. B. R. Schenck, Detroit.
69 Determination of Blood Pressure by Use of the Sphygmomanometer. A. M. Campbell, Grand Rapids.

The Ophthalmic Record, Chicago.

July.

70 Tubercular Affections of the Eye. W. R. Parker, Detroit.
71 Diabetic Retinitis. W. E. Gamble, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

July 28.

1 *Borderland of Medicine and Surgery as Exhibited in the Stomach. G. A. Gibson.
2 *Infantile Scurvy. G. F. Still.
3 Errors of Refraction Among Children Attending Elementary Schools in London. A. H. Thompson.
4 *Varieties of Ringworm and Their Treatment. J. H. Sequeira.
5 Electrical Resistance of the Blood and Urine as a Test of the Functional Efficiency of the Kidney. D. Turner.

1. **Borderland Affections of Stomach.**—Gibson does not touch on anything except the diagnosis and treatment of chronic gastric ulcer and malignant gastric conditions, his remarks being based on 25 cases in which surgical intervention was invoked. There were four deaths in this series. Two patients suffering from simple non-malignant stricture of the pylorus died, as the immediate result of operation. One patient with cancer of the pylorus died within a few hours of the operation; while another, also suffering from malignant affections of the stomach, died within two or three weeks of the operative procedure. In one of the earliest of these 25 cases the patient made an excellent recovery after posterior gastroenterostomy for cicatricial constriction at the seat of an old-standing simple ulcer near the pylorus. Some months afterward there was a recurrence of all the symptoms and an exploratory operation disclosed an extensive cancerous invasion involving many of the glands in the neighborhood of the stomach. Gibson prefers gastroenterostomy in all cases in which pylorectomy is not possible. He says that in all cases of gastric trouble, when ordinary medical methods of treatment fail to bring about a recovery within a reasonable time, recourse should be had to exploratory operation.

2. **Infantile Scurvy.**—Still is convinced of the superior potency of potato as an antiscorbutic, although it is not so suitable for prophylaxis as it is for treatment. It is usually tolerated well for a few weeks during the treatment, but it is more apt to cause digestive disturbance than is fruit juice, and therefore is less suitable for prolonged use as a regular addition to the diet. The potato is prepared by boiling or steaming in the ordinary way with care to obtain a floury potato; the outer floury portion is then scraped off and beaten up thoroughly with enough milk to make a smooth cream, sufficiently thick to pour out of a jug rather heavily—potato 2 heaped teaspoonfuls (with average 2 dram teaspoon) to 1 ounce of milk; 1½ to 2 teaspoonfuls of this potato-cream are given three or four times daily; after two or three weeks the dose of this should be gradually reduced, and omitted altogether within four weeks from the commencement of treatment. The mode of giving the potato-cream is of some importance; most infants take it best mixed up with the ordinary food, but if this is done it should be mixed with a portion only of the food to ensure all of the potato-cream being taken, otherwise if part of the food is left the child does not get the full dose of potato. Occasionally it is taken more readily given separately; in either case it is often disliked at first, but Still has rarely had any serious difficulty in getting a child to take it. In addition, 2 teaspoonfuls of raw-meat juice may be given three or four times in the twenty-four hours, and sometimes ½ teaspoonful of orange juice two or three times a day, but any looseness of the bowels should make the physician cautious in adding this to the potato-cream, for diarrhea in infantile scurvy is a serious complication, as Glisson seems to have observed. At the same time, the child is placed on a diet of milk which has been heated just short of boiling point and diluted with water; the scurvy-producing "food" is of course stopped.

4. **Treatment of Ringworm.**—Sequeira recommends the use of the x-ray as an epilating agent in the treatment of ringworm; but as the rays have no lethal effect on the parasite, merely bringing out the hairs with the fundus, the rest of the scalp must be protected against infection from the falling hairs. He uses the direct current of 240 volts, each coil being wound for the voltage used. The amperemeter is at 5. A tube with penetration corresponding to number 6 or 7 on Benoist's scale is the most used one. The best results are obtained with a spark gap of from 12 to 15 cm. The current in the secondary is kept at about 0.7 mp. The hair is cut short, and the infected area is exposed for a definite time to the rays at a distance of 15 cm. from the anode of the tube. With the interrupter making 500 interruptions a minute, and the conditions as above described, sixteen minutes is sufficient to cause complete epilation of the area exposed. The exposure is controlled by the Sabouraud pastille. This little disc coated with platinocyanid of barium is placed midway between the anode of the tube and the area under treatment. When a sufficient dose of x-rays has been given to produce epilation, the pastille changes from a yellowish-green tint to an orange. It is a useful adjunct in estimating the dose of x-rays, and though there is some variation in the pastilles Sequeira has found them of great value in checking the dosage. It is essential that the pastille be placed exactly midway between the anode and the area treated, and that it be not exposed to light, for the orange tint vanishes on exposure to strong light. At the end of the sitting the area which has been treated is covered with collodion and the patient goes home. Collodion is painted on to prevent the rest of the scalp from becoming infected. At the end of a fortnight the hair begins to fall out, and at the end of three weeks, it is completely shed.

The Lancet, London.

July 28.

6 Head-Nodding with Nystagmus in Infancy. G. F. Still.
7 Pericarditis in Childhood. A. Morison.
8 *Appendicitis and Gangrene of the Vermiform Appendix Considered as Separate Diseases. J. D. Malcolm.
9 Flagellated Protozoa in a Perineal Abscess. E. H. Hunt.
10 A Few Suggestions for the Future of Consumptive Patients of the Working Classes. M. S. Paterson and F. C. Shrubsall.
11 *Passage of Spirochæta Duttoni from Mother to Fetus. A. Breinl and A. Kinghorn.
12 Case of Cardiac Syphiloma with Bradycardia and Obstruction of the Inferior Vena Cava. C. W. Chapman.
13 Gangrene of Both Feet and Legs Due to Embolism and Thrombosis of the Abdominal Aorta in Its Entire Extent, the Result of Mitral Stenosis and Consecutive Cardiac Thrombosis. H. W. Syers.
14 *Case of Gallstones of Large Size Passed by the Rectum. W. E. C. Dickson.
15 Electrical Resistance of the Blood and Urine as a Test of the Functional Efficiency of the Kidney. D. F. D. Turner.
16 Possible Importance of Earth Worms as a Factor in the Spread of Disease. C. F. Fraser.
17 Notes on Rheumatic Complications. A. D. Pithie.
18 Cases of Tabes Dorsalis in which Widespread Cutaneous Sensory Manifestations Completely Disappeared. F. W. Price.

8. **Appendicitis and Gangrene of Appendix.**—Malcolm attempts to show that in a considerable number of diseased conditions of the vermiform appendix the initial lesion is the formation of a gangrenous patch in the wall of that part of the intestine, a condition which is frequently associated with an appendicitis beginning in the mucous membrane, but which may arise independently. Gangrenous patches forming in the wall of the appendix may bring about three well-defined conditions which are easily understood and are quite independent of inflammation beginning in the mucous membrane, although this also may be present. First, there may be an escape into the peritoneal cavity of micro-organisms which excite a serous, a seropurulent, or a purulent exudation unlimited by adhesions. Second, the adjacent peritoneum may become adherent over a gangrenous patch and the latter separates and is discharged through the appendix, recovery taking place. Third, a gangrenous patch may thus become sealed off, but when it separates the adhesions also give way and a localized abscess forms or a rupture into the peritoneal cavity takes place. As the pathology and the consequences of gangrene formation are so different from those of inflammation beginning in the mucous membrane it is necessary that the two conditions should be clearly differentiated from a scientific point of view and as much as possible in practice.

11. **Spirochæta Duttoni.**—Breinl and Kinghorn have been able to demonstrate the passage of these parasites from the mother to the fetus in case of four rats and one guinea-pig. In order to see whether there exists any inborn immunity two young rats, from four to five weeks old, born while the mothers were heavily infected, were inoculated with blood containing spirochetes. They showed no immunity but became infected and passed through an attack identical with that ob-

served in normal rats of the same age. On a third rat ticks were fed and the parasites appeared in the peripheral circulation after five days, the usual incubation period.

14. **Gallstones Passed by Rectum.**—The main interest in the case reported by Dickson lies in the fact that three gallstones of large size were evacuated from the gall bladder by natural means. They had evidently ulcerated through the fundus of the gall bladder into the large intestine, after these two organs had become attached to each other by adhesions, then passed slowly down the large intestine, and became surrounded by a mass of feces, causing partial obstruction of the bowels which was relieved by the repeated use of large enemata. The stones when fitted together made a mass 3½ inches long, forming a complete cast of the interior of the gall bladder. That they passed down by the cystic and common bile ducts is very improbable, there having been no severe attack of jaundice, and moreover the stone which formed a cast of the fundus of the gall bladder was the first to appear in the rectum, and preceded the others by about four months. Ulceration into, and passage by way of, the small intestine is also excluded by the clinical history, and stones of such large size, if they had traveled by the last-named route, would almost certainly have become impacted at the ileocecal valve. A small ischiorectal abscess formed a few days after the first stone was passed, probably from fissuring of the stretched mucous membrane of the anal canal and infection with organisms. This was opened—about one and a half ounces of pus being evacuated—and rapidly healed up; the patient is now in good health. The three stones, after drying, weighed 1.71 ounces.

Presse Médicale, Paris.

19 (XIV, No. 37.) L'osmose en physiologie et en pathologie. L. Hallion.
20 *Les hallucinations inanitionelles chez les "rescapés" de Courrières (in the long buried miners). H. Lassignardie.
21 (No. 54.) *Cure radicale de la hernie inguinale. M. Savariaud.
22 Obtention du lait normal asceptique (milk). G. Linas.
23 (No. 55.) *L'aphasie sensorielle. Sa localisation et sa physiologie pathologique. J. Dejerine.
24 Successful Electric Treatment of Cicatricial Cheloids—Traitement des chéloides par l'effluve de haute fréquence. F. Redard and G. Barret.

20. **Hallucinations from Starvation.**—Lassignardie's thesis in 1879 (Bordeaux) was devoted to the psychic disturbances consequent on deprivation of food. His conclusions were to the effect that fasting promoted the development of the intellectual faculties, especially the imagination. In actual starvation the character changed and became irritable and cruel, with loss of memory and will power, and development of hallucinations, agreeable or distressing. He has recently been studying the miners who were buried for so many days in the mine at Courrières. One miner was not released until after an interval of 25 days. He frequently imagined himself at home and talked with his wife and imagined that he found scraps of bread, which he ate with relish. Like most of the others, he frequently imagined that he saw bright lights before him. All the miners said that they became very irritable and frequently quarreled. They all had hallucinations, generally agreeable, but nearly all retained their reason, only a few being actual dupes of their imagination.

21. **Radical Treatment of Inguinal Hernia.**—The points in which Savariaud has modified the Bassini technic are in the restoration of the abdominal wall and in the shortening of the spermatic cord in case of a varicocele or lipoma in the cord. The article is illustrated.

23. **Sensory Aphasia.**—Dejerine presents evidence to confirm the assumption that disturbances in speech and mental disturbances are due to entirely different processes.

27. **Sterile Catgut, Ready for Use.**—Karewski sterilizes the catgut in a special glass vial, open at both ends, in the fumes of boiling 70 per cent. alcohol. The vials are exposed for an hour to the fumes at a temperature of 78.8 or 81 C. The catgut is wound by a yarn-winding machine and is boiled first in glycerin, then extracted cold in ether and alcohol. Each vial is partly filled with alcohol, containing from 1 to 3 per cent. glycerin, and is heated again to 103 C. for an hour. The open ends of the vials are then fused and they are kept in a vessel of alcohol ready for use. Tests with anthrax spores showed that they are destroyed by this method of sterilization. The vials have a small neck with a bulging part above, terminating in a long narrow tip. The end of the catgut is drawn out through this long top of the vial, a knot in the catgut preventing its slipping back, the knot fitting into the bulging part. The vial is opened by breaking the neck just below the bulging part. The article is illustrated, showing the special contrivances for large clinics and for hospital use.

Berliner klinische Wochenschrift.

25 (XLIII, No. 20.) Zur baktericiden Wirkung radioactiven Mineral-Wassers. M. Rheinboldt.
26 What Value Have Experiments on Frogs for Application in the Clinic?—Welchen Wert haben Digitalis-Froschversuche für die Praxis? Focke.
27 (No. 21.) *Ueber gebrauchsfertiges, dauernd steriles aseptisches Catgut. Karewski.
28 *Das Experiment in der Balneotherapie. F. Heinsheimer.
29 Reply to Bashford's "Experimental Cancer Research."—Erwiderung auf den Artikel des Hern Dr. Bashford; "Einige Bemerkungen zur Methodik der experimentellen Krebsforschung." P. Ehrlich and H. Apolant.
30 *Influence of Domestication on Origination of Disease.—Einfluss der Domestikation auf die Entstehung der Krankheiten. D. v. Hansemann. (Concluded.)
31 Ueber Antiamboceptoren. C. H. Browning and H. Sachs. (Concluded.)
32 Mountain Climate and Sea Air in Children's Affections.—Höhenklima und Seeluft als Heilpotenzen bei Kinderkrankheiten. R. Fischl.
33 *Serpiginous Corneal Ulcer.—Hornhautgeschwülste. Helbron.
34 *Retained Enemas.—Ueber Bleibe-Klystiere. A. Pollatschek.
35 *Balneotherapy in Gynecologic Affections.—Badekuren bei Uterusmyomen und exsudativen entzündlichen Erkrankungen der weiblichen Geschlechtsorgane. L. Nenadovics.

28. **Experimental Research on Balneotherapy.**—Heinsheimer has been studying on dogs with Pawlow fistulæ the effect of various mineral waters, bitters, etc., on the secretions. The results harmonize with those observed in the clinic.

30. **Influence of Domestication on the Origin of Diseases.**—This article was presented as one of the principal addresses at the Lisbon International Medical Congress and was mentioned in the notice of the congress in the last volume of The Journal. As examples of the degeneration that follows domestication, von Hansemann mentions that neurasthenia and hysteria are frequently observed among animals. He states that he knows of instances of imaginary gestation in the dog. The abdomen became enlarged, the milk glands swelled, and colostrum was secreted, the same as in an imaginary human pregnancy, and all the signs subsided after the normal term of gestation. He also mentions a dog that was given injections of morphin daily for a time on account of an operation. After the injections were discontinued the dog suffered from attacks of pain every day at the hour of the injections, but he quieted down at once if a little water was injected in place of the former morphin. Mental disturbances occur among uncivilized peoples, but the persons thus affected are soon exterminated and do not propagate and perpetuate the neurotic tendency. The increasing numbers of neuropathic individuals parallel the progress of civilization, and might even be used as a criterion of the stage of civilization in a special land. Animals in liberty and untrained children do not eat more than appetite calls for, but domesticated animals and children, tempted to eat by savory viands, soon acquire the habit of eating more than they require. In respect to tumors he remarks that wild animals and uncivilized human beings seldom live to reach the cancer age, which may explain the rarity of cancer among them. Tuberculosis in persons occupied in dust-laden air does not affect the apices. The tuberculous lesions are found where the inhaled dust is most accumulated. This form of tuberculosis is most certainly a "domestication affection." The same might be said of ordinary tuberculosis affecting a person changing to different conditions of life. Japanese students in Germany are liable to acquire tuberculosis, as also German students in Japan, showing the importance of a changed manner of life in the origin of the disease. This fact is also evidenced by the frequency of tuberculosis in prisons, etc. True gout is a typical example of a "domestication affection," he thinks. He has never known of its occurrence spontaneously in animals or among uncivilized peoples, and the same can be said of rachitis. The latter is never found

among people living in the open air or in well-ventilated houses who keep the children out of doors and refrain from bundling them up much in infancy. In conclusion he mentions the evil effects of wearing deforming shoes, corsets and hard hats as "domestication affections."

33. **Serpiginous Ulcer of the Cornea.**—Helbron urges promptness in treating ulcer of the cornea, as many eyes are still lost every year from progressing hypopyon-keratitis. Antipneumococcus serum is a valuable adjuvant, but can not be relied on exclusively, he thinks. He believes in applying the galvano-cautery even in the very earliest stages, using it at a low red heat, so as not to destroy the sound cornea beneath in the incipient cases, supplementing it with perforation and cleansing out the ulcer excavation in severe cases. Boric acid or sublimate salve afterward, he states, is more effectual than iodoform.

34. **Retained Enemas.**—Pollatschek uses small enemas of 50 or 100 or 150 gm. of Carlsbad waters at a temperature of about 50 C. in the treatment of chronic diarrhea. The infused fluid is retained and the procedure is repeated until the patient is able to retain the enema. He has found these small, hot enemas a very reliable palliative and curative measure. Boiled water and salt solution have also been found useful by his patients after their return home, but he has no personal experience except with the Carlsbad Sprudel water.

35. **Balneotherapy in Gynecologic Affections.**—Nenadovics reviews what has been written on this subject and his own experience, all tending to show, he thinks, the value of balneotherapy in gynecologic affections as soon as the febrile stage is past and the patient is able to travel. The ability to travel depends on the absence of fever and the general condition; the local pain and tenderness may be disregarded in cases with exudation and inflammatory processes. Mud baths, he states, are especially useful in case of uterine myomas in young women of delicate constitution, debilitated from hemorrhages, and also in chlorosis.

Münchener medizinische Wochenschrift.

36 (LIII, No. 21.) Nachweis von Antituberkulin im tuberkulösen Gewebe (tissues). E. Weil and H. Nakajama.
37 Zur Kenntnis und Beurteilung des kriminellen Aborts. Schickele.
38 *Zur Diagnose der kongenitalen Dünndarm-Atresie, unter bes. Berücksichtigung der Untersuchung des Mekoniums, K. Walz.
39 Therapeutische Verhalten der akuten Otitis Media mit Berücksichtigung ihrer verschiedenen Aetiologie. Scheibe.
40 Zum Nachweis der Azetessig-Säure im Harn (aceto-acetic acid in urine). L. Lindemann.
41 Technisches zur Bierschen Stauung (suction treatment). F. Kuhn.
42 Die medizinische Psychologie mit Bezug auf Behandlung und Erziehung der angeborenen Schwachsinnigen (training of feeble-minded) A. Uffenheimer.
43 (No. 22.) *Aktive Immunisierung gegen Infektions-Krankheiten. Dieudonné.
44 *Cultivation of Typhoid Bacilli from Blood.—Züchtung von Typhusbazillen aus dem Blut. Fornet.
45 *Formalin in Biologic Blood Test.—Anwendung von Formalin bei dem Uhlenhuthschen Verfahren. W. Loele.
46 History of Spinal Anesthesia.—Zur Geschichte der Rückenmarksanasthesie. August Bier (Bonn).
47 *Rest in the Open Air for Gallstone Patients.—Liegehallen für Gallensteinkranken. F. Fink.
48 Zur Röntgen-Bestrahlung der Leukämie. J. Arneth.
49 *Metabolism in Leukemia under Röntgen Treatment.—Untersuchungen über den Stoffwechsel bei Leukämie während der Röntgenbehandlung. I. Rosenstern.

38. **Diagnosis of Congenital Atresia of the Small Intestine.**—Walz describes the postmortem findings in a case of atresia of the small intestine associated with horseshoe kidney, and shows that the atresia is due to embryonal malformation. Meconium can be passed even with complete atresia of the duodenum. In every case of continuous vomiting by a newborn infant the meconium should be histologically examined, as operative treatment of atresia of the duodenum can count on success only if done early. If there is no spontaneous passage of meconium, then some can be obtained with an enema. Entire absence of lanugo hairs in the meconium, he states, is a positive sign of complete occlusion of the duodenum before the fifth month of embryonal development. This diagnosis is strengthened by the absence at the same time of pavement epithelium and of elements of food (droplets of fat).

43. **Active Immunization Against Infectious Diseases.**—This communication was the summarizing report on this subject, read at the Lisbon International Medical Congress.

44. **Cultivation of Typhoid Bacilli from Coagulated Blood.**—Fornet states that he was able to cultivate typhoid bacilli from the blood in 14 out of 19 cases of typhoid fever long before the agglutination test gave positive findings. The bacilli in unmodified blood all died, either from the bactericidal power of the blood or from the mechanical injury from the fibrin network. When bile is added to the blood it breaks up the fibrin network and releases the bacilli, so that they can be cultivated from the blood afterward. The clot of blood left from the agglutination test is placed in a test tube with about 5 c.c. of bile from the slaughter house and put in the incubator over night. A very small amount of blood is sufficient for the purpose.

45. **Improved Formalin Technic for Biologic Test.**—The great difficulty with the Uhlenhuth-Wassermann biologic precipitation test has always been the rapid spoiling of the blood and meat extracts, and the necessity that the material with which the animals are injected must be sterile. This difficulty can be obviated by adding formalin to the extracts. Loele found that the best mixture for the purpose was 2 per cent. formalin and 0.6 per cent. sodium chlorid in distilled water. This is mixed half and half with the blood to be injected into the rabbit to produce the prepared serum. The mixture found most effectual for preserving the extracts of blood and tissues was 75 parts of distilled water, 15 parts of calcium bichlorid (1 per cent. solution in distilled water); 10 parts of magnesium chlorid, and 1 part formalin. Precipitation occurs with remarkable distinctness with this alkaline formalin mixture.

47. **Rest in the Open Air for Gallstone Patients.**—Fink proposes to have erected at Carlsbad a "reclining hall" (Liegehalle) for gallstone patients, for whom rest and warmth to the abdomen for an hour or two or longer daily have been ordered. He believes that those suffering from cholelithiasis thrive much better when they spend the entire afternoon lying down, with very little exercise in the mornings. He would like to have open shelters provided, as for the tuberculous, and the Carlsbad authorities are now discussing ways and means to carry his proposal into effect.

49. **Metabolism in Leukemia Under Roentgen Treatment.**—This long article concludes with a warning that the general condition should be watched carefully and Roentgen treatment be suspended, notwithstanding a progressive reduction in the leucocytes, if anything indicates that the action of the Roentgen rays is going beyond the desired effect. The number of reds and the proportion of hemoglobin must be supervised, and also the elimination of uric acid. If the latter shows no signs of reduction, this must be accepted as a signal for special caution.

Therapie der Gegenwart, Berlin.

Last indexed, page 467.

50 (XLVII, No. 4.) Present Status of Cancer Research.—Der heutige Stand der Krebsforschung. H. Apolant.
51 *Zur Behandlung hartnäckiger Ischias-Fälle mit perineuraler Infiltration (sciatica). Umber.
52 *Zur Behandlung der chronischen Verstopfung (obstipation). O. Kohnstamm.
53 Diagnose und Therapie der spindelförmige nDilatationen der Speiseröhre (fusiform enlargement of esophagus). B. Auerbach.
54 Behandlung der oberen Luftwege mit Quillajarindendecoct (infusion of quillaja). Zickgraf.
55 Zwei Fälle von chronisch-ankylosierender Entzündung der Wirbelsäule (spine). R. Zuelzer.
56 Zur Diagnose und Therapie des chronischen Dickdarm-Katarrhs (of large intestine). W. Zweig.

51. **"Infiltration" Treatment of Sciatica.**—Umber has had excellent results in 14 cases of chronic, long rebellious sciatica treated with perineural injections by a modified infiltration technic. He injected from 70 to 100 c.c. of a 1 per thousand solution of eucain with 8 per thousand sodium chlorid. Nine patients were cured completely by a single or once-repeated injection. One, a syphilitic, was only slightly improved. In another patient paresis of the peroneus developed tardily after the one effectual injection. In some cases slight twinges were felt later in the peroneus region, but they subsided after a small amount of the fluid had been injected at the sensitive

point (30 c.c.). It was truly remarkable, he says, to see patients walking about entirely free from pain the day after the injection, when up to that time they had suffered continuous agony unmodified by any treatment. The last four patients were injected with physiologic salt solution alone, without the eucain, and the results were exactly as good as with the anesthetic. He injected a little larger quantity, up to 170 c.c. A single injection of this kind was followed by complete relief from pain in forty-eight hours. This latter technic is so simple and free from any danger that he advocates it for general adoption, instead of the eucain for fear of encountering an idiosyncrasy to this drug. He cites a case on record of death from 0.08 gm. of eucain. Lange of Leipsic, was the first to practice this "nerve infiltration," as was mentioned at the time in these columns, page 586 of vol. xliv.

52. **Treatment of Constipation.**—The principal features of Kohnstamm's successful treatment are the avoidance of meat and the ingestion of milk three times a day at least. He believes that worry has a constipating effect, and that the focussing of the will power is liable also to have an inhibiting influence on the visceral functions.

Gazzetta degli Ospedali, Milan.

57 (XXVII, No. 33.) Ricerche batteriologiche sulla infezione tifoidea. G. Curlo.
58 *La tripsina, fermento solubile proteolitico del pancreas, per la cura del cancro. G. Zanoni.
59 (No. 36.) *Contributo critico-sperimentale allo studio dell' etiologia della rabbia (rabies). C. S. Materazzi.
60 *Polmonite epidemica e infezione pneumonica famigliare. A. De Blasi.
61 *Il sintoma palmo-plantare di Philipovicz nella febbre tifoidea. G. Minciotti.
62 Relations Between a Boil and Paranephritis.—Sui rapporti fra furuncolo e paranefrite suppurata. F. Bindi.
63 Sulla pretesa coltivazione delle amebe parasite. P. Barbagallo.
64 (No. 39.) La patogenesi della anemia da anchilostoma. A. Berti.
65 Su la persistenza di laringo-stenosi dopo la intubazione o la tracheotomia nei bambini. G. Copetti.
66 *Nuovo processo per l'allacciatura dell'arteria innominata (ligatare). E. Giordano.
67 Uroscopio tascabile per l'esame delle urine al letto dell' ammalato (bedside examination of urine). E. Ronzani.
68 (No. 43.) *Sulla diagnosi delle alterazioni funzionali del fegato e della sifilide epatica (functional disturbances in liver). E. De Renzi.
69 Sulla variabilita del bacillo del tifo nei differenti tessuti dell' organismo. V. Maragliano.
70 (No. 48.) Coagulabilita e xantocromia del liquido cerebrospinale in un caso di lesione della coda equina. L. Fornaca.
71 *Sulla formazione e sul valore semeiologico del muco e delle muco-membrane. A. Riva.

58. **Trypsin in Treatment of Cancer.**—Zanoni has been repeating Beard's experiments with pancreatic ferment in the treatment of cancer. His results were likewise positive; the parts of the cancer in contact with the ferment became destroyed; granulations from the ear, and nasal polyps placed in the ferment in a test tube were rapidly digested. A superficial mammary mouse cancer became hollowed out under the influence of the trypsin, but without pain and without eschar formation. In proportion to the amounts injected into the mouse tumors, it would be necessary to inject a human being with 177 c.c. for a weight of 70 kg.

59. **Etiology of Rabies.**—Materazzi's researches confirm those of others, sustaining the etiologic importance of the Negri bodies in rabies. They can be detected and the diagnosis confirmed in 24 hours, he says, by simple microscopic examination of the fresh hippocampus, and with a minimal amount of material.

60. **Epidemic Pneumonia.**—De Blasi has observed an epidemic of pneumonia, affecting 60 persons, mostly in groups, and the disease displaying a marked contagious character. A pleural effusion was evident in about half the cases, but it was never purulent.

61. **Yellow Patch in Palms and Soles in Typhoid.**—Philipovicz regards the yellowish discoloration of palms and soles as pathognomonic of typhoid fever. In one of Minciotti's patients the yellow patches were painful. The symptom was most marked in the left palm and sole. The tint was a pronounced orange, and gradually subsided to normal. The pain first attracted attention to the left sole about the eighth day of the disease.

66. **Ligature of the Innominate Artery.**—Giordano's technic aims to open up the field extensively while respecting the points of attachment of the muscles of the region. It has shown many points of advantage over the ordinary technics in his tests on the cadaver. The sternum is divided with the wire saw introduced beneath, sawing on a level with the second rib. The clavicle is then sawed in the same way. The incisions and sawing outline a bone-muscle-skin flap, shaped like a trapezoid, which, when lifted up, exposes amply the innominate artery.

68. **Syphilides of the Liver.**—De Renzi discusses a case of syphilitic, interstitial hypertrophic inflammation of the liver, with chronic icterus. Marked improvement followed mercurial treatment. The icterus had been the first symptom, appearing eighteen months before. The liver, spleen and some of the glands became gradually enlarged. There was no alimentary glycosuria; the functions of the liver were evidently retained and exaggerated. The patient had long lived in a malarial region.

71. **Membranous Enteritis.**—Riva regards hypersecretion of mucus as a means of defense on the part of the organism to protect the mucosa lining the intestinal canal. He has found that bile has an anticoagulating action on the mucus, and has a curative effect in case of hypersecretion of mucus with accumulations of mucous casts in the stools. The mucomembranous formation is probably due to increased production of mucus with simultaneous reduction of anticoagulating substance, and is generally the expression of inflammation of the gastrointestinal mucosa. Its action is injurious, as it obstructs the free course of the feces and provides nooks and recesses where microbes and toxic substances can accumulate. He uses a special preparation of bile and has found it useful in treating cases of mucomembranous enteritis, as he previously reported.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Prophylaxis and Treatment of Internal Diseases, Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati, etc. Cloth. Pp. 652. Price, $5.00 net. New York: D. Appleton & Co., 1906.

Operative Treatment of Prolapse and Retroversion of the Uterus. By J. I. Parsons, M.D., M.R.C.P., M.R.C.S., Physician to the Chelsea Hospital for Women, Late Surgeon Royal Maternity Charity, Fellow of Royal Medical and Chirurgical Society, Obstetrical Society of London. Cloth. Pp. 90. Price, $1.25 net. New York: William Wood & Co.

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Addresses

THE DISTRIBUTION OF AFFERENT NERVES IN THE SKIN.*

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While the question as to how the ventral roots of the spinal nerves are engaged in the innervation of the muscles is in its main features cleared up, especially through the researches of Sherrington,[1] our insight into the distribution of the afferent fibers is still very incomplete. Here again the work of Sherrington represents by far the most important contribution, his experiments being the more interesting because of their having been made mostly on monkeys.

Sherrington[2] determined the extent of the cutaneous areas of the dorsal roots of all the spinal nerves and found that these areas are always continuous for each single root and that they overlap to a considerable extent. His method of observation was that of remaining anesthesia, as Head has termed it. The skin field of a spinal root is isolated by dividing as many adjacent roots as is necessary to surround the skin field in question by a totally anesthetic zone. By pinching the skin and watching the reflexes thus called into action the borders were defined.

This way of proceeding neglects the functional differences of the afferent fibers, and its results are, therefore, applicable to the sensory disturbances in man only with certain restrictions. Sherrington[3] tried to make up for this deficiency by a series of experiments on tame monkeys, cutting one or more of the dorsal roots and examining the field, thus rendered anesthetic or hypesthetic, with a variety of stimuli. He generally found the heat-sensitivity and the pain-sensitivity more impaired than the tactual sensitivity, which means that "the pain-field and the heat-field of a single sensory spinal root, at least in the case of certain spinal nerves, are less extensive than is the touch-field of the same root." He recognizes that the problem is but imperfectly accessible by researches on animals and awaits fuller information from the study of clinical cases.

In dealing with sensory disturbance in man after injury to cutaneous nerves, the first thing to be considered is what kind of sensations belong to the normal skin and to the underlying tissues. The subject has been treated by a large number of physiologic and psychologic investigations, and I propose, so far as I am able, to draw a short sketch of their issue.

Most physiologists agree that the sensory functions of the skin are based on four fundamental qualities mediating the sensations of warmth, cold, touch and pain. Careful investigations have placed it beyond doubt that corresponding to these functions the nerve-supply to the skin must be a fourfold one. Blix was the first to note that the sensibility of the skin to warmth, cold and touch varies widely within a given area, provided the stimuli act on a very small part of it. He ascribed this fact to the existence within the skin of terminal organs of specific function, and he regarded the most irritable points as their projection on the surface. Goldscheider has confirmed and amplified the conclusions arrived at by Blix, but was often misled in his observations by not using quantitative methods. Later I was able to show that the spots most sensitive to touch had a peculiar relationship to the hairs, lying always on the windward side of the hair and covering its root or sheath.[4]

The position of these touch-spots once ascertained, it is easy to prove that they react in a specific way to various kinds of stimuli. In using, for instance, the head of a pin as an electrode, the touch-spots respond to an alternating current of minimal strength by a vibrating sensation very similar to that evoked by a tuning fork brought in contact with the skin. In the spaces between the touch-spots no such sensation is provoked, but the same current or even a weaker one is felt as a non-vibrating, permanently painful prick.

We have, then, two different sensations evoked by the same minimal stimulus, and it depends on the place where the stimulus is applied as to which one is produced. The most probable explanation of this fact is that the effect depends on the kind of terminal organ excited by the stimulus. The one reacts quickly enough to transmit separately the rapid alternations of the current: the other, too slow to do so, is kept by them in a condition of constant irritation. In what part of the nervous system this difference of reaction is seated, whether in the nerve fibers, in the terminal organs, in certain central parts or, as seems not improbable, in all three of them, can not be decided at present. But it is clear that the nervous impulses belonging to the two sensations must be transmitted to the brain by different paths, a conclusion which quite agrees with clinical observation.

As regards the temperature sensations, similar circumstances prevail. If the skin is examined with bits of wire, kept at temperatures a few degrees above or below the temperature of the skin, it is easy to map out a large number of cold-spots and a more restricted number of warm-spots. They represent minute, but unchanging areas on the skin, in which the sensation cold or warm is aroused by a minimal stimulus, that is to say, by a stimulus not felt in the intermediate spaces.

In applying thermal irritants to these points generally only one kind responds. If the temperature of the skin is lowered the cold-spots are stimulated; if it is raised the warm-spots come into play. It is impossible to give definite temperatures as liminal values, since the physiologic zero point changes, not only as regards time, but also in different parts of the skin, as, for instance, in passing from the volar side of the hand to the dorsal one, or from the covered parts to the uncovered ones and so on. Some stimuli act on both the warm and the cold-spots. Mechanical and electrical irritations have this power and under certain circumstances thermal irritation also. With temperatures between 45° and 50° C. one is generally sure to stimulate not only the warm-spots, but also the cold-spots, evoking from the latter a sensation of cold, which I have termed the paradoxical cold sensation. It is, therefore, quite possible that one and the same stimulus is felt both as warm and cold. This can be conveniently shown in the following way: By means of a small lens the sunlight is concentrated on a part of the skin where the warm and cold-spots have been determined beforehand. By bringing the focus to a warm-spot the sensation of warmth is produced, on a cold-spot the sensation of cold. In the intermediate spaces the concentrated light is either felt as painful or is not felt at all, according to its intensity. The touch-spots never respond, being not accessible to any kind of thermal stimulus. The experiment shows in a very striking manner the specific nature of the afferent nerve-fibers of the skin.

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* Address before the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Jour. of Physiology, 13, 621, 1892.

[2] Phil. Trans., 1893, 184, B. 641; 1898, 190, B. 45.

[3] Jour. of Physio., 27, 360, 1892.

[4] Abtr. Ges. d. Wiss., Leipzig, 1896, 23, 175.

From this and other observations the conclusion may safely be drawn that the nerve-supply to the skin is a fourfold one. To use a rather schematic but illustrative expression, it can be said that the surface of the skin is divided into a very large number of minute areas or patches, each of which represents the field of distribution of the nerve fibers belonging to one or other of the above named four qualities. According to a rough estimate, there are on the skin of the trunk and limbs about 30,000 warm-spots, 250,000 cold-spots and half a million of touch-spots. As to pain, reliable dterminations are wanting. It is easy to prove that the sensibility to a painful stimulus passed across the skin varies considerably from place to place, but it is difficult to mark out with the same exactness as can be done for the three other sensations, spots of maximal sensibility. The reasons for this deficiency are manifold, one being, no doubt, the richness of the skin in nerve fibers of this sort.

I have often been told that common experience contradicts the conception of the nervous supply of the skin as here sketched, in that a warm, a cold, a blunt or a sharp object passed over the skin is everywhere recognized in its proper qualities, and that the sensation seems a continuous one throughout. In granting that the afferent nerves are nowhere mingled into a homogeneous or uniform layer and that the surface of the skin is, so to speak, checkered by a variety of terminal organs, the expectation is naturally raised that an object moving over the skin ought to provoke a sensation varying in quality and changing in intensity. I have given already a few instances which prove that this expectation is by no means an erroneous one. If the moving object is of very small size and its stimulating power not far above the threshold value, the sensation is in very fact a discontinuous one, varying generally both in intensity and quality. Besides there are to be found in every normal skin regions where one or two of the typical sensations are wanting, where cold is felt but not warmth, pain but not touch, and *vice versa*.

Still, the objection just raised holds good under the usual circumstances and must be somehow accounted for. I think the explanation lies in a peculiarity, belonging to all sensory organs, which for the sake of convenience I shall term the irradiation of stimuli. There are two kinds of irradiation, a physical and a physiologic.

Physical irradiation consists in the spreading of the irritation over a larger number of terminal organs than the nature of the stimulus itself would seem to demand. This spreading is caused by certain physical qualities of the tissues or parts conducting the stimulus to the terminal organs, as, for instance, by the imperfections of the dioptric apparatus in the eye, by the diffusion in the saliva of the substances affecting taste, etc. In the skin, thermal differences and mechanical deformation are apt to spread to a considerable extent, with the effect that, unless special precautions are employed, nearly every stimulus is sure to irritate more than one terminal organ. This circumstance explains the difficulty or inexpediency of mapping out touch-spots or temperature-spots over such parts as possess a thick epidermal layer, as the volar side of the hand, the sole of the foot, etc.

Of far greater importance is the phenomenon to which I have alluded as physiologic irradiation. The points of a pair of compasses set on the skin are not discriminated as separate if the distance is reduced to a certain liminal value, which differs widely in various parts of the skin. This fact was recognized by E. H. Weber, who used it as a means to measure the acuteness of local discrimination. His conception was that the liminal distance had an anatomic bearing in that it depended on the distribution and ramification of nerves in the skin. This view had to be abandoned after several investigators had found that the liminal distance could be much reduced in applying the two stimuli not simultaneously but successively. In using this device and choosing a suitable time-interval between the two stimuli, I was able to show that any two neighboring touch-points may be discerned, though it is not possible under these circumstances to judge their relative position.[5]

The enormous differences between the liminal distances found in simultaneous and successive stimulation can not be explained on an anatomic basis, but point to a difference in the spreading of the irritation, being evidently facilitated by simultaneous stimulation. This is proved, moreover, by the fact that simultaneous irritation of two neighboring touch-points is always felt more strongly than that of a single one, which means that the two irritations are added, one to another, as is the case with stimuli successively applied to the same terminal organ. It is, therefore, right to say that the localization of a given stimulus and the intensity with which it is felt depends not only on the physical properties of the stimulus and on the number and quality of the terminal organs engaged, but also on the conditions existing in the central nervous system.

I wish to lay special stress on this point, since it helps to clear up some very interesting observations recently recorded by Dr. Head.[6] In order to study the consequences of nerve injury more accurately than was possible on the patients of the London Hospital, he submitted himself to a very heroic and at the same time very valuable experiment. In April, 1903, the external and radial cutaneous nerves of his left forearm were divided in the neighborhood of the elbow, and after small portions had been excised the ends were united by silk sutures.

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[5] Würzburger Litzungsbor, 1899 and 1902.

[6] Head, H.: The Afferent Nervous System from a New Aspect, Brain, 1906, vol. ii, p. 99.

Dr. Head describes the consequences of the operation in the following way: "It produced loss of all forms of cutaneous sensibility over an extensive area on the radial half of the forearm and back of the hand. Stimulation with cotton-wool, the prick of a pin, the application of all forms of heat and cold, were unappreciated, and the two points of the compasses could not be discriminated, even when separated to the furthest extent possible. But if this part was touched with the point of a pencil, the head of a pin, or even with the ball of the finger, the stimulus was at once appreciated and the point of application localized with remarkable accuracy" (p. 102). "When the hairs were pulled, the elevation of the skin produced no effect on the consciousness. Pressure, which previously caused a sensation, was no longer appreciated when applied to the skin lifted from the subcutaneous structures to form a ridge. All sense of form or size was lost" (p. 103).

For a long time past neurologists have maintained the view that in speaking of the perception of pressure a distinction must be drawn between light pressure or touch and strong pressure or, as Strümpell more appropriately calls it, deep pressure. The perception of light pressure, of form and of size, is due to the skin, thanks to the sensibility of the touch-points and their highly developed discriminating and localizing power. The corresponding terminal organs are ring-like arrangements of non-medullated nerve-fibers encircling the hair follicles and, in the hairless parts of the skin, the corpuscles of Meissner.

The perception of deep pressure is much less accessible to investigation, because, under normal conditions, it is hidden by the superior sensibility of the skin. But it is known from clinical cases, particularly of syringomyelia, that the sensibility of the skin may be impaired or even lost, while the perception of deep pressure is apparently unaltered. So far as I am aware a minute examination of the state of sensibility in such cases has never been made. Undoubtedly a certain amount of localization remains and there is no ataxia in executing spontaneous movements, a disturbance never wanting when deep sensibility is lost. As to the terminal organs that are responsible for this kind of sensibility, Sherrington has rendered it very probable that they are to be looked for in the so-called "muscle-spindles." According to him, from one-third to one-half of the medullated fibers of the muscular nerve trunks consist of small-sized fibers connecting the spindles with the spinal ganglia.[7] There are, besides, terminal organs called corpuscles of Pacini and Golgi-Mazzoni to be found in the fibrous membranes, in tendons and joints. Head's experiment may be regarded as a crucial test, establishing the correctness of the above views.

A fact which puzzled Dr. Head very much he describes in the following way: "Over the radial half of the dorsum of the wrist a triangular area of skin became entirely insensitive to prick in consequence of the operation. But this same area remained sensitive to touches with cotton-wool and also, in a limited degree, to warmth. The area was capable of appreciating temperatures between 36 and 45° C. It was, however, entirely insensitive to temperatures of 50° C. and above."

If this description is to be taken literally it is difficult to understand, and, I think, very improbable. I venture to suggest the following interpretation: Temperatures of 50° were felt neither hot nor burning, but simply warm, just like the lower temperatures. If my conjecture is right, the observation can be easily explained by certain peculiarities of the temperature-sensations familiar to physiologists.

I have already spoken of the so-called paradoxical sensation of cold brought about by irritating the cold-spots with temperatures of 45° and higher ones. If the temperature of the normal skin is slowly raised over the physiologic zero-point, first the warm spots alone are irritated and the sensations lukewarm or warm evoked, according to the intensity of the stimulus. When the temperature reaches 45° the sensation changes in a peculiar way owing to the fact that the cold-spots join in the irritation, mingling their specific sensation with the warm one. Alrutz has proposed to reserve the term "hot" exclusively for this combination, and I gladly accept his suggestion. If the temperature is raised still higher pain is evoked, and the sensation assumes a burning character.

Now, if some part of the skin has lost the sensations of cold and pain, it is to be expected that all temperatures above the physiologic zero-point will be felt simply as warm, and that the sensations hot and burning will be absent. The possibility remains that the higher temperatures will not be felt at all, since it is a well-known fact that temperature-spots tire very quickly.

Another curious observation was made by Dr. Head during a certain period of recovery. From about the fiftieth day after the operation, sensibility of the skin slowly began to return, the sensation of prick appearing first, soon being followed by temperature sensations, but a year elapsed before light touch could again be felt. The temperature sensations were at first very imperfect. To irritate the cold-spots, which reappeared in small number, rather low temperatures were needed and conversely relatively high temperatures for the warm-spots. But whenever the spots reacted the sensations were strong and widespread, their localization indefinite and often erroneous. Similar phenomena could be observed when painful stimuli were applied.

I quite agree with Dr. Head in attributing to these observations a considerable importance, but I can not see them in the same light as he sees them. He thinks that these imperfect sensations of cold, warmth and pain are brought about by a special system of nerves, which he calls "protopathic." These nerves regenerate, according to him, more quickly than the "epicritic" ones, their threshold value is high, their sensations strong and varying little in intensity, the localization very indefinite, etc.

I may be now allowed to recall what I have said regarding the perception of intensity and locality of a stimulus. I pointed out that in producing these perceptions certain qualities of the central nervous system, such as summation, irradiation and others, play an important rôle. If a cutaneous nerve is severed, the atrophy of its distal end, of its terminal organs and probably of the skin is not the sole effect, but there occur at the same time marked changes in the corresponding spinal ganglia and their posterior roots. In a very elaborate research George Koester, of Leipzig, has shown[8] that the cells of the ganglia first swell and then shrink and that they remain for months in an altered condition. Similar changes take place in the posterior roots. According to H. K. Anderson,[9] section of the sciatica nerve in young animals checks the development of the corresponding ganglia and posterior roots and of the cells in Clarke's column of the same side.

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[7] Jour. of Physiol., 17, 211, 1895.

[8] Koester, Gg.: Zur Physiologie der Spinalganglien, Leipzig, 1904.

These observations furnish ample proof that at the time of incipient recovery the central connections of the cut nerve are not in normal condition, which makes it probable that their function also is altered. If we assume, for instance, that through the degeneration process the connections of neurons are loosened, it seems quite likely that after the operation stronger stimuli are needed to evoke sensations than under normal conditions, and that the irritation once established is little changeable as regards intensity and irradiation, which means that summation and localization are very imperfect. The assumption is the more probable since it is known that certain drugs act in a similar way. I believe, therefore, that the many interesting points brought forward by Dr. Head can be accounted for by reference to certain well-established physiologic and pharmacologic data. It seems, therefore, at least for the present, not necessary to introduce a hypothesis to which existing physiologic and psychologic data do not lend support.

I am quite aware that the explanation that I propose, like his, is more or less a hypothetical one. Still it has the advantage, as I believe, of being consistent with all the observations as yet known. Of course, every hypothesis is by itself transient and has to be changed as experience grows. That is the reason why I have wished to bring the matter before you, hoping that your experience will show me how far my conclusions are right and where I have missed the point. I am quite convinced that physiology alone, unaided by clinical observation, would be very slow in unraveling the mysterious functions of the nervous system.

DISCUSSION.

Dr. L. F. Barker, Baltimore, said that the Section was to be congratulated on having had the opportunity of hearing Professor von Frey give the results of his investigations. In 1895 it was his privilege to meet him for the first time and to have him demonstrate the method for distinguishing these four cutaneous senses, touch, pain, cold and warmth. It so happened that Dr. Barker had in his arm an area of elective anesthesia, due apparently to a cervical rib. In this area he felt pain sensations, but no cold, no warmth, and no touch. It interested him especially because he had an opportunity to study pure pain sensations unmixed with any other. At Professor von Frey's suggestion he studied this area and the adjacent skin for some six months under his direction. It was illuminating to see how his delicate methods permit the demonstration of the various sense points. The fact that he experienced pain sensations free from the other sensations in the area mentioned speaks strongly in favor of von Frey's view of independent pain nerves. The pain points are so close together in the normal skin, and are so difficult to stimulate without stimulating sensory points of other modalities, especially touch points, that many have found difficulty in convincing themselves of the accuracy of von Frey's observations. After becoming acquainted with pure pain sense it was easily possible for him to localize both touch points and pain points, and to distinguish them sharply from one another in normal skin. Of the many names connected with the physiology of cutaneous sense those of E. H. Weber, M. Blix, and Max von Frey are the most important.

Dr. S. J. Meltzer, New York City, said that there was no pain from heat; he could not say as to cold. His observations were made under local anesthesia. In one case in which magnesium sulphate was used, an operation was performed and the patient did not know he had suffered any pain. He had also had experience in the use of cocain. When this is used the sense of touch is present although the sense of pain may be absent.

Dr. S. I. Franz, Waverley, Mass., said he would like to ask Professor von Frey to explain from his point of view the results of the temperature tests made by Head and Sherren. Most of Head's subjects showed a loss of ability to appreciate medium temperatures, but a retention of sensation of the extremes, but Head also describes at least one case in which the extremes were not felt although the medium temperatures were properly appreciated. The first of these conditions may be explained as due to differences in threshold values, but when coupled with the second it suggests very strongly the probability of two different sensory mechanisms, one for moderate and one for the extreme temperatures—in addition, perhaps, to the "heat" and "cold" end organs and conducting nerves, which Professor von Frey has so ably demonstrated.

Prof. Max von Frey said he agreed entirely with Professor Barker in the view that different kinds of painful sensations exist. They could all realize that from cutting they suffered a different sensation from that resulting from strain of a joint. Pain may arise in nearly all of the tissues, while cold, warmth and touch are limited to the skin and mucous membranes. He called attention to the important work of Professor Tullenberg, who had shown that by high temperatures two heat sensations are produced, one a superficial and the other a deep one. Of course this had nothing to do with the assumption of Dr. Head, who assumes that the skin is supplied with two sets of nerves. Professor von Frey thought it important to investigate the different effects of poisons on the sensations; of cocain on the eye, for instance. The eye is very good for the carrying on of certain experiments. In using cocain he came to the conclusion that there was a difference in the lapse of time in the disappearance of the sensations of cold, warmth and pain. He was unable to make very extensive investigations. As to the remarks of Dr. Franz he thought he had shown that the differences which Dr. Head has observed are in the main due to differences in the temperature. He had to apply higher temperatures usually. Of course they would have to wait for a final paper by Dr. Head, but it seemed unnecessary to hold to the conclusion that there are two sets of nerves.

There was another experiment which was very startling in its results when done for the first time. It consists of putting a part of the finger or hand into mercury, which of course puts it under a high pressure, and this is not felt. Why is this possible? A very light touch will arouse the sensation of touch, while this will not. Professor von Frey found this to be due to a peculiarity of the touch nerves.

A SUMMARY OF THE THERAPEUTIC FIELD FOR THE PAST YEAR.

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PHARMACOLOGY AND THERAPEUTICS AT THE FIFTY-SEVENTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, BOSTON, JUNE 5-8, 1906.

THOMAS F. REILLY, M.D.
NEW YORK CITY.

Custom and the by-laws of the Association have ordained that your chairman shall outline the progress and advance in pharmacology and therapeutics during the year. To mention all of the advances in therapeutics in the past year would require a résumé of the progress made in the cure of disease in all the departments of medicine. The scope of this Section really embraces the whole art of curing disease and everything of a therapeutic nature is an open field for our discussion. I shall take up only those therapeutic measures that directly interest the general practitioner.

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[9] Jour. of Physiol., 28, 499, 1902.

GENERAL REVIEW.

The number of useful remedies introduced during the past year has been very few. It is true that the usual horde of organics and synthetics made in Germany have come, though with somewhat abated vigor, but thus far few have been of any signal service. Doubtless a potent cause of the failure of the new agents to attract attention is due to the fact that experimenters, reputable and otherwise, are now more chary in extolling the imaginary advantages of a new agent than they were before the crusade of the past year.

Better appliances and more experience are responsible for the increasing use of ethyl chlorid as an introductory anesthesia, preparatory to administering ether. For this purpose it is rapidly replacing the more cumbrous nitrous acid and is apparently quite as safe. The great claims set forth as to the value of scopolamin-morphin anesthesia have, in a measure, fallen to the ground. At one time proposed as a general anesthetic and now used as a preparative sedative to ether anesthesia. it is but slightly superior to morphin and atropin. For many years morphin and atropin have been used for the purpose of quieting patients before anesthesia, and for this purpose scopolamin and morphin have scarcely any other advantages. The lack of excitation is more than counterbalanced by the after depression. Chemically, it is the same as atropin and the Phamacopeia regards it as an equivalent. Like the Greeks, we are always running after the old gods with the new names.

The treatment of syphilis by hypodermic injections of soluble salts of mercury has, during the past year, received a great impetus, by reason of the almost unanimous advocacy of this measure by the eminent syphilographers who have written on the subject. It is safe to say that the treatment of syphilis by inunctions will soon be a thing of the past. In Germany the intravenous use of some of the preparations of digitalis has achieved decided recognition; in this country nothing has been done in this line as yet.

No new organic silver salt of any consequence has been launched within the past year. Sober second thought is gradually convincing us how seldom it is possible to "shoot" the virulent germs and the number of successful results reported from the use of organic antiseptics has materially diminished.

A few new cocain substitutes are now before the profession awaiting trial. Personal observation leads me to believe that their seeming advantages are more than counterbalanced by other disadvantages.

Little has been heard during the year of the use of large doses of creosote and its derivatives in the treatment of pneumonia. Doubtless, it is still employed to a large extent for this purpose, but except for its effect on an accompanying bronchitis, the impression is gaining ground that it is not of any distinct service. From the Southwest, where, apparently, pneumonias are of a milder type than ours, comes a second champion who lauds massive doses of quinin and chlorid of iron as a specific in the treatment of this disease. It may be said to be still on trial, but certainly we in the East can not get the good results that its sponsor says he achieves in the Southwest.

In the large metropolitan hospitals there is a feeling of therapeutic nihilism as to the medicinal treatment of pneumonia, and in the vast majority of cases the treatment is expectant in character. It is safe to say that strychnin is the only agent used with any constancy. The mortality rate of from 20 to 40 per cent. certainly should be modified by judicious medication. The tendency to secure medicinal agents from animals rather than from the plant kingdom, has increased during the past year. The use of Moebius serum of thyroidectomized sheep has been established as a measure of practical value in the treatment of exophthalmic goiter. The serum of Beebe and Rogers, although differing very much from that of Moebius, promises well. The Italians have been very active in this line of work and many favorable observations have been made by them in the treatment of leukemia and anemia and other blood diseases with various sera.

There has been little added to our knowledge of the therapeutic value of the suprarenal glands; on the other hand from several sources a note of warning has come as to the use of subcutaneous injections of its various preparations. In not a few instances sloughing has followed its use. The continued use of the active principle of this gland in animals has unquestionably induced degeneration of the walls of the arteries. This is a point to be kept in mind when this agent is frequently employed in human beings.

The number of the diseases beneficially affected by the Roentgen ray therapy has not received any material increase; on the other hand the field of usefulness formerly claimed for it has been much restricted.

During the year the tendency to use large doses of antitoxin in diphtheria has become more manifest. A most important advance in this connection is the confirmation of the value of antitoxin in postdiphtheritic paralysis, even though the patient has already received antitoxin. The intravenous use of this agent does not seem to have found favor, although there are cases in which it is worthy of trial. The diphtheria antitoxin has been used for well nigh all disorders from acute articular rheumatism to cerebrospinal fever and competent observers have reported good results from its use in most of them. Whatever good effects that may have followed its use were due to an inherent immunity possessed by the horse before the diphtheria toxin was administered. Later observations do not warrant any hope from its use in cerebrospinal fever. As a prophylactic agent antitetanic serum may be regarded as a specific. In up-to-date hospitals its use in all cases of punctured wounds has become a routine practice. This is especially the case with blank cartridge wounds, and the number of cases of tetanus have markedly diminished. When the disease has begun the injections of the serum into the motor nerves, spinal canal and brain, offer the only hope. For a long time the use of the antistreptococcus has been regarded in the light of an experiment. There is reason to believe that the use of polyvalent sera has been followed by marked results. The field of usefulness is much like that of antitetanic serum, in that it acts better as a prophylactic in suspicious cases than as a curative agent after the establishment of the serum disease.

No confirmation of Behring's antitubercle era has been reported. Hoffa, of Berlin, in the *Revue de Thérapeutique* speaks very encouragingly of the use of Marmorek's antitubercular serum in cases of bone and joint tuberculosis. He reports a series of thirty cases wherein the use *per rectum* of large doses of this serum has been followed by unmistakably good results.

On many occasions the word has gone forth from this Section that a more systematic study of our native plants would enormously enrich our medical armamentarium. If one-half of the energy that is daily put forth to discover some new coal tar product were employed to test our native plants and to extract their active principles, I am sure far more permanent results would be obtained. Why should there not be other plants growing about us, that will do for other organs what digitalis does for the heart and what quinin does for malaria? Coal tar derivatives have never cured disease. In every case their effects are but temporary. The reason of this present skepticism of the profession toward our native materia medica, is doubtless due, in a measure, to the senseless claims made by earlier inexperienced and too often uneducated physicians and laymen, claims which were found to be preposterous. If it were found that the agent did not benefit the disease as it was claimed to do, it rapidly fell into oblivion. This is not the method of the ultrascientific staff pushing a new coal tar derivative. They keep on trying it for everything and finally it may become a well recognized agent, useful for an entirely different affection from that which its originators intended.

THE PHARMACOPEIA.

The past year has witnessed the launching of a number of pharmacopeias. Those of European countries, as well as our own, have in the main, adopted the principles laid down in 1902 by the Brussels Conference. This has resulted in a uniform standard of strength and character for most medicinal agents throughout the civilized world. In this country hitherto, the appearance of a new edition of the Pharmacopeia has excited little notice on the part of the profession. A few college professors felt obliged to keep abreast of its teachings, but the general body of the profession had come to view it as being essentially a druggist's book. This year the condition is vastly different. The few changes that have been made in the strength of some of the well-known drugs have attracted the attention of the rank and file of the profession and there is a constant demand for instruction on the rules, changes and suggestions contained in the new work. Probably the most far-reaching result of the new edition is the establishment of the so-called purity rubric, whereby all articles which bear such a standard are restricted in their absolute purity without necessarily criticising minutely as to what the fraction of a per cent. claims to be. Such rubric gives all of the courts of our country a standard which they have long plead for to base their findings on and lends more protection to the public than a casual observer can realize. It is now believed that more frequent revisions of the pharmacopeia are necessary and it seems to me that the time has come when the American Medical Association should take a hand in this work. With our Council on Pharmacy and Chemistry, with a laboratory force, and with a journal as a mouthpiece of the entire profession, we are better equipped for the work of revision than any body which could possibly be selected as the Pharmacopeial Conventions have been in the past. Far from having any intention to impugn the work of the committee on revision, than which a better never existed, it is my belief that if the medical staff of the committee were selected by this Association and the pharmaceutical and chemical staffs by the national chemical and pharmaceutical associations, the revision would more nearly be an expression of current medical usage. As it is many agents have been retained that are not in general use, while others much used have been omitted. A national organization is eminently fitted to find out such facts and to give the book a national character.

THE CAMPAIGN AGAINST NOSTRUMS.

Of all advances in therapeutics during the year, none is more noteworthy, none will be more lasting to the whole art of therapeutics, than the war against nostrums and semi-secret preparations. It is safe to say that the campaign which has been waged by The Journal of this Association for the past two years and by various lay periodicals during the past year, has made thousands of physicians turn to the writing of pharmacopeial prescriptions rather than prescribing some confessedly secret prescription or proprietary, which often amounts to the same thing. This is distinctly a therapeutic advance and as it is potential for further growth it is all the more commendable. Many of the waves of moral upheaval which have characterized the past year in the different spheres, will doubtless recede as they have done before, but with this matter there can be no backsliding. The establishing of the Council on Pharmacy and Chemistry marks a pillar which as a permanent institution will always hold a beacon light to show the difference between the true and the false. Next to The Journal, it is the most valuable asset of the organization, and it is hoped that its work will be brought to the door of every practitioner of this country free of cost, whether he be a member of the organization or not.

WHY PROPRIETARIES ARE POPULAR.

It is not my intention to discuss the ethical and nonethical proprietaries; others have done that more exhaustively than we have time to do here. It seems to me that the chief reason for the use of the proprietaries is not that they contain any wonderful medicinal agent or combination of agents, but that they do present disagreeable tasting medicines of more or less value in a palatable form. We may say that it is a small matter, that the relief of distress and the cure of disease are our chief objects, but the present generation is a generation of sensitive stomachs and sensitive nervous systems, and the small things such as a disagreeable potion are to them a major affair and in many instances cause more discomfort than the disease, hence the vogue of homeopathy among the well-to-do. For instance, scarcely any one really believes that the modern organic iron preparations are intrinsically better than the old pharmacopeial inorganic salts, but it is the general belief founded on experience that, as furnished by the manufacturers, they do not disturb the stomach and are not repellent to the taste. I might mention many other similar instances. This brings the matter squarely up to the medical schools as far as the next classes of graduates are concerned. For those in practice it is no new advice to tell them to study pleasant combinations. By asking the advice of competent druggists many improvements in the routine prescriptions can be suggested. This must be a matter of individual education.

In some instances it seems that it might be a good plan to fill in the active ingredients of the prescription, quantity and dosage, and then to state that the druggist can use his own skill in making it palatable by the addition of flavors, etc. Such additions should then be incorporated in the prescription. In this way the druggist will take some pride in filling prescriptions and the more skillful he becomes the more patronage he will receive and thus he will be compensated.

THE DRUGGIST AND THE PHYSICIAN.

Another plan for educating the profession individually is that pursued by the druggists' association in several parts of the country. Circulars explaining the palatable prescriptions of the Pharmacopeia and of the National Formulary are sent monthly to all physicians in the neighborhood. The profession has generally been skeptical as to the ability of the retail druggist to make elegant and palatable preparations, and this notion has been fostered by the various proprietary agents. This was all too true of the slovenly druggist of a decade ago. To overcome this prejudice some of these up-to-date druggist associations before mentioned have followed the example of the detail men of the proprietary firms and are sending neighboring physicians small samples of the pharmacopeial articles as dispensed by them. These are in every instance the equal in quality, taste and appearance of any similar proprietary. Many physicians may not relish such instruction offered by the pharmacist, but it is a thousand per cent. superior to that dispensed by the average detail man. In a number of cities joint meetings of the local druggists and physicians have taken place and as a result a better feeling has been engendered.

This Section forms a link, as it were, between the druggist and the physician, and we hope in the future that closer relations may be maintained with the national pharmaceutical society. Plato's dictum that great questions are only to be decided by compromise holds good for this matter of the proprietaries. Some features of the proprietary trade must remain; others must go. Out of the present clash of interests and theories certain well-defined principles will be evolved that will form a basis for a newer science of therapeutics.

Original Articles

HEALTH INSPECTION AS APPLIED TO THE INDIVIDUAL.*

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The care of the health, when it comes to a discussion of its restoration when it has been lost, is a very old topic. Health inspection, as a wholesale proposition, as applied to communities, states and countries marks in its development perhaps the greatest advance in the application of science to human welfare. As applied to the individual, it still lags far behind what it ought to be.

Hundreds of lives are lost every year, and thousands of days of disability incurred because it is not the custom for the health of the individual to be the subject of inspection in such a manner as to detect and remedy disease in its beginning.

The life insurance examination which, of course, is only applied to relatively few individuals, reveals a surprisingly large amount of unsuspected disease.

Every individual should be thoroughly inspected from time to time by a physician applying the resources of a complete physical examination, with chemical and microscopic observation of all obtainable secretions, in order to ascertain the standard of health of the individual.

No one would think of running a complicated machine without an annual inspection and overhauling of those slight defects which, if neglected, lead to a serious breakdown.

Each generation as it advances through decades considers itself an exception to the one that preceded, and no one accepts the penalty of advancing age until it is thrust on him. The laboratory would inevitably reveal the necessity for attention to diet years before incurable physical penalties had been uncured.

Such an examination to be of value must be very technical in its nature.

Patients naturally seek the physician for disordered conditions that are sufficiently obvious to attract their attention.

The observations necessary to determine the standard of health of the individual in the absence of evident disease are so technical, consume so much time, and require so much manual dexterity, that the examinations themselves must usually be made by young physicians whose attention can be devoted chiefly to these things. But the young physician is unable to judge of the relative importance of the very technical details which he is specially capable of discovering. For this reason, the general practitioner, or as he has come to be called, in these days, the private practitioner, should have his practice so organized as to obtain the assistance of younger men who have fresh skill and enthusiasm with regard to the technicalities of physiologic observation. Comparatively few men have reached the point of such an organization for themselves alone. Some of us have brought this about by the establishment of a coöperative clinical laboratory, where the younger men who are fresh in all the technicalities of chemical and microscopic research do the work of older men, who are in actual practice.

Such a laboratory must be under the direction, more particularly of one man or a committee, but so long as it is purely coöperative in spirit, in that everything is done for the interest of those who come into the arrangement, and so long as the laboratory remains a place where actual practitioners meet to discuss technicalities with the younger men, and the significance of things with their fellows, it will tend to make clinical pathology a practical matter to actual practitioners. It is by means of such an organization that we may arrange our clientèle so that the continuous observation of each individual, while in apparent health may lead to the early detection of disease. The number of people who are willing to submit to this system is, unfortunately, comparatively small, but when its advantages are once clearly understood the number ought to be larger.

The individual must be trained to employ his physician to watch his physiologic processes in the same way as the public has come to expect the medical profession to watch over the health of the community.

Every person should possess a record of his physiologic standards and peculiarities for reference in case of suspected disease.

The united profession can work for the wholesale care of the people, while it is very hard for an individual physician to approach an individual citizen with a proposition for continuous care. This must be brought about by gradual education.

DISCUSSION.

Dr. S. A. Knopf, New York, said that Dr. Bishop had outlined the ideal future life of the average American citizen. He will have his own private family physician; if he can afford to pay for it, all right; if not, the municipality will pay for it. Dr. Knopf commended Dr. Bishop's ideas about the necessity of periodic examination of the average individual, particularly those predisposed to disease. Dr. Knopf said that in the tuberculosis crusade he has emphasized this point particularly in families predisposed to tuberculosis. If we wish to combat tuberculosis as a family disease, in the schools, and in the educational institutions, it is absolutely necessary, he declared, that we should have an entrance examination not only intellectual, but physical, that children should be reexamined at least every six months, or yearly. He said that these suggestions are a little utopian, nevertheless they are ideals; without enthusiasm we can not attain anything.

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* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Dr. M. Friedrich, Cleveland, said that one can not even get the examination of the school teacher, a most necessary thing. He can not force an examination, even, of a man who drives a milk wagon, which is absolutely essential. No man who has tuberculosis ought to handle milk. He can not get the examination of the bakers. The man who handles bread ought to be examined. It will take years and years to establish examination of individuals; for as soon as one attempts to examine an individual he will say: "You are encroaching on my personal liberties," and that is just where the shoe pinches.

Dr. Seneca Egbert, Philadelphia, said that while he agrees with Dr. Knopf that Dr. Bishop's proposition is rather utopian at present, he would like to suggest that there are places in this country where it is, in a measure, put in force; namely, in many of our colleges. While the physiologic examinations there are not complete and are largely anthropometrical, they do good by giving the authorities in the colleges a knowledge of each individual entering them whether as freshman or in a later year, and they give the students who enter these colleges a better knowledge of themselves and stimulate their fear, their ambition or whatever it may be, so that they get to work in the gymnasium and improve their condition, as is manifest within the first six months after entering and being examined. In the four years the improvement is remarkable and Dr. Egbert thinks one could say that the average condition of the men who go out from the colleges where such preliminary examination and anthropometrical work is carried on, is far better at the end of the four-year course than that of the men who go out from colleges where such examinations are not made. It also seems to him that here we have the kernel of the right beginning of the movement—that the men and the women who go out from such colleges are the very people who should carry this idea out among the laity and who may be powerful coadjutors of the physician who wishes to help this along. It is true that the idea is utopian at the present time and that it will take a long time before we have everybody examined; but when we appreciate that we have to-day three or four thousand people in our colleges who might be good, stanch advocates of such ideas in the future, and when we get down to the fact that sooner or later we must teach in our normal schools these very things and there develop these very ideas, we have the way made clear for a good beginning. We then will begin to be able to have the school teachers examined, after them the pupils, and so in time, he said, a comparatively large portion of the population will come practically within the scope of Dr. Bishop's suggestions.

Dr. Louis Faugeres Bishop, New York, declared that he is a great advocate of keeping young men who are beginning the practice of medicine at all kinds of pathologic and physiologic examinations, and said that these young men are glad to do the work in chemical pathology arising in the practice of old practitioners. He said that only by coöperation with such workers would it be possible to carry out his idea of health inspection.

Function of Pancreas in Metabolism.—Ugo Lombroso has recently published a report of considerable experimental work on this subject. He found that the disturbances caused in dogs by ablation of the pancreas were not modified by introduction of pancreatic juice into the duodenum under conditions closely approximating the normal. This demonstrates, he thinks, that the disturbances can not be the result merely of the lack of the pancreatic juice, but that they must be due to a missing internal secretion of the pancreas. This assumption is favored by the singular persistence of the islands of Langerhans after ligature of the pancreatic duct in rabbits. This persistence suggests that these islands participate in some internal secretion independent of the secretion of pancreatic juice. Lombroso's work is reviewed in the *Gazzetta degli Ospedali*, No. 68, 1906.

SOME TRUTHS ABOUT SLEEP.*

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In the popular mind there must be some mistakes about sleep, so variant and dissimilar are the views as to the need of sleep, the effects of it, and of the lack of it.

One man is sure that for health and strength he needs only four or five hours of sleep out of each day of twenty-four hours, and he quotes numerous people above childhood who have like views and experiences. Another must have eight or nine hours and cannot do with less, and, as all men tend to measure others by the yardstick that fits themselves, he is sure to believe that no one should have less than one-third of his existence spent in sleep.

The medical profession freely teaches this latter view and insists that children especially must have an abundance of sleep or be in peril of nervous and mental bankruptcy. We are told that infants should sleep a large part of the time for safety from calamity to their brains, yet there are instances of infants and small children who have for many months together slept less than four hours in the twenty-four and come out of the experience with vigorous minds and bodies.

INSOMNIA: A WRONG THEORY.

Great numbers of people in our modern life of high nervous tension are victims of insomnia, more now than ever before, and the number is apparently increasing rather rapidly in certain communities. Drugs to produce sleep were never in such demand, were never used so freely, both as a temporary expedient and as a daily habit, as now; and they are sold in vast quantities all over the nervous world, and used according to the whim of the sleepless, more often without than with the advice of physicians. Insomnia is therefore a favorite harvest field of the exploiter of "patent" nostrums, for he well knows that, driven to desperation by sleeplessness, its victim is ready to do anything that promises relief; and if sleep comes as an effect of a drug he is ready to forgive other and perhaps resulting ills, that may in the end be worse than the insomnia.

Possibly some of the sleeping potions may do good by helping to sleep without inflicting any incidental harm to the system, but the evidence is strong and accumulating that most, if not all, of the soporific drugs do harm in some way, especially the coal-tar products and all those that work their effects by obtunding the sensibilities of the nervous system. While their use may be justified by an occasional exigency, they are in the main mischievous because, if for no other reason, they undertake a function and do a thing for the body that good hygiene and a better course of living, as a rule, should make unnecessary.

The testimony of patients with this affliction certainly seems, on the face of it, to confirm their theory of the seriousness of insomnia, for they find that a night without sleep, even if they are in bed and bodily resting, unfits them for the duties of the coming day, and that after a good night, they are fresh and strong. And these data are correct; after a wakeful night these patients are unnerved for the day, and after a night of good sleep they are fit and cheerful. Whether their theory is correct that lack of sleep alone does the mischief is another matter, and there is reason to doubt this conclusion and to suspect, if not to know, that the insomnia is only one of several factors in the problem; one of several co-results of a common and another cause and not itself the sole cause of all the harm.

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* Read before the Association of American Physicians, May 16, 1906.

There can be no question that the victims believe implicitly in the current theory. They easily come to dread a sleepless night; they look forward to such a possibility with nervous apprehension, if not horror, which makes them less likely to sleep; in the throes of wakefulness when they have gone to bed for the purpose of sleeping they become so annoyed as to make sleep hard or impossible to court, and so they lie awake tossing in restlessness and chagrin till morning; and afterwards they look back on the experience with a sense of gloom.

INSOMNIPHOBIA.

It is not unnatural that they should attribute all their bad symptoms to the lack of sleep, for that is the easiest generalization; but it is only half true, if true at all. It is vastly important in this study to keep the horse in front of the cart, for the tendency is great to reverse them. The true story is that the horrors of insomnia are slightly due to want of sleep—very much due to insomniphobia, with which, in some degree, nearly every such patient permits himself unnecessarily and foolishly to become afflicted. His experience is analogous to that of the patient with phthisis who has night sweats. This latter believes, till he is taught otherwise and better, that his bad day is due to the night-sweat preceding it. This is a natural but a most unscientific inference for the patient to make. Really, the bad day and the sweat are co-results of another and a different influence; they are not cause and effect. When the patient learns this truth and that the sweat is not harmful in itself, but a possible benefit by the expulsion of poison, he discovers that it is only a trifling inconvenience, not a calamity, and he bears it with equanimity, if not with pleasure.

The victim of insomnia is equally wrong and equally unfortunate in his reasoning about his case. He honestly believes that loss of the sleep which he thinks his due, is fraught with the certainty of great injury; he laments his infirmity and fears he may become insane, and becomes nearly so by his worry, when if he could and would stop his fretting, he would find that he was hardly hurt at all. The very attitude of his mind when he goes to bed tends to keep him awake, for he is in a state of mental expectancy of insomnia, and the longer slumber is delayed the more demoralized he becomes, the more exalted is his irritation, and the less likely is he to fall asleep. What is worse, he is very unhappy about it and this mood tends still more strongly against slumber.

If he can go to bed and sincerely resolve that he does not wish to sleep, but would rather keep awake all night and perhaps read a book or otherwise try to drive off slumber; if he can bring his mind to this mood, which is one of pleasure at being awake—then he will fall asleep before he knows it and probably so remain the night through. The chief thing is the mood of pleasure, or lacking that, stoical indifference as to whether sleep comes or not; it makes the terror impossible and brings enough sleep in nearly every case—not eight hours it may be, but enough.

REST FOR THE BODY.

There is another truth about this subject that is even more fundamental, and one that is substantially never mentioned by students of it. This is that our theory is wrong that we go to bed and stay there eight or ten hours a day for the chief purpose of sleeping. Sleep, go to sleep, get sleep, sleep is the great restorer, blessed sleep—these are the cries that always ring in our ears, and that have probably in some form rung in the ears of all the recent generations as indicating the drift of thought about sleep. But it is a narrow and a one-sided view. Of course sleep rests the tired brain and lets its cells recuperate from the strain of labor that lowers them, but what of the weal of the tired body whose tissues have been lowered by the work of the day? This consideration has been almost wholly neglected in our scheme of reasoning and the poor body has had to get what benefit it might as an incident of the sleep. On the contrary, we should go to bed to rest the tired body and let sleep come as an incident; rest of the body should be the chief aim; go to bed for that purpose and the sleep will mostly take care of itself. Man can, by his volition, send his body to bed as readily as he can chop his wood, and so his body rests; but sleep comes as a sequence of the conditions of his body, i. e., fatigue, horizontal posture, quietness, silence and darkness to shut out impressions and to incline the brain against thinking; it does not come and never can come by an act of the will, as one rises and walks. The brain puts itself to sleep, so to say, involuntarily as the conditions entice.

The body should probably, with an active life, rest about one-third of the time, and it is not necessary that the brain should be unconscious in sleep all this while. Perhaps no one sleeps too much, but we have had surely an extreme estimate of the amount of sleep which it is indispensable that a rested body should have. This is a most practical truth; and every insomniac who gets himself down to or up to this mental basis begins at once to benefit from it, and he finds that lying awake an hour or two of a night, or before rising in the morning, is not only not harmful, but is not specially unpleasant. Then he is surprised to find his terror gone: he ceases to be an insomniphobiac and becomes a happy philosopher.

CULTIVATION OF A PROPER MENTAL ATTITUDE.

But this mental basis is one of the hardest things in all the experiences of life for the distraught poor sleepers to reach. It is hard for them to change their philosophy of sleep and their habits about it. They have unconsciously and unwittingly come to regard the act of lying in bed awake in the night as a punishment, if not a sin. They are chagrined if they do not drop off to sleep promptly on going to bed; and if they waken before daylight they fret till rising time, or they get up before their rest is over because they are awake. This fuming tendency of the mind is a most interesting study. It is quite as likely to reveal itself about a trifle as about the momentous things of life. A man will be extremely annoyed and impatient because you keep him taking a pill three times a day for weeks, although the pill is sugar-coated, is swallowed easily and produces not a symptom of which the patient is conscious. If it were a sugar-coated bread pill and he did not know this, he would grieve about it as freely. And we are all witnesses of countless lamentations of people because of trifling discharges from their throats and noses of harmless mucus each day. We know and they know that no pain or discomfort comes of it, yet they are in daily terror of the awful consequences they suppose to attend this trifling thing labeled catarrh.

It is hard to unlearn the lessons of a lifetime which are reinforced by beliefs that are hereditary from a thousand generations of usage, and to see as agreeable the things that have always been considered disagreeable. The sleep problem illustrates this to a high degree. One of the hardest sides of this problem is the contention that much less than the classical eight hours of daily sleep will do. But there are many facts to prove this thesis. People who lie abed long hours reading, sleep correspondingly little, and they live as long and keep as well as the average. It is notorious that many eminent men of history have slept little, and I think hardly one who can be called an intellectual giant has been accustomed to a great amount of sleep.

A CHILD'S EXPERIENCE.

Nor is it necessary that children, even infants, should have as much sleep as we have supposed. Many years ago my eyes were opened by an experience with a wakeful baby. He slept only about three or four hours a day on an average for a year, as shown by the most accurate of records, this wakefulness being due apparently to some nervous predisposition. Quieting drugs were tried, but it was soon found that dangerously large doses would be required materially to increase his sleep; and so, fearing the drugs more than the insomnia, his treatment was confined to good nursing and good nutrition. I fully expected that the child's brain would be permanently harmed by this experience, but nothing of the sort happened. At the end of a year and a half he was sleeping better, and by the end of his second year he was getting as much sleep as the average child of his age, and he was well and vigorous and had a good mind. Then a strange thing happened. He began to sleep more than other children, and by his fifth or sixth year, when he began to go to school, he was sleeping about fourteen hours. By his tenth year he seemed to have paid back to Nature what had been lost and was sleeping like other children of his age. He was perfectly well in mind and body, active and mischievous, and was well abreast of his schoolmates in his studies. One such case is enough to demolish the theory that a child must, that all children must, sleep a great deal or be ruined.

It is a common experience for a man to put off his bedtime till a late hour because he thinks he can not sleep till then; or to walk or work so as to tire his body profoundly before going to bed, in order that he shall be sure to sleep; or to get up at an absurdly early hour in the morning because he has awakened and can not sleep any longer. In all these ways he is wrong, for in them all he follows the wrong theory that we should go to bed chiefly for sleep. We are foolishly terrified by lying in bed awake, in the dark and with nothing to do. We are as bad as children afraid of ghosts. It is an unreasonable and an unreasoning fear, and one that any sensible person should have no difficulty in putting aside if he will only stop to think about it.

The body must be well rested every day, and in the horizontal posture. The erect position that is maintained through nearly all the waking hours makes this indispensable. We are physically handicapped as compared with the four-footed beasts; we need more rest of body than they, and rest horizontal, and if we get enough rest of body we usually get enough sleep if we only let ourselves sleep and do not worry to prevent it. But we should, as far as possible, seek those physical conditions that physiologically encourage sleep while we are resting. That rest of body is more necessary than much sleep, and that insomnia is clearly provoked by an easily prevented mental mood, are no warrant for us to neglect any of the obvious aids to easy slumber.

CONQUERING THE NOISE NUISANCE.

Light keeps some people awake; usually more than need be because they worry about it and magnify it as an impediment. Most people can have their bed hours in the dark; they can either go to bed early enough to have eight hours dark, or they can darken their rooms. Many are kept awake by noises great and small; often needlessly kept awake by trifling sounds that would be wholly negligible save for their propensity to be nagged by them. The irritation grows by indulgence; every time they hear the sounds and regard them as annoying, the horror grows. If the noises are produced by people or by animals, and are therefore preventable, the offensiveness is usually greater; the sounds of wind and waves and rain, or even gentle thunder are less sleep-killing than the coughing or snoring of an innocent neighbor or the distant barking of a dog.

Most people can overcome very much of any morbid sensitiveness to sound if they understand these truths and will try. But few will try hard enough and be wise enough for this consummation; and so some remedy for the noises of creation is proper for such people, if a remedy can be found that is harmless. The measure, whatever it is, must be mostly subjective, the noises themselves can be controlled but little; they must be kept out; the sound waves must be prevented from entering the ears. Cotton stuffed into the ears does a little good, but some waves pass through it unless it is packed so firmly into the meati as to cause discomfort, which, of course, renders the scheme nugatory. A cloth or other dressing tied over the ears may keep out many noises, but here again the apparatus, in order to be efficient, must press so tightly as to frustrate its purpose by the discomfort it causes. The thing needed is an air-tight, non-vibrating stopper for the ears; one that will not itself make a disagreeable sensation by pressure or otherwise; one that is easily applied by the patient himself, and one that is harmless. Common paraffin seems to fill these conditions; it is easily used, is harmless and wonderfully efficient. A small mass of the substance is warmed in the mouth, chewed perhaps to soften it the more rapidly, and is then pressed firmly but gently into the ear. It adjusts itself instantly to the external meatus, hardens as it cools and remains an almost complete bar to the passage of sound waves, without producing a disagreeable sensation, indeed, with so little sensation of any sort that its presence is soon forgotten. It is applied at bed time and removed by the finger in the morning; or it may be worn during the day if it comforts the patient, but not all the day for fear of interfering with the normal drying of the external ear. It may be used in this way for a long time with no harm of any sort and with the great advantage that it makes the patient nearly, or quite, independent of the unavoidable noises of his environment. This device may render it unnecessary to go to the country to sleep in order to escape from the city noises; it may make it less necessary to keep the children still to avoid waking their elders, and it may help the sensitive children to finish their naps in spite of the inevitable noises of the day.

OTHER TROUBLES.

Many people are poor sleepers for want of sufficient clothing in bed; cold feet are especially apt to keep them awake. A good bed is needful, for it rests the body most and so helps towards sleep. The remedies for these defects are obvious, but often beyond reach. Overfeeding often causes insomnia, if it does not make the drowsiness of indigestion, causing heavy sleep in the early evening and miserable wakefulness afterward; and overstimulation, especially with tea and coffee, is often fatal to good sleep. These troubles are always correctable. A loaded large intestine often keeps a sensitive person awake for half the night, when a prompt evacuation by an enema, a glycerin suppository or a quick-acting saline, relieves the insomnia for the time completely. Foul air to breathe is a frequent cause of wakefulness; for this the remedy is fresh air in great abundance; and people do not take cold in well ventilated bedrooms.

When people are up and about they rarely become sleepy because their brains are tired. They often thus are sleepy, but this is mainly due to fatigue of the body or to some disarrangement of the digestive organs. Sleep comes normally with a normal and unabused body that has been fatigued a little and then been put to rest, and it is helped by cessation of active thinking, by darkness, by stillness, by mental tranquillity and a happy spirit. These things are first to be secured if possible; then the sleep comes as a natural consequence and, with hardly an exception, in sufficient amount. The sleep is secondary, not primary; these other things are primary and of great importance.

We must not count the hours of our slumber for fear it is not enough; that would break the charm of the influence and spoil the game. We may keep a record if we like, and it may be useful for our amusement and to help to fix the exact amount of sleep (which now no man knows) that, in our social zone, is physiologic for the man, woman and child of the present century with their varying orders of enlightenment and manifold grades of work and play. But this question can never be settled by the one poor slave of insomnia or by a thousand of them, and the question can wait. It profits each such unfortunate to neglect the race interests for his own, and to put his mind, in the calmest sincerity, to the task of saving himself from his thraldom—and the task need not be hard nor its benefits uncertain.

THE TREATMENT OF THYROIDISM BY A SPECIFIC SERUM.*

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As the atypical forms of exophthalmic goiter are common and often overlooked on account of the nomenclature, it would be more accurate and at the same time less confusing to designate the condition as hyperthyroidism or simply thyroidism. The cases can be classified somewhat in the order of frequency of their occurrence in the following groups:

1. Simple chronic exophthalmic goiter or thyroidism of moderate severity with all the symptoms which gave origin to the name.
2. Atypical thyroidism which includes many of the early cases and those with more or less irregular symptoms, such as absence of goiter or of exophthalmos or of both; or those which complain chiefly of gastrointestinal disturbance with pain.
3. The chronic toxic cases of thyroidism or severe forms of the disease with slight fever, which may be the terminal stage of the common atypical form, or show little or no exophthalmos or goiter from the outset.
4. The acute toxic thyroidism presenting a clinical picture which Dr. W. G. Thompson has aptly compared to that of malignant endocarditis. These patients show little or no exophthalmos and a small soft thyroid and suffer from fever which may be quite high.
5. The psychopathic or neuropathic cases of thyroidism, which are a comparatively rare but, from a therapeutic standpoint at least, an important group. They give symptoms which sooner or later indicate organic change in the central nervous system and are only relievable in the early stages of the disease.

SYMPTOMS OF THE DIFFERENT TYPES OF THYROIDISM.

The most characteristic symptoms are those dependent on the vasomotor and nervous disturbances. The cutaneous blushing and feeling of heat, the "nervousness," tremor and often insomnia and the tachycardia with a soft, weak pulse are quite constant in all cases.

The exophthalmos and goiter may each vary within such wide limits that they should be considered as much confirmatory as positive signs. The subjective feelings of general discomfort, weakness, throbbing of the heart, dyspnea and frequently abnormal thirst must be borne in mind, as they are generally the first to disappear in any given case if the serum therapy is to succeed, while the other symptoms usually improve very slowly.

The *atypical group* includes some of the incipient cases which show no goiter nor exophthalmos, but can be recognized by the vasomotor and nervous disturbances; and the cases with goiter of long standing which not infrequently develop marked thyroidism quite suddenly and have no exophthalmos; and, finally, the cases usually with no exophthalmos but some goiter, which at irregular intervals suffer from pain referred to the abdomen or thorax and evidently due to excessive fermentation of food. At these periods the pulse becomes very rapid, but otherwise the whole clinical picture is one of acute indigestion, and unless the goiter were noted in conjunction with the tachycardia the probable cause of the difficulty is easily overlooked.

The *chronic toxic* type of this disease presents no particular difficulties in diagnosis, except that I have seen it occur and give every evidence of ultimately proving fatal with a decreasing exophthalmos, goiter and pulse rate, the greatest danger seeming to lie in the exhausted and degenerated heart muscles. It is in these chronic cases that the bad secondary lesions of blood stasis and general anasarca dependent on the impaired cardiac action become so prominent, and unless there is a considerable goiter or exophthalmos the true cause of the trouble may not be detected.

The necessity of the recognition of *acute toxic thyroidism needs* considerable emphasis. Though the condition is quite uncommon, I believe that it is by no means so rare as is generally supposed, nor so difficult to recognize after attention is called to it. Judging from the few cases I have seen and known about, this particular condition must have a very high mortality, and yet I believe that of all the different types of exophthalmic goiter this is the most amenable to the serum treatment. The history of such a case usually covers a few weeks of the common vasomotor and nervous symptoms which more or less rapidly become worse and are accompanied by fever until the clinical picture, as Dr. W. G.

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Thompson has described it, is almost exactly that of malignant endocarditis. There are the flushed and sunken cheeks, dry tongue, rapid labored breathing, tumultous heart action, the nausea, vomiting and diarrhea of any toxic state and often thromboses or extravasations of blood in the neighborhood of the peripheral vessels. There may also be enlargement of the liver with pain and evidence of perihepatitis. The terminal stages are accompanied by delirium and finally coma, and as the urine may contain albumin or sugar the possible errors in diagnosis are evident. There is usually no exophthalmos, at least there was none in the few cases I have seen, and about the only characteristic feature among all the symptoms is the thyroid enlargement. Without some increase in size of this organ open to detection by sight or touch, I do not believe the correct diagnosis can be made except by the most careful exclusion of all other possible conditions and by the trial of the antithyroid serum. Fortunately the thyroid, though small, is generally at least palpable and this is a valuable guide.

The *psychopathic or neuropathic* forms of thyroidism constitute a small but important group of cases, and when there is taken into consideration the evident poisoning of the nervous system, which is so prominent a feature of this disorder, the only wonder is that pronounced disease of the brain or spinal cord or peripheral nerves does not more often supervene on the usual insomnia and general state of mental and nervous excitation. In looking over the histories and recalling the individuals it is quite possible to trace the progress of the psychic changes from the mild forms of alternating exaltation and depression through a melancholic stage to pronounced delusions with homicidal tendencies. Of two bad cases of this description which I have seen, one after recovery and the other in the intervals of the malady, could recall to memory all their disordered imaginings and acts and were more or less aware of their disordered character during the period in which they suffered from mental derangement, but they were controlled by overpowering impulses. In the beginning these patients ought to be curable; but after organic changes in the nervous system have occurred any great improvement is probably impossible.

A SPECIFIC SERUM.

The preliminary report on the treatment of exophthalmic goiter by a specic serum published in February, 1906,[1] contained statements which must now be somewhat modified. The serum is made by separating the nucleoproteids and thyroglobulin from the human thyroid gland and injecting these bodies into the peritoneal cavities of rabbits, dogs or sheep. The inoculations are continued at intervals of from five to six days for about six weeks and the animals are then bled from the carotid. The serum thus obtained presumably contains an antibody or cytotoxin which is specific in its action on the thyroidal epithelium and an antibody or antitoxin for the thyroglobulin which is believed to be the active and, in diseased states, the toxic product of the gland. I formerly attempted to draw some clinical distinction between the antitoxic and cytotoxic elements in the serum, but more extensive experience has shown this to be probably erroneous. Hence, as the antitoxin has at the best a more or less theoretic existence, while the cytotoxin can be demonstrated in the test tube and all the clinical phenomena can be explained by the action of the cytotoxin which is certainly present, I shall mention only the cytotoxin.

Nevertheless, a serum made by excluding all the globulin and using only the nucleoproteids from a pathologic thyroid (exophthalmic) seems at least dangerous (Case 38), while neither the normal nor the pathologic serum made in the usual way by combining the nucleoproteids and thyroglobulin in the injections, has produced, at the worst, anything more than severe symptoms.

Early in our experience the need of some means of standardization of the different sera became apparent, and Dr. Beebe devised an agglutinin reaction by which an estimate could be made in any given sample of serum of its cytotoxin activity. The complicated details of this test will be found in his article; it is enough to state here that minute fragments of human thyroid gland suspended in salt solution can be agglutinated by a specific antithyroid serum in a manner quite similar to the agglutination of typhoid bacilli in the Widal reaction. The more pronounced and rapid is this antithyroid agglutination the more effect will the serum exhibit clinically, although, unfortunately, this is not a very reliable therapeutic guide. Nevertheless, it is of considerable assistance in judging of the presence or entire absence of any active constituent in the serum yielded by any particular animal. In other words, some animals were found to yield a serum which gave no agglutinin test and in such instances the effect on the patient was entirely negative. At the same time it was demonstrated that only a large gray buck of the Belgian hare species of rabbit could be at all relied on; white rabbits have been found to be of practically no use. The dog, which in respect to the quantity of serum obtainable would be a very desirable animal, produced a serum showing in the test tube slight activity; but the sheep was considerably better, although a great quantity of thyroids were required for the inoculations; and the material used for immunizing purposes is not inexhaustible even if its character which, I believe, is a very important factor in the results, is not considered. For the sake of brevity in description, I shall call the serum obtained by inoculating rabbits with the combined nucleoproteids and thyroglobulin of the pathologic thyroids of this disease, the pathologic serum. For our supply of these glands we have to thank Dr. Charles Mayo, of Rochester, Minn., who has kept us pretty well provided with the organs he has removed at operation.

By normal rabbit, dog or sheep serum is meant an antitoxic or antithyroidal serum obtained by inoculating these animals with the combined nucleoproteids and thyroglobulin separated from the normal human gland.

It is worth noting at the same time that the nucleoproteids in the pathologic gland are in far greater abundance than in the normal gland, and, as the character of these proteids may differ from the normal, so there may be some difference in the serum which can not be detected chemically, but which when tested clinically does produce a different result. At first the normal serum seemed entirely unsatisfactory and the pathologic serum appeared to be the only hope, but now, fortunately, the discrepancies between the effects of the two sera have not been found to be so great as was formerly believed. The normal serum geenrally shows a less active agglutinin reaction than the pathologic and those specimens of sera which may be considered of maximum activity have only been obtained from one or two out of a great number of rabbits and then were made by inoculations from the pathologic gland. In the administration of the different sera a certain proportion of the patients hitherto have not reacted at all to the normal serum, or if they did the result has appeared harmful rather than beneficial. and a few patients have not improved unless given the very best grade of pathologic serum which can be obtained only from exceptional animals. There is much yet to be learned, however, both about the dosage of any given serum and the frequency of its administration, and I have hopes that the normal serum can be made effective in a much greater proportion of cases than it has been in the past. For if a change for the better can once be established in a patient's condition the normal serum and even the less active specimens of normal serum have generally proved capable of checking the more or less frequent exacerbations of thyroidism. On the other hand, the normal dog serum, although by the agglutinin test the least active of all the sera, has seemed in a few instances to have given the best results.

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[1] The Journal A. M. A., Feb. 17, 1906.

STATISTICS.

Our statistics include a total of 90 cases, of which 23 have been cured of all symptoms of thyroidism, 52 have been more or less improved and 11 have failed to improve (as yet) and four have died. Of the latter, one was an acute toxic case who immediately after the administration of the serum passed from an apparently moribund to a convalescent condition, but later, as the recovery was very slow, I operated on her with a fatal result. The second was in a chronic toxic state and, after improving under the administration of the serum, went home and some six weeks later suddenly dropped dead. At the autopsy there was found a pronounced status lymphaticus. The third case, one of the very acute toxic type, died, after improving in pulse, respiration and temperature, with every evidence of a hemorrhage into the respiratory center and, I think, in spite of the serum and not because of its administration; too little apparently was given to prevent the toxemic extravasation of blood. The fourth patient was losing ground and died soon after the administration of the serum, which in this instance differed from the other sera in that it was made only from the nucleoproteids, and hence was a pure cytotoxin (Case 38).

In the 54 personally treated or supervised cases, 15 patients have been cured and 29 improved; six cases were failures and four deaths occurred. In many of the improved cases the patients, I think, are really cured, but as several months must elapse before the result can be determined they can not yet be passed on, and the same can be said of those which have apparently failed. I have several times been surprised to find patients whom I have dismissed as unbenefited after a short trial return a few weeks or months later showing considerable change for the better. I believe, therefore, that if even the slightest improvement in almost any one subjective or objective symptom can be detected within the first two weeks of treatment there is a fair prospect of ultimate cure. If a patient does not at first respond, different grades of sera should be tried, as well as sera from different species of animals, and, if possible, that which I have called the pathologic serum; by varying the dosage and intervals and noting the results much more success can be expected than under any other method of treatment.

PROGNOSIS.

In judging the probable results of the injections the most important factors to be considered are, first, the kind of thyroid possessed by the patient and, next, the duration of the disease and its clinical type. Histologically it is possible to recognize four fairly distinct types of gland; one of these shows increased vascularity, another simple hypertrophy with increase of colloid, and another great increase of epithelium, while in the fourth type there is a marked anatomic change with a loss of the greater part of the thyroid structure. The last represents the terminal stages of a chronic thyroidism and is probably hopeless from a therapeutic standpoint. Some clinical distinction can also be drawn between these different kinds of thyroids. Patients who have soft thyroids respond more easily to the serum than the patients with hard glands and, as a general rule, the smaller the organ the better is the prognosis. The large, hard glands with an irregular and nodular surface, especially if the superficial veins of the neck are numerous and dilated, are, I believe, incapable of much, if any, betterment and belong in the fourth histologic class.

As to the type of the disease, the acute toxic cases with fever seem to do the best with the least serum and at the same time they show the least reaction; and there also seems to be little difference whether the normal or pathologic serum is used, provided, only, it is known to possess considerable activity by the agglutinin test. Apparently this is because the thyroid has not had time to become greatly altered and is approximately of normal structure. I think, however, that the pathologic serum is a little better than the normal for these cases. but the difference is so slight that it is well within the limit of error in observation. But all the chronic forms of the disease respond better to the pathologic than they do to the normal serum and, although the distinction is far from being exact, the variation in the kind of serum required points to the probable condition of the thyroid. As a general rule the more nearly normal it is the better will the normal serum act.

The chronic toxic types of the disease with severe symptoms both of thyroidism and of the secondary lesions dependent on disturbed circulation present the worst prognosis and are the least amenable to this or, in fact, to any form of treatment. The thyroids of these patients are generally large and hard and of irregular outline and the veins of the neck numerous and dilated. As histologically there is very little of the original gland structure left in these cases, it is difficult to conceive of any benefit from a specific antithyroid serum. Nevertheless, one such patient (Case 34) for a time at least improved.

Of the atypical chronic class, those whose chief complaints have been disordered digestion accompanied by fermentation, abdominal or thoracic pain and bad tachycardia, have also generally proved therapeutic failures. The psychopathic and neuropathic cases must, of course, have a poor prognosis unless the original toxemia can be checked before organic nerve lesions have been produced.

THE REACTION TO INJECTIONS.

The reaction to the injection of the serum is of two distinct kinds. One is fortunately rare and occurs within about five minutes of the injection. There is a sudden dilatation of all the superficial capillaries; this "blush" may be succeeded by cyanosis and is accompanied by a feeling of distressing dyspnea and faintness with rapid and feeble pulse; nausea and vomiting and diarrhea follow. These somewhat alarming symptoms pass off in an hour or sooner, if diffusible stimulants are administered, but the patient remains weak and uncomfortable for about a day.

The other reaction is fairly constant and, as a general rule, seems a necessary preliminary to the subsequent improvement. At the point of the injection there is immediately some burning sensation which is followed within a few hours by considerable swelling and erythema which may extend from the shoulder to the wrist when the injection is made in the arm, and continues for several days. This erysipeloid edema has sometimes been much more pronounced with the pathologic than with the normal serum, but the pathologic serum, though causing greater local redness and swelling, gives rise to less pain than the normal. Then at about the same time or some twelve hours after the injection there is generally some fever with increase in the tachycardia or irregular heart action and often diarrhea which may last a day or so. If another injection is given in the other arm before the subsidence of the swelling in the first arm the latter will be made worse and the constitutional symptoms intensified. Indeed, I believe by pushing the serum or gently increasing the dose there might be produced a fatal result. At all events, by repeating the dose too often the patient can be so exhausted that harm rather than good is the immediate consequence. In only a few instances have I seen this constitutional reaction postponed till the end of five or six days; and then it seemed to be connected with menstruation, which began in these particular patients about that time. For the serum, if administered just before or at the beginning of menstruation, may cause the ordinary reaction to be increased, and hence the date of the monthly period must always be ascertained and an injection postponed until the flow of blood has at least nearly ceased.

ASSIMILATION OF THE SERUM.

In the administration of the serum the patient should be put to bed for the first week; no restriction in diet is necessary beyond plain wholesome food without stimulants, except in the toxic cases and in patients with diarrhea who will need more or less careful feeding. Then 1 c.c. of a serum which has been proved fairly active by the agglutinin test is given hypodermically into the subcutaneous tissue in the back of the upper arm between the skin and muscular fascia. I have always selected this region, as it is accessible and free from veins and is loose enough to permit of considerable swelling without undue pain or danger of sloughing. The local reaction around the point of injection is best treated by a wet dressing of a 1 to 60 or 80 solution of carbolic acid in water and the constitutional reaction which appears a few hours later, by the administration, every three or four hours, of about three grains of iodid of potassium with about five minims of the tincture of strophanthus. The iodid of potassium has apparently a specific effect on the thyroidism and aids greatly in checking any rapid or irregular heart action. After all signs of the reaction have subsided there should be some improvement in the subjective symptoms. If an active pathologic serum has been employed the improvement occurs a little earlier and is a little more marked than with the normal serum. The restlessness, the feeling of discomfort, the insomnia, and the "thumping" of the heart subsides first and then the pulse becomes slightly slower and stronger. The best results are obtained by giving from four to eight injections of 1 c.c. each every third or fourth day or sometimes at shorter intervals, but waiting each time until the previous reaction has subsided. Some degree of immunity at least to the constitutional reaction seems finally to become established. The acute toxic cases with fever, as stated previously, have not shown any reaction, but after the first day have improved steadily and quite rapidly so there seems no reasonable expectation of any disagreeable reaction in these cases. As they are the most dangerous type of the disease and very apt to prove fatal, especially if they show any degree of cerebral symptoms, the possibilities of the reaction should be disregarded and an active serum pushed by the administration at intervals of 24 hours of 1 c.c. at a dose which may be increased by one-half a c.c. each 24 hours until some noticeable improvement is obtained or until a half-dozen doses have been given.

All the other forms of the disease do not do so well, and some judgment is necessary to determine both the amount of the dose and the frequency of its repetition. About 1 c.c. of an active serum has proved a useful average quantity, but some variation may be required. A small dose of five or ten minims, especially if the serum is not very active, seems to stimulate the thyroid and to make the general condition appreciably worse; and a large dose of 2 or 3 c.c. has produced such alarming symptoms of rapid and irregular heart action that I believe a fatal result could thus be obtained. But within these limits a certain amount of experimentation is necessary; if the usual 1 c.c. dose does not prove beneficial after a couple of trials, 1.5 c.c. or 2 c.c. can next be employed. It will often be found that this change will cause less reaction and more benefit than decreasing the amount. Occasionally, however, .5 or .25 c.c. of very active serum yield the best results; or a serum from another species of animal can be tried. Then after giving some half-dozen injections at intervals of three or four days the subsequent repetitions have to be considered. Too frequent and too long continued treatment seems to do harm rather than good and to produce a condition of muscular weakness and prostration which is as bad or worse than that due to the primary thyroidism. Therefore, the serum should only be administered about once a week for three or four months and after that at longer intervals. Exacerbations of the thyroidism may appear from time to time, but always less and less frequently until finally the patient remains well. As a guide in the administration of the serum a vicious circle hypothesis for the etiology of the condition of thyroidism is of some service. All that is necessary is to break this circle by the inhibitive power of the serum on the thyroid epithelium and then to give no more injections than are demanded to keep it broken until a return to the normal equilibrium is obtained. This seems to require months, but the present indications are that it will occur in the majority of the cases, and I am beginning to have some hopes for even the chronic toxic cases. But a favorable outcome can not be hastened by increasing the quantity or frequency of the dose and, except in the acute toxic cases with fever, which alone are strikingly amenable to this treatment, there is nothing spectacular in the recovery. It is very slow and often intermittent.

The changes in the size and character of the thyroid perhaps better than anything else give an idea of what may be expected as to the rapidity of the general improvement. In the average case the circumference of the neck has shrunken about one-quarter of an inch a month, at first and then remained stationary for some weeks and later again decreased until it reached the normal size in a perfect cure. A thyroid which is smooth and large and rather soft, in other words one which has undergone simple hypertrophy at first softens and diminishes in size quite perceptibly and rapidly, apparently from loss of colloid and congestion. Then there is a long period when very little shrinkage or change can be detected, except a slightly lowered position. During this time it becomes firmer and harder at menstruation or in slight exacerbations of the disorder which generally indicate a repetition of the injection. Later, or at the end of four or five months, it may once more soften and be gradually reduced to a normal size. On the other hand, a thyroid which is hard at the outset shows the first sign of improvement by becoming softer. I do not believe that the large glands, whether soft or hard, ever entirely disappear, for at least one of these patients who has remained entirely free from all symptoms, even the exophthalmos, for several months still has a quite perceptible fibrous goiter. Occasionally also after the administration of the serum patients complain of some soreness or pain in the region of the thyroid or throat but I have never under these conditions noted anything like active inflammation in the gland. Those who have recovered completely have required about six months of treatment and observation before all signs of the disease, or more accurately of overactivity of the thyroid, have disappeared. But if improvement in almost any one symptom, either subjective or objective, can be detected during the first week or two of treatment, even if the pulse or other signs do not respond, the case should not be given up immediately as hopeless. Slight variations can be made in the dosage of the serum or another kind of serum should be tried, bearing in mind that some patients, especially these with chronic toxic or severe symptoms of long duration and generally possessing hard or very vascular thyroids, will not respond at all to the normal serum, but will to the pathologic, or sometimes only to a particular pathologic serum of exceptional activity.

A few patients, especially those in middle life or older, who generally have small thyroids with slight or no exophthalmos and rather severe nervous symptoms, show a somewhat peculiar reaction. They improve in sleep and in the restless discomfort, and then if the injections are continued they become weaker and are made worse than ever. But if as soon as the initial improvement is noted, the injections are suspended and the patient put under the best hygienic outdoor conditions, they will gradually improve very much and at the end of two or three months, treatment can be resumed. It requires considerable judgment, coupled with some experience not to give such cases up as hopeless at the end of the first week, but many of the patients I believe will ultimately recover if patience is practiced along with the regulation rest treatment combined with the serum administered at long intervals. It is possible that some element of myxedema may here be involved and that thyroid feeding rather than antithyroid injections may be indicated.

The convalescence in these as in all the other rather severe forms of thyroidism is very like that from typhoid fever or any other exhausting disease, and is exceedingly slow and often interrupted by exacerbations of the process which should be met with another injection of the serum. But after a patient has once made good progress towards recovery and then shows signs of relapse it is noticeable that almost any normal or pathologic serum, if administered without delay, will stop the symptoms. At the best, a moderate proportion of the chronic cases of this disease, especially those patients past middle age and with hard glands can not be benefited by either the normal or pathologic serum and for these, after a fair trial for at least a month, I think that surgery offers the best hope.

To correct an erroneous impression of this serum which seems to be prevalent, I must repeat that only in the rare acute cases can any quick results be expected and then there is a long period of convalescence before recovery is completed. The majority of the patients respond very slowly and several weeks may elapse before they are evidently improved. I believe, however, that with greater experience in the preparation of this peculiar remedy and with care and patience in its administration many of the chronic cases can finally be greatly benefited if not ultimately entirely cured.

The details of all the histories can be found in The Transactions of the Association of American Physicians of 1906. Only typical examples of two cases are given here and in addition two of the four fatal cases. In the other two fatal cases the patients had first been improved by the serum and the deaths took place long after the cessation of the injections; one from operation and subsequent very acute thyroidism, and the other apparently on account of a condition of status lymphaticus. Of the two fatal cases here given, the first (Case 37), I think, died from an unusually acute and severe form of the disease and not at all because of the administration of the serum.

The fatal ending in Case 38 might with some reason be ascribed to the effects of the serum, although it must be borne in mind that the disease was rather acute and severe and the patient had previously been losing ground. She received a serum made entirely from the nucleoproteids of a thyroid gland taken from a patient who had died of exopthalmic goiter. It differed from the other sera in not having any globulin combined with the nucleoproteids in the inoculations and so should serve as a warning for using great care in the administration of such a serum. I had several times previously given this same serum in much larger dosage (though at not quite such short intervals) and seemingly with benefit to others, but since this experience I have never dared to give a pure cytotoxin at less intervals than five days or a week, as the effect may be cumulative, and cause no symptoms for two or three days.

Case 13.—J. McG., age 27, single, female, has been nervous for years, but first noted typical signs two years ago. She had been confined to bed for a month, with loss rather than gain in strength. There was a moderate-sized soft goiter; neck measured 14 inches in circumference; pulse was from 110 to 130 with throbbing heart and pulsating thorax.

Treatment.—January 12 to 22, she received in divided doses 5 c.c. of normal rabbit serum and 1 c.c. of pathologic serum with slow improvement in subjective symptoms and slightly lowered pulse rate. She left the hospital for home a little stronger, with less heart throbbing and with the neck ¾ of an inch less in circumference. Pulse was 110. After this at intervals at first of four days and later of a week she received injections of different normal and pathologic sera, apparently improving more under the latter than the former and with more reaction. The pulse during March remained about 100 but of good quality. The thyroid was firmer and a little smaller, and she was able to resume work. The last injection was given April 14, and May 6 the pulse was 84, the thyroid small and again soft. The neck 12¼ inches in circumference and the general condition normal. Since the first of March she has been working steadily as an office nurse and stenographer and has been conscious of no physical disability. At present (August, 1906) there is no exophthalmos, no tremor, no abnormal subjective symptoms, the pulse is about 80 and though there is still a slight fulness of the neck, it is so slight that she can be reported as cured.

Case. 32.—A. P., aged 29, single, Swedish domestic, entered the Presbyterian hospital under the care of Dr. W. G. Thompson, Dec. 11, 1905.

Examination.—She had a temperature of 102, pulse of 120, and respiration of 25 to the minute. There was a slight but perfectly plain, soft symmetrical goiter, precordial heave, marked pulsation in the cervical vessels and evident dyspnea, but no exophthalmos. She was very weak and tremulous, and had some nausea and diarrhea. She gave a history chiefly of this and "nervousness" and sleeplessness for only the past two weeks, and had therefore an acute type of the disease. The condition grew rapidly worse, and December 16 the temperature was 104, the pulse 136 and the respirations 36; the tongue was dry and hard, there were ecchymotic spots in various parts of the body and evident thrombosis in some of the veins of both legs. The picture was one of a severe and probably fatal toxemia.

Treatment.—December 16 and 17 she received 1 c.c. and on the 20th 2 c.c. of a very active pathologic serum and no other medication then or afterward. There was no appreciable reaction and after the second dose there was a very marked improvement in all the symptoms. December 22 the temperature, pulse and respiration were practically normal.

Result.—There ensued a steady through rather slow progress toward recovery. She was up and around the ward in the middle of January with no signs of the disease, except weakness, some anorexia and a soft thyroid which could be felt, but was not perceptible to sight. She left the hospital in February apparently well and when last seen on April 30 was on her way to make a visit in Sweden and presented no sign of disease.

Case 37.—M. R., aged 18, single, female, first noted a soft goiter in October, 1905. For this she was given thyroid tablets. A month later she fainted in the gymnasium and symptoms of exophthalmic goiter were evident. After cessation of the thyroid feeding the thyroidism subsided but reappeared in December after a tonsillitis. During the next three months she became normal except for a small soft goiter. In April there were again slight signs of thyroidism but these disappeared until on May 4 a severe gastroenteritis occurred after some indiscretion in diet. On May 5 and 6, the signs of Graves' disease quite suddenly recurred and became severe with headache, great restlessness and tachycardia. On May 7 the pulse was counted at from 200 to 210. The respiration was labored and between 30 and 40 to the minute. On May 8, 9 and 10 she received 1 c.c. of a moderately active pathologic serum without any reaction except a slight and transient local redness. The heart action and respiration began to improve on May 9 and on May 11, the pulse was about 90 and good, and the breathing 23 to the minute. The intense headache on May 8 and the restlessness grew worse and on May 10 stupor developed and deepened into coma on May 13, and a right-sided, incomplete hemiplegia was then noted and this was soon followed by Cheyne-Stokes respiration. Breathing then stopped completely about 10.45 a. m., and as the pulse continued at from 110 to 120 but of good quality, artificial respiration was begun and continued until 5 p. m. The condition then became worse and the patient died. No autopsy was permitted.

Remarks.—I believe that the cause of death was a hemorrhage into the respiratory center and that the fatal ending took place not because of, but in spite of the serum. The administration of serum should have been begun earlier and pushed more vigorously. It is worth noting that just after respiration ceased at 11 a. m. on May 13, I gave 2 c.c. of an active normal serum in the preparation of which much thyroglobulin was used and hence, theoretically, the serum contained considerable antithyroglobulin. About two hours after its administration there was a noticeable improvement and natural respiration was possible for about 20 minutes. Respiration then again failed and could not be restored.

Case 38.—A. G., aged 15, single, female, had suffered from typical symptoms of the disease, but with no exophthalmos for about four months.

History.—She entered the Presbyterian hospital in January, 1906, and received all the usual treatment with a steady, slow deterioration. She was given different specimens of serum without any change and reacted only to a very active pathologic serum from one particular rabbit. This reaction consisted in an exacerbation of all symptoms with fever, lasting for about twenty-four hours after the injection and followed by a brief improvement and almost immediately by a recurrence of all characteristic symptoms.

Examination.—May 20, 1906, the pulse varied from 130 to 150. There was a hard symmetrical goiter of moderate size. The neck measured 13 inches in circumference; the heart was dilated and overacting; the temperature ranged between 99 and 101 and the patient was so weak as to be unable to sit up in bed without fainting.

Treatment.—A very active pathologic serum made only from the nucleoproteids of the thyroid of a patient who had died of this disease, was employed. This was used as no other serum had shown the least effect (except one, and that only with transient benefit). At 10 a. m. and at 11 p. m. May 20, and at 10 p. m. May 21 she received 10 minims of this cytotoxin. There resulted only a slight local erythema until the morning of May 26 and then the temperature dropped from 100 to 96, the pulse began to rise rapidly from 130 to 180, and the patient became extremely restless, vomited frequently, and in the afternoon passed into a condition of stupor. On the previous day the goiter, which had been hard, began to soften and shrink, and during the afternoon of May 23 could only be made out as a small soft mass not much larger than the normal gland. The circumference of the neck in these two days decreased from 13 to 11¼ inches. Three c.c. of an active normal gland serum were then administered in the faint hope of averting the apparently fatal result, as the normal serum can be supposed to contain at least some antithyroglobulin. Some hours later the pulse fell from 180 to 120 but the stupor continued and the patient died at 11 p. m., May 23. With great difficulty, the house physician, Dr. Mason, obtained only the thyroid gland, which showed the following changes as described by Dr. James Ewing.

Examination of Thyroid.—The material received for examination consisted of a portion of one lobe of the thyroid removed 2 hours after death and measuring 2.5 × 3 cm. This tissue was strikingly light yellowish in color as though very fatty and anemic; the consistence was greatly reduced; no colloid could be detected except in a very few small cystic areas from 1 to 2 m.m. in diameter. Although in general very anemic, the tissue showed a few pin-point hemorrhages. The tissue was hardened in 80 per cent. alcohol, in Zenker's fluid, and in Orth's fluid. Sections showed the usual changes of an active toxic form of exophthalmic goiter. There were visible marked cellular hyperplasia, many new alveoli, a few miliary hemorrhages, extreme granular degeneration of tubule cells, and extensive exfoliation of these cells. Much of this exfoliation appears to be due to traumatism applied during removal of the gland. Staining by osmic acid after fixation in Muller-formol shows comparatively little fatty degeneration. The colloid is limited to a few large alveoli containing semifluid colloid mixed with many exfoliated cells. The only changes that seem possibly referable to action of the serum are the anemia and the acute degeneration of the cells. Otherwise, the changes do not differ from those seen in the average case of acute fatal exophthalmic goiter.

Philippine Plants.—The *Philippine Journal of Science* issues a supplement dated April 15, 1906, containing a systematic description, by E. D. Merrel, of the flora of the Lamao Forest Reserve, comprising 1,151 species in 611 genera from the musci, vascular cryptogams and flowering plants, but not the fungi algæ and lichens. Four hundred and eighty-five species are trees and 201 shrubs and woody plants. The monograph contains 142 pages, but it is admitted that a large number of species occurring in the district have not been catalogued.

A SERUM HAVING THERAPEUTIC VALUE IN THE TREATMENT OF EXOPHTHALMIC GOITER.*

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A preliminary paper was published in The Journal, Feb. 17, 1906, describing the preparation of a serum having therapeutic value in the treatment of exophthalmic goiter. Since that date I have had a great deal more experience in the preparation of the serum, and its therapeutic effect has been carefully tried on many more patients so that it is now possible to describe improved processes for its manufacture and to state more nearly what its value is likely to be.

The theoretical basis was described in sufficient detail in the first paper. I may say, however, that since the publication of the article in the *Journal of Experimental Medicine,*[1] describing the experiments which led to the therapeutic application in exophthalmic goiter, I have made many more experiments of the same nature, and as a result it may safely be concluded that a serum having a high degree of specificity can be prepared by injecting the purified nucleoproteids of a given organ into some animal of alien species. The experiments have demonstrated, likewise, that absolute specificity can not be attained by this method, and I believe that no method will enable us to prepare a serum having absolutely specific properties.

At the time of our first report Dr. Rogers and I had used only the thyroid glands from two fatal cases of exophthalmic goiter as a source of the proteids. For theoretical and practical reasons, however, we followed these first experiments by others in which the serum had been developed by proteids derived from normal human glands obtained at autopsy. The method of preparation has been the same in each case and is given in detail below.

PREPARATION OF THE PROTEIDS.

Normal human glands obtained at autopsy are ground to a very fine hash by a special machine. From six to eight times the volume of 0.8 per cent. salt solution is added and the whole thoroughly shaken and allowed to extract for twelve hours in the refrigerator, chloroform and thymol being added to prevent bacterial growth. At the end of this period the coarser particles are removed by straining through gauze, the filtrate is centrifugated and finally filtered to remove the finest particles. The clear filtrate contains three classes of proteids, namely, nucleoproteids, globulins and albumins, the first two of which we wish to use. Nucleoproteids are precipitated by the addition of acetic acid to a frank acid reaction, using litmus as an indicator. I find a very marked difference between normal and goiter glands in respect to this precipitation behavior. It is rarely possible to obtain a definite flocculent precipitate by the addition of acetic acid to the extract of normal glands.

The normal gland contains a very small proportion of nuclear material and a relatively large amount of colloid. The glands can not be obtained in a perfectly fresh condition, the autopsies varying from 12 to 50 hours postmortem and, although the bodies are kept cool, there is opportunity for autolytic changes which readily occur. I have never failed to precipitate nucleoproteids from extracts of perfectly fresh normal glands of sheep or dogs, but it is often very scanty in amount, and if the glands are allowed to remain in a warm place for a few hours no precipitate will form.

Since the object is to obtain both nucleoproteids and globulin for injection, it has been found best to precipitate both together by making the saline extract acid with acetic acid and then to precipitate the globulin by the addition of an equal volume of saturated ammonium sulphate solution. After standing in the refrigerator for a few hours a voluminous precipitate has collected in such form that it may be filtrated out readily. These proteids are twice redissolved in alkaline sodium chlorid solution and reprecipitated by acetic acid and ammonium sulphate solution. After the last filtration the proteids are carefully removed from the paper and dialyzed in a parchment tube for four days with the addition of thymol as an antiseptic. Such a period of dialysis does not remove all the ammonium sulphate, but for the purpose of inoculating the animals there is no objection to the small quantity remaining. At the end of this period, the contents of the dialysis sack are made feebly alkaline with sodium carbonate, and the solution which contains the desired proteids is kept in the refrigerator. Just before injection, the solution is filtered and a definite quantity measured out. The final filtration removes all fragments of thymol, shreds of filter paper and any undissolved material remaining after the dialysis.

The above method applies only to those proteids which I have obtained from normal glands and is given in detail so that no one familiar with the simplest manipulations in physiologic chemistry will have difficulty in following them. In some instances the same procedure has been followed in dealing with the exophthalmic goiter glands.[2] In other cases we have tried to determine how a serum made from the nucleoproteids alone would compare with that made by including the globulins. For this purpose we have prepared nucleoproteids after the same method that was followed in preparing them from the organs of dogs, namely, by repeated precipitation with acetic acid, accompanied by careful washing. The saline extract is prepared in the same manner as with the normal glands, nucleoproteids precipitated by the addition of acetic acid and the precipitate allowed to settle in tall, narrow glass cylinders, washed by decantation until the supernatant fluid is free from proteid and then dissolved by the addition of sodium carbonate to alkaline reaction.

After filtering this solution the nucleoproteid is precipitated by acetic acid and the process of washing repeated. The final product in some instances has been dried at a low temperature in a special apparatus, which has been described elsewhere. Such dried proteid may be kept for an indefinite time without harm. In other instances the nucleoproteid precipitate has been kept in tubes in the refrigerator with the addition of chloroform as an antiseptic. When this proteid is desired for injection it is dissolved by the addition of sodium carbonate to a faint alkaline reaction to litmus. It is of some importance that this reaction be carefully determined. If the injected material is acid in reaction, or if the reaction is too strongly alkaline, a fatal peritonitis is likely to result. In some instances it happens that the nucleoproteids dissolve very slowly and incompletely on making the suspension alkaline. Such a condition does not prohibit the use of the proteid, however, for I have found that an active serum can be obtained from its injection.

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* From the laboratory of the Huntington Fund for Cancer Research, Department of Experimental Pathology, Cornell Medical College, New York.

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Beebe: Jour. of Exper. Medicine, November, 1905.

[2] It is a pleasure to record here our obligations to the Drs. Mayo for their courtesy in furnishing us with glands at operation, and also to Dr. L. B. Wilson for his painstaking care in packing them for shipment. Without their assistance it would have been impossible to do much of the work which is now reported.

INJECTION OF THE ANIMALS.

Three species of animals have been used for developing the serum, namely, rabbits, dogs and sheep. By far the largest part of the serum has been made in rabbits, but we have been using sheep in the more recent work for experiments with the normal thyroid proteids. For some unexplained reason, dogs have not yielded an efficient serum and their use has been discontinued. It is not possible to predict the activity of a serum which any given animal may produce. The factor of personal idiosyncrasy is noticed here, as in most matters relating to immunity. Serum has been obtained from a large number of rabbits, both for the thyroid experiments and also in continuation of the work on cytotoxins, and it is possible to say as a result of it that the best serum can be produced in a certain type of animal, namely, large buck Belgian hares. The animals should be full grown young adults, weighing from six to eight pounds, and should be well fed and cared for throughout the immunization period. It occasionally happens, however, that an animal in what appears to be prime physical condition and having the best care fails to produce an active serum. Investigators who wish to repeat these experiments should bear these facts in mind.

The injections have been made into the peritoneal cavity. Subcutaneous injections almost invariably result in abscesses. The technic is simple. A small area on the abdomen is shaved and a small needle hole burned in the skin with a hot wire. A short needle with a dull point should be used to avoid puncturing the intestines. The amount of material injected is determined to a considerable extent by the behavior of the rabbit, particularly with respect to the loss in weight. In general, however, the proteid from 10 grams of thyroid is employed for an initial dose in a six-pound rabbit, and the subsequent doses determined by the loss in weight. The sheep, which in the beginning weighed 125, have had injections of 100 cubic centimeters of solution, an amount which represents the proteid from 80 grams of normal human thyroid gland. One of these sheep has been bled four times and has had in total the proteid from more than 700 grams of normal human thyroid gland during the period from December 20 to May 4. With the rabbits, five injections, six to eight days apart, have been given and the animal exsanguinated from the carotid on the eighth day after the last injection. The sheep have been bled after analogous treatment, but quite enough serum can be obtained without exsanguinating the animal. After three additional weekly injections, the animal may be bled again. The treatment is a severe experience, however, and must be given cautiously.

PROPERTIES OF THE SERUM.

At the time of our first publication Dr. Rogers and I had employed no means of testing the activity of the serum except its direct inoculation into patients having exophthalmic goiter and noting the reaction produced. The method of standardizing diphtheria and tetanus antitoxins can not be successfully applied in this case. Later in the work, when I came to the point of testing the agglutinin and precipitin reactions on thyroid fragments and proteid, respectively, it occurred to me that we could use these means for standardizing the serum if it proved that the agglutinating action was in some constant degree parallel to the therapeutic effect. To determine this point I tested many different sera which had been in the laboratory for some time, and which had been thoroughly tested clinically. The results proved to be nearly uniform and were sufficiently promising to lead to a continuation of the study on these lines. In general, it has been found that the more active the agglutinating powers the more marked the local and general reaction following injection. Here again the personal idiosyncrasy of the patient enters, and we find that a serum that agglutinates well produces a vigorous reaction in most patients, but such a result is not invariable. In order to have comparable conditions a definite method has been followed in making these agglutination tests.

Twenty-five grams of normal human thyroid, which have been pulverized in a special machine, are extracted for two hours in 100 c.c. of 0.8 per cent. salt solution; the extract is next strained through gauze and centrifugated for four minutes at uniform speed. Such treatment precipitates the coarser particles firmly in the bottom of the tubes, while the finer fragments remain in looser suspension below the clear extract, but above the coarser impacted mass. The finer particles can be separated with a considerable degree of sharpness from the coarser, and after diluting with 0.8 per cent. salt solution to 250 c.c. and straining through cotton a suspension is obtained which in many ways can be compared to a bacterial emulsion. In the ice box or incubator the fine particles settle very slowly, and in a manner quite different from the agglutinating action which is obtained by the addition of a specific immune serum. In order to have comparable results, it is necessary to follow the method of preparation of the emulsion with some considerable care, for I have found that the time and completeness of the agglutination depend in no small degree on the concentration of the suspension.

As regards the serum, the time required depends on two factors, namely, the potency of the serum and its concentration. The method we have followed is to prepare several tubes containing the same suspension of thyroid cells, to add varying quantities of immune serum and to incubate at 38 C. By noting the length of time required to produce the flocking in various concentrations of serum we can form an idea as to the relative activity. Such tests made under comparable conditions with a large number of sera show that the agglutinating power is in a remarkable degree parallel with the vigor of the local and the constitutional reaction produced by the serum on injection. In this respect, it may differ from bacterial antitoxins in that the latter are not supposed to show any definite relations between their agglutinating and bactericidal and antitoxic properties. I do not wish to be understood as saying that the most active serum will effect a cure in a shorter time than the weaker; there are many other factors involved beside the simple antagonistic action of the serum for a toxin.

Another point of considerable interest is the fact that the serum is highly specific in its agglutinating properties. Suspensions of other human tissues, such as muscle, liver, lymph gland, round-cell sarcoma, are not agglutinated except occasionally by high concentrations after long standing. A serum which in a concentration of 1 to 2 agglutinates thyroid fragments in 30 seconds shows very feeble agglutination of muscle fragments in ten hours. After such a lapse of time it is often difficult to distinguish flocking from mere settling, but the supernatant fluid is somewhat clearer in the tubes to which the serum has been added.

HEMOLYTIC PROPERTIES.

In the first paper dealing with cytotoxic serum, I stated that there was no reason for believing that the action was due primarily to hemolysis or hemagglutinative properties which were demonstrable in strong concentration in test tube reactions. Histologically, we could find no positive evidence that would lead us to such a conclusion, while experiments *in vitro* showed that in such a concentration as the serum was used *in vivo* no hemolysis or hemagglutination was evident. The therapeutic dose of thyroid serum has never approached nearer than 1/100 of that used in the dog experiments, and it is hardly possible that this is a concentration sufficient for the feeble hemolytic property to show itself. We have no satisfactory evidence, however, that the results of test tube experiments apply in the body, and it is conceivable that a serum may be hemolytic *in vivo* in much more dilute concentrations than are required *in vitro*.

We have had some opportunity to test the matter clinically and have found that the serum treatment generally causes an increase in the per cent. of hemoglobin and number of erythrocytes. Such a result may be due to the general improvement in health and probably not to a direct effect on the blood-forming organs. These clinical results, however, are based on too few cases to be considered final.

THERAPEUTIC EFFECT.

It is a matter of much interest to consider how far our primary objects can be attained by the use of the serum. Our laboratory experiments have shown that it has highly specific action on the thyroid tissues and that it is not markedly hemolytic, but its real specific antitoxic and cytolytic action must be determined by animal experimentation. We have had human subjects for most of this work, and fortunately only one patient on whom the serum has been used has thus far died, so that our conclusions must come from the clinical results. The serum is based on the theory that exophthalmic goiter is a toxemia and that the toxin in question is the thyroglobulin. If we find that administration of the antiserum causes an immediate and striking improvement in the toxic condition we may reasonably infer that it is due to a neutralization of toxin. In a few severe cases we have noticed a striking improvement in all symptoms follow within forty-eight hours. Such, for instance, occurred in Case 7 in Dr. Rogers'[3] report already printed. This patient is now perfectly well. Cases which show such behavior are generally those having an acute development with a soft thyroid gland, which is probably in a condition of simple hypertrophy and contains a large amount of colloid matter with but little relative increase in the number of cells. Such facts are best explained by the toxemia hypothesis, and constitute the only positive experimental evidence we have for the belief that the serum contains a true antitoxin.

It must be stated, however, that only a small proportion of the cases show the striking immediate improvement which is suggested above. The majority show slow gradual improvement which, although positive and undoubted, does not afford such convincing evidence of antitoxic action. The majority of cases which we have treated have been of the slow developing chronic rather than the acute type. The gland in these cases is more cellular and presumably the cytotoxic element in the serum, in the comparatively feeble doses in which it is administered, can not act with sufficient vigor to cause immediate and rapid diminution in the gland. More rapid destruction might possibly result in a dangerous acute toxemia from the decomposition products of the gland. It is a well-known fact that manipulation or massage of the gland is likely to be followed by an exacerbation of symptoms. It would not be desirable to produce the same class of lesions in the thyroid that were found in the livers and kidneys of the dogs treated with specific cytotoxins, but we do wish to inhibit the gland and to bring its activities back to the normal. Accordingly, a much smaller dose should be used. I confess that I feel much less sure of my ground in dealing with the cytolysin than I do with the antitoxin idea.

There is, however, some evidence which should not be ignored. My previous work with dog organs demonstrates that it is possible to develop highly specific cytotoxic serum from nucleoproteids, and, since these proteids from the thyroid gland are included in the injection, a similar property of the serum should be produced as in the former case. I have had some indications that a partial suppression of kidney function may be produced before we have positive evidence of a kidney lesion resulting from the administration of a nephrotoxin.

Aside from this, I know of no facts which show that inhibition of function may precede lesion. We do not know to what extent it is necessary to injure an organ by such means in order to inhibit its function. It is a purely hypothetical assumption, but it may be easier to inhibit a tissue which is maintained in a habit of excessive unstable activity than it is to affect one in a stable physiologic condition. For instance, the antipyretics reduce fevers, but have little or no effect on normal temperature. A pathologic and a physiologic condition are not precisely comparable. The main fact, however, is that the administration of the serum causes a decrease in the size of the gland and in a few cases it has been restored to apparently normal size. A vicious habit has somehow been broken and it has seemed to me reasonable to ascribe the result in part to the cytolysin properties of the serum.

There is some advantage in having the antithyroid serum developed in two animal species. In some cases the sheep serum, which is developed from normal glands, has been given at weekly intervals for from eight to ten weeks in chronic cases. It was efficient in suppressing the symptoms and caused much improvement, but at the end of this period there were exacerbations which the sheep serum, even in increased doses, would no longer control, although in the beginning it had proved perfectly satisfactory. The serum no longer caused a local reaction, although this, too, had at first been quite pronounced. It seemed possible that the sheep serum had been continued for so long a period that the patient had developed an anti-antitoxin and was, therefore, to a very large extent immune. When rabbit serum, which gave a weaker agglutinin reaction, was administered to these patients the symptoms were promptly controlled. The immunity to the sheep serum did not in any way interfere with the biologically different antitoxin. The two diseases in which serum has been employed most, diphtheria and tetanus, are both acute and accordingly such a possibility as the formation of an anti-antitoxin has needed no consideration. In those chronic cases of exophthalmos in which serum treatment must be long continued, however, it will probably be necessary to change the biologic character of the serum occasionally in order to prevent such interference.

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[3] Rogers: THE JOURNAL A. M. A., February, 1906, p. 487.

SERUM FROM THE NORMAL AND THAT FROM THE PATHOLOGIC GLAND.

The results reported in the first communication were all obtained by the administration of serum developed from the pathologic gland. Our more recent experiments have demonstrated that it is possible to develop a serum of high therapeutic efficiency from proteids of the normal gland, and it is hardly necessary to add that these results are of considerable interest to both the physiologist and the clinician. For if we had found that serum from the normal gland was quite inefficient it would indicate the presence of a special toxin in the pathologic gland. It would mean not simply excess of function, but rather a complete change in the character of the secretory activity.

Our results are in accord with the results of chemical investigation, for, as I have stated previously, such study has not revealed any special toxin. It is, indeed, Oswald's[4] belief that the exophthalmic goiter thyroglobulin is poorer in iodin than the normal secretion, but this does not indicate a radical difference in the remaining portion of the proteid. There is a very wide variation in the amount of iodin which the normal gland contains, and it is hardly probable that the iodin variations which Oswald has found in the exophthalmic goiter secretion would so alter the proteid molecule from that of the normal as to render the latter unfit to serve in the immunizing process. The biologic character which is of the greatest moment in the process of immunity is probably given by the remaining portions of the proteid rather than by the iodin group, so that I am of the opinion that the exact iodin content is a matter of small importance for our purposes.

The most active serum which I have thus far developed has come from the proteids of certain glands removed at operations. The activity of this serum has been expressed in its agglutinin reactions, the local and constitutional reaction on injection, and its therapeutic effect. In all three phases it has exhibited the highest potency of any serum yet produced, but I am not convinced that its action shows a difference in quality rather than intensity from that of normal glands. There are reasons which, I believe, explain the particularly good quality of this serum, and these are not dependent directly on its being developed from exophthalmic goiter glands. The glands were removed at operation and were received at the laboratory in perfectly fresh condition and consequently the proteids derived therefrom had suffered little by autolysis; second, the serum was developed in young adult Belgian buck hares which stood the injection very well, and, as I found, this is the particular type of animal that gives the best serum. The normal glands from which the serum is made are obtained at autopsy, and this fact makes it impossible to get them in a fresh condition. Practically all our normal serum has been developed in sheep and these animals do not produce so active a product as the hares. This latter statement holds true, also, for the cytotoxins produced from dog organs. We have had striking and immediate improvement follow the administration of both the normal and the pathologic serum and, in my opinion, the facts do not warrant the conclusion that there is any radical difference between the two. This question is one of the highest complexity and can only be settled by long-continued experimentation on a large number of patients. We must take into consideration the great difference in reaction which patients show to the same serum as well as the considerable differences in the quality of the serum produced by the same class of animals under similar treatment.

If the hypothesis regarding the antitoxic and cytotoxic property and their dependence on the injection of thyroglobulin and nucleoproteid, respectively, is correct, then we should find it advisable to vary the activity of the serum in respect to these two factors in order to meet the indications in the various types of cases. Experiments of this sort are now under way, but we can not as yet make any statement of results. The hypothesis may break at any point and it is not safe to make it too extensive.

It is of interest to consider in this connection the condition of the gland from the one fatal case treated with serum. The case was one of long standing; the patient, a man, had had the disease for ten years and was in extreme condition when admitted to the hospital. During his period of treatment, which lasted for six weeks, he made good general improvement in all symptoms. The circumference of his neck diminished three inches during this time. His death occurred a few weeks after leaving the hospital, and at the postmortem the gland was found to have a tough, beefy consistency quite different from the soft condition on entrance to the hospital. Histologic section showed the gland to be very cellular, practically without colloid, and in many places the cells were in a partially atrophic condition, which suggested the beginning of the changes characteristic of myxedema. We have no section of the gland showing the condition at the beginning of treatment, but the change in the consistence and size of the gland, together with the postmortem condition, favor the belief that the gland at first had considerable colloid which disappeared during the course of treatment. In this respect the result agrees with the conditions found by many investigators in the thyroid glands of animals treated with cytolysin serum. The patient was treated with serum made from the normal glands only. Since the above was written we have examined the gland from a second fatal case after serum treatment and have found an extensive acute degeneration of the gland. The patient received small doses of serum at frequent intervals. The gland very rapidly diminished in size and the patient died on the fourth day after beginning treatment.

CONCLUSIONS.

When all the conditions are considered I believe it is fair to conclude that the serum is an agent of considerable value in the medical treatment of exophthalmic goiter. It has been used in all manner of cases in which it was possible to make a diagnosis, and in some cases in which the diagnosis was doubtful. Only a comparatively small percentage of these have been of recent development. A small percentage of trials has resulted in failure, a much larger number in improvement, while an encouraging number of individuals have been completely cured. In making up the statistics which are given here, all the cases of which we have any record have been included. These have covered an area from Maine to California, and in many instances the physician in charge of the case has had no other experience with the disease but the one case immediately under treatment. A number of the patients have begun treatment so recently that it is not possible to make any safe conclusion of the outcome. The number of instances of cure and improvement are so large that they can not be ascribed to coincidence, and under favorable conditions I believe much can be accomplished by careful serum therapy.

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[4] Oswald: Hofmeister's Beiträge, 1902, vol. ii, p. 545.

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THE SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.*

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The treatment of exophthalmic goiter by operation is a comparatively recent procedure and its usefulness as a means of relieving this serious disease is not yet conceded by all. In many cases operation is contraindicated, while in others operative measures result often in complete cure, or almost always in improvement.

The cause of this disease is not yet sufficiently established, but that many cases are caused by an excess of thyroid tissues is self-evident. Yet in some cases (10 per cent.) it is said there is no enlargement of the thyroid and in many the enlargement is not marked. In some cases, again, enlargement of the thyroid is a late symptom in the disease, while in others the enlargement precedes the other symptoms by months and sometimes years. Goiter has been known to exist for years without producing any marked symptoms of this disease and then they appear. The parenchymatous goiter may be present for some time without giving rise to any symptoms, and the enlargement of the thyroid may only be accidentally noticed, by feeling the collar band too tight, or observing a fulness of the neck when looking in a mirror. Some attribute exophthalmic goiter to atrophy of the parathyroids or their infiltration by fat. In my cases where the parathyroids had been removed with the thyroid they have been found perfectly normal in appearance and not infiltrated or atrophied.

The idea that exophthalmic goiter is due to a disorder of the sympathetic and vagus is now abandoned by almost all, and the operation of excision of the sympathetic ganglia and trunk in the neck for the relief of this disease may now be looked on as an obsolete operation. That the nervous system is involved in the affection goes without saying, but the cause is not in the nervous system, but in the thyroid gland, and the profound effect produced on the nervous system is brought about "by the action of certain substances which find their way into the circulation as a result of deranged function of the thyroid gland"; overactivity of the thyroid, or the secretion of an enlarged thyroid produces too much oxidizing material.

Therefore, the probable cause of exophthalmic goiter is hyperactivity and hypersecretion of the thyroid, and the same condition may be produced by artificially feeding an individual with thyroid extract. It is certain that many patients are cured by the removal of the excess of thyroid tissue, and the natural inference is that the excess of thyroid tissue causes the symptoms in those cases in which this organ is enlarged. It is possible that there may be other causes (and in this connection the thymus can not be ignored) in the production of complex symptoms of this disease, for these symptoms may exist without special enlargement of the thyroid, but where there is enlargement the removal of a sufficient quantity of the gland tends to the cure or relief of the symptoms.

Dr. H. MacKenzie[1] says: "If we could assure ourselves that the disease is nothing more or less than a hypertrophy of the thyroid gland, it would seem that the most rational method of treatment is to reduce the enlarged gland to something like normal proportions by surgical means. But we can not ignore the part obviously played by the thymus in this disease. . . . Unfortunately, the operation is, even in the hands of most skilled surgeons, a dangerous one, and the risks are greatest in the class of cases which respond least to medical treatment."

Partial thyroidectomy does not always cure, perhaps because not enough of the gland is taken away. Kocher advocates removing three-quarters or more of the gland and the ligation of three arteries. Ligation of the thyroid arteries is as difficult as thyroidectomy, but less likely to cure and less dangerous. Curtis recommends it as a preliminary operation to partial thyroidectomy and as a palliative operation. Schwyzer, of St. Paul, reports four cases of well-marked exophthalmic goiter cured by ligation of the thyroid arteries.

B. Farquhar Curtis[2] is still a mild advocate of sympathectomy, but latterly he has been practicing thyroidectomy, and in one case did both operations with good results. Jaboulay's operation of exothyropexy is now never practiced, and in fact Jaboulay himself gave it up for section of the cervical sympathetic. As many deaths occur, strange to say, after sympathectomy as after thyroidectomy. It has been thought that deaths following operation in this disease are due to too much absorption of thyroid secretion, owing to the rough handling of the gland. But in the operation of sympathectomy there is no rough handling. It is well known that individuals with exophthalmic goiter stand operations badly and cases are reported of deaths occurring from so-called thyroidism in persons suffering from this disease after operation on distant parts, such as the pelvis or breast. The cause of death in these cases is almost as obscure as the cause of the disease itself, which may sometimes come on after severe fright or anxiety, and these causes in a well-developed case of exophthalmic goiter are well known to lead to an exacerbation of the symptoms.

THE CLASS OF CASES SUITABLE FOR OPERATION.

I am of opinion that early operations are the safest and that the class of cases most likely to benefit are not the most severe ones, but those in which the gland is more enlarged on one side than another, in which, in fact, there is a more definite tumor formation, in which the gland is not excessively vascular, and in which the enlargement has preceded the symptoms of Graves' disease by months and perhaps years. These might be called cases of secondary or acquired goiter. Also in those early cases of enlarged thyroid with a mild form of Graves' disease, in which the gland is soft, vascular, and evenly enlarged throughout, here operations are usually most satisfactory, the after-results being decidedly good. The cases in which operation should be avoided are those of large vascular thyroids in which there are definite febrile exacerbations, excessive tachycardia, "with acute dilatation of the heart, precordial distress, gastric and abdominal pain, vomiting and diarrhea, sleeplessness, perspirations, sense of suffocation, great restlessness, edema of the feet—in fact, all the symptoms of toxemia due to thyroidism." (Thompson.)

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] British Med. Jour., Oct., 28, 1905.

[2] Annals of Surgery, March, 1906.

It is singular that most physicians are against operative measures, or only consent in a half-hearted way to their occasional employment. It is perhaps because they hand over only the desperate cases to the surgeon, after all medical measures have proved futile. Hector MacKenzie[1] says: "On the whole, I consider the risk attending thyroidectomy too great to justify the operation save in exceptional circumstances." Eulenberg is opposed to operation, and Dr. George R. Murray[3] does not mention it at all. Nearly all the recent medical writers on exophthalmic goiter condemn surgical procedures as being too dangerous and not always successful (Collins, Robins, S. Smith).

MORTALITY FOLLOWING OPERATIONS.

A good deal depends on the kind of case operated on, and hence statistics are not of great value. Huntington[4] had one death in nine patients operated on. Ransohoff[5] reports six cases without any fatality. Curtis[6] reported fourteen cases of sympathectomy and thyroidectomy with four deaths, and mentions 136 patients operated on by surgeons, including Kocher, Schultz and Mayo, with 17 deaths. A large mortality, but no doubt in properly selected cases this would be much lower. Kocher's report of 59 patients operated on showed: 76 per cent., cured; 14 per cent., improved; 3.8 per cent., slightly improved; 6.7 per cent., died.

At the German Congress for Internal Medicine, held in April, Kocher reported having operated on 167 cases, with 9 deaths and 72 per cent. of cures. Friedheim, of Hamburg, out of 20 cases, had 15 patients cured and 5 improved.

The diseases having the symptoms complex of exophthalmic goiter, then, may be considered to be of two kinds: One in which the patient is extremely nervous and sleepless, has tachycardia, exophthalmos, pyrexia, tremor and edema of extremities, diarrhea and frequent sweatings, emaciation, and with a large, diffuse vascular thyroid usually not more enlarged on one side than the other, and which has not preceded the nervous symptoms, but has come on with the other symptoms indicative of this disease. This patient may have a dilated heart and perhaps endocarditis if the disease is of some standing; in such cases I should not now operate.

Patients in the second class, although ultimately not distinguishable from the former in symptoms, have had goiter for some years, which is more pronounced on one side than the other, and there is nervousness, excitability, difficult respiration, tachycardia, exophthalmos, tremors, sweatings and moderate loss of flesh. These patients are suitable for operation, and when the overgrowth of thyroid is removed the patient ultimately gets quite well. At first the pulse becomes quieter, nervousness is less, the patient increases in weight and generally improves, the exophthalmos, however, diminishes very slowly. Some of these patients operated on nine or ten years ago still remain quite well, and in this class of cases I have had no death following operation, though in some I have had some very alarming symptoms.

Huntington says: "We can not escape the conviction that general anesthesia is in a very large proportion of cases seriously at fault. There is no difference of opinion among operators as to the impropriety of general anesthesia in this relation and especially in advanced cases." Now, I have always used general anesthesia, latterly ether and chloroform mixed, and have had no bad results. In the two cases of death the patients perfectly recovered from the anesthesia and died after some time—eight hours in one case and two days in the other. The danger is always great in operation in a severe case of exophthalmic goiter, but not greater probably than the mortality would be if the patient were treated by medical means only. In selected cases this danger ought not to be very great, and with more extended experience in the cases proper for operation and if the operation is performed in the early stages, in the future I am sure the results will be much better.

REPORT OF CASES.

In the seventeen cases I report there were three deaths, all in desperate cases; nine patients were completely cured; three much improved; one relapsed and one was lost sight of, though improvement was noticed immediately after operation. Four cases were of the cystico-colloid variety; eleven colloid adenoma, and two pure hyperplasia without as much colloid as in the normal gland.

In two cases there was no exophthalmos, though the other symptoms were marked. In two the exophthalmos was slight, and in thirteen it was well marked. The patients' ages ranged from 14 to 53 years, and the average was 28.80. There were sixteen females and one male. All the patients demanded operation for the relief of their distressing symptoms, and in none was the operation insisted on. In every case the dangers were distinctly placed before the patient and her friends.

The following is a synopsis of the seventeen cases:

Case 1.—Mrs. H., aged 35, telegraph operator, always lived in Canada.

History.—Seven years ago she first noticed enlargement of the thyroid, which increased slowly until six months ago, when the gland began to grow rapidly and nervous symptoms were much increased.

Examination.—She entered the hospital for operation Dec. 16, 1894. At that time she had a pulse of 120, tremors, great excitability and loss of flesh with exophthalmos. She had been forced to give up her occupation on account of nervousness, and had also of late experienced some difficulty in breathing. There was enlargement of the thyroid, more on left side, and many hard nodules were felt in this lobe.

Treatment and Result.—The left half of the gland was removed with much benefit. Tumor after removal was found to consist of large vesicles filled with colloid and lined with flattened epithelium. The patient resumed her occupation, had little tachycardia and much diminished nervousness. Several years later I saw her again, when many of the old symptoms had returned, but she refused further surgical interference.

Case 2.—Miss L., aged 20, was sent to me by Dr. Cornell, of Brockville, Ontario.

History.—She has had enlargement of the thyroid for some years; both sides are enlarged and have the appearance of localized tumors. A short time after she noticed the increased size of the gland, nervous symptoms developed, tachycardia, tremors, etc. These symptoms increased on exertion and her pulse was almost uncountable. Then came exophthalmos with persistent pyrexia and on exertion great difficulty in breathing.

Examination.—When I saw her in 1896 she was a pale, anemic girl, very thin, with slight exophthalmos and a rapid pulse, 140 to 200. She was excessively nervous, had tremors, some fever and edema of the extremities, and was much emaciated. Both lobes of the gland were considerably enlarged. The enlargement was not of the soft, diffluent character usually seen in Graves' disease, but was hard and seemed to be

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3. Medico-Chirurgical Society Transactions, 1903, London, Eng.
4. Transactions of the American Surgical Association, 1905.
5. Lancet-Clinic, June, 1905.
6. Annals of Surgery, March, 1905.

a growth well defined on each side and the size of a small orange.

Operation.—Nov. 18, 1896, I enucleated from each lobe by separate incision a solid tumor, the size of a tangarine orange, full of colloid matter.

Result.—The patient rapidly recovered and was sent home in ten days. Two years after she was perfectly well and had no signs of exophthalmos or tachycardia; in fact, all the symptoms for which she consulted me had disappeared. I heard from her in March, 1906, and she still remains perfectly well and has no signs of goiter or Graves' disease. This case was one of my most successful.

Case 3.—Miss McC., aged 24, always lived in Montreal.

History and Examination.—She had a well-marked enlargement of the thyroid, more on the right side. It seemed to be a large solid tumor and commenced three years previously as a small nodule in the middle line of the neck and was supposed to be due to pressure of a brooch. Nervous symptoms appeared with the tumor. She was extremely nervous, had tachycardia (pulse 120), tremors, went upstairs with difficulty, sweated easily, had a slight cough; legs were edematous; she had lost much flesh and had exophthalmos.

Operation and Result.—Oct. 8, 1901, half the gland was removed and the patient made a good recovery. When last seen, three years after the operation, she was attending to her business as a milliner and was quite well, and though at times very nervous she had gained much flesh and the palpitation and other symptoms had disappeared. I have heard lately (April, 1906) that she still remains quite well. The gland was cystico-colloid with hyperplasia.

Case 4.—Bridget McC., aged 16, had enlarged thyroid for four years.

History and Examination.—The enlargement was general, but not very soft or vascular. She was extremely nervous, had tachycardia, pulse 120, tremors, loss of flesh and slight exophthalmos. Two sisters and a brother have enlarged thyroids.

Operation.—At operation the whole thyroid was removed, except a small portion over the trachea.

Result.—The patient rapidly recovered and lost in the course of a few months all nervous symptoms, and when last seen, four years later, was stout, healthy, with no nervous symptoms, and following the occupation of a domestic servant.

Case 5.—Jennie K., aged 24, since she was 15 years of age had enlargement of the thyroid.

History.—It commenced as a small round growth in the right lobe and had continued to grow ever since. For some years, owing to tachycardia and breathlessness, she had not been able to walk upstairs or to walk any distance on the level. For some years also she had had tremors and exophthalmos. The tumor was of large size, smooth, soft and not very vascular. The patient had become much thinner of late.

Operation.—Jan. 27, 1899, the tumor was enucleated. It was cystico-colloid. After operation there was a temperature of 104 F. and an uncountable pulse, with excessive nervousness. The discharges from the wound were sterile; on removing the packing and the evacuation of a large quantity of clear serum the symptoms subsided.

Result.—She was discharged from the hospital much improved, the tachycardia was less, she had no tremors and was altogether better. Six months later she wrote me that her heart had ceased to palpitate and that she was gaining flesh rapidly. In June, 1903, three and a half years after operation, I saw her again and she was looking very well; there was no trace of enlarged thyroid, but she still had slight exophthalmos and was occasionally nervous. I have heard since that she is married.

Case 6.—Miss S., aged 40, first noticed a small swelling on the left side of the neck ten years ago, which has been growing ever since.

Examination.—She had marked tachycardia, tremors, breathlessness on exertion, exophthalmos, and was emaciated and excessively nervous: pulse ranged from 108 to 110. The tumor was of considerable size and confined to the left lobe and isthmus.

Operation.—She was operated on Feb. 23, 1899.

Result.—For a time there was no improvement, but after six months there was less tremor and nervousness. Six years after I heard she was very well, but still has slight exophthalmos.

Case 7.—Miss M., aged 29.

History.—Two years ago her neck began to enlarge on the right side and the swelling gradually increased in size to that of a tangarine orange. She had tachycardia (pulse 120 to 130), tremors, palpitations, breathlessness and hacking cough.

Operation.—August, 1901, operation was uneventful; the right lobe was removed. The patient was much improved by operation and the pulse soon after came down to 90. I have been unable to trace this patient.

Case 8.—Alice H., aged 22, has had an enlarged thyroid all her life; up to three years ago she lived in Ireland.

History.—Latterly the gland has enlarged rapidly and nervous symptoms have been present for the past two years; the enlargement is more on the right side, smooth and vascular, pulsating. The pulse ranged from 100 to 120, the eyes were prominent; there were tremors, edema of legs, palpitation, insomnia, and latterly she has lost much weight.

Operation.—In May, 1904, the right half of the thyroid and isthmus were removed. Symptoms of thyroidism developed after operation; there were high temperature, great restlessness and uncountable pulse. These symptoms subsided at the end of a week and she was discharged at the end of two weeks.

Result.—Three months later I saw her and she had gained over 20 pounds in weight; the pulse was between 70 and 80, and she had resumed her occupation of nurse. Since then she has married and is now very well.

Case 9.—W. M. L., aged 44, had had an enlargement of the right lobe of the thyroid for some seven years.

History.—Seven months before consulting me nervous symptoms commenced to appear with attacks of dyspnea, dry cough, loss of weight, and "protrusion of the eyes." He also had attacks of palpitation and had tremors. Pulse ranged from 110 to 120.

Examination.—A marked enlargement of the right side of the thyroid was found which was soft, diffluent and pulsating. The trachea was displaced to the left. There was a good deal of exophthalmos, more on the right side, with tremors and a pulse of 112.

Operation.—Aug. 9, 1904, the right half of the thyroid and the isthmus were removed. After operation there was great restlessness, rapid pulse, and high temperature, with insomnia; eight days after there was much less nervousness and less tremor.

Result.—Six weeks after he left the hospital he reported himself much better.

Case 10.—Mrs. P., aged 34, was sent to me by Dr. Alguire, Cornwall, Ont.

History.—For the last twelve years she had noticed the thyroid enlarging; it came on soon after her marriage and especially grew during her last two pregnancies; her mother had enlarged thyroid and two of her sisters have it now, one of whom I have since seen has well-marked Graves' disease. The patient had great difficulty in breathing, but none in swallowing. She had tachycardia, pulse 134, exophthalmos, attacks of palpitation, and was very irritable. She had also lost flesh. She had a short, dry cough and of late her voice had altered.

Examination.—Paralysis of the left cord was found. The growth, which was a very large one, commenced on the right side and this is yet the largest part.

Operation.—Nov. 22, 1905, the whole gland was removed with the exception of a small part of the right lobe over the trachea. The trachea was found to be scabbard shaped. After operation, which was a difficult one, hoarseness and dysphagia followed, and then an attack of jaundice ensued, which had not completely disappeared when she left the hospital fourteen days later. With the jaundice her pulse fell to 76.

Result.—I heard from this patient a year after operation and she reported very slow recovery and still had some discomfort with dyspnea, but was gradually improving and had gained flesh. There were no signs of myxedema.

Case 11.—Mrs. H., aged 53, had had enlargement of the thyroid for some years.

History.—She had become so very nervous and excitable that she insisted on operation. She was a thin, excitable woman, with a pulse ranging from 125 to 135, tremors, insomnia, and slight exophthalmos. On each side there was a much enlarged, soft, diffluent and vascular gland; the arteries were very atheromatous.

Operation.—Oct. 19, 1901. Ether anesthesia was used. The patient, on coming to the operating table, had a pulse of 200. The whole gland was removed. The patient stood the operation well and recovered perfectly from the anesthesia, but that evening the pulse became uncountable, the temperature rose rapidly, she was very restless, and died the next morning, evidently from thyroidism.

Case 12.—Mrs. C., aged 30, had had a "full neck" ever since she can remember.

History.—Four months before consulting me, after the birth of her last child, the right lobe began to enlarge and severe nervous symptoms began to develop.

Examination.—When I first saw her I found a small, very excitable, emaciated woman with excessively prominent eyes, and with a pulse of from 140 to 150, and well marked tremors, she was also sleepless and had diarrhea and sweatings. Her husband said that at times she was quite maniacal. She had an enlarged neck, measuring 35 cm., the enlargement greater on the right side. The gland was soft, very vascular, diffluent and pulsating.

Treatment.—I first gave her potassium iodid in ten grain doses. This seemed to have the effect of hardening the gland and she was less nervous, but soon tired of it and refused to take any more. I then tried *x*-rays; six exposures caused diminution of the tumor from a circumference of 35 cm. to 32.5 cm., but there was no perceptible effect on the nervous symptoms. Operation was demanded, and, although I was not very eager to comply, I took her into hospital and kept her in bed for a week with an ice bag on the heart. I had much difficulty in keeping her in bed as she was at times violent and almost maniacal, and seemed in great fear. The left cord was partially paralyzed.

Operation.—Jan. 25, 1906, she was operated on. There was much difficulty in giving the anesthetic, but when she became unconscious she was quiet and her pulse fell from 200 to 140. An ether and chloroform mixture was the anesthetic. The operation was without incident, the right lobe and isthmus were removed and the patient recovered completely from the anesthetic and recognized her friends.

Result.—Towards evening she became excited, the pulse uncountable, respiration difficult, and the temperature rose to 104 F. She became quite maniacal and then subsided into a stupor and died during the night. Examination of the removed lobe showed some hyperplasia of the gland and it was found that the parathyroid had also been removed, and on examination was found to be quite normal.

Case 13.—Miss D., aged 23, for some years had had an enlargement of the thyroid which was soft and vascular.

History.—She has had frequent attacks of palpitation, tachycardia and excessive nervousness, which made her life miserable. She could do nothing and was getting worse. She had lost flesh. There was no exophthalmos and no tremors, although Graefe's sign was present.

Operation.—Dec. 2, 1898, the right half of the thyroid and the isthmus were removed. She had some symptoms of thyroidism after operation and perspired most profusely for some days.

Result.—At first there was no improvement but a year afterwards the patient said she was better than she had been for years and that the left half of the gland had diminished considerably. It was a colloid goiter with hyperplasia.

Case 14.—M. McL., aged 19,

History.—For two years she had noticed enlargement of the neck and latterly had been very nervous, breathless, and had suffered from palpitation; the eyes also had become prominent.

Examination.—A moderate enlargement of the thyroid was seen more on the left side; it was soft and vascular. The patient was excessively nervous, had a moderate degree of exophthalmos, and some breathlessness; pulse ranged 110 to 120.

Operation.—June 17, 1895, the left lobe and isthmus were removed. The left lobe contained an adenomatous growth.

Result.—The patient recovered well from the operation and left the hospital on the tenth day. She was much improved, pulse had come down below 100, and the nervousness was less. I heard of her some months after and she reported that she was quite well, had no tachycardia, and was much less nervous, but the exophthalmos still persisted.

[These notes were taken from my private operation book and from a short account on the back of a photograph. The complete hospital case record had been borrowed and never returned, and could not be found.]

These fourteen patients are all on whom I have operated with sufficient severity of symptoms to call the condition Graves' disease. Many patients have been operated on who had difficulty of breathing, rapid pulse, and some with a considerable degree of nervousness, but, although there were some of the symptoms of Graves' disease, yet they were not severe enough to be classed as exophthalmic goiter. Of the 14 patients operated on twelve patients have been benefited by operation, one has relapsed and one has been lost sight of; the deaths have been two, both in very advanced cases. The next three cases I mention shortly are patients who have been operated on by colleagues in the hospital, who have kindly consented to allow me to make use of them.

Case 15.—C. G., aged 19, had had gradual enlargement of the thyroid for five years.

History.—She had lost weight, was excessively nervous, had frequent attacks of palpitation, pulse 140, tremors, and marked exophthalmos.

Examination.—She had enlargement of the heart, a systolic murmur at the apex, and an accentuated second pulmonic sound. The left side of the thyroid was larger than the right, and the whole gland was much enlarged, soft and pulsating, except on the right side where the enlargement was apparently cystic.

Operation.—January, 1897, the patient was operated on; she lost considerable blood and never recovered consciousness after the operation. The autopsy showed a greatly enlarged thymus and excessive enlargement of both suprarenals.

Case 16.—E. B., aged 14, had been excessively nervous for two years and had had profuse sweats.

History.—For six months the voice had been affected and she had had difficulty in swallowing and excessive restlessness and periods of mental depression. Although there has been slight enlargement of the thyroid for two years, it had increased greatly in size during the past three months. Pulse ranged from 120 to 130. Tremors were well marked and there was great dyspnea on exertion; she had marked exophthalmos.

Operation.—The right half of the thyroid was removed in November, 1904, under local anesthesia, and the patient did well.

Result.—When last heard of some months after operation she had improved greatly and was much less nervous, and the pulse was 80 to 100.

Case 17.—Mrs. G., aged 33, had noticed increasing enlargement of the thyroid for the past sixteen months, and especially during the last three months.

Examination.—She had well-marked exophthalmos, tachycardia (pulse 120), tremors, great nervousness and excitability. Both lobes of the thyroid were moderately enlarged, the right being more prominent; the gland was firm, elastic, not very vascular, and of uniform consistence.

Operation.—In February, 1905, excision of the right lobe was performed under cocain and ether and the patient rapidly recovered, going out in eight days, with much better pulse (under 100), and not nearly so nervous. In this case there was very little colloid, there was hyperplasia of the gland with very small alveoli.

In most cases hyperplasia of the gland was found, in some the colloid matter was much more abundant than in others; in some the vesicles were smaller, and in others there was the folding in of the epithelium as described by MacCallum. I have not given the description of the microscopic sections, but have been content to make a diagnosis from the clinical symptoms which are complex. I do not yet believe that we can always tell by microscopic examination whether or not the condition is one of Graves' disease, for in many cases in which there were no symptoms, such as tachycardia, nervousness, etc., well-marked hyperplasia of the gland was found.

This being a surgical paper, I have not mentioned the medical treatment. The cases I have related had all been treated medically before being sent to me. Of the serum treatment I have no experience nor have I seen cases treated in this way, though I have heard that good results have been obtained in many instances.

DISCUSSION.

ON PAPERS OF DRS. ROGERS, BEEBE AND SHEPHERD.

DR. L. W. BACON, JR., New Haven, Conn., is convinced that a little more careful analysis of the symptoms presented would enable the surgeon to elect among several possible surgical procedures the one best suited for the particular patient. In cases of what may be called the "sympathetic type," for instance, where on account of such symptoms as a unilateral exophthalmos it is difficult to ascribe the symptoms to hyperthyroidism or to any other form of a general intoxication, it is very reasonable to consider the possible advantages of the so-called sympathectomy over thyroidectomy. There is another class of cases in which the irregularity of the symptoms, and the extreme predominance of one symptom over another indicates perversion rather than mere excess of thyroid function; in these cases thyroidectomy is little likely to do good. In some of these cases there is a concomitant localized myxedema, and here Dr. Bacon regards thyroidectomy as distinctly contraindicated. When, as in some cases, the administration of thyroid extract is followed by an amelioration of the symptoms, this is an indication of perverted, rather than of excessive thyroid function, and in such cases thyroidectomy should be recommended with great caution.

The general conclusion Dr. Bacon has reached in the matter is that the more typical the case of exophthalmic goiter the more clear is the indication for thyroidectomy. Atypical cases may demand some other operation, or may, perhaps, be best treated by non-surgical means. Care should always be observed in advising any kind of an operation in these cases, and if on testing the case with thyroid extract it is found that this produces an amelioration of the symptoms, and likewise, in that certain small percentage of cases where the disease apparently is not due to a distinct intoxication, abstension from thyroidectomy should be the rule. For, however logical a means this operation may offer for the reduction of an excessive secretion, for the correction of a function perverted in quality its logic is less evident, and for the cure of those patients who may present many of the symptoms of exophthalmic goiter, but whose troubles are dependent on organic changes in the central nervous system, thyroidectomy is probably worse than useless. The line of progress in the surgical treatment of exophthalmic goiter will lie in the more careful analysis of the cases.

DR. H. M. S. DAWBARN, New York, believes that in view of the brilliant results obtained by Drs. Rogers and Beebe, surgeons are not justified in attempting any surgical intervention without first trying the serum treatment. He has used the ligation method instead of partial thyroidectomy in four instances, with the greatest benefit. The object of the removal of a portion of the thyroid is to get rid of the excess of thyroidin thrown out in excess by the gland. If the same results can be accomplished by shrinkage of the thyroid gland, simply through tying off all the named thyroid arteries, two great benefits are attained. First, there is avoided the risk of removing a part of the gland, with its occasional consequent rise of temperature and sudden death; the ligation method being, on the other hand, practically devoid of mortality. Second, since the majority of these cases occur in women, the resulting appearance is important to consider. The removal of the thyroid on one side leaves a depression, whereas there continues a bulging on the other side, there thus being a lack of symmetry and never a very grateful patient. By the method Dr. Dawbarn is advocating, there is nothing worse than a delicate linear scar running down the neck on each side. Inasmuch as there is no case on record in which ligation of both the superior and inferior thyroid arteries, and also any other artery that may be found going to the gland, has been followed by gangrene of the gland, there can be no objection to tying all of these vessels. There will remain anomalous vessels enough for nourishment. Dr. Dawbarn ties them on both sides at the same sitting and, in his experience, they have been so very large that they can be found without the least difficulty. The resulting deformity is almost *nil*. That being the case, it seems that inasmuch as in each instance there has been very rapid and permanent shrinkage of the thyroid, and since it is so very safe a plan and does not necessitate handling of the gland, it is the thing to try rather than any more severe and mutilating method.

DR. A. J. OCHSNER, Chicago, said that there are four distinct dangers connected with anesthesia in operation for exophthalmic goiter. 1. There is the danger of the anesthetic itself. These patients, unless anesthetized with great care, are very liable to get into trouble. If the anesthetist is at all careless the patient may be so thoroughly asleep that it will be difficult or impossible to arouse him. 2. There is the danger of producing a toxemia incident to the possibility of violently handling the enlarged gland while the patient is asleep. He can not at that time object to any violent treatment, and it is possible to squeeze the thyroid juices into the circulation. The result is high temperature and sometimes a fatal issue. 3. There is the danger of injuring the recurrent laryngeal nerve, which does not have to be reckoned with when the patient is awake, because the moment it is picked up the patient becomes hoarse. 4. And, finally, there is the danger of infection through the breath of the patient, the patient breathing and infecting his own thyroid through his breath.

Following a suggestion made by Dr. Crile some years ago Dr. Ochsner avoids all these troubles by thoroughly anesthetizing the patient with ether while he is in the horizontal position, then covering the mouth and nose with about ten thicknesses of aseptic gauze, then elevating the head of the patient by placing him in the inverted Trendelenburg position and utilizing the resulting anemia, in place of the anesthetic, for the remainder of the operation. It is always possible to complete the operation without giving any more of the anesthetic, and by the time that the recurrent laryngeal nerve is reached in the course of the operation the patient will be partly out of the anesthesia and able to speak so that he can warn the operator of that danger, which can also be avoided in that way. In fact, so can all the dangers that depend on the anesthetic, and there is the advantage of having the patient quiet so that the operation can be completed very rapidly.

The operation which Dr. Ochsner has performed on many patients has been the following: He removes the middle and larger lobe and ligates the inferior thyroid artery and vein on both sides, which reduces the size of the thyroid on the opposite side, so that no deformity results. One case was operated on as long as fourteen years ago. The patient is still in excellent condition. Dr. Oschner thinks that the serum treatment is still in the experimental stage. If, however, it proves to be useful, then the operative treatment must be reserved for those cases in which the serum proves useless. At present, the operation, if performed in this way, is certainly a relatively safe and satisfactory procedure.

DR. J. SHELTON HORSLEY, Richmond, Va., stated that the pathology of exophthalmic goiter seems to be accepted as being due to the thyroid gland itself and not to a disease of the nervous system. This is proved by several things. First, by the fact that operations attacking the thyroid itself seem to be productive of the best results. Second, by the magnificent work of Drs. Rogers and Beebe who have elaborated this serum which acts only on the thyroid gland and employed it in a number of cases with good results. Third, cases have been reported in which a patient presenting all the typical symptoms of exophthalmic goiter has been given an anesthetic with fatal results. Dr. Crile reports one such case. The patient with typical exophthalmic goiter was in a very desperate condition. She was put on the operating table and anesthetized with ether. Dr. Crile, seeing how badly she took the ether, and how desperate the case really was, did not operate. Not even an incision was made, but the patient died a few hours afterward with all the symptoms of hyperthyroidism, showing that this condition was brought on by the irritating effect of the ether in the blood and either the emunctories were blocked and excretion was thus lessened, or else the secretion of the thyroid was increased. This pathology being accepted, there should be some method of explaining the good results in Jonesco's operations in which the sympathetic ganglia of the neck are excised. He has done this operation once, with improvement of symptoms, but the disease recurred later. The good result is due not to the interference with the lymphatics or with the blood supply, but to the fact that the trophic and secretory impulses have been intercepted by the operation. Necessarily, the secretion from the thyroid will be less, hence the improvement. But when this diminution of secretory impulses has been compensated by increased impulses from the uninjured nerves, the condition recurs. Ligating the thyroid arteries may act, to some extent, in a similar manner, because the nervous supply is interfered with by the incision and the manipulation necessary to tie the arteries.

DR. ROBERT T. MORRIS, New York, called attention to the fact that the thyroid extract, which has been worked out by Dr. Charles Am Ende of New York, can be used in very large quantities and without producing tachycardia. He has obtained such very marked and striking results from the use of this particular thyroid extract in his clinic that, he thinks, it is worth calling attention to this work, of which Dr. Am Ende has made only a very brief report for publication. The serum was used in connection with the x-ray in the treatment of malignant growths. In a number of cases in which progress was being made with the x-ray, this particular thyroid extract, given in large quantities, apparently turned the case toward recovery. In some cases it has seemed to Dr. Morris that the condition represented a compensatory hypertrophy in which the organ was trying to produce an internal secretion for the purpose of neutralizing the product of metabolic fault. This seems to work out in practice when we give in these particular cases a thyroid extract in sufficient quantity.

DR. WILLIAM L. RODMAN, Philadelphia, has done very few operations for exophthalmic goiter, and until recently he was rather pessimistic about them. Recently he saw Dr. Charles Mayo perform five operations for exophthalmic goiter and the result in each of these five cases was so perfectly satisfactory that he felt that there is a much broader and wider field for surgery in exophthalmic goiter than he had hitherto believed. Dr. Mayo has demonstrated that the dangers of general anesthesia have been greatly exaggerated. His results have been much better than the results of operating under cocain anesthesia. The point in his technic that impressed Dr. Rodman most was the fact that he makes his incision higher than any one else. It is preferable to the low incision of Kocher. Next, instead of dividing the sterno-thyroids and sterno-hyoids in the middle, he divides them near their insertion, which, undoubtedly, greatly facilitates the removal of the gland. It also prevents cosmetic defects after operation.

Another point in Dr. Mayo's technic which impressed Dr. Rodman much was the exceeding care with which he handles the gland. There is no undue squeezing or manipulating the gland. It is always handled with the utmost gentleness. These cases all did very well. The first patient was operated on on Friday with a pulse of 150. The next morning the pulse was 88 and the patient left the hospital on the following Monday, just seventy-two hours after the operation. Each of the other patients did equally well. While Dr. Mayo's mortality was greater in his earlier operations, he has lately done 42 consecutive cases with but a single death. The profession has been pessimistic in the past; in truth, too much so. There is a better outlook for operations rightly done in exophthalmic goiter than has been hitherto believed.

DR. ROGERS has had some experience with the surgery of the thyroid and he has been greatly impressed with the mortality and subsequent ill results. Only the exceptional surgeon has the experience which obviates mortality and prevents failures in exophthalmic goiter. Dr. Rogers has under his care now six cases that were operated on with failure to cure or subsequent relapse. As for the danger of surgery, some men overlook the pathology of the condition which involves a possibility of status lymphaticus and sudden death. Also many men extirpate an asymmetrical lobe that is very much enlarged, but really has nothing to do with the thyroidism. It is generally the smaller parts that need looking after in these cases. The larger part is only cystic and is without function.

As for the disappointments of the serum treatment, Dr. Rogers said that there are many curious things that are utterly beyond understanding. Only a certain kind of animal will make a serum, and only a few animals will make a good serum. The dog makes a perfectly useless serum; sheep pretty good, and once in a while very good. White rabbits make a very poor serum; only gray rabbits make the best serum. Originally he believed that only the pathologic gland would make a good serum, but he has now learned that a fairly good serum can be made from the normal gland. He advised giving the serum a trial before resorting to surgery.

DR. SHEPHERD has never had a death from general anesthesia in operations on the thyroid, and he has had a great many operations. With general anesthesia the pulse often becomes much slower and the breathing much quieter. As to handling the gland, he believes that it is handled more gently under general than under local anesthesia where the patient is often struggling. With the exception of two deaths, all his patients were benefited by operation. In one instance the improvement lasted only four years, when there was a recurrence of the symptoms. As a rule, it is only the more desperate cases that die, and then not from the anesthesia.

As to the pathology of the disease, many cases of enlarged thyroids with hyperplasia of the gland are without any symptoms of exophthalmic goiter at all. He has had no experience with the serum, so that he could not give an opinion as to its efficacy.

A STUDY OF CONVERGENCE AND ITS DEFECTS.

INCLUDING AN ANALYSIS OF FOUR HUNDRED AND FORTY-ONE CASES OF EXOPHORIA.*

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PHILADELPHIA.

Next to the visual act itself, convergence is admittedly one of the most interesting of the functions of human eyes. That it is evolutionally the last oculomuscular function to appear seems now equally well admitted. The gradual evolution of the invertebrate eye is scientifically satisfactory. The transition from the invertebrate to the vertebrate eye is involved in some doubt. From that point upward, however, the evolution is resumed and continues very regularly. In the lowest class of vertebrates (the fishes) the eye is probably no better than a squid's. Their eyes are situated on the side of the head with such widely divergent axes that there is no overlapping of the visual fields at all. There is no consensual movement (each eye being absolutely independent of the other). There is no common field of view, no common point of sight, no corresponding points in the two retinas; hence no stereoscopic vision. Leaving out amphibians and reptiles (of which we know little), in birds binocular vision becomes possible by a unique arrangement of corresponding points about a very excentral fovea, though their optic axes are widely divergent. In mammals the optic axes are brought around more and more to the front, the convergence of the axes on a point of sight becomes easier and easier. With this comes the gradual development of corresponding points about a more highly organized central area; hence all the phenomena of stereoscopic vision and the judgments based thereon.

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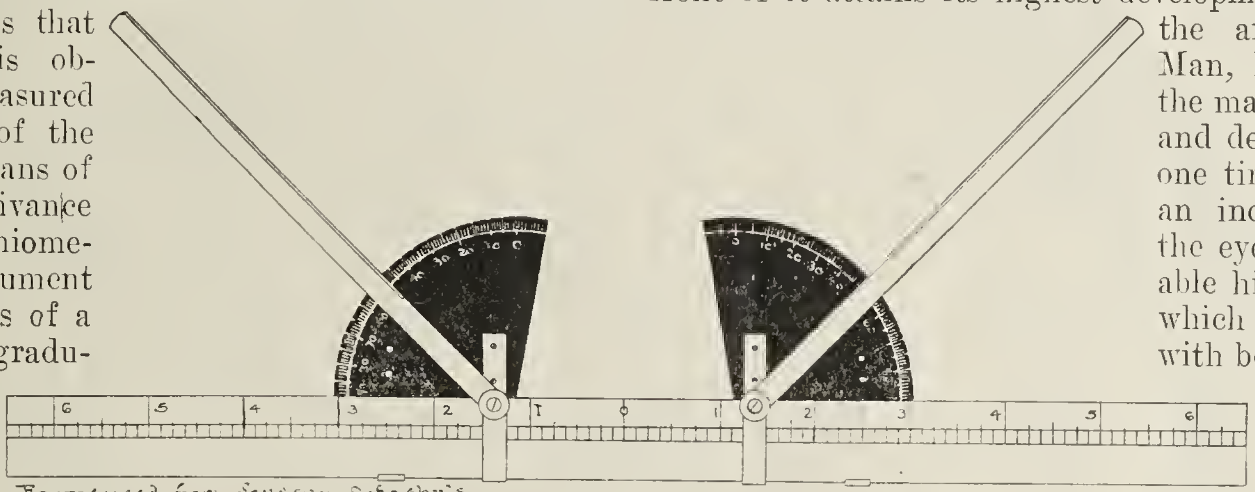
* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Only in the anthropoid apes do we find the eyes fairly in front with optic axes parallel in the position of rest. There is, too, a much more highly organized spot of central vision (fovea) added, which is the essential basis of what the psychologist calls attention.

Out of all this there came thoughtful attention to the object under observation—to the partial exclusion of other things—which seems a necessary condition to the emergence of the higher faculties of the mind. The existence of the fovea is necessary to the concentration of attention on the thing looked at, for, as Le Conte says: "How could we attend to one thing if all other things were equally distinctly seen?"

Harris[1] finds that in all vertebrates below mammals there is a total decussation of the optic nerves at the chiasm. In this connection the magnificent work of Lindsay Johnson[2] is of profound interest. Each time he investigated the fundus oculi of the more than 200 different animals that came under his observation he measured the divergence of the optic axes by means of a special contrivance known as a goniometer. This instrument (Fig. 1) consists of a bar on which graduated quadrants slide, each carrying a movable indicator revolving on it. To measure the divergence of an animal's eyes the instrument was placed on its head immediately above and parallel to the plane passing through the centers of the two eyes. The quadrants were moved so that the pivots of the indicators (a) lay in the axes of the two eyes. The indicators were then rotated on their pivots until the indicators themselves lay directly in the line of the two optic axes. The number of degrees thus obtained indicated the deviation from the median line or, in other words, from parallel vision. If the indicators stood at right angles to the median line the divergence would equal 90 degrees; if parallel to the median line, the divergence would equal zero. The results of this colossal task are shown in Figure 2 taken from his work.



Reproduced from Lindsay Johnson's Comparative Anatomy of the Mammalian Eye

GONIOMETER

Figure 1.

On the left hand of the chart will be found the range of divergence between the various members of the orders taken as a whole, while on the right details as to families and genera are given. It will be readily seen from the chart that the higher the order the nearer the axes approach parallel vision, although the range in each is considerable, and each one to some extent overlaps the other. It will also be noted, on the right hand of the chart, that the degree of divergence in each eye for the hare is 85 degrees, for the giraffe 72 degrees, the porcupine 45 degrees, the hedgehog 40 degrees, the pig 33 degrees, the wolf 25 degrees, the dog 20 degrees, the fox 15 degrees, the cat 10 degrees, the lemur about 5 degrees and for the monkeys and apes, as also for man, zero or parallelism of the optic axes.

In the development of the human embryo there can be followed the same evolution in one species that is above outlined in all the vertebrate. The eyes develop on the sides of the head as in the fish. Gradually with the formation of the face they are brought around to their permanent frontal position and are in place about the end of the second month. In this the ontogeny agrees with the phylogeny, and the forward rotation of the orbits of each vertebrate is consistently followed in the developing human embryo (Pohlmann). During the rotation of the eyeball to the front the orbits also become less divergent until in man the inner walls of the two orbits are parallel and in relation with the nasal fossæ. The outer wall describes an angle of about 40 degrees to the inner, giving an orbital axis in the human being of about 20 degrees divergence from the median plane of the head.

The stimulus to the animal to see what is directly in front of it attains its highest development in man and the anthropoid apes. Man, however, carries the matter still farther and develops what "at one time amounted to an inco-ordination of the eye muscles to enable him to see things which are close by with both eyes" (Pohlmann). The monkey can maintain only a limited convergence for a short time and man is the only animal with sustained convergence. As civilization progressed, near work became more and more absolutely necessary and convergence became less an effort and more of an automatic act. With the invention of the printing press, the amount of near work imposed on the eye increased manifoldly and to-day we use our eyes largely as "contact organs."

ANALYSIS OF THE ACT OF CONVERGENCE.

Inasmuch as convergence and divergence are parts of the same act, it may be well to ask, with Maddox, "What is the starting point of convergence?" If the innervation of the eyes were temporarily inhibited, the eyes would surely take up a position of about 20 degrees' divergence, as claimed by Hansen Grut.[3] Le Conte[4] has shown that during sleep, and in his own case during drowsiness, the eyes diverge, as they also do in drunkenness, under anesthesia and at death. Prentice,[5] believing that the postmortem findings might shed light on the real anatomic position of the eyes, tabulated the conditions in 3,000 cases within from 24 to 48 hours after death, and in not one did he find the eyes straight.

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[1] Brain, vol. xxvii.

[2] "The Comparative Anatomy of the Mammalian Eye," London, 1901.

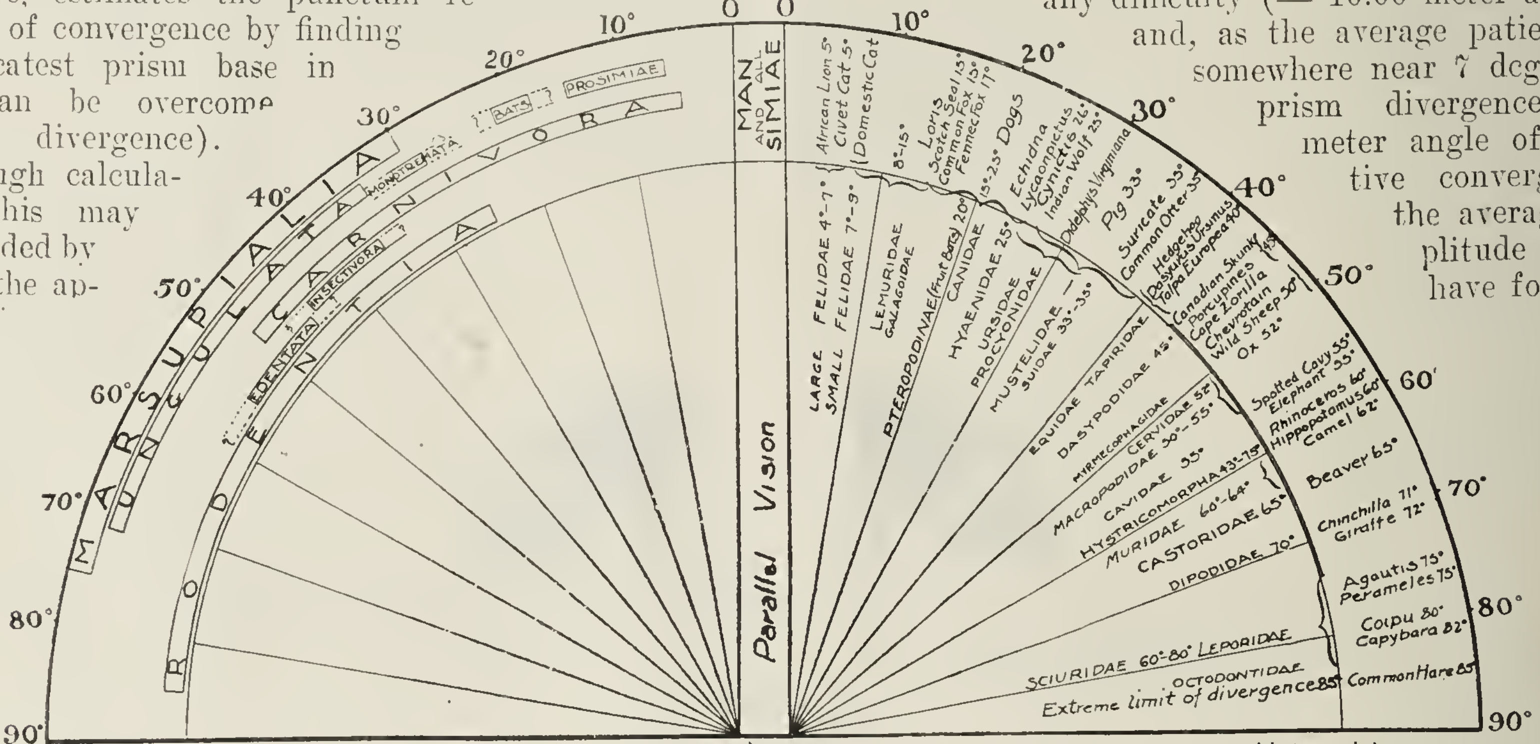
[3] Knapp's Archives, vol. xxiv.

[4] "Sight," p. 254.

[5] Lancet, 1899.

In 17 persons who had parallel ocular axes during life, he found divergence postmortem. He concludes, therefore, that even in civilized man there is a tendency toward divergence which is overcome by fixed innervation. This fixed innervation is what Maddox[6] calls tonic or initial convergence.[7]

In Figure 3 he represents convergence as composed of three elements: the initial or tonic element, the accommodative element, and the reflex element, although exception might be taken to the latter element. It is simpler to resolve convergence into two elements, namely, initial or tonic convergence (the phylogenetic convergence of Pohlmann) and accommodative convergence (Fig. 4). This. however, is the academic phase of the matter. Landolt approaches the subject of convergence in a much more practical fashion and shows how deeply he feels that it is a problem sufficiently often encountered in the flesh to merit our earnest study. He prefers to measure the amplitude of convergence,[8] because of his conviction that that is the key to many otherwise puzzling anomalies of convergence. He, therefore, estimates the punctum remotum of convergence by finding the greatest prism base in that can be overcome (prism divergence). For rough calculation, this may be divided by 7 and the approximate degree of negative convergence (or divergence) in meter angles thus obtained. For instance, if prism divergence be 7, there is one meter angle of negative convergence. For estimating the postive convergence, prisms are not of sufficient value, because of the varying quality of convergence so estimated. His preference is for the ophthalmodynamometer (of his own contrivance). For this purpose I have for three years employed what seems to me a much simpler device. Using the one-candle electric light of the DeZeng electric ophthalmoscope, I half-darken the room and then, starting at 15 inches from the face, have the patient watch the light attentively as it is carried in the median line toward the eyes. At about 10 inches from the eyes the corneal images from the electric light become plainly visible to the surgeon, and it is then easy to watch these images as the light is carried toward the root of the patient's nose until one or the other of the corneal images comes to a standstill. This is the near point of convergence, and one can readily calculate the number of meter angles of positive convergence at the patient's disposal. For instance, if one of the corneal images comes to a standstill at 4 inches, there are 10 meter angles of positive convergence; if at 5 inches, there are 8 meter angles; if at 3 inches, there are 13 meter angles. The test as thus applied is objective, while Landolt's procedure is subjective and open to all the disadvantages of every subjective test. This test is applied in about 5 seconds, as a rule.[9] The amplitude of convergence is, hence, the sum of the positive and negative convergence. Thus if there be 9 degrees of prism divergence (1.28 meter angles of negative convergence), and the corneal images come to a standstill at 4 inches (10 meter angles of positive convergence), the total amplitude = 1.28 + 10.00 = 11.28 meter angles of convergence.



Reproduced from Lindsay Johnson.

Diagram showing the divergence of the optical axes in the Mammalia

The Natural Orders are represented on the left-hand quadrant, the Families, Genera and Species on the right.

Figure 2.

By the above test I have found that the average patient converges to 4 inches (10 centimeters) without any difficulty (= 10.00 meter angles), and, as the average patient has somewhere near 7 degrees of prism divergence[10] (1 meter angle of negative convergence), the average amplitude as I have found it in my office is about 11 meter angles. Landolt has found 10.50 as his average. He has further shown[11] that of the total 10.50 to 11.00 meter angles the reserve ought to be about twice as great as the convergence required by the work, and that is about what occurs in the average individual. Most work is done at about 13 inches from the eyes, that is, it requires about 3 meter angles of convergence, and this leaves from 6 to 7 meter angles of reserve, or a trifle more than twice as much as the ordinary amount used. If there be much departure from this relation, there is almost sure to be some discomfort in the use of the eyes at the occupation distance. As these two tests—estimation of the prism divergence and estimation of the convergence near point—can be accurately executed in from 3 to 4 minutes, there can be little excuse for omitting them in any patient with exophoria who has not been made comfortable by the use of a nonprismatic correction only. Indeed, I believe it wise and valuable to make them in all cases of exophoria before dismissing the patients to try the effect of their proper correction.

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[6] "The Clinical Use of Prism," Bristol, 1897.

[7] Hansen Grut aptly compares it to the tonic element in the accommodation of a hypermetrope.

[8] Norris and Oliver: "System of Diseases of the Eye," vol iv.

[9] It is also worth while in pursuing this test to approach the light from the right and left side as suggested by Duane.

[10] In 60 consecutive cases of exophoria it was found to be 7.5 degrees.

[11] Arch. Opht., March, 1886.

ANALYSIS OF FOUR HUNDRED AND FORTY-ONE CASES OF EXOPHORIA.

In the analysis of the following 441 cases, these facts are to be borne in mind:

1. All of the cases occurred in private practice.
2. Only cases presenting stereoscopic vision have been included in the analysis (hence exotropia is excluded).
3. Proper correcting lenses were prescribed by me and tried thoroughly before proceeding to the treatment of the exophoria as an intrinsic condition, or the patients had been recently refracted by a trustworthy ophthalmologist.
4. No selection of cases for these statistics has been made. They have been taken consecutively and include all the cases of exophoria I have seen in private practice.
5. Refraction with a mydriatic was done in practically every patient under 45 years of age when I did the refraction myself. Over that age the refraction was done without a mydriatic.

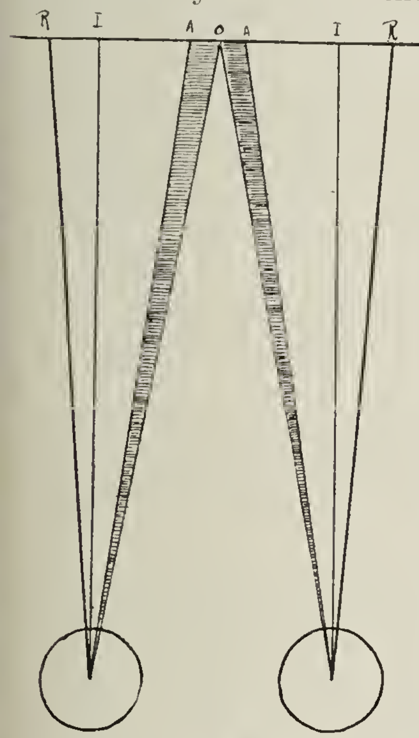

Fig. 3.—(After Maddox). R, Punctum remotum. R. I., initial convergence. I A, accommodative convergence. A O, reflex convergence.

6. In testing for exophoria at the near point, the dot and line test was discarded entirely, first, because it places the eyes under highly artificial conditions; second, because many women (and the bulk of these patients were women) can not tell whether objects are in alignment or not.

Instead of the dot and line, the Maddox multiple rod was used, along with the one-candle electric lamp used on the DeZeng electric ophthalmoscope (described above in connection with the convergence near-point test). This little light the patient holds at the ordinary occupation distance (about 13 inches), and by means of the multiple Maddox rod great delicacy is secured, one-fourth of a degree of error being easily thus revealed. In presbyopes the reading correction should be used when this test is applied or the observer will be led into error. Schild's, Baer's or any other development of the simple apparatus I have described may be used, but for six years I have found the simple one-candle electric light and the Maddox rod satisfactory in every way.

7. In testing prism divergence (abduction) and prism convergence (adduction) separate prisms were used, the prism divergence being always estimated first. In obscure cases the following 7 points were considered essential to a proper study of the case: (a) The exophoria for infinity (or distance); determined by both the cover test and the multiple Maddox rod.[12] (b) The hyperphoria for infinity. (c) The prism divergence (abduction). (d) The prism convergence (adduction). (e) The exophoria for 13 inches (33 centimeters). (f) The hyperphoria for 13 inches (33 centimeters). (g) The convergence near point.

These seven maneuvers may be accurately gone through in from 6 to 8 minutes and are well worth systematic employment in every obscure case of exophoria in which symptoms persist in spite of the best refraction.

Age.—The frequency of exophoria in the various decades of life is given in Table 1, which shows plainly the influence of age in its production. The occurrence of less than one-tenth of all the cases before the twentieth year is a significant fact. Weiss[13] calls attention to the outward swing of the orbits (and along with them their long axes) after puberty. Duane[14] notes those cases in which divergence has developed as a result of the gradual divergence of the orbits taking place during the period of growth in children and youth. "This divergence, by altering the angle of insertion of the tendons and the amount of tendon in contact with the eyeball (contact arc), increases very greatly the power of the externus and diminishes that of the internus, and in itself is quite sufficient to account for the development of divergent strabismus." If it will give rise to so pronounced a deviation as divergent strabismus, it may well be asked: How much more easily may it give rise to a latent deviation or exophoria?

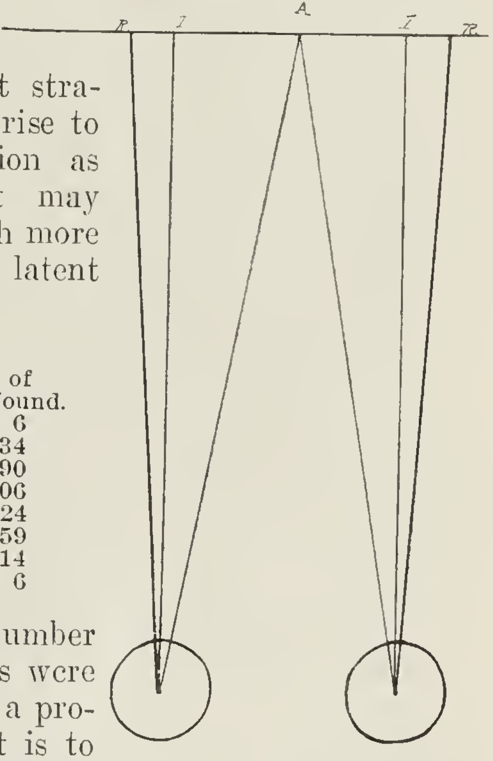

Fig. 4.—R., punctum remotum. R. I., initial convergence (tonic convergence. I. A., accommodative convergence.

TABLE 1.

Decade.	No. of times found.
Under 10	6
11 to 20	34
21 to 30	90
31 to 40	106
41 to 50	124
51 to 60	59
61 to 70	14
Over 70	6

Sex.—Of the whole number here reported 161 patients were males and 280 females, or a proportion of 6 to 11. That is to say, there were almost twice as many women as men presenting exophoria. These figures accord very well with those furnished by analyses of large numbers of refraction cases (say 1,000 to 2,000)[15] which show that about twice as many women as men apply for refraction in private practice. Women's nervous systems are admittedly less resistant than men's, and it is also probable that women employ their eyes more at the occupation distance than do men. Neurasthenia, too, for many reasons, is much more likely to occur in women than in men. Yet examination of 33 cases of exophoria of the neurasthenic type occurring in this whole series were practically equally divided between the two sexes, 15 of the patients being men and 18 women. It is altogether probable that if the figures could be so extended as to include an equal number of males and females exophoria would be found to occur as often in 1,000 men as in 1,000 women.

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[12] The cover test seems to me one of the most valuable tests at the ophthalmologist's service if applied as follows: The patient is made to survey some small object on a homogeneous background (like a blank wall or a small point of light looked at in a mirror across the room; by reflecting the light in this way a good distance can be obtained for the test). With the patient's gaze fixed on the fixation object, a card is carried in front of the eyes from right to left, covering first one eye and then the other. This maneuver should be repeated from 10 to 15 times to break in on the fusion impulse as much as possible, great care being taken that at no time, as the card is being moved, both eyes get a simultaneous view of the object else the point of the test is lost. By attentive observation, the eyes will be seen to give a slight jump in or outward as they are alternately uncovered, unless there be lateral balance or less than 1 degree of error. This test is wholly an objective one, and its objectivity and accuracy give it great value. If it is desired to make the test subjective (by asking the patient after a few movements with the card whether the fixation object appears to jump from side to side as the card is shifted), it is very readily done. So carried out, it becomes the parallax test, and is of the greatest delicacy, one-fourth of a degree of deviation being easily possible of detection in intelligent patients.

[13] Knapp's Arch., vol. xxv.

[14] "Motor Anomalies of the Eye."

[15] See Risley and Thorington, Jackson, Gould, Ellis and others.

TABLE 2.

Students	50	Farmers	3
Accountants	20	Merchants	11
Desk workers	55	Needleworkers	40
Stenographers	15	Salespeople	7
Professional people	92	Storekeepers	8
Outdoor workers	7	Housewives	120
Laborers	3		
Mechanics	10	Total	441

Occupation.—Table 2 has to do with the occupation of the 441 exophorics. These workers may be arranged in three groups as follows:

1. Those who use their eyes at the occupation distance most of the day.
2. Those who use their eyes little or not at all at the occupation distance.
3. Those whose days are fairly well divided between general work and near work, e. g., housewives.

Thus the students, accountants, desk workers, stenographers, professional people, needle workers (including loomworkers) show a total of 272; the outdoor workers, laborers, mechanics, farmers, merchants. collectors, salesmen, shopkeepers, etc., show a total of 49, while the housewives number 120. In other words, practically two-thirds of the whole number of exophorics were what might be called near workers. I am inclined to attach some importance to these particular figures; for if one be engaged more or less all day in near work, even though they wear a perfect correction, they are very likely to have some symptoms of discomfort at their work if they present exophoria for infinity; in my experience exophoria at infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

TABLE 3.

Degrees of Exophoria.	Times found.	Degrees of Exophoria.	Times found.
1	95	12	4
2	145	13	1
3	69	14	1
4	29	15	7
5	14	16	1
6	15	17	..
7	9	18	3
8	9	19	..
9	2	20	1
10	12	25	1
11	1		

The degree of exophoria occurring in these 441 cases is shown in Table 3. As in hypermetropia, so in exophoria the smaller degrees of error predominate; the parallel is further borne out by the fact that, as a rule, the smaller deviations carry with them the most marked symptoms, and for the same reason, that they are overcome all day long. Of the whole series of 441 cases, 309, or 70 per cent., were of 3 degrees and under. Only 32 times, or in 41 per cent., did the deviation amount to 10 degrees or more. In 7 cases it reached 15 degrees, in 3 cases 18 degrees, in one case 20 degrees, and in one other 25 degrees. Naturally, these last few were practically instances of suppressed (or overcome) divergent strabismus (anatomic exophoria), which will be alluded to later.

TABLE 4.

In 441 cases of exophoria there was associated:		
H + ah in	176 cases.	
Ah in	34 cases.	
H in	46 cases	
H + Ah (one eye) H or Ah (other eye	46 cases.	
Ahm in	17 cases.	
Total for H + Ah and allied conditions	319	319
There was associated:		
M + Am in	48 cases.	
Am in	16 cases.	
M in	3 cases.	
M + Am (one eye) M or Am (other eye)	7 cases.	
Amh in	16 cases.	
Total for M + Am and allied conditions	90	90
There was associated antimetropia:		
(So-called anisometropia) in	32 cases.	32
Total		441

Refractive Status.—We next come to the relation that exophoria bears to the various states of refraction as set forth in Table 4. Despite the fact that exophoria has been looked on by many authorities as a passive condition, it will be seen by reference to the table under consideration that this belief is no longer tenable. That a certain small percentage does represent a passive or under-action phenomenon (in reality an accommodative exophoria) is a well-established fact. But Table 4 shows at a glance that in 441 cases this anomaly was associated with hypermetropia or its allied refractive conditions (H + ah-ah-ahm + H) 313 times, or in 72 per cent. of the cases. And inasmuch as all hypermetropic conditions call for excessive accommodation (hence associated excessive convergence impulse), we may be sure that a certain portion of latent exophoria is masked in such cases by the attempt on the part of the patient to overcome the hypermetropia. Herein lies the unwisdom of anything like a full correction of the spherical element in the hypermetropia associated with exophoria.

Myopia and its allied condition (Am, M + Am, Amh) were present in 89 of the 433 cases (20.5 per cent.) and it is probable that a certain proportion of these were accommodative exophorias.

There remain to be considered 31 (or 7.5 per cent.) cases of antimetropia (the so-called anisometropia) in which it will be later shown that the average degree of exophoria was higher than in any other refractive condition.

Subdivisions of Exophoria.—The term exophoria, while of great clinical convenience, is not altogether sufficient to the purpose for which it is employed, in that it gives no clew to whether convergence be deficient, divergence excessive, or the two conditions coexistent. So that, for purposes of statistical study and better understanding of the cases, it becomes necessary further to subdivide a proportion of the series herein offered into:

1. Exophoria with normal divergence and deficient convergence.
2. Exophoria with divergence excess.
3. Exophoria with convergence and divergence both deficient.

These may be, for greater convenience, put down as: (a) Asthenic exophoria (Savage), true convergence insufficiency; (b) sthenic exophoria (Savage), anatomic exophoria; (c) neurasthenic exophoria.

In the series of cases here offered there were 200 in which there was only partial or no relief to the patients' symptoms afforded by correcting lenses alone. Of this latter number there were 121 in which the prism convergence and the prism divergence were estimated in the further study of the cases. Arranging these 121 according as they showed subnormal, normal or excessive divergence, we find the following:

Thirty-five times, divergence and convergence were subnormal; 23 times, divergence was normal and convergence was subnormal; 63 times, divergence was excessive and convergence subnormal. Or to tabulate them more in detail:

TABLE 5.

Conditions.	No. of Times Found.	Average Exophoria for Infinity.	Average Prism Convergence.	Average Prism Divergence.
Neurasthenic exophoria	35	1 80°	9°	5.5°
Asthenic exophoria. . .	23	2.25°	11°	7°
Sthenic exophoria.	63	3.00°	14°	8°

This table shows that over 60 of the class so studied proved to be sthenic or intrinsic exophorias (divergence excess of Duane), a proportion that, it is thought, will hold for the whole series. It further shows that the average exophoria increases as the prism divergence increases (as would naturally be expected). Finally, it sustains Seabrook's claim that exophoria for infinity almost invariably means subnormal convergence, whether the exophoria is asthenic, sthenic or neurasthenic. The influence of hyperphoria in reducing both prism divergence and prism convergence is well known, and no case of exophoria should be put down as neurasthenic until hyperphoria of three-quarters of a degree or more has been excluded. Table 6 was drawn up for the purpose of comparing at every point 6 cases each of neurasthenic, asthenic and sthenic exophoria.

Several interesting practical points are brought out by this table. It is commonly accepted that from 10.50 to 11.00 meter angles of convergence amplitude are sufficient for comfortable work at the near point; and yet in Cases 5 and 6 of Group 1 in Table 6 there was exophoria of 8 degrees for the reading distance in both cases, with a convergence amplitude in one case of 12.00 m.a. and in the other 13.85 m.a. In Cases 1 and 4 of Group 2, there was exophoria of 12 and 10 degrees, respectively for the reading distance, with a convergence amplitude of 21.00 m.a. (!) in each case. It will be readily seen that, while all 4 of these patients possessed convergence amplitude much in excess of what is generally considered quite sufficient, they had all learned the trick of using the power that was potential in their adducting muscles all the time.

Contrast with these Patient 5 of Group 2, who presented an exophoria of 2 degrees for both distance and near work, in spite of the fact that her convergence amplitude was but 8.50 m.a. Here was a patient who, though her convergence amplitude was not all that it should be, yet held her adductors up to their work almost perfectly, for she was almost without symptoms. Too, she was one of those individuals who have themselves well in hand and accomplish all things well; moreover, her physical condition was superb.

TABLE 6.

		Exophoria for distance.	Exophoria at 13 inches.	Difference between infinity and near exophoria.	Prism convergence.	Prism divergence.	Convergence near point.	Amplitude of convergence in meter angles.
	Group 1:*							
Neurasthenic.	1	2	6	4	7	6	3	13.85
	2	1	5	4	8	6	3	13.85
	3	1	5	4	8	6	3	13.85
	4	1	2	1	10	6	3	13.85
	5	1	8	7	6	5	3½	12.00
	6	1	8	7	10	6	3	13.85
	Group 2:†							
Asthenic.	1	2	12	10	10	7	2	21.00
	2	1	5	4	12	7	3½	12.50
	3	3	12	9	10	7	4½	10.00
	4	3	10	7	11	7	2	21.00
	5	2	2	0	12	7	5½	8.50
	6	1	6	5	14	7	4½	10.00
	Group 3:**							
Sthenic.	1	2	7	5	18	10	3½	13.00
	2	12	19	7	20	14	5	10.00
	3	2	2	0	19	8	3	14.15
	4	8	15	7	8	9	4	11.30
	5	5	18	13	18	12	4	11.70
	6	4	16	12	11	9	4	11.30

* Cases with subnormal prism divergence.
† Cases with normal prism divergence (= 7 degrees).
** Cases with excessive prism divergence.

The following 5 cases illustrate well the value of estimating both the exophoria for the near point and the amplitude of convergence—for if the exophoria for the near point be much greater than that for infinity and the convergence amplitude be normal—the necessity for convergence training, with prisms or otherwise, is apparent. Such patients need to be shown how to use a faculty they already possess. On the other hand, when exophoria for the distance shows no increase when estimated for the near point, though the convergence amplitude be normal or even above normal, not so much need be expected from further training of a faculty the patient already knows how to use and is probably drawing on heavily.

A word as to the proportional relation between prism divergence and prism convergence. In 1895, Risley[16] stated his belief that muscular asthenopia frequently proceeded from disturbance between the relation of adduction to abduction which should be as 3 to 1. This was based on results obtained with the rotary prism. Some time earlier Noyes had spoken of 5 or 6 to 1 as the normal relation. Following Risley, Bannister[17] went over 100 U. S. Army recruits and, using separate prisms from the trial case, came to the conclusion that "there exists in healthy eyes no positive definite relation between prism convergence and prism divergence for distance, and that it is not correct to claim that such eyes should, without practice with prisms, show at 6 meters a ratio between these functions of 3 to 1 or 6 to 1 in favor of convergence, not permitting abduction to fall below 6."

Naturally, much depends on the way in which the tests are applied. Convergence is a variable elastic quantity. Prism divergence is a fairly constant one. It would seem wise, therefore, first to test the prism divergence, gently leading the patient along by having him close his eyes from time to time and open them suddenly, with the purpose of arriving at his greatest possible prism divergence, then closing and resting the eyes for a few minutes before estimating the prism convergence. This was the method employed in the subjoined series of 121 exophorics in whom it was found that: prism divergence was in excess 12 times; prism divergence and prism convergence were equal 10 times; the relation of prism convergence to prism divergence was as 1½ to 1, 30 times; as 2 to 1, 41 times; as 2½ to 1, 19 times; as 3 to 1, 7 times; as 4 to 1, twice.

Bannister's figures appear to be very good ones to work from, as they are based on methods largely in use in ophthalmic offices the country over. As compared with them, it will be seen that in exophoria the relation of prism divergence and prism convergence varies in so confusing a manner as to attach little value to their relative behavior. Estimation of the near point exophoria and convergence near point are more essential. Necessarily the amount of prism convergence in a case of exophoria is always of interest; for instance, if a patient's distance vision begins to blur when a 6, 8 or 10 degree prism is placed base out before the eyes, the inference that their prism convergence is defective and that they have not learned to dissociate their accommodation and convergence is entirely justifiable.

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[16] Univ. Med. Mag., 1895.

[17] Annals of Ophth., 1898.

In Table 7 the average exophoria in the various states of refraction is shown and we here find food for thought:

TABLE 7.

		Average exophoria.
H + Ah and allied conditions.....	319 cases.	2.5 degrees.
M + Am and allied conditions....	90 cases.	3 degrees.
Ahm	17 cases.	3 degrees.
Amh	17 cases.	4 degrees.
Antimetropia	31 cases.	5 degrees.

In H + Ah as it commonly occurs, stereoscopic vision is usually very little, if any, hindered, and the average exophoria associated with it is but 2.5 degrees. In antimetropia (the so-called anisometropia) where dioptric inequality between the two eyes ofttimes interposes a weighty hindrance to smooth, easy stereoscopic vision, the average exophoria rises to 5 degrees. In other words, when there is sufficient obstacle to the performance of stereoscopic vision, the eyes tend toward the position of anatomic rest, which is a heritage to us from our forebears for countless generations. Exophoria thus reveals itself as a reversion to a lower type and may justifiably be considered an atavistic phenomenon, as claimed by Lindsay Johnson, Pohlmann, LeConte, Jackson and others. The data here given lend firm statistical support to that contention.

As to symptoms, 200 of the 441 cases here catalogued presented symptoms of muscular asthenopia persisting after careful correction of their refraction. Of these two hundred, 173 exhibited headache, the frontal type predominating in 102, the occipital in 60, the temporal in 11; while 140 gave testimony as to more or less vertigo, especially after near work. Ocular fatigue and ache were present in 153, ocular tenderness in 98, conjunctival irritation was complained of in 121, low-grade photophobia in 130. Nausea seemed fairly well related to the exophoria 72 times; and drowsiness after near work was almost invariable, as was also picture-gallery and after-shopping fatigue. Gastric reflexes seemed etiologically related to the exophoria in 23 cases in an unmistakable way. By gastric reflex is meant the nameless vacant sensation in the epigastric region so perfectly described by DeQuincey in his "Confessions." That a certain proportion of exophorics (who overcome their exophoria) have this reflex is indisputable. Two cases presented intractable superior dental neuralgia (with teeth in the most perfect condition) that yielded to prisms, bases in, for permanent use. Another case exhibited the complete picture of acute glaucoma that subsided within three days after the incorporation of prisms, bases in, in distance correction.

Treatment.—The treatment of exophoria calls for about as nice discrimination as any problem in medical practice.

First of value. I would place right living, hydrotherapy and abundant sleep; second, the most painstaking refraction; third, convergence training. This may be of various kinds, but I have resorted mainly to two kinds, namely, converging exercises on a pencil from arm's length in toward the root of the nose until the convergence near point is reached and the patient sees double. This was invariably prescribed to every exophoria. Pencil converging exercises to the left and right (as suggested by Duane) was of service in a few cases.

The second element in convergence training is by means of prisms, bases out, according to the method popularized by Gould as "weighting the convergence stimulus." The patient is given a pair of 5-degree prisms in a frame with which he walks toward a candle flame, placed at the far side of the room. The prisms are raised as he goes toward the light. As soon as he reaches it, the prisms are dropped before the eyes and he backs away from the light, gazing steadily at it all the time. Should the light be seen double, the patient immediately retraces his steps and again backs away from the light until he goes the entire length of the room, holding the candle light single. This is done from ten to fifteen times, two or three times daily. After a week, 10-degree prisms are ordered to be used in the same way; in another week or two, 15 degrees or 20 degrees according as the patient rapidly or slowly learns the trick of dissociating his accommodation and convergence. This method is of value in all exophorics.

Prism exercises were resorted to in this manner in 147 of the 200 cases as the sole optical treatment aside from the wearing of a proper correction; in 26 more the exercises were employed in connection with the use of prisms, bases in, in the patient's distance correction; and in 27 more in connection with the use of prisms, bases in, in the patient's reading glasses.

4. In Prisms, Bases In, for Permanent Use.—The use of prisms, bases in, to be incorporated in the patient's distance correction, has been deprecated by various high authorities. Their chief (and almost unanimous) contention has been that the exophoria for infinity increases under the use of such prisms. That this is true, within certain limits, must be admitted; and yet in anatomic exophoria,[18] when proper correction of the ametropia has failed to relieve, and attempts at training the convergence have been poorly borne, the trial of prisms, bases in, in an extra or hook-front experimentally seems to me entirely justifiable. In cases so selected, it will be found that when convergence has been made somewhat easier to the patient by the use of rest prisms, the convergence may then be trained to a very considerable point, and the convergence for infinity thus kept from increasing. This was my experience in 17 out of 42 cases in which prisms, bases in,[19] were ordered for constant use. It is no more surprising that the exophoria should increase in these cases of anatomic exophoria than that a patient should gradually manifest more and more of a latent hypermetropia as plus lenses are skillfully crowded on his eyes. And I believe there are few cases of anatomic exophoria (due to orbital peculiarities, insertional anomalies, etc.) in which there is not a considerable element of latent exophoria unrecognizable with the Maddox rod because of the overwhelming fusion impulse in such individuals. For such patients I know of no test comparable to the cover test if employed as previously described. It is as wrong to order prisms, bases in, for permanent use without soon after training the convergence to the highest possible point as it would be to rest an inflamed joint and then not exercise it afterward. Many of these patients have a splendidly developed convergence, but it is because of their excessive use of it all day long in overcoming their exophoria that they have their symptoms.

A class of patients for whom convergence training is even more plainly indicated are the exophorics who present but 1 or 2 degrees of deviation for infinity with anywhere from 10 to 15 degrees' deviation at the reading distance (prism divergence being normal). These patients respond finely to convergence training as a rule. There is, however, a small outlying percentage in whom it will be found necessary to supplement convergence with prisms, bases in, in their reading glasses only (these patients are mainly presbyopes) before they become entirely comfortable in near work. In 45 patients for whom prisms, bases in (or decentered lenses), were used, there were ordered prisms correcting one-quarter of the infinity exophoria in five cases; one-half of the infinity exophoria in eight cases; two-thirds of the infinity exophoria in ten cases; the full amount of the infinity exophoria in ten cases; more than the full amount of the infinity exophoria in twelve cases, with uniformly good results.

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[18] By this is meant exophoria with highly excessive prism divergence and defective temporal arc rotation. (The "Divergence Excess" of Duane; or the "Intrinsic Exophoria" of Savage).

[19] Minus prisms Maddox prefers to call them.

There may be room for doubt as to the wisdom of ordering prisms for constant use, but one need not hesitate to order prisms, bases in, for use in reading glasses only if the divergence for the near point exceeds 10 degrees. From one-third to one-half of the deviation for the near point will usually be gratefully accepted.

OPERATION.

When it comes to the question of operation in exophoria (after all the preceding measures have failed to relieve) there is the widest variation of views among the writers on this subject.

When exercise of the function of convergence has failed Landolt[8] is devoted to advancements. In Hansell's experience[20] advancement will often permanently cure. Savage and Thomas[21] both indorse muscle shortening as the operation of election when other means have not relieved the patient. Posey[22] did DeWecker's capsular advancement in 33 cases of pronounced exophoria, and states that, although after a lapse of two years there seemed but little objective gain, the improvement in the symptoms was marked and would seem to justify the operation. W. R. Parker,[23] if "driven to operation" (and this ought to be the stand taken by every ophthalmic surgeon—he should feel driven to operation), does tenotomy or advancement according to the indications.

In the series here discussed (441 cases) operation was done seven times, and in each instance tenotomy was resorted to. In three cases, the amount of exophoria operated for equaled 10 degrees, in one case 12 degrees, in one case 13 degrees, in one case 18 degrees, and in one case 20 degrees. In two cases in which both externi were equally and moderately divided at the one sitting, there was subsequent homonymous diplopia for three to four weeks, especially in the temporal periphery, but this eventually left the patients with vastly more useful eyes than they had ever had before. All these seven patients were markedly helped by the operation. In each one convergence training (begun from three to seven days after operation) was relied on to finish a cure. Theoretically, advancement is strongly indicated in exophoria, yet in the anatomic variety, with convergence decidedly insufficient and divergence more decidedly in excess, I can see no reason why tenotomy should not be done, first, because there seems no danger of nasty after-results (from five to six years after the tenotomy, such as we see in tenotomies for convergent squint); second, tenotomy is infinitely easier than advancement for these functional conditions and vastly easier of adjustment to the particular condition in each individual, whereas advancement is very much clumsier and more difficult of performance.

In spite of the feeling in some quarters that the stitch by means of which advancement is done is very simple and very easy, I feel disposed to continue doing tenotomies in the very few exophorics (slightly less than 2 per cent.) who need operative help.

CONCLUSIONS.

Finally, the following conclusions growing out of twelve years' earnest thought and work with exophoria are offered with all diffidence as to the result of that experience:

1. Exophoria, as a symptom-producing quantity, has come to the point where it must be viewed as an atavistic phenomenon—a reversion to a lower type—a stigma of degeneration, if some one wishes to insist on it. (I do not hesitate to use the latter designation, as I am myself an exophoric.)

2. All the advantages of binocular stereoscopic vision are conditioned on convergence only.

3. Convergence as it is daily dealt with may be said to be composed mainly of two elements—the initial or tonic convergence and the accommodative convergence.

4. The amplitude of convergence ought to be always calculated.

5. The average patient has somewhere between 10 and 11 meter angles of convergence.

6. The reserve amount of convergence ought to be about twice as great as the convergence required by the work.

7. The cover test is the most reliable test for study of the position and behavior of the eyes when fixed on an object at twenty feet.

8. When converted into the parallax test much added delicacy is secured.

9. The Maddox rod and a small electric light are much superior, as a test for the muscle balance at the reading distance, to the vertical diplopia test.

10. Nine-tenths of all cases of exophoria will be encountered in individuals over 20 years of age.

11. The frequency of exophoria in the male and female is about equal.

12. Exophoria for infinity generally means deficiency either in the amount of convergence or in the faculty of using it.

13. Low degree exophorias are the most common and the most symptom producing.

14. The average degree of exophoria is least in H + Ah conditions, rises through the M + Am conditions, and is highest in antimetropia.

15. Exophoria assumes three principal forms; i. e., (a) asthenic exophoria (convergence insufficiency), (b) anatomic exophoria (sthenic exophoria), (c) neurasthenic exophoria.

16. About 50 per cent. of exophorias are of the sthenic or anatomic variety.

17. The test of the muscle balance at the reading distance is no measure of the total converging power of the patient and must be supplemented by tests for the convergence near point.

18. The prism convergence is only of relative value as a working indication.

19. The relation of 3 to 1 as between prism convergence and divergence will not nearly hold in exophoria.

20. The influence of hyperphoria in often reducing the power of both divergence and convergence is well

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[20] The Journal A. M. A., 1895, vol. xxv, p. 745.
[21] The Journal A. M. A., 1895, vol. xxv, p. 745.
[22] Annals Ophth., 1899.
[23] Ophth. Rec., 1901.

known, and no case of functional divergence should be put down as a pure exophoria until hyperphoria of three-quarters of a degree or more has been excluded.

21. In hyperexophoria the use of suitable vertical prisms, with convergence training, will frequently do away with all the patient's symptoms.

22. The symptoms of exophoria do not differ materially from those of other forms of eyestrain.

23. The treatment of exophoria should comprise (in the following order): (a) Right living; (b) careful refraction; (c) convergence training; (d) prisms (bases in) for infinity; (e) prisms (bases in) for the reading glasses only; (f) tenotomy or advancement.

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DISCUSSION.

Dr. Edward Jackson, Denver, in the main, and particularly in his conclusions as to treatment, agreed with Dr. Reber. These conclusions, and particularly the order of importance of the different therapeutic measures, he said, ought to be impressed and taught widely, viz., right living, careful refraction, convergence training, prisms, tenotomy or advancement. These are by no means of equal importance. Both in the number of cases to which it is applicable and in its importance in the cases to which it does apply the first stands far ahead. We can not by operation and training make up for the faulty nutrition of the nervous system. As to the amount of reserve convergence, most ophthalmologists who have carefully studied the accommodation have realized that the amount of accommodation that must be kept in reserve, for the comfort and health of the patient, varies greatly in different persons. It has seemed to Dr. Jackson that the proportion of convergence that could be used habitually varied even more widely, and in general that but a small part of the convergence should be used.

He agreed with Dr. Reber that exophoria becomes more common with increasing age, more particularly as regards near work. Inability to sustain convergence for near work he finds very common at the age of presbyopia. A great many patients are relieved quite as much by prisms, bases in, as they are by change of lens. For a good many years he has tested all refraction cases as to muscle balance with the Maddox rod test, and low degrees of exophoria are extremely common. He would not say that the low degrees are so likely to produce trouble as the high degrees. If we take the total number who develop asthenopia, probably more than one-half of them have quite low degrees. But the number of people who present that amount of exophoria is so much greater than those who present the higher degrees that the low degrees are evidently less likely to cause trouble.

Dr. Alexander Duane, New York, referred to the following points in Dr. Reber's paper: First, as to the convergence near point, he thinks the distance usually given for this (four inches from the center of rotation of the eye) is too great. In his experience for extreme convergence in normal cases the point is not more than three inches from the center of rotation of the eye, or practically two inches from the root of the nose. He determined it very simply by using a very small white-headed pin, which is carried in rapidly toward the eyes. The movement, when the convergence near point is reached, is determined (a) subjectively by the fact that the patient sees the pin double; (b) objectively by the fact that the physician can see one of the patient's eyes oscillate and diverge. It is important in this regard to note which eye diverges. In exotropia there is often a relative convergence near point, i. e., the point down to which the patient still makes the attempt to converge, although he may never actually succeed in converging on the object of fixation. It is an important matter to determine this relative near point, for a patient with a comparatively close relative near point affords a much better prognosis both for operation and for orthoptic treatment, than one who makes no attempt at convergence at all.

Second, in testing the exophoria for near he agrees with Dr. Reber that the dot and line (phorometer) test is not very satisfactory, but instead of using the Maddox rod for determining this he uses the cover test (measuring the deviation with prisms), and is sure that he gets trustworthy and precise results.

Third, he can not agree that exophoria for infinity almost invariably means subnormal convergence. In very many cases the presence of 10, 20 or even 30 degrees of exophoria for distance is compatible with perfect converging power and normal ability to overcome prisms, base out.

Fourth, he does not feel that exophoria in anisometropia and other conditions interfering with binocular vision represents necessarily, or even frequently, a reversion to the lower type, a sort of atavistic phenomenon. His explanation is that, owing to the anisometropia, etc., the two retinal images are of different size and distinctness, and it is correspondingly difficult to fuse them. If the patient gives up the fusion effort and sees double it is for his interest to throw the images as far apart as possible, so that they shall often confuse each other less, and this he does. The often spasmodically varying character of the exophoria for distance accords with this view.

Fifth, as regards the use of prisms for constant wear, Dr. Duane is opposed to them, because, while serviceable for a time, they seem in the long run to be detrimental. The untoward effects may not occur until after they have been worn for a year or so. Not infrequently he has had patients come to him who have worn prisms for a long time and who say that, while at first comfortable, they have later become uncomfortable, and such patients he finds are almost always helped by removing the prisms. Again, prisms, base in, he is sure tend to increase the exophoria for near as well as for distance; i. e., tend to cause a true convergence insufficiency.

Sixth, Dr. Duane says that operating is a last resort, but when the indications are clear for it it does give gratifying results. His rule is: (a) With large exophoria for distance and less, or at least very little more exophoria for near, with good converging power (close convergence near point) and with eyes that can be and have been suitably trained to converge and see binocularly, he does tenotomy of one or preferably both externi. (b) With little exophoria for distance and low diverging power combined with exophoria for near and little or no converging power (remote convergence near point), he does advancement of one or both interni, with tenotomy of the externi. (c) With marked exophoria for distance and near with low or no converging power, and high converging power he does advancement of the interni.

It is understood that the operations are preceded by thorough orthoptic treatment.

Dr. Mark D. Stevenson, Akron, Ohio, said that convergence is chiefly stimulated by the desire for a single binocular stereoscopic vision. It is this desire which creates the so-called initial or tonic convergence which is required, so that a distant object may be seen singly, and it also compels convergence in association with accommodation in seeing close objects. The eyes can usually converge for a much nearer object than they can accommodate for, and this last part of the convergence act is done solely in the interest of single vision. Accommodation and convergence are usually associated only in the central act of convergence and not in its beginning or ending. Those under the effect of a cycloplegic, the old, and some myopes having no accommodation, often have good convergence. In testing for the muscle balance at the distance, the desire for single vision should be eliminated so far as possible, e. g., by making the objects seen with each eye dissimilar, as with the Maddox rod or by displacing the images by means of prisms, so that they could not be fused. However, in testing convergence which depends primarily on the desire for single vision this desire should not be suppressed, but the amplitude of convergence, which is of chief importance, should be determined. This is easily done by first determining the negative convergence, if any, in meter angles and then the positive convergence. The convergence near point may be found by means of a small light, but it is closer to the patient if a small white object on a black background is used, and Dr. Stevenson usually finds the convergence near point considerably closer to the patient than does Dr. Reber. In the *Ophthalmic Record*, July, 1904, Dr. Stevenson described a simple instrument by which the muscle balance at the ordinary reading distance during accommodation for that distance can be determined in a few moments, the patient looking closely at the small figures. By this means the degree of convergence for the reading distance, stimulated only by the accommodation for that distance, may be better determined than by the Maddox rod, as it is not so easy to accommodate for a light. The patient might accommodate for the red streak of light which, seen through the rod, often appears to be at a different distance from the light, and thus over- or understimulate convergence.

Dr. G. C. Savage, Nashville, directed attention to some points of vital importance. First, no test of the lateral muscles, he said, is worth anything when made under the influence of a mydriatic. The relationship between convergence and accommodation is such that if one takes away the accommodative power the converging power is disturbed, and one can not get reliable results.

Second, judgment of verticality, horizontality and obliquity is a gift and not an acquisition. He disagreed with Dr. Reber's statement that women can not judge this as well as men; a child can judge it as well as a man and so can a woman. A third point is this, that there is a distinct meaning when there is exophoria in the near and not in the distance, with young people, and if the physician does not understand that and prescribes full-strength convex glasses under a mydriatic he gets the patients into trouble. If a patient has exophoria in the near and not in the far, that patient has a powerful ciliary muscle, which, with a slight impulse from the brain, will focus rays of light from the page easily. Slight excitation of the accommodative center produces a correspondingly slight excitation of the converging center, and hence the feeble convergence. Now if the ophthalmologist prescribes full-strength convex glasses for a hyperope who has exophoria in the near and not in the distance, that patient will never accept those glasses. They will cause suffering until removed. If to such a patient, with, say, diopter of hypermetropia, the physician gives a one-diopter minus lens, he stimulates accommodative effort and so stimulates the convergence center, and comfort comes to the patient.

Dr. F. S. de Lue, Boston, said that in testing his cases for errors of refraction, he examines all for external muscle insufficiencies, and is surprised at the frequency with which exophoria appears when the hyperphoria has been relieved. Generally, the balance soon becomes re-established, and these patients do not complain, or if they are disturbed, it is not for distance, as a rule, but for near work, and a prism, base in, generally for near only, used a short time, gives the needed relief.

Dr. Oscar Wilkinson, Washington, said that there is a certain class of cases in which we get the most gratifying results from the use of prisms. He does not believe in using prisms for every case of exophoria, but when a patient fails to get relief from the correction of the error of refraction and comes back with asthenopia symptoms immediate relief can often be given with 1 or 1.5 degree prisms, base in. In regard to exophoria increasing under the use of prisms, he does not believe we will, as a rule, observe any appreciable increase in the exophoria from the use of the prism if the examination is made with sufficient care in the first instance. It should be made several times under different circumstances, i. e., when the patient is rested and when tired. In the treatment of exophoria an operation is indicated when all other means fail. In cases with more than 10 degrees of exophoria, tenotomy is the operation of choice; in cases with less amount the tucking or advancement operation is indicated.

Dr. Wendell Reber, Philadelphia, said that when he stated that he thought low degrees of exophoria were mostly productive of symptoms it was because they are overcome. Some patients with 3 degrees have more intense symptoms than those with 12 degrees. He called attention also to the fact that prisms for permanent use are not ordered for many cases. It is one of the last resorts and he submits that prisms for constant wear may be absolutely justifiable even though the exophoria does sometimes increase. He agreed with Dr. Duane that the cover test is the most valuable for testing exophoria for distance, but does not agree that it is for the near point. He thinks the small electric light is very valuable. He said that he wished he could feel, as Dr. Stevenson does, that we do increase the power of muscles by exercise, but he does not. He thinks that we simply teach these patients to use a coördination which they already have. Frequently the exophoria decreases and the symptoms subside.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.*

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Palliative operations in cases of brain tumor are not new, and the temporary benefits to be derived in this way have been fully recognized by many physicians during many years. It has seemed time well spent to examine some of the reports of cases treated by trephining, or other method of opening the skull, for the relief of pressure when a tumor could not be localized, or if localized could not be removed. Unquestionably many cases have been omitted, and yet I have collected sufficient to demonstrate that palliative treatment has an important place in cerebral surgery.

REVIEW OF LITERATURE.

Annandale[1] said, in 1894, that more than twenty years previously he had opened the skull of a patient whose symptoms were those of general brain pressure and, although no special condition was found, temporary relief was marked. Another case of this kind, he says, was operated on by Sir Joseph Lister in the same wards with success. In 1889, Annandale removed a piece of bone from the skull because of intense headache, following an injury of the head years previously. No abnormal condition was found, although the dura was incised. The patient made an excellent recovery and was perfectly cured. Annandale remarked that when no localized symptoms of brain tumor exist an exploratory operation may be performed, and experience has shown that in some of these cases the operation has been useful in taking off general pressure and in a few instances has even been followed by shrinking or degeneration of the growth. Again, a growth may give rise to effusion of fluid or to hemorrhage, and the symptoms caused by these conditions may be at least temporarily removed by the operation.

Sahli,[2] in 1891, spoke of improvement from palliative operations. The tumor in one case was supposed to be in the cerebellum. Vision improved and headache disappeared after a palliative operation. The patient (a boy) died some months later and no necropsy was obtained. Sahli thinks that two trephinings remote from each other give more relief of pressure than one. Sometimes Nature performs a palliative operation, what he calls *Selbsttrepanation*. In consequence of the pressure the skull becomes thin at the region of the Pacchionian bodies and openings may occur, and in one case he saw the brain protruding through several such openings.

The palliative operation, he thinks, is not ideal, is not without danger, and improvement is only temporary. In one case of prolapse of the brain he observed unconsciousness immediately followed by death. Acute prolapse of the brain may impair the function of the rest of the brain. He recommends small trephinings in preference to large.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-seventh Annual Session.

[1] Annandale: Edin. Med. Jour., January-June, 1894, p. 898.

[2] Hermann Sahli: Volkmann's "Sammlung klin. Vorträge Innere Medicin," Nos. 1 to 29, 1890-1894, p. 300.

In 1891, White[3] described a number of cases of epilepsy in which improvement followed operation, although nothing abnormal was found.

In 1893, Horsley[4] said that the removal of excitatory symptoms by opening the skull is a marked phenomenon, convulsions ceasing. In one of his cases in which the diagnosis of tumor of the middle cerebellar peduncle was made, the skull was opened only to relieve the pressure, and the cerebellum protruded almost an inch through the trephine hole. The symptoms of tumor soon disappeared, and six months later the man felt perfectly well. He survived eighteen months, and during this time had few attacks. Only a small cavity was found.

Horsley thinks that some tumors are so interfered with in their nutrition by opening the skull and suddenly altering the pressure therein that they forthwith degenerate. In another of his cases the tumor was too large for removal, but the patient survived for over two years, with disappearance of the attacks and improvement of the hemiplegia. The tumor at the time of the operation was obviously malignant and rapidly growing, but had later undergone complete destruction by the mere exposure at the time of operation. Such a result, he says, can not be anticipated or expected as likely to follow, but it is an argument in favor of opening the skull for the purpose of palliating a condition which can not be cured.

Horsley says, also, that he has found in every case the effect of opening the skull has been to remove the headache and, further, that in cases where it was known before operation that the tumor could not be removed relief from severe pain afforded by opening the skull persisted until the patient died. The simple and safe procedure of opening the skull should be undertaken when drugs fail. At the Berlin Congress Horsley pointed out that opening the skull caused the swelling of the optic discs to subside, and that the subsidence may proceed steadily to complete recovery, provided atrophy has not previously begun. If atrophy has commenced the condition is hopeless. Vomiting is dependent on the degree to which intracranial tension is raised, and, as a rule, this symptom disappears when the skull is opened.

Jaboulay,[5] in 1893, obtained good results by trephining in a case of tubercle of the brain without opening the dura. The prognosis from trephining, he thinks, is better the more circumscribed and superficial the lesion.

Caton and Paul[6] trephined the skull in a case of acromegaly in 1893. The dura bulged in the opening. The operation relieved the headache, and the remaining three months of the patient's life were comparatively comfortable.

Macewen[7] did a palliative operation in 1889 in a case with symptoms of cerebellar tumor. The patient experienced great relief. After a week tuberculous tumors were removed from the cerebellum.

Taylor[8] reported a series of cases of brain tumor to show that there is almost invariably a subsidence of optic neuritis after operation whether the tumor is removed or not. This fact, he says, was known to Horsley so long ago as 1888. In discussing Taylor's paper Horsley said that if there is any atrophy present no amount of reduction of pressure within the skull will produce the slightest change or afford the slightest relief in respect of the loss of vision. If there be commencing atrophy, after operation the neuritis that may be present will disappear, but the atrophy is permanent; opening the skull, therefore, is not justifiable if the atrophy is well marked. Horsley was probably referring to the operation only in so far as vision is concerned, as the operation may relieve some of the other symptoms, even though it may be too late to restore vision. The optic neuritis may disappear, Horsley says, even though the dura is not opened.

In a case reported by Keen[9] in 1894, the diagnosis of intracranial tumor was made, but the growth could not be located. Trephining was recommended with a view of relieving intense headache. The tumor could not be found. The bone was not replaced, and, although the brain bulged greatly, headache and hallucinations entirely disappeared, and the man became a quiet and tractable patient. He died four and a half months after the operation, having been much relieved during this time. The operation was performed in 1892. In another case, also, much benefit was obtained by a palliative operation.

Bruns,[10] in a case of brain tumor in which the tumor could not be found at operation, improved the patient's condition by opening the skull. By the end of the third week very little choked disc remained, attacks of blindness no longer occurred, headache was much less severe and vomiting ceased. Similar improvement he had noticed in two other cases of brain tumor after trephining.

Byron Bramwell,[11] in 1894, said that he had advocated trephining for the relief of symptoms in his book, "Tumors of the Brain," published eight years previously, but that he would advocate the operation still more strongly in 1894 in cases in which there is a great increase of intracranial pressure and drugs have failed. When he published his book he had not been aware that Grainger Stewart or any one else had recommended the operation. In many cases the headache is intense, and it has been shown that in some of these cases sudden death occurs, apparently as a result of the mere severity of the pain and sudden inhibition of the action of the heart. In other cases in which the intracranial pressure is greatly increased, the patient dies suddenly in an epileptic fit or as the result of failure of respiration. Opening the dura reduces intracranial pressure and relieves headache, optic neuritis and other symptoms.

In 1894 Kammerer[12] reported a case of supposed tumor of the brain in which double trephining was done for the relief of pressure. The headache disappeared, vomiting ceased for several weeks and then occurred occasionally. The motor power of the right side (previously this side was paretic) improved and some sensation returned. The dura was not incised.

Wyeth remarked that he had trephined in two cases with symptoms of brain tumor and, finding no tumor, had sewed up the dura, but had not replaced the bone; improvement had followed the relief of pressure.

Sänger,[13] in 1894, reported a case of brain tumor in which after opening the skull and dura prolapse of the brain with improvement in the symptoms occurred.

In one of the cases of tumor reported by E. Albert[14] in 1895, in which palliative trephining was done, headache disappeared, but vomiting persisted. The dura probably was not opened. Later trephining was done on the other side of the head, but vomiting persisted. The relief afforded was in regard to headache and might have been greater if the dura had been opened.

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[3] White: Annals of Surgery, August and September, 1891.
[4] Horsley: Brit. Med. Jour., 1893, No. 2. p. 1365
[5] Jaboulay: Arch. provinc. de Chir., vol. ii. 1893.
[6] Caton and Paul: Brit. Med. Jour., Dec. 30, 1893, p. 1421.
[7] Macewen: Brit. Med. Jour, Dec. 23, 1893, p. 1367
[8] Trans. Ophthal. Soc. United Kingdom, vol. xiv, 1893-4, p. 105.
[9] Keen: Amer. Jour. Med. Sci., January and February, 1894.
[10] Bruns: Neurolog. Centbl., 1894, p. 20; also, 1893, p. 389.
[11] Bramwell: Edin. Med. Jour., January to June, 1894, p. 1067.
[12] Annals of Surgery, vol. xix, January to June, 1894, p. 685.
[13] Sänger: Neurolog. Centbl., 1895, p. 472.
[14] E. Albert: Wien. med. Woch., 1895.

In another case in which trephining was done for brain tumor the dura was punctured. Headache became at once less severe, but the improvement was only temporary. In another case after trephining apparently without opening the dura, vision improved and headache and vertigo disappeared. The symptoms returned and the dura was opened. The operation was not very successful as a palliative means.

Schlesinger,[15] in a case of brain tumor, had a large protrusion of the brain as a result of the operation. The protruded portion could not be replaced, nor was it excised, and when the patient was presented he had a subcutaneous tumor on his head as large as a fist. The general condition improved as a result of the operation, the palsy diminished, the Jacksonian convulsions ceased on the third day after the operation, the choked discs and headache disappeared. Seven weeks had elapsed since the operation at the time of presentation. A later report of this case states that the improvement lasted several months and then the symptoms returned rapidly and death soon resulted. The entire right cerebral hemisphere was replaced by a gliosarcoma.

Decompressive trephining, a term employed by Jaboulay,[16] performed for brain tumor, according to this author, has proven to be of some benefit, more often not. When done for the relief of inoperable tumors, the results are not always brilliant. He speaks of astonishing results produced by trephining in the cerebellar fossa in a case of basal tumor; the pain ceased and the vision improved. The patient lived four and a half months after the operation. Jaboulay seems to believe that the relief in palliative operations is greater for tumors of the cerebellum and adjoining parts than for tumors of the cerebrum.

Broca and Manbrac[17] ascribe to Horsley the honor of being the first to describe carefully trephining as a palliative operation in brain tumor, although scattered references to the subject are found in the literature, and they refer to Annandale and Lister. Horsley recommended making a large opening in the skull without opening the dura. Sahli, they say, recommended excision of the hernia that is produced by opening the dura, especially as the portion of the brain involved in the hernia is impaired in its function. They say that Kocher did operate in this way on a child in the service of Sahli for a tumor not localized, but probably in the cerebellum. A hernia of the cerebellum was excised and benefit resulted. Broca and Maubrac employ the term "cerebral decompression." The palliative operation, they think, exposes the patient to the danger of shock, and when the operation is performed at an advanced period of the disease death is not exceptional. When the patient survives, the most distressing symptoms are lessened or disappear entirely, and, therefore, the palliative operation should be employed. It does not cause more rapid growth of the tumor. Exploratory trephining, when the diagnosis of location has been incorrect, has taught us that cerebral decompression may give important results. These authors express themselves in favor of partial removal of a tumor when the whole can not be excised, but are undecided as regards Horsley's view that partial ablation may retard the growth of the remaining portion. They report two cases of tumor in which palliative operation was beneficial.

In 1895 J. J. Putnam[18] remarked that he knew of one patient who, in consequence of simple opening of the skull, had been free from pain for many years, though blind. He said he had seen relief from pain by large openings in the bone in several cases of brain tumors.

Shultze's[19] results from palliative operation in brain tumor were disappointing, as recorded in his paper published in 1896. He speaks of it as often dangerous, but at times beneficial.

Ludwig Bruns[20] thinks that when the tumor can not be removed or only a small part of it is removable, trephining does not affect the focal symptoms, but causes the general symptoms quickly to disappear if the opening is large. Consciousness returns, headache, vomiting and choked discs disappear. In two of his cases the patients, who had hovered between life and death, had been able to walk again after palliative operations. In one of his cases (glioma of the occipital lobe) improvement lasted several months; in a second case it lasted some weeks. As headache in many cases does not return at all, the recurrence of symptoms is not so distressing and the patient passes into coma. The tumor, by growing through the opening, removes the pressure on the lymph tracts within the skull. Bruns says the opening in the skull must not be too small, and the dura must be opened.

Clarke and Morton[21] report a case of tumor of the brain without localizing symptoms, in which a large area of the skull was removed for relief of intracranial pressure and the dura was not incised. Headache disappeared. They remarked that Beevor and Ballance thought that removal of bone alone without incision of the dura was not likely to relieve intracranial pressure, but they (Clarke and Morton) believe that the actual increase in the bulk of the cranial contents may not be considerable if the tumor is small, and the bulging of the dura mater even to a very limited extent may be sufficient to relieve the increase of the intracranial pressure caused thereby. Clinical evidence in Caton and Paul's case, as in their own, showed distinctly that removal of an area of bone alone is sometimes sufficient. Except for the recurrence of fits five months after the operation, the trephining was of great benefit in Clarke and Morton's case. Optic neuritis subsided, leaving some consecutive atrophy, but the patient had good vision, was entirely free from headache and vomiting, except once during the last series of fits, had recovered his mental powers and had a comfortable existence.

Alfred Wiener[22] reports a case of irremovable tumor. After opening the skull, headache and convulsions disappeared for about two months, but the tumor grew through the opening of the skull, attained considerable size on the outside of the skull, and the symptoms returned. Wiener speaks in favor of trepanning in cases of brain tumor, even when there is no other hope of success than the relief of the general symptoms.

Rohmer[23] has collected a large number of cases in which the palliative operation in tumor of the brain had a beneficial effect on vision.

von Bergmann[24] has called attention to the fact that in contrast to those cases in which improvement was pronounced after palliative operations for brain tumor others are recorded in which no benefit was obtained, and, indeed, the symptoms were made worse. The improvement is only temporary and in some cases has been of very short duration. The operation also is dangerous. Improvement has occurred after merely opening the skull or after opening the dura also; surgeons, therefore, he said, preferred to remove a large piece of bone and leave the dura intact, but, as cerebrospinal fluid can escape only after the dura is opened, the incision of the dura is a necessary part of the palliative operation. There was a tendency, he said, to stop at a palliative operation, and this must be strongly combated. The future of the surgical treatment of brain tumors lies in the advancement of diagnosis, and in this way the almost thankless palliative operation may be changed to a radical cure. As the escape of cerebrospinal fluid is more important than the opening of the skull, v. Bergmann recommended lumbar puncture. Since v. Bergmann wrote his book experience has shown that lumbar puncture in cases of brain tumor may be dangerous. He has been pessimistic both as regards palliative and radical operations for brain tumor. He gives a long list of cases in which exploratory and palliative operations were done, but almost all of these were attempts at removal of a tumor. In his book (1899) occurs the expression, "decompressive trepanation." He refers to a case reported by Remsden in 1825, in which trephining was done for headache.

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[15] Schlesinger: Neurolog. Centbl., 1895, p. 702, and 1898, p. 974.

[16] Jaboulay: Lyon Médical, 1896, p. 73.

[17] Arch. Gén. de Médecine, February, 1896, p. 129.

[18] Boston Med. and Surg. Jour., Jan. 16, 1896, p. 66.

[19] Shultze: Deuts. Zeit. f. Nervenhlk., vol. ix, 1897, p. 217.

[20] Ludwig Bruns: "Die Geschwülste des Nervensystems," S. Karger, Berlin, 1897, p. 229.

[21] Clarke and Morton: Brit. Med. Jour., 1896, p. 802.

[22] Wiener: New York Med. Jour., Oct. 15, 1898, p. 541.

[23] Rohmer: Revue Méd. de l'Est., 1898, p. 525.

[24] "Die Chir. Behandlung von Hirnkrankheiten," Berlin, 1899.

Sänger,[25] in 1894, reported two cases to show that under certain circumstances trephining is proper, even when a tumor can not be removed. In 1899 he presented a case of brain tumor in which a palliative operation had been performed. Inunctions were at first effective, but later the symptoms became very severe. An opening was made over the cerebellum and the cerebellar lobe at once protruded; when the dura was incised much cerebrospinal fluid escaped into the bandages for more than three weeks. After the operation vomiting and headache ceased and full recovery seemed possible. Choked disc disappeared, and vision improved so much that the patient was again able to read. The gait also improved and ataxia became hardly noticeable. The operation was performed Aug. 7, 1899, and the presentation of the patient was made Nov. 14, 1899.

Babinski,[26] in 1901, reported a case in which a tumor could not be found after the cerebral dura was opened, although the symptoms had been so severe as to make an operation desirable. The headache and vomiting ceased after the operation, which was performed January 14. The choked discs disappeared by January 30. The presentation of the case was made Feb. 7, 1901. In another case Babinski observed signs of an intracranial disease. The patient had an intermittent discharge of cerebrospinal fluid by the nose. Headache was lessened by the escape of fluid and became more intense when the flow ceased. Nature in this way produced decompression, he says. This case is not unlike some others reported in the literature in which Nature has effected a means of relief for intense intracranial pressure, and bears a resemblance to a case observed by me in consultation with Dr. Laplace and reported in this paper (Case 1).

A. Sänger[27] presented a case in which he had made the diagnosis of cerebellar tumor and an opening was made over the left cerebellar lobe. The improvement was marked, and Sänger believed that either the tumor had undergone a retrograde change or the condition was hydrocephalus. Of eleven cases in which a palliative operation was performed, the symptoms were much lessened in ten. The time for operation that Sänger chooses is the beginning of impaired vision. When the opening is made over the cerebellum the dura must not be opened immediately.

In 30 cases of brain tumor studied by Leslie Paton[28] that were operated on, useful vision was saved in 22 and the vision was as good as before the operation in 18. It is impossible to draw conclusions regarding his cases in which a tumor was removed and those in which a palliative operation was performed. In the discussion following Paton's paper J. S. Risien Russell said he had no doubt that trephining was of great value in saving sight. He never hesitated to recommend the operation, even in cases in which there was no chance of either localizing the tumor or removing it, for by relieving the intracranial pressure alone sight could be saved. His experience had been that removal of bone alone was not sufficient; it was usually necessary to open the dura in order to obtain sufficient relief of pressure to bring about a subsidence of the optic neuritis. Paton also expressed himself in favor of opening the dura, as he did not believe merely opening the skull was of much benefit. In two cases only the cranial cavity was opened, and blindness developed in both.

Codman[29] says:

> In 28 of the 36 operations the attempt at a radical removal of the tumor was made, and in the eight worst cases only was it decided to do only a palliative operation. I think we may almost say it is certain that if in no case the attempt at radical removal had been made and, instead, a simple operation for the relief of pressure had been done through an intermuscular incision over a "silent" portion of the cortex, the mortality would have been greatly diminished and the percentage of improvement been made much greater. I do not mean to say by this that radical operation in the hands of a surgeon who has made a specialty of brain work is not justifiable, but that in the hands of most of us, a simple palliative operation will be far better in the long run.

In my opinion, only one who has made a specialty of brain surgery should attempt to remove a brain tumor.

J. J. Putnam[30] reports cases of palliative operation. In Case 2 marked relief from terrible headache and optic neuritis followed the making of a large trephine opening in the parietal region, and this, too, although the bone was replaced. This improvement was attributed to the escape of cerebrospinal fluid, which gushed in large quantities from the wound in the parietal dura. The tumor was a glioma of the lateral lobe of the cerebellum. In Case 3 a large tumor mass protruded through the trephine opening, pushing the skin before it. A measure of relief followed the operation. Recently, in association with Watermann, he has reported other cases. Lund[31] also has reported improvement from the palliative operation in cases of tumor of the brain.

Cushing[32] has reported recently cases in which the palliative operation has been of much benefit.

DR. W. W. KEEN'S CASES.

I add condensed notes of two unreported cases in which palliative operation was performed by Dr. W. W. Keen, with improvement in each.

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[25] Sänger: Neurolog. Centbl., Dec. 1, 1899, p. 1118.

[26] Babinski: Revue Neurolog., 1901, p. 266.

[27] Sänger: Verhandl. d. Deuts. Gesell. f. Chir., 1902, p. 158.

[28] Trans. Ophthal. Soc., United Kingdom, vol. xxv, 1904-5, p. 129

[29] Codman: Boston Med. and Surg. Jour., July 20, 1905, p. 74.

[30] Putnam: Boston Med. and Surg. Jour., July 20, 1905, p. 76; also Jour. of Nerv. and Ment. Dis., May, 1906.

[31] Lund: Boston Med. and Surg. Jour., July 20, 1905, p. 81.

[32] "Surgery, Gynecology and Obstetrics," vol. i, 1905, p. 297.

Case 1.—Jan. 3, 1901, E. H. M., aged 26, complained of failing vision and had later several attacks of temporary blindness. Among the first symptoms were severe headache on the right side and vomiting, later the pain shifted to the left side. He was found to have extensive optic neuritis. He has a little vision now in the left eye but is blind in the right eye. He has sharp boring pains which shoot from the upper occipital region to the back of the left ear. The patellar reflexes are exaggerated. Dr. de Schweinitz, Dec. 17, 1900, found optic neuritis passing into atrophy.

Dr. Keen, Jan. 30, 1901, made an osteoplastic flap over the left parieto-occipital region. The dura was very tense. Four small openings were made in the dura, but nothing abnormal was discovered. The brain was punctured in the attempt to reach the lateral ventricle and the attempt probably was not successful. The piece of bone was removed entirely. The patient was discharged February 18, almost entirely relieved of his headache.

At Dr. Keen's suggestion, I made inquiries regarding the present condition of this man and received the following letter, dated April 20, 1906: "I am wonderfully improved and relieved as to pain, can not see except to distinguish between night and day, have not been bedfast for a year or more, at intervals have severe pain, say every week or two, lasting from twelve to twenty-four hours, after which brain is very sore. Since last July have been having a discharge of the left nostril, of a watery-like fluid, since that the pain is not quite so severe."

Case 2.—Feb. 5, 1903. E. B., aged 37. During the summer of 1894 a small tumor developed in the scalp on the posterior portion of the right parietal bone producing headache and a sensation of pressure. In the summer of 1895 this mass was removed. His physician stated that it was a fatty tumor. All the pain and pressure symptoms disappeared and he was perfectly well.

After several months the headache and pressure sensation gradually returned; simultaneously with the onset of the headache his eyesight began to fail, and for the last two months he has been partly blind. He has had frequent vomiting, but he attributes this to the iodids. Ataxia was noticed in the finger-to-nose test. His gait is ataxic with a tendency to fall to the right. Lateral movements of the eyeballs are ataxic. Patellar reflexes are minus. Dr. Sweet found papillitis passing into optic atrophy in both eyes.

Feb. 11, 1903, Dr. Keen exposed the cerebellum over nearly one-half of the right half of the occipital bone. The dura was extremely tense on palpation. The patient was discharged ten days after the operation entirely relieved of his headache and with the wound healed.

Dr. John T. Howell wrote to me, April 23, 1906, that the patient died in a hospital in England, July, 1904, after an operation in February of the same year. The skull was opened above the ear and a large tumor was taken from the brain. After returning from the Jefferson Hospital, in 1903, the patient's improvement was of short duration.

(*To be continued.*)

PHARMACOPEIAL OR PROPRIETARY PREPARATIONS: WHICH?

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The medical profession is confronted with the difficult task of providing an effective method of checking the practice in vogue with many of its members of prescribing and recommending various proprietary remedies, many of which are most fraudulent.

It is sometimes difficult to draw hard-and-fast lines regarding what really constitutes an ethical preparation in contradistinction to a so-called "nostrum." It is not good practice to condemn *in toto*, with one stroke, all proprietary preparations, for undoubtedly ethical, nonethical and even many nostrums possess some therapeutic properties, since in the composition of most of them certain well-known drugs are used

Irrespective of the composition and therapeutic value of the medicament, the medical profession brands as nostrums all which make claims to possess curative properties wholly at variance with well-known laws of drug administration. At times the physician is greatly perplexed and confused by the vast array of preparations which are offered, recommended and extolled for the treatment of various disorders and maladies, and through this uncertainty he has at times been led to prescribe proprietary preparations when in reality he has been of the opinion that he was recommending and prescribing strictly pharmaceutical remedies.

It would be an excellent plan if both practitioners of medicine and members of the pharmaceutical profession would look very carefully into the composition and combination of all new chemical, synthetic and Galenical preparations (not excluding "patented" nostrums which are from time to time offered to physicians as valuable therapeutic agents), would examine the preparations and their literature very carefully and would report the findings to the various medical or pharmaceutical societies. Then, should the preparations show any extraordinary merit, they might devise preparations of equal efficacy, if not superiority, and probably at very much less cost to the consumer.

Our standard, the United States Pharmacopeia, has already shown us the way and can always be our guide. For instance, at present there is on the market a great and ever increasing number of acetanilid combinations. differing very little in composition, but under very different and fanciful names. In order to avoid this confusion of names, and in order to harmonize the medical profession, the committee of revision of the United States Pharmacopeia has ordered incorporated into the United States Pharmacopeia the preparation known as *pulvis acetanilidi compositus*. Therapeutically it matters very little if in all these various preparations the amount of citrate of caffein is 1/50 grain more or less, or if the amount of bicarbonate of soda is ½, ¾ or 2 grains in each dose, or if the alkaline salt be bicarbonate of soda, or potassium carbonate, or carbonate of ammonia, each of which is added simply as a solvent for the acetanilid. The same rule could be used in all similar preparations which are now or may be offered.

Another example: Since the reintroduction[1] of earth into the materia medica as an antiphlogistic application a number of preparations with fanciful and arbitrary names—names, in most instances, suggestive of an antipyretic—have been offered to the medical profession. and here again, in order to extricate the physician from this chaos, the United States Pharmacopeia has come to the rescue and has formulated and offered to the profession a most efficient and reliable combination in "cataplasma kaolini."

It has taken many years to bring the different liquid preparations of opium, which at various times were extolled by irresponsible vendors and charlatans as boons to humanity, to assuage suffering, under a distinct class. Tinctura opii. tinctura opii camphorata and tinctura opii deodorata of indefinite strength were for years sold under various names by ignorant and unreliable persons, a very dangerous practice, considered from the present standpoint of drug administration. Tinctura opii of indefinite strength was then generally known as laudanum, Abbe Rousseau's drops, tinctura thebaica, tinctura meconii.

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[1] The use of earth or clay as a topical application is as old as medicine itself. Applications of earth or clay or of earth mixed with oil or fat were the only remedies used on painful surfaces by the poor in ancient times. Then followed the use of earth and molasses, hot or warm sand or salt, then bread and milk poultices, linseed meal, and now it is popular to use earth and glycerin.

Tinctura opii comphorata still has some adherents, especially among the laity, under the old names of Bateman's pectoral drops, Godfrey's cordial, paregoric, Schultz's antispasmodic drops, while tinctura opii deodorata is still occasionally prescribed by old practitioners as McMunn's elixir. Now the therapeutic value of all these different preparations of opium depends on the definite percentage of the alkaloid morphin present in the various grades of the drug used. The various pharmacopeias of the different nations, and especially the U. S. Pharmacopeia, have directed that, in order to secure uniformity in medication and reliability in results, all grades of opium used in the preparation of the various pharmaceutical preparations containing opium must conform to a standard of at least 12 per cent. of morphin assayed in the grades of opium used. In times gone by, when the different preparations of opium were vended under these many different names, they were all more or less unreliable and even dangerous, as they were prepared without any knowledge or regard to the amount of morphin contained in the drug. It is well known that some grades of opium assay as low as 1 per cent. and others as high as 16 per cent. and even higher. Scores of other and of similar examples can be mentioned.

Tinctura aloes et myrrhæ, under the name of Elixir Paracelsus, was known in remote times. Tinctura benzoini composata as a topical remedy had a wide reputation under the euphonious names of Friar's balsam, Turlington's balsam. Linimentum saponis was known as Stear's opodeldoc, infusum sennæ compositus as Vienna draught, not to mention Dover's powders, Donavon's solution, Labarraque's solution, Goulard's extract, Basham's mixture and many others.

Take, for example, the various combinations and mixtures of cod-liver oil which are now on the market and with which most physicians are familiar either through the medium of the daily press or through the advertising columns of medical or pharmaceutical publications, by the liberal supply of samples or by waste-basket literature. The literature is usually very adroitly worded, calling the attention of the physician to a pleasant and palatable preparation of cod-liver oil, and the physician who prescribes these preparations is flattering himself that probably in a given case of pulmonary affection, or in the convalescence from an infectious disease, or perhaps in the after-treatment of typhoid or pneumonia he is giving a tissue builder, a nutrient, a food in the form of an elegant cod-liver oil medication, when, as a matter of fact, he is doing nothing of the kind. It is not even indicated in the literature or on the label that the preparation contains cod-liver oil, although the words cod-liver oil appear in glaring big type. What the circular or printed matter generally says is: This preparation *represents the value* of 25 per cent., 33 per cent. or 50 per cent. of cod-liver oil. But it does not say that it contains a minim of cod-liver oil. [The alcohol soluble admixtures of cod-liver oil, consisting of biliary acids and bile salts, trimethylamin, volatile ammonia, some fatty acids and traces of iodin, phosphorus and phosphoric acid, sulphur and sulphuric acid, with some coloring matter wholly inert, is made by the addition of expectorants, anodynes and corrigents into a pleasant-tasting elixir, cordial or tonic, but not a trace of cod-liver oil can be found in it.] These preparations may possess some therapeutic properties and undoubtedly may be very useful in the treatment of bronchitis and in pulmonary affections generally. Similar preparations, but of definite strength and uniformity, may be devised if the profession must have such combinations.

At present, by means of samples, circulars and pamphlets, through the public press and in some of our journals and magazines intended to be read at the fireside and in home circles, even by some of our medical publications, various preparations are advocated and recommended in the treatment of real or imaginary uterine diseases and are usually mentioned as uterine tonics. Although some make claims for good wholly unwarrantable, still a few grains of truth may be found in all the chaff. Reliable and honest pharmaceutical houses have taken the cue and have formulated preparations, some of undoubted merit, which may be used with more or less good results in the treatment of the various uterine disorders. These pharmaceutical houses have sampled the medical profession liberally, both by the way of trial medication and printed matter, but especially the latter, and from this practice the physician has acquired the pernicious habit of prescribing these so-called uterine tonics. In the National Formulary, a book which may be called an appendix to the United States Pharmacopeia, and which is compiled for the purpose of furnishing to the medical profession good and reliable formulæ for all unofficial preparations, such as physicians may unhesitatingly prescribe, a good and an efficient combination suitable as a uterine tonic may be found.[2]

If the physician would devote about half an hour each week looking over the United States Pharmacopeia, a good dispensatory, the National Formulary or a standard work on materia medica or therapeutics, he would soon acquaint himself with good, reliable and accurate formulæ and remedies, preparations which he need not hesitate to prescribe; preparations on which he could rely at the bedside, where, after all, the supreme test of the physician's skill must be demonstrated; and instead of continually racing after strange gods it would eliminate from his mind all the various uncertain compounds and mixtures—nostrums—with which he is now burdened.

Such time would be well spent. It would familiarize the physician with many a good medicament and teach him its composition, and, most important of all, it would teach him what he might expect from it therapeutically. The difficulty lies in this: the average physician devotes too little study to materia medica and therapeutics. A better acquaintance with the United States Pharmacopeia and with materia medica and works on therapeutics is most essential in combating the ever-progressive proprietary medicine evil.

170 Colorado Ave.

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[2] Elixir viburni opuli compositum, in the National Formulary, is as follows:

Fluid ext. viburnum opulus	f. ℥i¼	38
Fluid ext. trillium	f. ℥iss	75
Fluid ext. aletris	f. ℥i¼	38
Compound elixir of taraxacum	℥xi	330

Pilocarpin.—Dr. S. West employs pilocarpin in both uremic and diabetic coma, giving from 1/12 to 1/6 of a grain hypodermically and repeated at intervals. He has never seen anything but good come of it. Pilocarpin is more reliable and less dangerous, he thinks, than the infusion of jaborandi.—*Clinical Journal*, May 30, 1906.

Clinical Notes

TWO CASES OF INFECTION WITH TÆNIA NANA IN THE PHILIPPINE ISLANDS.

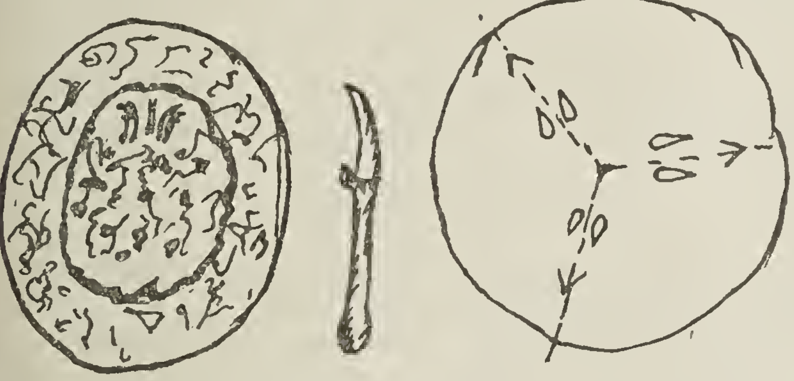
CHARLES L. FOSTER, M.D.
Lieutenant and Assistant Surgeon, U. S. Army.

During my tour of duty in the Philippines, two cases of infection with *Tænia nana* (*Hymenolepis nana*) came under my care, and a brief outline of the symptomatology in these cases and a description of the ova of the parasite may be of interest, especially in demonstrating the fact that infection with this tapeworm is not infrequent in the Island of Luzon and that the damage to the host may be severe.

NARRATION OF CASE.

The first case under observation was a private of E troop, 8th U. S. Cavalry. After the recent epidemic of Asiatic cholera in and around Manila, one squadron of the 8th cavalry was stationed along the Mariquina river, from which stream is derived the water supply of Manila, to guard the river from pollution. E troop took station at Mariquina, a town five miles from San Mateo.

Case 1.—The patient had marched with his troop from Fort William McKinley to Mariquina and soon after arrival was taken sick. Forty-eight hours later I saw the man. As several deaths from Asiatic cholera had occurred at Fort McKinley just before this troop left, it was feared that this man might have the disease.



Figs. 1, 2, and 3.—Ovum with inner membrane surrounding embryo. Hooklet with rounded extremity for musculature. Diagram showing arrangements of hooklets in three planes.

Symptoms.—When I reached Mariquina the man had nausea and vomiting, with frequent loose and watery stools; intestinal cramps, not very severe, and no cramps in the muscles of the limbs. He was very weak, but there was no collapse and the pulse was fairly strong and regular. Temperature: Mouth, 99 F.; rectum, 100.

Treatment.—The patient was transferred to the hospital at San Mateo by ambulance, and after taking a little cracked ice and brandy the nausea and vomiting were relieved.

Stools.—The first stool was examined. It was watery with a few flakes of brownish material scattered through it; not at all like the rice-water stools of cholera. Under the microscope there were seen epithelial cells in various stages of degeneration, fatty acid crystals, and bile-stained débris. The usual products of severe intestinal inflammation were not present. Hundreds of ova (Fig. 1) were seen. Each stool was saved (male fern had been administered on the second day after admission) and search made for the worms, but none could be found, and, after the first morning of the patient's admission to hospital, no ova were found. The intestinal antiseptics and purge administered before I saw the man, it is supposed, caused the expulsion of the worms; the stools were not carefully examined until the patient entered the hospital. He gained rapidly in strength and weight and was soon returned to duty.

Case 2.—The second case was under treatment one month later. The man is a member of the hospital corps.

History.—He gave a history of chronic diarrhea in 1898, contracted while in Puerto Rico. He was operated on in 1904 for appendicitis. For several months he has been troubled with constipation, loss of appetite, coated tongue, and distended and slightly painful abdomen. He is nervous and does not sleep well, and has abdominal distress after eating.

Examination of Stools.—The stools were formed, dark-yellow in color, with flakes of mucus scattered through them. Under the microscope, ova in every respect similar to those noted before, were found; and, also, many *Cercomonas intestinalis.* The man was put to bed and given a preliminary purge and two 3 c.c. doses of male fern. After several hours the stools were examined and about forty unbroken *Tæniæ nanæ* were obtained. Several of the worms were brought out by the purge.

THE OVA.

The ova are transparent and not bile stained, oval, almost round, in shape; about 30 microns in the short diameter and 35 microns in the long. The shell is very thick, not rigid, and not radially striated, and contains here and there coarse granules. Immediately surrounding the embryo is a delicate membrane (Fig. 1). The protoplasm of the embryo contains many granules of various sizes. Six hooklets are attached to each embryo (Fig. 2); these are arranged in pairs and their points almost touch the inner membrane. The curved points of the ends of the hooklets are directed from the center of the group, in three directions. The arrangement of the groups of hooklets, and the fact that in several of the ova the hooklets had perforated the membrane and were projecting into the shell almost to its outer surface (Fig. 4), and that in others the points of the hooklets were widely separated from each other and some distance from the membrane, suggested to me that perhaps the function of these hooklets was to free the embryo from the shell. Diligent search was made to see if any motion of the embryo could be observed. At length one embryo was found in active motion within the shell. The points of the hooklets were first drawn together and the whole armament thrust against the adjacent part of the surrounding membrane and into the shell; then the hooklets made a circular sweep around a point near their blunt extremities as a center, in three planes at angles of 120° to each other (Fig. 3). This thrust and sweep was repeated at the rate of about once in ten seconds. The motion continued for about one hour, at the end of which time the envelope had been cut through about three-fourths of its thickness. Motion then grew slower and soon ceased altogether. During the motion of the hooklets, motion of the protoplasm of the embryo could be traced by the granules contained

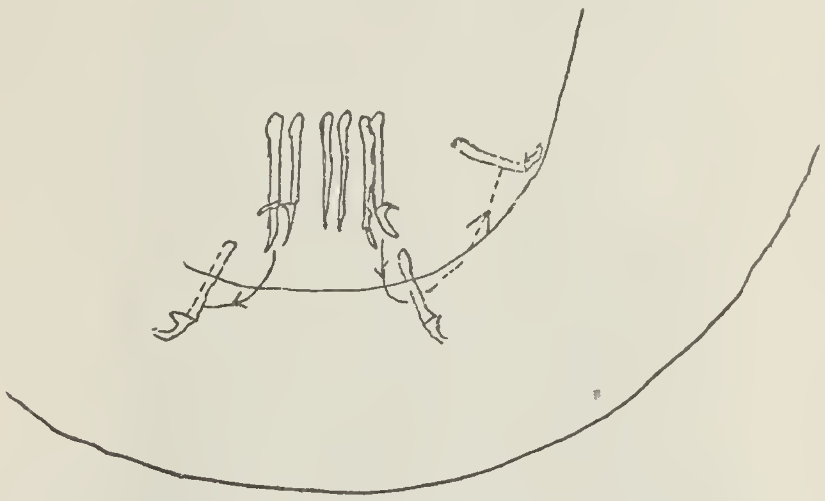


Fig. 4.—Diagram showing how points of hooklet are thrust into the shell and then swept around through it.

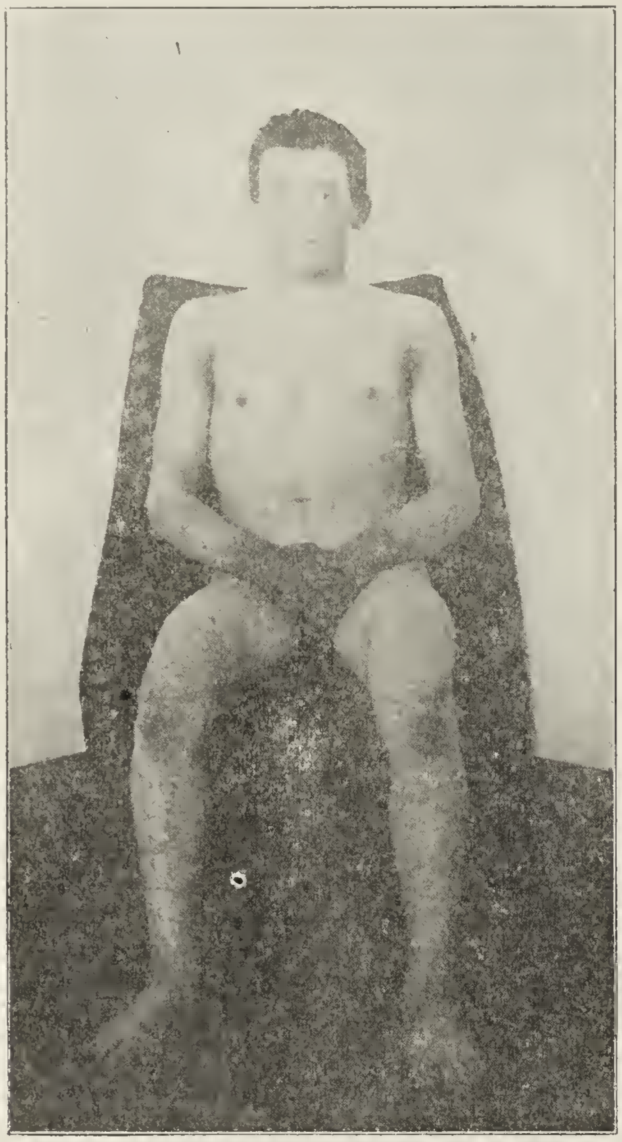
therein. No embryos free of their shells could be found. This movement was observed in the embryos passed *per anum* by both patients, also in those expressed by cover glass from the fresh worm obtained from the second case.

The parasite is found in several of the lower animals, especially rats, in which animal, it is stated, an intermediary host is not required.

ROCKY MOUNTAIN SPOTTED FEVER.

CHARLES E. MOOSER, M.D.
RENO, NEV.

I read with interest two articles on Rocky Mountain spotted or "tick" fever in The Journal, July 7, 1906. This fever exists in Nevada, but cases do not seem to be so numerous or so fatal as those occurring in Idaho, Utah and Montana. Here they occur almost, if not exclusively, among sheep-herders, so I am somewhat surprised that Dr. H. N. Mayo does not even mention this class, though they are plentiful in the states named.



About three years ago my first patient with "tick" fever came to me. I did not recognize the condition as such, hence can not say whether the patient, a sheepman, had been bitten by a tick. The infection was severe and I feared that I would lose the patient. He got up at the end of eight weeks, and recovered slowly thereafter, and in time became entirely well. The treatment in this case was symptomatic, as outlined by Dr. Mayo.

Within the past two months I have had six cases, five Frenchmen and one Spaniard, all sheep-herders. They came from three different camps (one of which seems to have acquired a reputation for having such cases yearly), two from each camp. Without exception all the men gave a history of one or more very recent tick bites. All the patients were severely infected, two especially so. None of the cases terminated fatally; all were typical cases. The Spaniard's case was the most severe, perhaps because he came to me later than the others, having tried to "fight off" the trouble. He came in an extremely emaciated condition, resembling the pictures of Cuban reconcentrados published in the papers during the Spanish war, and in marked contrast to the puffed features of the others. A very distressing phase of his illness was a cough resembling that of an advanced case of phthisis. Examination of lungs was negative and the results justified the belief that no serious lesions were present, as the cough disappeared with the eruption.

Unfortunately no special blood or other tests were made, owing to lack of facilities.

In great contrast to the first case mentioned all of these patients were practically well within three weeks—out of bed, etc.—final recovery being very rapid thereafter. With but slight exceptions, calling for some special drug, all the patients were given practically the same treatment. An initial dose of calomel and jalap, followed next day by quinin, 30 grains twice daily for one week (a little longer for the Spaniard), then in gradually diminishing doses until the temperature remained normal for two days.

Strychnin sulphate was given when necessary. A seidlitz powder or two was given every morning. Sponge baths were also given. No quinin was given in my first case. Other cases with which I am familiar, and in which quinin was omitted or given in small doses only, lasted, as did my first case, about two months. In those in which large doses were used the majority of patients recovered in from ten days to two weeks. The accompanying illustration of the patient in my last case (not a very good photograph) shows the typical eruption.

CONGENITAL MEMBRANE IN THE NASOPHARYNX.

RICHARD H. JOHNSTON, M.D.
BALTIMORE.

Patient.—Mrs. M. E., aged 35, was referred to me for examination and treatment of nose and throat.

History.—For a number of years she had had trouble with the right ear in the nature of a purulent otitis media. With the removal of the ossicles she experienced great relief from certain subjective symptoms while the discharge was reduced to a minimum. She complained of dryness of the nasopharynx which had existed for a long time and of disagreeable sticking and gagging sensations which combined to make life miserable. From her efforts to remove the secretion, nausea and vomiting ensued. There was constant tinnitus in the left ear.

Examination.—The nose showed nothing abnormal with the exception of a dryness of the mucous membrane. The pharynx was dry and parched and covered with a layer of thick grayish secretion which apparently came from the nasopharynx. The examination of the latter revealed a curious condition of affairs. After cleansing the posterior pharyngeal wall the mirror could be used with ease. Coming down from the roof of the nasopharynx and extending entirely across the cavity was a distinct membrane which divided the space into anterior and posterior parts. The membrane had its origin behind the openings of the Eustachian tubes, neither of which was visible. About the center of the membrane was a round perforation extending a little further to the left than to the right. Through the hole could be seen the lower two-thirds of the septum, the inferior and the middle turbinates on the left and a little to the outer side of the septum on the right. Above and to the right, midway between the opening and the lateral wall, and at the point where the membrane came off from the roof, was a second elongated opening much smaller than the first. The margins of both openings were perfectly smooth and clear cut. The membrane passed downward and became gradually lost on the posterior wall of the soft palate.

No tuberculosis or specific history could be obtained. From the large extent of membrane and from the clear cut margins of the openings, there can be no doubt that it was congenital. The nose was in fair condition and it seems proper to assume that the partial obstruction to nasal breathing had contributed in part at least to the extreme dryness of the throat. A proposition to attempt the removal of the membrane was declined by the patient.

Royet[1] has an article on insufficient nasal breathing caused by bands of tissue extending from the Eustachian tubes to the posterior wall of the nasopharynx. He cites two cases in which the destruction of such bands restored nasal breathing and relieved tinnitus of long standing. In a third case the bands adhered to the soft palate. In this case the mirror could not be used so it is impossible to say just what the character of the bands was.

Molinie has reported two cases of annular contraction of the nasopharynx. Courtdade in 1903 related that he had long recognized the fact that a cause of pharyngeal obstruction was the partition of the nasopharynx by filament-like bands.

Royet concludes: 1. That bands of tissue from the tube to the posterior pharyngeal wall can cause obstruction to nasal breathing which in most cases is slight. 2. In the majority of cases they are associated with other lesions of inflammatory origin in the nasopharynx and contribute their part in diminishing the permeability of this canal. 3. In both cases their destruction is indicated.

In a somewhat careful review of the literature I have not found a case like the above. Complete atresia of the nasopharynx with atresia of the nose has been recorded as giving rise to great deformity of the face with impaired mental development. Escat in his work on diseases of the pharynx pictures two such cases. They are very rare. My patient did not get sufficient air through the nose on account of the membrane and the dryness of the mucous membrane of the pharynx was certainly due in part to mouth breathing. It is probable that the tinnitus and the suppuration in the middle ear were connected with the formation in the nasopharynx.

The proper treatment was undoubtedly the removal or the tearing through the abnormal tissue to give better nasal respiration.

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THE FLUOROSCOPE IN DIAGNOSIS OF ANEURISM.

G. R. GAGE, M.D.
AND
H. H. HEYLMUN, M. D.
HUTCHINSON, KAN.

History.—W. H., aged 29, married, gave a negative family history. For 12 or 13 years, until two months ago, his occupation had been that of a steam hammer driver. On an average of probably 5 times a day he would throw his weight on a heavy lever, alighting on the abdomen. He had never had any illness from the age of 14 to 24; he had been a hard drinker; was treated 8 years ago for specific trouble, which showed as a row of indurated ulcers, extending around the corona; this condition baffled his physicians for 10 months, but yielded immediately to the application of dry calomel. No suspicious symptom developed since.

Eight years ago he noticed pain in his left hip and leg, which rapidly became very severe, compelling him to walk with a cane for the next four years, though not preventing him from attending to his work in the machine shop. For the past four years the pain has been present more or less constantly, though not so severe as formerly, and not severe enough to necessitate the use of a cane. For the past year he has suffered from a heavy boring paroxysmal pain in the abdomen, which would sometimes be absent for a day or two, but most of the time present and getting progressively worse.

Appetite was fair; there was no trouble with digestion, no nausea and bowels were regular. There was some emaciation; patient was pale, expression indicated suffering.

Examination.—Examination of abdomen revealed pulse of 94, temperature normal, and marked condition of arteriosclerosis. There was tenderness over the great sacrosciatic notch. There was what appeared to be a spasm of the recti muscles; with head and knees elevated a tumor, hard and immovable, was made out just to the right of the umbilicus. The tumor was pulsating and seemed to possess that peculiar expansive pulsation indicative of aneurism. On auscultation a blowing sound was heard somewhat like that of a mitral regurgitation. This bruit almost entirely ceased after the patient had been in the recumbent position a few moments. Comparing the anterior tibial pulse with that of the radial, the former was found to be about one-third of a beat behind the latter. There was no swelling of the ankles or dilatation of the superficial veins of the abdomen, nothing to indicate interference with return circulation.

As a possible aid to diagnosis, the patient was placed in front of an *x*-ray tube requiring a 7 inch spark gap. By the aid of the fluoroscope a dark shadow about 3 inches across laterally was discerned at the site of the tumor. By close attention one could readily make out an expansion and contraction of this shadow corresponding with the pulse beat; this expanding and contracting shadow had very much the appearance of the heart as seen through the fluoroscope and immediately appealed to us as being a diagnostic procedure of great value in cases in which aneurism is suspected.

In this case the diagnosis of aneurism of the abdominal aorta was made and the family acquainted with all the facts of the case, also the possibility of a mistake in diagnosis which could be positively determined only by an exploratory incision.

Operation.—Consent of the patient and family was readily given and the patient prepared for operation. While under the anesthetic, and the abdominal wall relaxed, an elevation was seen at the location of the tumor. An incision was made through the right rectus muscle, directly over the most prominent point of the tumor, and after working gently through some slight adhesions, an aneurism half as large as a teacup was found. It appeared to be fusiform at its lower extremity, which was just above the bifurcation; the right side was lobular and extended fully an inch to the right of the median line. Owing to the fact that the patient took the anesthetic very poorly, no further exploration was made, and the wound was closed.

In this case there was a positive history of alcoholism and a probable history of specific trouble, either one of which may have been the cause of the arteriosclerosis. The continued bruising of the vessel at this particular point, no doubt, had to do with causing the aneurism.

The point in the case which seems of the most value to us, and the one to which we desire to call the attention of the profession, is that of the use of the fluoroscope. These patients are usually more or less emaciated and afford excellent subjects for *x*-ray work, and the expansive pulsation of the tumor is much more perceptible to the fluoroscope than it is to the finger tips.

Naming of Carbon Compounds.—In the *Pharmaceutical Review*, July, W. A. Puckner, Chicago, publishes a compilation "of terms, syllables, prefixes and endings commonly employed in the naming of carbon compounds," for the use of students in pharmacy and medicine, and for pharmacists and physicians. Chemical terms which are usually unintelligible to the average physician are explained in simple language, and the derivation is given.

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[1] Royet: Revue Hebdom. de Laryng., etc., Feb. 3, 1906.

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[For other information see second page following reading matter.]

SATURDAY, SEPTEMBER 1, 1906.

FEATURES OF LIFE INSURANCE EXAMINING WHICH DEMAND CORRECTION.

In the radical reformation which is taking place in some of the life insurance companies as the result of the recent investigations and the exposure of gross irregularities, it is to be hoped that the status of the medical examiner will be considered, the importance of his duties more keenly appreciated, and correction made of conditions which have sometimes made it difficult for the examiner to do his work without violating his sense of decency and self-respect. The abuses which we have in mind have grown up, for the most part, in connection with high-pressure methods of soliciting new business, arising from the intense competition among the companies and the eagerness to pile up a large surplus. It is evident for the last few years the agency department of many of the companies has been the dominant factor, and the insistent command has been "get new business," at whatever cost and at whatever sacrifice to the other interests of the company; "get new applications, even by force or fraud, if such be necessary." It is equally evident that such a course is not conducive to the best interests of the policyholders, who are the real owners—the stockholders of the company.

All this is of interest to the examiners because they have unwittingly been made parties to these methods in a variety of ways. Until recently in many companies the appointment of examiners was largely controlled by the agents and this power was often made use of to secure applications from physicians under the promises of appointment to an examinership. How detrimental this was to the interests of the other policyholders is well shown by a statement recently made by the medical director of one of the largest of the American companies. The death losses for a period of five years, during which the examiners were recommended by the general agents, were compared with the losses for a similar period immediately following a change to the plan of appointment entirely independent of the agency department. It was ascertained that the actual saving to the company through lessened mortality under the latter plan had been sufficient to pay the total expense of the medical department during that period, including all examination fees, salaries of medical officers and other expenses.

The interests of the agent, the placing of his risks and securing his commission are, in a sense, antagonized by the interests which the examiner is appointed to protect. The cordial relations which should exist between the examiner and the agent are not promoted by ignoring this fact, but by its frank recognition, and by the confidence of the agent that the physician is capable and honest and will always give his applicant a "square deal." It is essential to such pleasant relations, as well as to the efficiency of the examiner, that he should occupy an absolutely independent position in reference to the agent, being responsible directly and only to the medical department. Any arrangement which enables the agent in any way, directly or indirectly, to coerce the examiner is unfair to the physician and bad for the company. Such coercion is possible when two or three examiners occupy the same territory for one company, if the agents are permitted to take their examinations to the examiner of their choice. It is possible in such a case for the agents to take most or all of their cases to a favorite examiner, making his income from this source a large one, while the other examiner has little or no business. In such instances the examinations should be made independent of the agent either by having a chief examiner to whom all applications are submitted and who assigns them equitably, or by placing the examiners on a salary (usually objectionable on other grounds), or through a pooling of the examinations by the physicians themselves.

We shall have something more to say along these lines in subsequent issues.

CAISSON DISEASE.

It has been demonstrated by means of experiments on animals that the serious results to health which are frequently the accompaniment of the duties of professional divers and of those who work in caissons must be attributed to a too rapid rate of the process of decompression on return to the normal condition. Up to a few weeks ago the most reliable data with regard to the disease had been collected by M. Hersent, a French engineer. In 1894, at Bordeaux, he had carefully noted and discussed the influence of high air pressure on the human subject in the persons of three workmen who had voluntarily submitted themselves to the ordeal in the interests of science. These men were enclosed in a steel chamber, and the experiments were conducted under the observation of a commission composed of members of the Bordeaux Faculty of Medicine. The defects of M. Hersent's investigations lay in the fact that no scientific records could be taken on the spot, as would have been the case had a trained scientific experimenter been in the chamber.

Dr. Leonard Hill, F.R.S., and Mr. Greenwood, M.R.C.S., two Englishmen, have been recently engaged in personal experiments[1] of a like nature with the object in view of clearing up some obscure points. They caused to be constructed a large steel cylinder in which one or the other was shut. This had a capacity of 42.2 cubic feet, with a motor-driven pump for effecting compression and taps for decompression. It may be said that both the experimenters were in excellent physical condition at the commencement of the investigations. Drs. Hill and Greenwood underwent varying degrees of pressure in their cylinder, and each wrote a diary of his sensations. The highest pressure to which Dr. Hill was subjected was 75 pounds, while Mr. Greenwood underwent a pressure of no less than 90 pounds. Neither suffered from serious after effects, not even when the maximum pressure of the series was reached, one corresponding to a water depth of 210 feet. The point especially emphasized was the vital importance of a gradual decompression period. In fact, the authors assert that "the responsibility of those who allow short decompression periods is clear; every death or case of paralysis from air embolism must be set down to the negligence of the contractor." It is also pointed out that, during the process, it is essential to exercise well every muscle and joint of the body, and to change the posture frequently in order to maintain adequate capillary circulation.

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[1] Proceedings of the Royal Society of London, February, 1906; Lancet, June 30, 1906.

The experimenters faithfully recorded the physiologic changes induced while under pressure in the chamber. It was noticed, among other effects, that at three atmospheres the vibratile movements of the tongue and lips practically ceased. All distinct sensations of pressure in the ears was relieved as soon as the pump ceased its strokes, and the pressure in the chamber became constant. The final conclusion arrived at was that an adult may be safely submitted to a total barometric pressure of at least seven atmospheres, provided that the precaution of making the period of decompression gradual be strictly observed.

There is probably more caisson work going on, as a rule, in the United States than in any portion of the globe. The danger attending the work was much in evidence during the construction of the last suspension bridge in New York, when several of the workers suffered severely from "caisson disease." The investigations of the English medical men are, therefore, valuable, and their advice as to the decompression period should be taken to heart by all large bridge builders in America.

MARITAL CONSANGUINITY AND DEFECTIVE CHILDREN.

There are not a few, even of physicians, who are apt to consider that the old-time ecclesiastical regulations forbidding the marriage of blood relatives, which have become the basis for most of our modern legislation on this subject, are founded on moral rather than on good physical grounds. There is a natural feeling of repugnance against the marriage of very near relatives, but there is an impression, now altogether too general, that cousins may marry with impunity. For those who entertain any such idea the report of the United States Census Bureau on the blind and the deaf, which has recently been published by the Government Printing Office, will provide material for very serious consideration. This report is written by Dr. Alexander Graham Bell, better known popularly as the inventor of the telephone, but who has a world-wide reputation as an expert of scientific thoroughness with regard to deafness and its causes and conditions.

Some years ago Dr. Bell succeeded in demonstrating that nearly three times as large a proportion of the deaf children born of parents who are cousins are congenitally deaf as of children born of parents who are not thus related. This average is confirmed by the statistics collected very carefully for the present census report, and statisticians in other countries have found practically the same proportion, occasionally even worse.

With regard to the blind the state of affairs as pictured by the census report is even more deterrent. Of the blind who were the offspring of consanguineous marriages, meaning that the parents were related as closely as cousins, proportionately 3.67 times as many are born blind as in the case of the blind who were children of those who were not so related. In the case of both the deaf and the blind the census figures show that 4.5 per cent. of all cases are the offspring of parents who are cousins. With regard to the blind, altogether some sixty thousand cases are analyzed, so that there would seem to be no doubt that the conclusions arrived at are amply justified and that the results obtained are not mere coincidences nor to be attributed to a narrow view of the question.

In discussing the statistics, Dr. Bell points out that the view of the situation obtained is likely to be better, instead of worse, than is actually justified by the real state of affairs. It can be readily understood that many persons, when questioned as to the consanguinity of parents, either refuse to answer or occasionally even prefer to deceive rather than to admit the possible influence of this fact in their condition. From not a few of the deaf and blind it has been impossible to obtain definite statements with regard to parental relationship. All such cases have been excluded from the statistics. It seems not unlikely that most of these cases were really examples of parental consanguinity, and they would make the expectation as to defective children even more appalling than it is. In not a few cases, as every physician knows, the consanguinity of parents is deliberately concealed from children whenever the surrounding circumstances (as, for instance, residence at a distance from other relatives) allows the subterfuge.

Already the number of defective children is so much on the increase from the stress and strain of large city life that every possible factor which adds to the probability of the reproduction of further unfortunates must be removed. Medical examinations of school children show that defects in the special senses are particularly frequent. If parental consanguinity can, as is proved by these statistics, add to the number of the totally blind and deaf, then it must be even more important as an element in the causation of such minor defects in the special senses which are serious handicaps in the battle for life. If this state of affairs is true for blindness and deafness, it can be concluded that it is also true for all the complex physical mechanisms which underlie the most important functions of human life. German statistics show that stutterers, for instance, are more common in the families of related parents than among the ordinary population. Various muscular weaknesses of a hereditary character must be placed in the same category.

It seems clear, then, that the marriage of cousins should be discouraged in every possible way. The possibilities of offspring being deformed or defective are already sufficiently appalling to make prospective parents uneasy. To increase the chances of such an unfortunate event by three or four times is enough of itself to give the most careless person pause. About one-half of the states in the Union have laws forbidding the marriage of cousins by blood and it would seem that their example should be followed by the other states.

THE DECREASE OF DRINKING AMONG PHYSICIANS.

A religious paper claims that drinking is on the increase among physicians, and in support of this statement it refers to a banquet that was given under the auspices of the staff of one of the hospitals of a large city west of the Mississippi River, at which, it was reported, only four of the fifty physicians present abstained from drinking. The report may be true, but we can not accept the conclusion it is quoted to support. We do not believe that drinking habits are on the increase among physicians. There are many who drink some and some who drink too much on occasions or even habitually, but we believe that there were many more of this kind a generation ago, and as the advocate of temperance the medical profession is much more to the fore at the present time than at any previous period. The statement is one of those unfortunate generalizations based on insufficient knowledge of the facts, and one which a religious journal, of all others, should be most careful to avoid.

THE CASE OF "DR." CARSON.

The *Independent*, a weekly journal published in Kansas City, is a good running mate for *Collier's Weekly* in the fearlessness with which it exposes frauds and fakes of all kinds. The newspapers of Kansas City have not yet reached that commendable state in which they exercise discrimination in the publication of objectionable advertising. This is particularly true so far as medical advertisements are concerned. Mr. George Creel, the editor of the *Independent*, has been giving considerable space to the exposure of the doings of quacks. In a recent issue he devotes some space to one "Dr." C. H. Carson, who poses as a "vital healer" and whose place of residence, where all the "cures" are effected, is known as the Temple of Health, or, as the *Independent* puts it, the Pimple of Wealth. The treatment employed by "Dr." Carson consists of the laying on of hands, blessing tissue paper to place on tumors in women's breasts, placing bits of torn paper in an envelope, with the warning that they must not be exposed to light, etc. It would appear that "Dr." Carson and his methods ought to be made the objects of a vigorous investigation by the State Board of Health. So far as we can learn, the "doctor" is not licensed to practice, and if he is not practicing medicine within the meaning of the medical-practice acts of Missouri and Kansas, thus relieving the State Board of Health of any responsibility in the case, the matter ought to be taken up in the interests of the people by the Medical Society of Kansas City. Meanwhile the *Independent* is to be congratulated on its courage. It deserves the support of medical men, as well as of the public.

ALCOHOL AS AN INTERNAL GERMICIDE.

A health commissioner of one of our great cities, according to the newspapers, recently uttered the rather rash advice to use whisky or alcoholic drinks to prevent typhoid in the existing unsafe condition of the city water. It is hardly possible that the advice was given seriously. It was probably merely a facetious suggestion inspired by the local atmosphere of the city hall, but it has been generally taken up by the newspapers and more or less seriously discussed. As an advice to the public in general it is about on a par with the ancient recipe for the cure of the toothache, to "let an omnibus run over your foot." We would not venture to say how much alcohol it requires to kill a bacillus, but it would take a rather unsafe quantity to neutralize any very thoroughly infected water. Alcohol may, in certain conditions, be a useful medicine, but it is rather unreliable as a prophylactic for most diseases.

Medical News

ILLINOIS.

New Sanitarium.—It is reported that Drs. Jeremiah H. Stealey and Carl F. Snyder will establish a modern sanitarium in Freeport.

To Enforce Laws.—The Board of Health of East St. Louis has instructed the Health Inspector to see that conductors of street cars enforce the laws regarding expectoration.

Personal.—Dr. and Mrs. Lyman Ware, Chicago, have returned after four months in Europe.——Dr. Albert H. Dollear, Jacksonville, has been appointed assistant physician of the Illinois Western Hospital for the Insane, Watertown.

Reform in Asylums.—The State Board of Charities, in its quarterly bulletin, states that as a result of its inquiries, the board feels that there is pressing need for a correlation of the energies of the state hospitals for the insane. No two institutions are alike, but in the majority of items of administration, standardization is necessary to elevate the institution to a high plane of efficiency and economy. The hospitals for the insane were found to be topheavy on the custodial side. The superintendents are burdened with business details which pre vent them giving sufficient attention to the medical administration. For this reason, the hospitals are more like detention boarding-houses than places for the modern treatment of hopeful cases, and the industrial re-education of chronic types.

Chicago.

Typhoid Fever.—No increase in typhoid fever was reported during the week except in Rogers Park and Maywood. In Rogers Park the cause was attributed to the use of well water, which has been found to contain large numbers of the colon bacillus, and in Maywood the interference with sewage disposal pending the construction of a new sewer, is said to be the cause of the condition.

Deaths of the Week.—The total deaths from all causes in Chicago for the week ended August 25, was 589. 58 more than for the preceding week, and 12 more than for the corresponding week of 1905. The mortality was equivalent to an annual death rate of 14.91 per 1,000. Acute intestinal diseases caused 149 deaths; consumption, 58; heart diseases, 37;; pneumonia, 34; cancer, 32; Bright's disease, 31; and violence, other than suicide, 38.

Heat and Humidity.—During the week ended August 25, 9 deaths were reported as caused directly by sunstroke, but this represents only partially the effect of the prolonged high temperature and excessive humidity. Of the increase of 58 deaths, as compared with the previous week, cancer and heart disease contributed each 12 and acute intestinal diseases 24. It is probable that in these cases the fatal termination was the result of the prevalent weather conditions.

INDIANA.

Added to Faculty.—Dr. Lemenuel W. Famulener, for three years research fellow in pharmacology under Dr. Cushny at the University of Michigan, and for one year a worker with Dr. Mansen in the Statens Serum Institute at Copenhagen, has been appointed assistant professor in pathology at the Indiana University.

MARYLAND.

Baltimore.

College Building to Be Sold.—It is reported that the Baltimore University building on Bard Street will be sold and the institution closed.

Increase of Typhoid.—The usual autumn increase of typhoid is manifest, fifty-five cases of typhoid having been reported last week and eleven deaths.

Acquitted.—Dr. John W. C. Cuddy, charged with causing death by an illegal operation, has been discharged by the grand jury, no evidence being found against him.

Physicians Injured.—Dr. J. Ridgeway Andre, an aged physician, still in practice, suffered injuries, August 21, by a breakdown of his carriage and consequent runaway.

Plan for Extermination of Mosquitoes.—Dr. Bosley, health commissioner, proposes a plan for the extermination of mosquitoes, which includes fines on tenants or property owners who allow water to stagnate in their yards, and makes health wardens and police officers responsible for the conditions and for failure to report violations of the laws. The present municipal agencies are to be employed in this work, so that the plan involves no extra expense to the taxpayers.

Vacation Time.—Dr. Ira Remsen is at Prout's Neck, Maine. ——Dr. George Reuling has returned from Narragansett.——Dr. William H. Howell is at Chebeague Island, Maine.——Dr. James D. Iglehart is at Saranac.——Dr. R. Martin Bruns is at Allenhurst, N. J.——Drs. George W. Mitchell, Robert Hoffmann and Albert Colby are in Paris.——Dr. Amanda Taylor-Norris is at Rehoboth Beach, Del.——Dr. Joseph Blum is at Ocean City, Md.——Dr. William Whitridge is in Rhode Island.——Dr. Howard Kelly is traveling in Europe.——Dr. T. Chew Worthington is taking a trip to Niagara Falls and the Thousand Islands.

MINNESOTA.

Personal.—Dr. F. Dale Smith, Oronoco, was thrown from his buggy July 26, and sustained a fracture of the leg.——Dr. John W. Andrews, Mankato, is taking a trip to Southern Oregon.

Bly Imprisoned.—Dr. Theron H. Bly, Minneapolis, convicted of performing a criminal operation, and sentenced to imprisonment for three years and a half, began serving his sentence in the state penitentiary, Stillwater, August 11.

Scarlet Fever in Eveleth.—The Commissioner of Health of Eveleth announces that there have been 24 cases of scarlet fever in the city, but that the outbreak has been mild and well under control, and that the number of cases has decreased since July 10. Since August 1 there have been not more than nine cases at any time and there are but four existing now.

Bemidji Man Said Not to Be a Leper.—Arndt Reton, classed by the Bemidji physicians as a leper and placed under quarantine far away from the city, made his escape and went to Cass Lake, where he was examined by the physicians, who claim that he is not afflicted with the disease. The two toes which he had lost were amputated as the result of frozen feet two years ago.

Care of Veterans.—Under the direction of Dr. Charles A. McCollom, Minneapolis, chairman of the committee on health and comfort, the physicians of the city organized for special duty the week of the encampment. The entire city was divided into sections and a force of 150 physicians assigned on duty in this division. In cases where public school buildings were used for dormitories a special physician had been placed in charge of each. In all notices sent out, the lodging places and the name and address of the physician in charge of the district was given. Headquarters were opened in the old city hall building for the entire encampment, and two ambulances were secured. Nine stations were established along the line of march and the results showed the great care exercised in the organization of the medical service.

MISSOURI.

Fined for Selling Cocain.—A clerk at the Franklin Pharmacy, St. Louis, on August 14, was fined $20 and costs on the charge of selling cocain to two women. This is the first prosecution under the law for selling cocain without prescriptions therefor.

Hospital Staff Chosen.—At a meeting of the Home Missionary Society of the Methodist Episcopal Church of Springfield, the following staff of physicians for the new Burge Deaconess Hospital was elected: Drs. John C. Matthews, William C. James, George W. Barnes, John W. Williams and John P. Ralston. The attending staff are Drs. Francis E. Ross, Jonathan E. Tefft and William M. Smith.

Cancer Deaths Increasing.—The statistics of the St. Louis Health Department show that cancer is on the increase in the city, notwithstanding the decrease in the total number of deaths. In the year 1903-04, 11,486 deaths occurred, 391 of which were from cancer; in 1904-05, 11,364 deaths, of which 398 were from cancer, and in 1905-06, with only 9,833 deaths, 438 deaths are reported to be due to the disease.

Tenement Board Named.—The mayor of Kansas City has sent to the council an ordinance naming a tenement board of seven, of which Dr. Orville H. Dove is the medical member, together with a communication pointing out the necessity of such a commission. The duty of this board is to investigate the tenements of the city, to report to the Board of Health the conditions existing among the city's poor, and to recommend such ways and means for the improvement of the situation as are thought necessary and practical.

NEW YORK.

Bequest.—By the will of the late Theodore S. Hubbard, Geneva, a bequest of $500 is made to the Geneva City Hospital.

Diphtheria in Watertown.—During July there were 17 cases of diphtheria reported in Watertown. Despite the investigations of the Board of Health no cause could be determined for the disease.

Typhoid Fever.—Corning reported 152 cases of typhoid fever, due in every instance to the use of water from wells. The city water has been analyzed and has been found to be free from all disease germs.——On account of the prevalence of typhoid fever in and around Baldwinsville, Dr. F. P. Sinclair, Lysander, has been authorized by the Board of Health to make a thorough examination of the camps and cottages in the vicinity.

Buffalo.

Hospital Acquires Land.—The Children's Hospital, Buffalo, has acquired a tract of land adjoining the hospital for the purpose of building an extension to the institution.

Personal.—Dr. W. Harry Glenny is at East River, Conn.——Dr. Stephen Y. Howell has returned from the sea shore, Dr. Reuben M. Root from the Muskoka Lakes and Dr. Frank W. Love from Lake Bonaparte.——Dr. Matthew D. Mann will go on a hunting trip to Wyoming and Colorado early in September.——Dr. F. Park Lewis will return from Europe shortly. ——Drs. Irving W. Potter and Roland O. Meisenbach were recently elected on the staff of the German Hospital.——Dr. Harry Mead has been at the Thousand Islands.

New York City.

Trachoma Increases.—It is stated that ten sufferers from this disease have been deported daily from Ellis Island during the last two months, a much larger number than usual.

Personal.—Dr. John A. Billings arrived on the *Baltic*, August 22.——Dr. Henry F. Owsley, Flushing, has sailed for Europe.——Dr. Mary G. Patten is visiting in southern California.

Filtration in Sight.—Bids have been asked for an experimental plant for Jerome Park reservoir. This experimental plant is merely the forerunner of a great filtration plant that will be erected after the experimental plant shows just what the ingredients of New York water are.

Fresh Air Camp.—A fresh air camp has been established by the Association for Improving the Condition of the Poor and is in operation at the foot of Sixty-second Street, for the treatment of infants under 18 months of age. It has accommodations for fifty and every cot is occupied.

Typhoid in Brooklyn.—Since August 1, 76 cases of typhoid fever have been reported to the health authorities of Brooklyn. No definite cause has been found for the unusual prevalence of the disease, but the general belief is that it is due to the inferior quality of the drinking water supplied from the Ridgewood reservoir.

For Tuberculosis Hospital.—Plans have been filed by the Department of Charities for a new tuberculosis hospital to be erected in the Borough of Richmond on land recently purchased near the present City Farm. The buildings will be eight in number, each four stories high, 80 by 137 feet, on the ground plan, and will cost $800,000. This institution will be called the Sea-Side Hospital.

Opposes New Building for Hospital.—Comptroller Metz opposes for the present the erection of new contagious-disease pavilions in connection with the Kings County Hospital. The citizens of the neighborhood are endeavoring to have this hospital removed to a less crowded neighborhood. The Board of Health will ask for the appropriation of $32,000 for the contagions pavilions, and if no better location is available, the extension to the present hospital will be undertaken.

Error in Certificate.—Dr. Simon M. Roth, charged with falsely filling in a death certificate, was acquitted in the Yorkville police court, August 9. His certificate read that the decedent, Lena Schultz, 38 years old, died at 233 East Seventy-eighth Street, but in reality the woman's name was Green, she was 18 years old and died at 138 East Seventy-eighth Street, the residence of a midwife. Under the new law it is not necessary to certify as to the direct as well as the indirect cause of death.

Vital Statistics for Second Quarter.—The report of the Health Department for the quarter ended June 30 shows 25,692 births and 18,928 deaths, equivalent to an annual death rate of 18.29 per 1,000. There were 12,467 marriages, a gain of 1,584 over the same period of last year. Pulmonary tuberculosis claimed 2,319 victims, tubercular meningitis 221 and other forms of tuberculosis 113. There were 1,527 deaths from pneumonia and 1,223 from violence. Of children under 5 years of age there were 6,237 deaths, of which 801 were due to summer complaint. Of the deaths 8,967 occurred in the tenements.

Contagious Disease.—There were reported to the sanitary bureau for the week ended August 11, 371 cases of tuberculosis, with 173 deaths; 128 cases of diphtheria, with 16 deaths; 125 cases of measles, with 4 deaths; 116 cases of typhoid fever, with 16 deaths; 56 cases of whooping cough, with 11 deaths; 9 cases of cerebrospinal meningitis, with 10 deaths; 53 cases of scarlet fever, 8 cases of varicella and 1 case of smallpox; a total of 867 cases with 230 deaths. There were reported to the sanitary bureau for the week ending August 18, 376 cases of tuberculosis, with 176 deaths; 151 cases of diphtheria, with 20 deaths; 113 cases of typhoid fever, with 10 deaths; 67 cases of measles, with 6 deaths; 51 cases of whooping cough, with 18 deaths; 32 cases of scarlet fever, with 2 deaths; 9 cases of cerebrospinal meningitis, with 4 deaths; 17 cases of varicella and 1 case of smallpox; a total of 817 cases, with 236 deaths.

OHIO.

Personal.—Dr. Max Heidingsfeld, Cincinnati, has gone to Berne, Switzerland, to attend the meeting of the Dermatological Congress.——Dr. David P. Shie, Orrville, who is critically ill with hepatitis, is improving and believed to be on the way to recovery.

Free Antitoxin.—The State Board of Health has made an arrangement whereby it acts as a distributing agency to supply diphtheria antitoxin to local boards of health for use where it might otherwise be unavailable on account of poverty. The antitoxin is the property of the manufacturer and is to be paid for by the local boards of health as required.

Typhoid Fever at Cincinnati.—Drs. Martin Lewis and Dudley Palmer of the house staff of the City Hospital have gathered some interesting data regarding the epidemic of typhoid fever. Between April 1 and August 13, 230 cases of the disease were treated at the hospital. The cases were located between Liberty Street and Walnut Street east to the bottoms, and again on Central Avenue from the city hall to Liberty Street and south of McMicken Avenue and west of Eggleston. This territory receives its water supply from the Third Street reservoir. They find typhoid most prevalent among the Hungarians and other recent immigrants who have little or no knowledge of the laws of hygiene.

PENNSYLVANIA.

Operated On for Appendicitis.—Dr. Calvin H. Elliot, resident physician in the Insane Asylum at Harrisburg, has been operated on for appendicitis in the Medico-Chirurgical Hospital, Philadelphia.

Sanitarium Burned.—The main building of the Grand View Sanitarium, an institution for the treatment of consumptives near Oil City, was burned August 19. The loss is $5,000, partly covered by insurance. The patients, 196 in number, all escaped uninjured.

Dr. Mackey's Death.—In the notice of the death of Dr. Charles D. Mackey, Montrose, which appeared in The Journal of August 18, page 528, it was stated that he was a member of the Susquehanna County Medical Society from 1888 to 1901. The secretary of the society writes that this is incorrect, as at no time was Dr. Mackey a member of the society.

Hydrophobia Prevalent.—It is reported by Dr. Aime Leteve, who is in charge of the Magee Pathological Institute, Pittsburg, that there are a large number of cases of hydrophobia in Western Pennsylvania, Ohio, West Virginia and Maryland. As many as thirty cases have been under Professor Leteve's care at one time during the last two months, and at present there are sixteen under prophylactic treatment at the institute.

Food Commissioner Victoricus.—A notable victory in the administration of the pure-food laws of the state has been achieved by Dr. B. H. Warren, dairy and food commissioner. The commissioner's chemists having discovered sulphur dioxid in much of the candy examined, charges were brought against the manufacturers and dealers. The manufacturers stated that the glucose containing this preparation (which was used for bleaching) was supplied solely by the glucose trust, a subsidiary of the Standard Oil Company. The commissioner had included the representatives of the trust among those against whom charges had been made, and the trust, seeing it was useless to fight the state law and the commissioner, asked for a conference. At this conference the trust's attorney admitted that the charges were true and promised to settle all fines against the manufacturers, and, moreover, to withdraw all bleached glucose from the markets of Pennsylvania and from the markets of the United States. In this manner the commissioner has drawn the attention of the entire country to the fact that harmful substances are universally used in the manufacture of glucose candy, and by the enforcement of the pure-food laws has eliminated for the future this danger to the public health.

Report of Food Commissioner.—Dr. B. H. Warren, state dairy and food commissioner, in his report for 1905 states that the milk supply of Philadelphia "has no superior, if equal, in any city in the United States." Many hundreds of samples of milk and cream were collected for examination, with most satisfactory results. The crusade in the interests of pure food has been expensive, but has been the means of saving many lives in other sections of the state as well as in Philadelphia. A smaller percentage of adulterated, preserved or impure articles of food and of milk in particular is sold. The number of prosecutions ordered during the year is much less than during the preceding years. The following summary of the total number of suits ordered by the commissioner shows the decrease in figures: In 1903, 1.800; 1904, 1,517, and 1905, 1,085, a total of 4.402. The report says:

> The decreasing figures form their own commentary. The continued violation of the oleomargarine law was productive of the next to the largest number of suits ordered in 1905, namely 187, while thirty defendants were charged with violating the renovated butter law. The sale of chemically preserved meat, sausage, etc., resulted in the ordering of over 200 prosecutions. Jellies, jams and preserves were found illegal in 144 cases, while Marachino cherries produced

fifty-three unfavorable chemists' reports. Eighty-three samples of catsup were found to be illegal, while prosecutions were directed against fifty-two dealers who sold Worcestershire and other sauces containing forbidden chemicals. In strange contrast with previous reports, only forty-seven samples of milk and cream proved unlawful.

Philadelphia.

Public Baths.—The total number of bathers at the city bathhouses last week reached 605,066. Of this number, 131,156 were men, 4,757 women, 449,982 boys and 19,171 girls.

Bequests.—By the will of the late Ellen Summers $2,000 is to be divided equally among the West Philadelphia Branch of the Little Sisters of the Poor, St. John's Orphan Asylum for Homeless Boys and the House of the Good Shepherd.

Trachoma in Immigrants.—In fifty out of the 340 steerage passengers who arrived on the American Line steamer *Westernland*, August 20, traces of trachoma were found. It is expected that about one-fifth of this number will be deported.

New Officials for Health Bureau.—Director W. M. Late Coplin, of the Department of Public Health and Charities, has made the following appointments: Dr. Augustus H. Clagett, assistant medical inspector; John H. Lehman, nuisance inspector, and Thomas H. Nelson, milk inspector.

Personal.—Dr. Samuel W. Morton is slowly recovering from a severe attack of appendicitis.——Dr. Edward P. Davis sailed for Europe, August 25.——Dr. James P. Hutchinson, who has been spending the summer abroad, will return home the end of September.——Dr. J. C. McCracken, who went to China last December to help found a medical school and hospital in Canton under the auspices of the University of Pennsylvania, has returned to this country. He will assist in the dedication of the new University Settlement House in this city and will then deliver a series of lectures to raise funds for the Canton Medical School.

Health Report.—The total number of deaths for the week numbered 481, a decrease of 17 from those reported last week and an increase of 44 over the number reported in the corresponding week of last year. The principal causes of death were as follows: Typhoid fever, 12; whooping-cough, 17; scarlet fever, 3; diphtheria, 4; tuberculosis, 58; cancer, 22; apoplexy, 15; heart disease, 25; acute respiratory diseases, 24; diarrhea and enteritis, 90; appendicitis, 4; Bright's disease, 43; congenital debility, 18; senility, 4; suicide, 6; traumata, 8; accidents, 9, and marasmus, 9. There were 149 cases of contagious disease reported, with 19 deaths, as compared with 189 cases and 19 deaths reported for last week.

SOUTH DAKOTA.

Epidemic of Typhoid.—More than 100 persons are reported to be seriously ill with typhoid fever at Bristol, Andover and Webster, and five deaths are reported.

New Hospital at Yankton.—A number of Yankton businessmen held a meeting August 3, with Bishop O'Gorman at the Sacred Heart Hospital and reported progress on the new hospital project.——The Good Samaritan Association has been incorporated with a charter in perpetuity. Money for the erection of the hospital is to be secured through the issuance of 5 per cent. bonds, of which $50,000 worth are to be issued at once, redeemable in five, ten, fifteen and twenty years. In 1927 the hospital is to be turned over to the Benedictine Sisters.

TENNESSEE.

Health Crusade.—The Humboldt Medical Society has prepared a pamphlet on the laws of health which contains a series of articles on hygiene and sanitation for use in the city schools. A copy of this pamphlet is ordered to be placed in the book of every child attending school.

New Building for Academy.—The members of the Nashville Academy of Medicine at its meeting August 15, subscribed about $8,000 toward a new building to be used as a permanent home for the organization. About $20,000 is needed for this purpose.

Personal.—Dr. N. F. Raines, Memphis, has been appointed president of the Shelby County Board of Health.——Mr. Laurent Brown has been appointed lecturer of medical jurisprudence in the Medical Department of the University of Tennessee, Nashville.——Dr. George St. John, Knoxville, has been appointed physician at Bushey Mountain prison.——Dr. Henry J. Kelso, Knoxville, was thrown from his buggy August 4 and sustained a fracture of the leg below the knee.——Dr. Louis Leroy, Nashville, state bacteriologist, has accepted the chair of principles and practice of medicine in the College of Physicians and Surgeons, Memphis.

TEXAS.

Personal.—Dr. Nathaniel Cass, Cameron, who was operated on for appendicitis July 29, has recovered from the operation, but is now suffering from pneumonia.——Drs. Henry B. Decherd, William E. Howard, Scurry L. Terrell, Albert Wilkinson, Robert S. Yancey and John O. McReynolds, have been appointed medical inspectors of the Dallas Board of Education; Drs. Edwin J. Reeves, I. S. Kahn and George W. B. Swain have been appointed as an advisory board and Dr. Frank J. Hall has been appointed to act in conjunction with the advisory board.

District Society Meets.—At a meeting of the Central Texas District Medical Association, Dr. I. Newton Suttle, Corsicana, was elected chairman, and Dr. James W. Miller, Hillsboro, secretary of the section on surgery; Dr. Jesse B. Shelmire, Dallas, chairman, and J. Walter Torbett, Marlin, secretary of the section on practice of medicine; Dr. Leonard Keplinger, Waxahachie, chairman, and Dr. Burt L. Scott, Waco, secretary of the section on eye, ear, nose and throat and Dr. Oliver J. Halbert, Waco, chairman, and W. L. Crosthwait, Holland, secretary of the section on obstetrics and gynecology. Waco was selected as the next place of meeting.

VIRGINIA.

Punished for Selling Cocain.—James Hill, colored, Richmond, has been sentenced to serve a term of imprisonment of one year for selling cocain.

Personal.—Dr. Anna Moon Randolph, Newport News, is suffering from septicemia, resulting from an operation wound.——Dr. Ernest Woolfolk, Thornhill, is ill and is undergoing treatment at the Memorial Hospital, Richmond.

Election.—At the annual meeting of the Augusta County Medical Society held in Staunton, August 8, the following officers were elected: Dr. John W. Freed, Hermitage, president; Drs. J. C. Alexander, Mount Solon; Walter S. Whitmore, Mount Sidney, and William C. Roller, Mint Spring, vice-presidents; Dr. Thomas M. Parkins, Staunton, treasurer, and Dr. Marshall J. Payne, Staunton, secretary.

WASHINGTON.

Typhoid Fever Diminishing.—The health officer of North Yakima, in his report for July, says that less than 12 cases of typhoid fever have been reported to him since last April, whereas, during the month of July, 1905, 54 cases were on record; and he believes the city to be in excellent sanitary condition.

License Revoked.—An order of the State Board of Medical Examiners has been filed in the office of the County Clerk of King County revoking the license of James Stewart of Seattle for unprofessional and dishonorable conduct. Stewart was charged with having attempted to bribe a member of the board with $600 to procure a set of the questions to be propounded at the examination. He was convicted in July, 1902, and appealed to the Supreme Court, which a year later affirmed the decision of the lower court.

WEST VIRGINIA.

Personal.—Dr. John G. Pettit, Clay, has been elected assistant at the West Virginia Hospital for the Insane, Weston.——Dr. George W. Daniels, Gerrardstown, was nearly stung to death by a swarm of infuriated bees a short time ago. He is now out of danger.——Dr. Charles B. Williams, Philippi, is ill with typhoid fever.

Poison Regulations.—An ordinance recently enacted by the city council of Charleston provides that no person shall sell except to dealers any poisonous drug or substance except when prescribed by a physician or when the purchaser has first been furnished with a written permit from the board of health. The enforcement of this ordinance is being strenuously opposed, it is said, by the druggists, who claim that it prohibits the sale of disinfectants and fungicides and the common household liniments, and is in conflict with the state law. At a meet held July 7 they resented the report that their opposition to the measure was due to a desire to profit from the sale of narcotics.

GENERAL.

Electrotherapeutists To Meet.—The sixteenth annual meeting of the American Electrotherapeutic Association will be held at the College of Physicians, Philadelphia, Sept. 18-20, 1906. Transportation is to be on the certificate plan at the rate of a fare and a third. The headquarters will be at the Hotel

Flanders, Fifteenth and Walnut streets. Dr. G. Betton Massey, 903 Professional Building, Philadelphia, is chairman of the committee of arrangements.

Negro Medical Association.—The eighth annual meeting of the National Medical Association of Negro Physicians and Surgeons of the United States was held in Philadelphia August 21-23. The association has a membership of over 2,000, and more than 500 delegates were present. The following officers were elected: Dr. Nathan F. Mossell, Philadelphia, president; Dr. George W. Cabannis, Washington, vice-president; Dr. John A. Kenney, Tuskegee, Ala., secretary; Dr. A. Wilberforce Williams, Chicago, treasurer; and Dr. Peter A. Johnson, New York City, chairman of the executive committee. The next meeting will be held in Baltimore in August, 1907.

Southern Tri-State Society to Meet.—The eighteenth annual meeting of the Tri-State Medical Society of Alabama, Georgia, and Tennessee will be held at Chattanooga, Tenn., Oct. 2-4, 1906. Reduced rates have been granted for Alabama, Georgia, Tennessee, Mississippi, Louisiana and Florida. The preliminary program includes an excellent list of papers from leading medical men of the south. As mentioned elsewhere, strong pressure will be brought to bear to convert this organization into a branch of the American Medical Association, the Association of the Southeastern States. Further information and places on the program may be obtained from the secretary, Dr. Raymond Wallace, Chattanooga, Tenn.

Health Report of the Isthmus for July.—In his report for July, Colonel Gorgas states that it is now eight months since a case of yellow fever occurred in Panama. During the month there were thirty-three cases of smallpox at Colon, with one death. The disease was introduced in the person of a child from Cartagena. With one or two exceptions the cases all came from one focus. The last case was reported July 29, and from that date till August 17 (the date of the report) no new cases had been discovered. Colonel Gorgas believes that the outbreak has been controlled and states that its prompt extinction was due to the energetic efforts of Dr. Wheeler, the health officer, and those who assisted him. The small death rate was due to the care given the sick by the superintendent of Colon Hospital and the officers under him. Among the 28,000 employés there were 151 deaths. Of these, 13 were among the 5,000 whites and 138 among the 23,000 blacks, giving the blacks more than double the death rate of the whites. Pneumonia caused the largest number of deaths; the next disease in point of mortality was malaria. In referring to the published reports that the death rate among the negroes is due to too much sanitation, Colonel Gorgas states that in his opinion this statement is erroneous. The obvious cause for the large death rate, he says, is seen in the very bad sanitation of their lives. They seldom possess a change of clothing, and when they reach home in the evening their clothes are soaked. They go to bed, sleep soundly, and as the air gets cold the men become thoroughly chilled. In general, the men feed themselves, and as they are improvident they do not give themselves nearly enough food. This, Colonel Gorgas believes, is sufficient to account for the prevalence of pneumonia among the negroes. The Canal Commission, he states, is endeavoring to remedy these faults, and when corrective measures have been put into effect the mortality from this cause will decrease.

CANADA.

Congress of French-Speaking Physicians of America.—The fourth congress of the French-speaking physicians of North America will be held at Quebec in June, 1908, on the occasion of the celebration of the three hundreth anniversary of the founding of Quebec by Samuel de Champlain in 1608. The congress will be presided over by Dr. A. Simard, with H. Hervieux as vice-president; Lanoix, vice-president for the United States, and Siroix, vice-president for the rural districts; A. Paquet, secretary general, and F. X. Dorion, one of the governors of the College of Physicians and Surgeons, the treasurer. The third congress recently closed its sessions at Trois-Rivières with an attendance of about 300, and more than 120 scientific communications on the program. Dr. Normand presided and Dr. C. Deblois proved an able secretary. A handsome medal was presented to the congress on behalf of the scientific societies of France, some of which were represented by special delegates. H. Triboulet was the official delegate of the French government and R. Proust of the University of France, while A. Loir represented a French scientific society. J. Ahern's communication on "Chorio-epithelioma" is given in full in the *Bulletin Médical de Quebec* for July. He describes 3 cases. The patients were 19, 44 and 30 years old. Cough and blood spitting were prominent symptoms in these cases. All the patients had had from 2 to 12 pregnancies, some of them terminating in abortion or premature delivery. The third patient had passed through 5 pregnancies and one recent abortion at four months, and when first seen was coughing and spitting blood, with much icterus and much weakness and emaciation. The case was diagnosed as chorioepithelioma with metastases in vagina, liver and lungs, but no autopsy was allowed. No operation was attempted and the patient succumbed in ten days. There was no history of a preceding mole in this case, as in the 2 others. Laurendeau of Brandon reported a case in which he had performed "extramedian symphyseotomy," hebotomy or pubiotomy as the operation for enlarging the pelvis by lateral section of the pubis is variously denominated. It was the first operation of the kind done in Canada, and proved eminently successful.

FOREIGN.

New Hospital for Belfast.—The new fever hospital for Belfast was formally opened August 2. This is said to be one of the best designed and equipped of its kind in the world.

Proposed Restriction of Marriage in Roumania.—The *Deutsche med. Wochschr.* refers to a decree whose adoption is now being discussed in Roumania, to prohibit marriage to persons suffering from incurable syphilis, pulmonary phthisis or epilepsy.

Smallpox in Central America.—Acting Assistant-Surgeon Layton reports that smallpox exists in Bluefields. Passengers leaving for Mobile have been vaccinated. The local governor assured Dr. Layton that he would appoint a board of health to take full charge of the situation. The situation is a serious one and local conditions all favor the rapid spread of the disease.

Collective Research on Appendicitis in Europe.—The Paris Académie de Médecine and the Berlin Verein für innere Medecin have each been devoting several sessions to a discussion of questions regarding appendicitis. Statistics show that the number of cases and the mortality from appendicitis are increasing in continental Europe. The German imperial authorities have now appointed a committee to undertake a collective investigation on the subject. It consists of eight members, the majority members of the Berlin society mentioned above.

Eighth International Congress of Otology.—This congress was to have been held at Budapest in 1908, but it has been postponed one year. This has been done because the next international medical congress is to be held at Budapest in 1909, and it has ben arranged that the congress of otology will convene as a special section for otology in the international medical congress. It will retain its autonomy, however, and be called the Eighth International Congress of Otology, as above. Prof. J. Böke of Budapest will preside, while Dr. S. Szenes is secretary general and Dr. E. Vali, treasurer.

International Tuberculosis Centralblatt.—Prof. L. Brauer of Marburg has been publishing for some time the *Beiträge z. Klinik d. Tuberkulose*, which is now in its fifth volume. He has recently commenced the publication of what he calls the *Internationales Centralblatt f. d. gesamte Tuberkulose-Literatur*. Both of the periodicals are issued by A. Stuber's Verlag, Würzburg. The *Beiträge* appear irregularly, from 3 to 5 numbers forming a volume, the price of which is 16 marks, or about $4. The *Centralblatt* is issued monthly, and the annual subscription is 8 marks, $2. O. de la Camp and G. Schröder are also interested in the publication, while the *Beiträge* has a long list of collaborators, including Schwalbe, Völker and Vulpins.

Responsibility of Hospital for Suicide of Patient.—A hospital maintained by the sisters of charity at Berlin has recently been sued for damages by the relatives of a man who jumped out of a window while delirious in pneumonia. The plaintiff stated that she had sent her husband to the hospital so that he could have better supervision than at home, but he had been left alone and he seized the opportunity to commit suicide. She claimed that the suicide could not have occurred if he had been properly watched. The hospital authorities said that close supervision all the time was impossible for the limited nursing force of the hospital, and that they had no funds to increase the nursing force. The judge held the nurse in charge of the case at the time responsible for the man's death and imposed the fine asked. It was a charity case.

The Professorship of Physiology at Glasgow University.—King Edward has appointed Dr. Diarmid Noel Paton regius professor of physiology at Glasgow University to succeed Dr. J. G. McKendrick. Dr. Paton is the son of the late Sir J. Noel

Paton, the well-known artist. *The Medical Press* states that Dr. Paton has been engaged for many years in teaching physiology in the extramural school in Edinburgh, while his position as superintendent of the laboratory of the Royal College of Physicians has proved his capacity both for carrying out original research and for inciting others to do the same. He is well-known as a distinguished physiologist, especially through his studies in dietetics and on the functions of the ductless glands; while he has also published a number of valuable researches in connection with the life-history of the salmon. Dr. Paton has been a most popular teacher in Edinburgh, the *Press* continues, and his influence for good and public spiritedness have made themselves felt in all matters connected with medical education. His training, though in the main physiologic, has brought him so much in contact with clinicians that in teaching he always emphasized the practical rather than the purely scientific aspect of physiologiy; he has never forgotten, as some physiologists are apt to do, that his pupils are going to be physicians, not physiologists.

Health of India.—Acting Assistant-Surgeon Eakins in *Public Health Reports*, states that the mortality in India from cholera is the highest recorded since 1901. The deaths from this disease number 146,339, giving a ratio of 2.93 per mille., against 1.63 in 1904, and 2.77, the quinquennial average. The mortality from plague in 1905 was the highest on record since the outbreak in 1898, the total number of deaths being 126,084, against 75,433 in the previous year, and 58,255, the average of the last quinquennium. The period of greatest prevalence was, as usual, from January to April, but the climax was reached in March, in which month alone 40,090 deaths from plague were reported. Twenty-seven districts were more or less affected by the disease, the districts which suffered most being Saran, Patna, Gya, Shahabad, Monghyr, and Calcutta. During the year rat extermination was carried on in many parts of the province, but notably in the Giridih coal fields and in Bihar. As an example of the efficacy of rat extermination the sanitary commissioner cites the instance of Jagadispur in the Shahabad district. The operations were carried on there very thoroughly, and though there was a good deal of the disease in Shahabad, Jagadispur itself enjoyed complete immunity despite the fact that a very large number of the people from other badly infected localities came to reside there. The arrangements to keep up the campaign for at least another twelve months are complete, and if, as is not impossible, a virulent and widespread epidemic occurs next winter, the places where rat extermination has been carried on will have an opportunity of demonstrating conclusively the practical results of this method of protection. During the year, 1,544 plague inoculations were performed. A total of 1,214,487 deaths was reported from "fever," the death rate from this cause representing a ratio of 24.34 against 20.49 per mille. in the preceding year, and accounting for 63.17 per cent. of the total deaths registered from different causes during 1905. Antimalarial measures, which, aimed at the destruction of mosquitoes, were tried at Berhampore and Balasore, and though it can not be claimed that they have as yet yielded great results, they caused a considerable reduction in the number of mosquitoes and paved the way for more complete operations. Considerable activity was displayed by many municipalities in the administration of the various branches of sanitation. Inquiries were made during the year to ascertain whether filtration through sand and application of sulphate of copper rendered the effluent from septic tank installations bacteriologically pure. The net result of the experiments was to show that these methods, either separately or in combination, are capable of purifying the effluent, but that in practice they are likely to prove difficult in proportion to the amount of impurity in the material to be treated; and it was considered doubtful whether they would be practicable in the case of effluents of a high degree of impurity except as adjuncts to other methods of treatment. Sterilization of the effluent was then attempted by means of chlorinated lime. The experiment proved successful, and it was found that an addition of this material equivalent to 5 grains for each gallon of effluent rendered the fluid virtually sterile. The sanitary commissioner reports that septic-tank latrines are an entire success when used for communities such as mills, large schools, railway workshops, and the like, and he is now considering whether or not they can be adapted to municipal towns. He will be asked to submit a report embodying the results of his experiments. The sanitary commissioner has also made a number of suggestions for the adoption in municipalities of the septic-tank method as a

Pharmacology

Somnos.

Under the caption "The Chemistry of Chloræthanal"* the following has appeared in some of the drug journals for August:

> An abstract of papers from *The Journal of the Illinois Medical Society* for February 14, 1906, seems to be going the rounds of the pharmaceutical and medical press. It contains among other papers one by Prof. Julius Stieglitz, Ph.D., entitled "The Problem of the Synthetic Chemical Compound," read at the "Symposium on Proprietaries" of the Illinois Medical Society. In reference to one of the products of our house the author says: "It bears in its description the statement that it is a compound of chloræthanal with a higher polyatomic alcohol, which is true. To a chemist, that spells at once chloral combined with glycerin. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer?"
>
> To use his own judgment on such a subject intelligently, a physician should know the nature of the compound formed by adding chloral to glycerin, just as he would in deciding in regard to prescribing a product formed by combining potash with bromine. If not informed regarding the chemistry of the latter subject he might think that potash and bromine, both being dangerous poisons, would be only the more poisonous when combined. The physician posted on the subject would, however, recognize the compound as potassium bromide. In a similar manner, a physician not knowing that the product resulting from the reaction between equivalent amounts of chloral and glycerin is a definite chemical compound, differing chemically, physically, physiologically and clinically from chloral, might hesitate about prescribing it because of fear that it was chloral dissolved in glycerin.
>
> Inasmuch as the statement referred to gives an entirely erroneous idea and implies that the preparation is simply a solution or mechanical mixture of chloral and glycerin, we submit the following:
>
> The reaction which occurs when chloræthanal—trichloraldehyde or chloral—and a higher polyatomic alcohol—the trihydric alcohol $C_3H_5(OH)_3$—or glycerin, are added together, in proper equivalent proportions, produces the chemical compound, trichlorethidene propenyl ether. This reaction was studied and reported by Louis Henry, a celebrated chemist of Louvain, Belgium, as long ago as 1874 (see *Berichte der Deutschen chemischen Gesellschaft*, VII (1874, p. 762). The result of the reaction is a definite chemical compound (trichlorethidene propenyl ether), which, when heated somewhat above 40 degrees C. (104 degrees F.) decomposes into its original components, chloral and glycerin.
>
> The heat developed on admixture of these two substances, the physical properties of the resultant product, and the physiological effects, all prove that the product is a new compound differing in marked degree from chloral. The symbolic formula for this new compound is $C_9H_{11}O_6Cl_9$.
>
> Trichlorethidene propenyl ether is a hypnotic belonging to the methane group. It consists of a viscid mass, or solidified jelly, which will not flow on inverting the container. It can be softened and made to liquefy by heating, or can be changed to a brittle solid on chilling by a freezing mixture, thus differing in its physical condition from either of its original components by being more solid than either. This proves the formation of a chemical compound as distinguished from a mere mixture, which would have the tendency to lower the freezing point instead of raising it, as here effected.
>
> What has caused chemists who have made a superficial examination to reach the wrong conclusion that no definite compound is formed has been the fact that when overheated this trichlorethidene propenyl ether is again reverted into chloral and glycerin.
>
> Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (73 per cent.) trichlorethidene propenyl ether solution in glycerin. When 10 Cc. of this elixir is injected into the veins of a dog, or other animal, the immediate effect is no greater than the effect of injecting the same amount of normal salt solution in the same way; and not until total doses corresponding to twenty times that prescribed are injected does the blood pressure show any permanent fall, or decrease in respiration, and these phenomena are no greater than are characteristic of normal sleep.
>
> Enormous doses are required to produce a lethal effect on animals, corresponding to at least 15 fluidounces of the elixir injected into the veins of a 150-pound man. Sixteen fluidounces of the elixir has been taken by mouth with suicidal intent, and nothing resulted except a long-continued normal sleep, frim which the patient awakened refreshed.
>
> The action of trichlorethidene on the blood is practically negative. This is in great contrast to chloral, which reduces the red blood cells on an average of 32 per cent. It does not reduce hematin, as it was impossible to find hæmatoporphyrinuria in a single case of the many in which it was tested; neither have we had any reports of it doing so.
>
> We are claiming that the product is safer than any known hypnotic; that it produces normal sleep, is less depressing than the bromides and absolutely without any untoward effect upon the heart,

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* Chloral is a trichlorin derivative of the aldehyde derived from ethyl (æthyl) alcohol and therefore is called trichlorethanal, that is trichlor, indicating that the compound contains three atoms of chlorin, ethan referring to its derivation from ethane or ethyl alcohol and the ending al denoting that it is an aldehyde. Compounds containing one and two chlorin atoms, monochlorethanal and dichlorethanal, are known, but since the compound containing three chlorin atoms is the only one in common use the term chlorethanal is applied to chloral, the prefix tri- being understood. The title, therefore, reads in plain language: "The Chemistry of Chloral."—Editor Journal A. M. A.

respiration and vasomotor centers or the blood. In this we are amply justified by the results of physiological test and clinical experience.

Therefore, in answer to Professor Stieglitz' question. What physician who would hesitate about prescribing chloral would not like to use his own judgment as to whether chloral *plus* glycerin would be any safer? we unhesitatingly reply: Chloral is conceded to be the most desirable hypnotic known, but owing to its untoward action is unsafe. Trichlorethidene propenyl ether, as prepared by us in the form of elixir (Somnos), possesses all the desirable properties of chloral, but so far as known is free from its untoward effects. Physicians who know this to be the case (and a large and increasing number do know it) prescribe the product in preference to any other hypnotic, and their use of it is founded upon judgment and discretion.

Honest criticism never hurts, but facts half stated, or at least so stated as to lead to erroneous criticism, are unfair, and for that reason we have given the above full information. Very truly yours,
H. K. Mulford Company.

The quotation which calls forth the above letter is from a paper read by Professor Stieglitz in the symposium on "Nostrums," before the Chicago Medical Society—not the Illinois State Medical Society as stated—and published in The Journal of the American Medical Association, May 5, 1906.

The evident intent of Prof. Stieglitz' paper was to show by a concrete example, without mentioning specifically the name of the article, how the glamor of the production of a synthetic had led a prominent and reputable firm to mystify the profession by the use of chemical terms, unintelligible to the mass of the profession, in describing a simple combination of well-known drugs.

Somnos is a proprietary preparation put out by the H. K. Mulford Company, as a:

"Definite chemical product formed by the synthesis of chloræthanal with a polyatomic alcohol radical."

On the label Somnos is stated to be

"A reliable and safe hypnotic and cerebral sedative, free from depressing effects upon the heart, respiration, vasomotor centers."

In the advertisements we are told that:

"Somnos contains no chloral nor paraldehyd and is absolutely free from any depressing action upon the heart or circulation, and has no destructive influences on the red corpuscles of the blood, nor does it cause gastric disturbances by continued use."

It may possibly be unnecessary to suggest that, stripped of of all technical verbiage the H. K. Mulford Company acknowledges that Somnos is an unstable compound of chloral and glycerin, and so unstable that it separates and becomes a simple mixture at 104 F. To put it in different words, the firm states that Somnos is a compound of chloral and glycerin and not a mixture, since a chemical union takes place between the two drugs. By referring in the above letter to the work of Henry, the H. K. Mulford Company acknowledges, unintentionally, probably, that this idea of uniting chloral with glycerin is not original with that company. In parentheses it may be said that many attempts have been made in the past to produce compounds of chloral which would not depress the heart; these have all been failures. As Fraenkel states ("Arzneimittel Synthese," second edition, p. 444) compounds of this sort are either so permanent that the chloral effects are lost altogether, or else the chloral is so readily set free that the compound possesses no advantage over the drug. As stated below, experiments show that this is true with the Mulford preparation.

Heretofore the literature did not contain a word to indicate whether Somnos was "chloræthanal alcoholate" or a solution or an elixir of it. As a matter of fact it appears to be an elixir containing between 5 and 6 per cent. of the unstable compound of chloral and glycerin. And yet physicians were asked to compare the toxicity of this solution with the undiluted chloral. Even now the attempt to mystify is persisted in. If it really was the intention of the H. K. Mulford Company to tell just what Somnos is, then the amount of chloral represented by a given amount of Somnos would have been stated and not: "Our elixir (Somnos) contains in each 16 Cc. 1.2 Gm. of a concentrated (73 per cent.) trichlorethidene propenyl ether solution in glycerin." We do not hesitate to say that there is not a physician, unless he is also an expert chemist, who could calculate from the data given the amount of chloral represented by a dose of Somnos.

Nearly a year ago, the Council on Pharmacy and Chemistry took up this preparation, Somnos, and chemical examinations revealed that it was a combination of glycerin and chloral, probably a non-stable chemical compound easily separating by heat. Correspondence regarding the matter took place between the Council and the H. K. Mulford Company, without any satisfactory conclusions being reached. The sub-committee having become satisfied regarding the composition of Somnos, namely that it is an unstable compound of chloral and glycerin, proceeded to an investigation by animal experimentation of the claims made by the H. K. Mulford Company regarding its therapeutic effects and safety. While the report has not yet been submitted to the Council, we are informed by those who have conducted the experiments that the results of the experiments show conclusively that the physiologic effects of Somnos are practically identical with those of an elixir of chloral of corresponding chloral strength; respiration, circulation and temperature were equally depressed by the two.

It is to be regretted that when the H. K. Mulford Company introduced this preparation the firm did not state what it now has been forced to state. It is more to be regretted, however, that the facts are not now presented in plain language easily understood and not in terms unintelligible except to chemists. Further, why did not the H. K. Mulford Company state exactly how much chloral is represented in a dose of Somnos as marketed, and leave it to those who use it to say whether the same quantity of chloral in Somnos has any different effect than has the same quantity of chloral in a simple elixir?

An Endorsement of the Council on Pharmacy and Chemistry.

At the recent meeting the Pharmaceutical Association of the State of Pennsylvania placed itself on record as endorsing the efforts of the Council on Pharmacy and Chemistry of the American Medical Association. In commenting editorially on this fact, the *Druggists Circular and Chemical Gazette* says:

Some of the druggists have not been able yet to see the "ultimate gain" to their profession to grow out of the putting down of fraud and deceit in medicine, but light is dawning on more and more of them all the time. The question will be settled when it is settled right—which it will be one of these days. Both in and out of medical circles the insolence of strongly intrenched but unworthy interests is giving way to fear, which in turn will be followed by dismay. Those who read the papers need not be told what is going on among the insurance companies, railroad corporations, the beef packers, and the "bad" trusts generally, and the same kind of revulsion has been stirred up against the evils of the proprietary medicine men. The latter, aided by the "red-clause" portion of the press and such other influences as it can control or buy off, are making a desperate fight, but as the public becomes better and better informed, the fraudulent nostrum army must continue its retreat.

Bile Beans.

In The Journal, Nov. 25, 1905, page 1676, we referred at some length to this nostrum and to the judgment given against it in a British court. A sequel to this appears in the *British Medical Journal*, July 28, from which we quote:

The second division of the court of session (four judges) at Edinburgh gave judgment on Friday, July 20, in an appeal against a judgment in the outer house, in which the Bile Bean Manufacturing Company, Limited, Greek street, Leeds, sought to interdict an Edinburgh chemist from selling under the name of "Bile Beans" any pills or other articles not made or supplied by the complainers. Interdict was refused in the outer house and the second division adhered to this judgment. The lord-justice-clerk said the bile beans of the complainers were said to be made of Australian vegetable substances discovered by a Charles Forde. The place of the discovery, the mode of it, and the instrument of it were all deliberate inventions, without any foundation in fact. The story was that Charles Forde, who was described as a skilled scientist, had noted the fact that the natives of Australia were free from bodily ailments, and that after research and investigation he had ascertained that that immunity was obtained by the vegetable substances. All that, in every particular, was false. There was never such a person as Charles Forde, and there was no eminent scientist engaged in such research in Australia. The truth was that the complainers had formed a scheme to palm off on the public a medicine obtained from America, and they created a demand by flooding the country with advertisements, placards, pamphlets, and imaginary pictures. The complainers desired protection for the name "Bile Beans," but being themselves engaged in perpetrating a fraud on the public, they were not entitled to any such protection.

An Instance of the "Patent-Medicine" Habit.

Dr. J. C. Davis, Rochester, N. Y., reports the following interesting case of "patent-medicine" addiction:

"Mrs. Lottie Shaal died, July 10, from an overdose of 'a narcotic of some kind.' The coroner waived an autopsy as the woman was addicted to the 'patent-medicine' habit.

"During the past year she had been taking Cox's Headache Powders, obtained from her grocer. On July 7 she took one box of Cox's Headache Powders; on July 8 a part of a bottle of Hostetter's Bitters, and all of one bottle of Lydia Pinkham's Compound; on the morning of July 9 she went to see a neighboring physician, who gave her a small powder to quiet her nerves. I was unable to ascertain its contents. About noon she went out again and must have got advice or medicine, for she returned home and went to bed. Her two daughters noticed her peculiar actions, and in trying to undress her, discovered a small vial in her stocking. Mrs. Shaal pleaded with them not to disturb her—that she would not take any more. They let her alone for a short time and she got up and must have taken the contents, and have thrown away the bottle, for they have been unable to find it anywhere about the house.

"About 4 o'clock she was taken to St. Mary's Hospital with symptoms of some narcotic and spinal stimulant, and died the next morning, July 10."

Correspondence

Ethyl Chlorid As a General Anesthetic in Minor Operations.

New York, Aug. 22, 1906.

To the Editor:—I noticed an article with the above title in The Journal, August 18, by George F. Hawley, M.D. I desire to call attention to the fact that the inhaler referred to was devised by me for ethyl chlorid narcosis, and has been used by the medical and dental professions for at least three years. He appends the name of "Apperson" to the inhaler, when it is and should be called the antidolorin inhaler, devised by Maurice Green, D.D.S.

No doubt Dr. Hawley has been misinformed or misled, and in proof of my statement I enclose reprints of several articles I have written in the past on this subject, in which are cuts identical to the one used by him.

I do not look for any special credit as the inventor of this device, but I do object to any one taking undeserved credit, or probably imposing on the profession by attaching his name to any apparatus or instrument wrongfully.

Maurice Green, D.D.S.

We submitted the above letter to Dr. Hawley, who writes:

Chicago, Aug. 27, 1906.

To the Editor:—The mask mentioned in my article was represented to me as "Apperson's Mask." Having no reason to question the statement and not being acquainted with the mask of Dr. Green, I used this name in my article. I do not wish to place credit where it is not due, however, and I am, therefore, obliged to Dr. Green for setting me right in the matter.

George F. Hawley.

Interstate Reciprocity and Frauds in Medical Schools.

San Francisco, Aug. 23, 1906.

To the Editor:—In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

Thus the erudite secretary of the Michigan board writes that in all his career he has never had occasion to reject a diploma from a recognized medical school. Thorough investigation of credentials entails no small amount of labor, but it has already demonstrated that colleges violate the rules contained in their own published announcements and graduate students in violation of the state laws. Repeated rejections of diplomas secured under fradulent conditions has not cured the evil, at least in California, for similar frauds are recurring. The possessors of such diplomas, nevertheless, are beginning to seek new fields. They apply for examination or registration in other states, where their credentials are often accepted without question. Now, were California to reciprocate with these states it would, *volens non volens*, open the door to all such medical bandits, thus defeating the purpose of the law. Surely reciprocity under these conditions can not be founded on justice.

As a specific example of the detection of fraud in applications for license, we cite the following, taken from the official records of the California board:

May 17, 1906, H. R. Painton graduated from the Medical Department of the College of Physicians and Surgeons, San Francisco, and was given a diploma duly signed by Dr. Winslow Anderson, president, and Dr. D. A. Hodghead, dean of said college. July 31, in the office of the State Board of Medical Examiners, H. R. Painton filed his application for a license. In his affidavit mention is made of four consecutive annual courses at the above mentioned school, 1902 to 1906. Inspection of the annual announcements of the College of Physicians and Surgeons showed H. R. Painton's name in four different numbers, thus corroborating the applicant's sworn statement.

Further research, however, developed the following facts: H. R. Painton taught in the grammar school of a neighboring county from 1902 to 1904, i. e., his term of service in the capacity of teacher coincided exactly with the first two years of his alleged attendance at the College of Physicians and Surgeons, San Francisco. Confronted with the above evidence, H. R. Painton admitted having filed a false document, and gave his college attendance as only two courses. The value of H. R. Painton's faculty-bedecked diploma is *nil* in California, but past experience authorizes me to assert its par value in any other state. There, the fradulent product of the no less culpable College of Physicians and Surgeons, San Francisco, will undoubtedly become a staunch advocate of interstate reciprocity.

It may be asked why California recognizes schools proved guilty of fradulent acts. The answer is found in its medical law which authorizes the board to pass on applications and not on colleges.

Two remedies suggested themselves in dealing with frauds in medical colleges: 1. The investigation of colleges by national societies, such as the Association of American Medical Colleges, whose standard has already been recognized by the legislature of seven states and territories, or the medical council of the American Medical Association, whose functions are merely advisory. 2. The coöperation of examining boards in investigating the preliminary educational credentials and the college work of all applicants for license.

In conformity with the latter suggestion the credential committee of the California board has requested that it be notified of all applications for license filed with other state boards by graduates of California colleges.

Dudley Tait.

Insurance Examination Fees.

New York, Aug. 16, 1906.

To the Editor:—In The Journal, August 11, appears an editorial in regard to life insurance fees which is evidently intended to be a fair and conservative statement of the case from your point of view. While conceding the fairness of spirit manifested in the general tenor of your remarks, I can not refrain from calling your attention to the misleading inferences which may be drawn from your statement regarding the effect of the general insurance bill recently enacted by the New York State Legislature.

Any physician not familiar with the facts would be more than likely to infer from your remarks that this law does not in any way affect business written outside of New York State. I presume it was far from your intention to convey such an implication, as you are doubtless aware of the following facts:

1. The companies organized and operating under the laws of New York State must comply with the law limiting the expense of procuring new business. These limitations apply to the entire business of the company, whether written in New York, Oregon, or Central Asia.

2. The companies organized and operating under the laws of other states will not be permitted to enter and to do business in New York State except under limitations identical with those imposed on the New York companies.

The American Medical Association, in appointing a committee to investigate the life insurance situation in advance of passing final judgment on the matter, acted with characteristic dignity and restraint. As your admirable journal is the organ and mouthpiece of the Association, and has assumed the responsibility of molding the opinions of the medical profession on these questions, I am sure you will desire to correct a misleading editorial allusion to a matter of such pivotal importance as the New York insurance law.

Eugene L. Fisk, M.D.
Medical Director.

[Our correspondent evidently labors under the apprehension that our readers do not know that the New York law affects all companies that operate in New York, whether New York companies or not, and we hardly thought it necessary to emphasize this point. There are insurance companies—and many of them—which are still paying the old flat rate of $5.00, and which are doing business in New York.—Ed.]

District Branches of the American Medical Association.

Nashville, Tenn., Aug. 14, 1906.

To the Editor:—Since I learned of the intention on the part of the profession of Kansas, Missouri, Oklahoma, Arkansas and Texas to organize the Southwestern District Branch of the American Medical Association, I have been waiting to see if some one else would not give expression to the opinion that such organizations should be effected immediately all over the United States. Two weeks ago I introduced the discussion of this matter at the meeting of the Nashville Academy of Medicine, and found that every member present viewed the matter as I do. They emphasized their desire for such an organization in our territory by the creation of a committee, consisting of Dr. A. B. Cooke of this city and the undersigned, to undertake the work at once. We have called a meeting for this purpose to be held in Chattanooga October 2, at 9 a. m., in the Read House. This meeting is called for the same time as the meeting of the Tri-State Medical Association. It is my opinion that the Tri-State Association will be glad to transform itself at once into the larger body, which would be named either the Southern District Branch of the A. M. A., or the Southeastern District Branch, probably the former. The states expected to send representatives to this meeting are Kentucky, Tennessee, Georgia, Alabama, Florida, Mississippi and Louisiana. It is not improbable that Kentucky will wish to join the states immediately north of her, in preference to becoming a member of the Southern District Branch. The truth underlying the necessity for these district branches is very clearly expressed in the communication of Dr. F. H. Clark in the August 4 issue of The Journal as follows: "Because of the natural limitations of the state association on the one hand, and the magnitude of the American Medical Association on the other." It must be a fact recognized by every one that the sections of the A. M. A. have grown to be so large that the opportunity for presenting papers, and even of discussing papers, has become very small, especially as concerns the younger members of the profession. If for no other reason, the district branches should be brought into existence, but of course the meetings of these district branches should be held, as provided for already in the constitution, in the fall of the year, or in the early winter, so as never to interfere in the least with the annual sessions of the A. M. A.

In this communication I do not propose to do the thinking for the profession in the various states of the union, but I do propose to make some suggestions that will put them to thinking.

1. The following states are already combined in the formation of the Southwestern District Branch, namely, Kansas, Missouri, Arkansas, Oklahoma and Texas.

2. The following states will constitute, in the near future, the Southern District Branch of the A. M. A., namely, Tennessee, Georgia, Alabama, Florida, Mississippi, Louisiana, and probably Kentucky.

3. Would it not be well for the following states to organize the Southeastern District Branch, namely, South Carolina, North Carolina, Virginia, District of Columbia, Maryland, Delaware and Pennsylvania?

4. How would this do for the Eastern District Branch: New Jersey, New York, Rhode Island, Connecticut, Vermont, New Hampshire, Maine and Massachusetts?

5. How would this do for the Northern District Branch: West Virginia, Ohio, Indiana, Illinois, Michigan—and Kentucky, should she prefer this union to the other mentioned above?

6. How would this do for the Northwest Central District Branch: Wisconsin, Minnesota, Iowa, Nebraska, North Dakota and South Dakota?

7. This for the Northwestern District Branch: Montana, Wyoming, Idaho, Washington and Oregon?

8. This for the Western District Branch: Colorado, New Mexico, Arizona, Utah, Nevada and California?

These several districts would be sufficiently large for furnishing a body of medical men that could be divided into sections for scientific work, but the sections of course should not be so numerous as those of the A. M. A. I would suggest that the following sections would be sufficiently numerous: First, Section on Practice of Medicine, Obstetrics and Diseases of Children, allowing that the practice of medicine should include nervous, mental and cutaneous diseases; second, Section on Surgery and Gynecology; third, Section on Ophthalmology, Otology and Laryngology; fourth, Section on Anatomy, Physiology and Pathology. Therapeutics would naturally fall in the first section.

I trust that if this communication does nothing more, it will at least put the profession to thinking in the direction pointed out. It is presented only in the spirit of suggestion, and not of dictation.

G. C. Savage.

The Attacks on the American Medical Association.

Detroit, Aug. 1, 1906.

To the Editor:—In traveling I meet many members of our Association and hear a good deal of criticism of the management, which pains me very much, and obliges me to defend the organization, and where there is so much talk there must be some cause for it. I also read in the journals a good deal of criticism, and can readily see how it is caused. Undoubtedly a great deal comes from the manufacturers who are financially injured by being exposed; the other comes from the independent journals who resent the statement that there is no use for their existence. In the case of the manufacturers, few will defend them, and I think everybody believes that the good work should go on and be amplified if necessary. As far as the independent journals are concerned, I certainly think there is a place for them. First, there is a place for the various special journals, then there is a place for local medical journals; in fact, I believe every journal, no matter how small, has some good in it and reaches some physician and helps him, and thus does good. Their value may be limited, but still every one does some good. Some think there are too many medical societies; still I believe not. Each one reaches some members that others do not, and thus raises these members up.

The whole thing, it seems to me, is a lack of tact on the part of those in charge of the organization. Take for instance, the Report of the Board of Trustees, as it is published in The Journal of June 16, which is all right, being read simply in abstract, but there is no reason why it should not be printed more in detail. A few pages more of printing matter costs very little more. For instance, the salary list. Why should it not be given in detail; why not state that the Secretary gets $10,000 a year? He certainly earns it. I think he earns twice as much. The members might just as well know it. Why should they not? The expenses of the organizer should be given in detail. He certainly earns it; in fact, the services he renders to the Association is worth five times as much.

I can readily see how the resolution to appoint a committee to investigate the financial condition was opposed by the Trustees, who thought it was a reflection on the management. They have the books investigated by an expert once or twice a year, and always select a different man. They know the books are all right, but the trouble is that the members do not know that. If they would, such a resolution would probably not be offered. If I were a Trustee I would not give any member a chance to offer such a resolution. I would offer it myself and I would insist that the greatest kickers should be put on that committee. That would cure them and then they would see that everything was all right, of which no member really has a doubt. Still, when such a resolution is objected to, it makes a man suspicious, and they ask why should anybody object to that? The Good Book says you must not only avoid evil, but the very appearance of evil. This a good doctrine.

It is just so with the new medical directory. Why could it not be stated exactly what was paid for the list bought by the Association and all the details? Speaking of the medical directory, that will cost probably $75,000 to get it up. With money received from a limited number of advertisements, the price ought to be reduced to about $2.00, and then every member of the Association will get one. At the most it should not cost more than $3.00.

It is such a simple thing. If all these things were known by the members there would be less criticism. The other point is the finances. The Association is growing, has a big income. We do not need to accumulate money. Why, for instance, should not every person who writes an article receive, say, 100 reprints free of charge as a good many medical journals do? If a man wants more he can pay for them and they ought to be given to him at the lowest possible figure or cost price. Why should the bound volume of the Sections cost $1.00 to the members, when the original cost is only about one-third? Why should we accumulate money in bonds and stocks? It is good to have a property of our own, the finest press, and facilities to turn out a good journal, but let us stop there. We may say we want a new building and a larger one. If we do need one, we can put up one, but do it in such a way, that from rents there will be enough to pay the interest on the building and to accumulate a sinking fund that will pay for it in twenty-five or fifty years. Why should the present members pay all that and leave the future generation a valuable property without any efforts of their own? We should be willing to do our share, but we do not need to do everything.

In fact, as the membership grows and the subscription list increases we ought to try and reduce the number of advertisements. We ought to have a journal with virtually no advertisements, and those we have should be charged a good price (just as they have been in the past); decrease the number and increase the price.

If I should be mistaken about one or the other little point, I hope the Trustees will correct me, but all around I simply want to say: Be more open and specific in your statements. Do not resent every little inquiry made, but just jolly them along. Let the independent medical journals alone. Do not charge members more than the actual cost for whatever they get. Devote more money to the chemical and research laboratory, and to establishing of a complete medical library, and give a most perfect review of every medical journal published in the world. That seems to me, should be our constant endeavor. Do not let us quarrel about such little things, but stick together for the good of the race.

J. H. Carstens.

The above letter was forwarded to Dr. T. J. Happel who sends the following reply:

Trenton, Tenn., Aug. 8, 1906.

To the Editor:—Nothing is more unpleasant to me than a controversy, for life is too short to quarrel over the little things. I have read Dr. Carstens' letter, and I regret that he has felt called on to notice the criticisms made by others in regard to the management of the affairs of the Association; yet to notice them in such a way that did one not know that he was a friend of the Association and ready at all times to uphold it, he would be considered as one of the elect who was sitting in judgment on these questions. These criticisms seem to be confined to certain localities where there are perhaps medical men who feel that they are better qualified to edit The Journal and to manage the affairs of the Association than is now being done. In various ways I come in contact with many physicians, and I have yet to find the first one, except the few disgruntled ones who were at the Boston session, who complain of the management. The criticisms on the part of the various physicians spoken of in almost every case could be referred to "a sore toe," or some other like cause of irritation.

The independent medical journals owned by physicians are usually run for profit alone, and of course the war made on unethical advertising hurts their "toe." They claim not to want to publish unethical advertisements, and yet they continue to do so for the money which they receive, and their opposition is due to the fact that The Journal has shown up the fraudulent nature of these advertisements. If they cut out these advertisements they lose money, hence they complain, but they make their journal better. There is a place for all ethically conducted private journals, and instead of The Journal, A. M. A., injuring them, it is an indirect benefit to them, for as The Journal's rate of advertising is proportioned to its circulation, the private journal will get much that The Journal can not get. Some of these journals are doing noble work, and the House of Delegates was outspoken on this subject at Boston.

While the journals already mentioned are to be commended, there are many journals sent out by and in the interest of the manufacturing chemists to laud their own products. Such as these can not be handled decently in an article limited in space, and hence, they must be ignored.

The state journals are rapidly becoming essentials in well organized medical associations. They furnish state and county medical news—reporting the proceedings of the state and county medical societies. Of course this might lessen the amount of free material for the private journals, but the private journal has no right to complain of this.

Manufacturers of some of the proprietary medicines complain because the worthlessness of many of their products has been shown up through the work of the Council on Pharmacy and Chemistry of the A. M. A. I agree with the Rev. Sam Jones in cases of such complaints, when he says that "if you throw a brick into a crowd you can tell who has been hit, because he always makes an outcry." Those who are complaining most loudly are the ones who have put on the market the worst drugs, and who may have come in contact with the "Pure Food Bill" passed by the last Congress.

However, I would have nothing to say in answer to Dr. Carstens' letter had it not been for the insinuations against the Board of Trustees. He says that there is a lack of tact on their part in the management of the affairs of the Association, and illustrates this by a reference to the report of the Board of Trustees, which he says was read "simply in abstract" (of course he means in the House of Delegates). Dr. Carstens knows, or should know, and if he was not in the House at the time the report was called for, then his friend, Dr. H. O. Walker, should have informed him, that before the report of the Board of Trustees was read, at the request of the chairman of the board, when the report was called for, instead of being read at the morning session, a copy of the report was given every delegate, and to every one who was in the house at that time, with the request that before the House of Delegates reconvened for the afternoon session it should be carefully examined, to the end that when read, any and all members in the house might call for any information desired, not fully set forth in the report. At the afternoon session of the house, after several other matters had been disposed of, "The Report of the Board of Trustees for the year ending Dec. 31, 1905," was called for. Under the direction of the board this report was presented by the chairman. He read carefully and deliberately every part of the report that was deemed of sufficient importance to demand any special comment. As the financial part of the report was printed in detail, except an itemized statement of salaries, and the expense account of the organizer, Dr. McCormack; the receipts and expenditures were not read singly, but the sum total of each was stated, and then a few of the larger items read—the page of the report being called in every case as the reading progressed. These debit and credit tables were prepared by an auditing company of Chicago, chartered under the laws of Illinois, having no interest in the result of its examination; its sole object being to investigate the books and vouchers and accounts of The Journal office, and of the Treasurer. In order to refresh the memories of Dr. Carstens and of others who take the same view that he does of the work of The Journal office and of that of the Board of Trustees, I copy from The Journal, June 16, the last clause of the report of the Investor Audit Company, which examined the books for the Board last January:

> We have examined, properly approved and receipted vouchers for all expenditures, with the exception of a few which had not been returned by the bank at the time of our visit. We shall audit same on our next visit to the office of the Association. We counted the cash on hand and verified the cash in bank with statements furnished us by the bankers. The securities in possession of the Trust Company were examined and found to be intact. In addition to the above, we have verified the footings of the cash book and made such other checks as in our opinion were deemed necessary for the protection of the Association.
>
> Considering the amount of detail handled by the Accounting Department, we found the work to be in excellent condition. There appears to be a continued improvement in the manner of handling the accounts and office work.
>
> We will be pleased to furnish you with any other information that you may desire. Yours faithfully,
>
> E. M. Mill, Manager.

Dr. Carstens complains that the salary list was not printed in full in the report. Such a list never appears in the report of any well-managed business association. The Board of Trustees, recognizing the right of every member of the House of Delegates and of any member of the Association to such information, carried to the session a sheet having every item on it, from which to read anything asked for. We did not feel that it was necessary to publish to the world the amount paid the editor and the 150 to 175 other employés, including the girls engaged by the hour in the mailing department. As was forcibly stated on the floor of the house by Dr. Montgomery, the salary of the editor was fixed, when he was elected, at $5,000 per annum, to be gradually increased in proportion to the results produced till it reached the sum of $10,000, which amount he has received since March of last year. Whether or not he has merited that amount, judge ye. The Board of Trustees thinks that he has. How well Dr. Simmons has done his work can be easily shown by reference to The Journal, July 9, 1898. The report of the Board of Trustees, made at Denver in that year, showed the total receipts of The Journal office, including $20,000 drawn from the Treasurer, to have been $47,140.07; expenses, $45,644.17, leaving a balance of less than $1,500 in The Journal office. The Treasurer's report showed a balance in his hands of $14,692.72. Ten thousand dollars of this amount was put aside for emergencies, making a sinking fund of $13,000. The weekly average issue of The Journal was then 11,470 copies, as compared with 38,000 for the year ending Dec. 31, 1905. I am glad that Dr. Carstens does not object to the salary paid our editor.

Had the full pay-roll of The Journal office been printed in the report, The Journal would have been at the mercy of any human vulture that might have desired to injure it, by attempting to entice from it any employé, by offering a few more dollars than he or she was receiving. No business man, firm, or corporation is ever guilty of such a stupendous piece of folly. Further:—the payroll is constantly changing, but all of the labor used in the mechanical and composing departments must be paid for at union rates.

In addition to the sheet containing the salary account, there was also on hand in Boston the sheet which contained the organization expense account, which was given to Dr. Coe, with permission to publish it if he wished to do so. The salary account was also put into his hands so that each and every one, whether a "kicker" or not, might read and compare, but not publish without permission of the House of Delegates. Dr. Carstens or Dr. Walker could have published the organization statement, had either of them wished to do so, for it was put in the hands of Dr. Coe to do with it as he pleased, but both report sheets were returned to the Chairman of the Board before the afternoon session adjourned. This makes it perfectly plain that the board had nothing to conceal and was wishing to conceal nothing.

The employment of Dr. McCormack as organizer since the annual session, in 1904, has been done under the order of the House of Delegates. He has been paid $5,000 a year and his expenses ever since he entered on the duties of that position. The Trustees felt one year ago that the organization had reached such a stage that this expense might be dispensed with, but on the direct request of the House of Delegates continued his services for another year, as they did again at the last session.

I am of the opinion that the House of Delegates would not have wanted to listen to the reading of a report of Dr. McCormack's traveling expenses, made up of railroad fares, board and incidentals from one place to another of his itinerary. These and similar accounts are all submitted to and passed on by the Board of Trustees, after which they go to the Audit Company. Every item of this and of all other accounts is on file in The Journal office and is open to the inspection of every member of the Association who may call at the office of The Journal. I may add parenthetically that I have had a personal experience in investigating a few business matters for friends in the office, and it was no trouble to find anything that was wanted. It always seemed to be a pleasure for the book-keeping department to look up any matter called for. The board will gladly furnish a report, covering all the itemized details of the business if the House of Delegates wishes it, and it will welcome any investigation made under the order of the House of Delegates. It is an utter absurdity to suggest an investigation of a business of the magnitude of The Journal office by a committee of physicians who are not practical book-keepers. The Board of Trustees long since abandoned any such piece of folly, and has the work done by expert accountants. Two audit companies have been employed since my connection with the board. If another investigation is wanted apart from that made by the board, then let there be selected by a committee in no wise connected with the management of The Journal a different expert accountant, and let him be sent there by the president of the Association with directions to go through the office in a systematic way and to send in his separate report to the next session of the Association. A committee of physicians would be a useless addendum to a financial investigation. Let it be understood that The Journal office and its affairs are open to the members of the Association at any time.

The organization expense account as handed Dr. Coe is as follows:

ORGANIZATION EXPENSE, 1905.

Dr. J. N. McCormack, salary	$4,999.92
Dr. J. N. McCormack, expense bill, June 13, 1904, to July, 1905	1,453.90
Drs. Ohls and Green	875.00
Express charges and postage	42.92
Expense to agents account of local society work	259.00
Jobbing	166.30
	$7,797.04

1906.

Dr. J. N. McCormack, salary, January to April, inclusive	$1,666.64
Dr. J. N. McCormack, expense bill, Sept. 4, 1905, to December, 1905	863.00
Jobbing, express, etc.	118.60
	$2,648.24

Drs. Ohls and Green are in The Journal office, but such of their time as is devoted to the work of Dr. McCormack is charged to that account. One not conversant with such work as is done in The Journal office pertaining to the many subdivisions, such as the Council on Pharmacy and Chemistry, the Council on Medical Education, national education, etc., can not realize the kind of work done in these different departments.

Dr. Carstens says that he can readily see why the Trustees would oppose a resolution to investigate the financial condition of the Association. He assumes that they did oppose such action, that they voted against Dr. Walker's resolution. At the time the resolution to investigate was offered by Dr. Walker, I am of the opinion that not more than three or four of the Board were in the House of Delegates, and I *know* that not one of them offered a word of opposition to the resolution. The objection to this resolution was made by nearly every delegate present, as every one knows who was present at the meeting when "all who have grievances" were asked to air them.

The absurdity of the idea entertained by some of the "kickers" in regard to a further examination of the condition of the monetary affairs was evidenced by the suggestion made by some one, that all books, papers, accounts, vouchers and other matters should be boxed up and brought to the place of the annual session and examined by a special committee appointed at that session. Such an idea needs no further notice. Again, if those who object to the present management of The Journal are not willing to accept the report of the special accountant employed by the Board, are they sure that they would accept the report of any other expert accountant? The suggestion of Dr. Carstens that the Trustees should be the ones to offer the resolution of investigation for the "kickers" is a piece of folly which I feel sure was due to thoughtlessness on his part. To offer such a resolution would be to show a want of confidence on their part in the work done by themselves. It must be remembered that Dr. Simmons gladly welcomes any member of the Association to The Journal office, and Dr. Walker or Dr. Carstens could have free access to it and could avail themselves of such a visit to study the office and all of its methods. The idea that a committee of physicians could do any more than is done by the nine Trustees in going over the books and vouchers of the office—a work requiring two skilled accountants six or eight weeks to do, is absurd.

The motion of Dr. Jones of California to reconsider the tabling of the resolutions was a parliamentary move made for the purpose of still further emphasizing the action of the House. With all this the Trustees had absolutely nothing to do.

Now as to the Directory:—Dr. Carstens complains that not enough light was thrown on the matter of the purchase of the Standard outfit, and that no exact statement of the cost of it has ever been made. Dr. Carstens has certainly not read the reports of the Trustees, or the minutes of the House of Delegates for the past three years. Had he done so he would have known that the publication of a Directory and Blue-book had been reported on time and again within that time. He, or his friend, Dr. Walker, can recall the fight made against the publication of a directory by the Association last year at the Portland session—the fight being instigated by a rival directory in a certain city—and that the House by an almost unanimous vote ordered the Board of Trustees to proceed with their work of publication. At that time it was not possible to state the exact price at which the directory could be bought, but the amount put up for an option on the property was stated in the Report of the Board of Trustees for that year. The price had been agreed on, but under an obligation binding both parties, it could not be given out till the House of Delegates had acted on it. When this had been done, the price was no longer a secret, and in exhibit A of the Report of the Board of Trustees, in the letter of the Audit Company, in the first item of expense to which the company refers, appears the following statement:

> Net Investment in Directory to date, $10,868.39. This is made up as follows: Expenditures for salary, labor and material in preparing first edition, $5,042.89; Cost of Directory property, $6,035.50; making a total cost of $11,078.39; less advance sales Directory, $165.00, and advance advertisements, $45,.00; $210.00; leaving net investment, so far, $10,868.39.

The secretary and editor in his report to the Trustees, gave the following additional information:

> We have already secured about 4,600 subscribers to the Directory, and about $3,800 advertising contracts have been made. We expect to have about $5,000 worth of advertising. Of course this is being limited to absolutely unobjectionable matter, or we could treble this amount.
>
> From present appearances we shall be able to get out the Directory without any loss, although this is merely a conjecture at this time. If we do, it will be remarkable, because we shall be at a very great expense for this first issue that will not be incurred in getting out future editions. This applies not only to the expense connected with gathering the fundamental information referred to above, but also to the fact that practically all of the matter will have to be set in type, much of which will in the future be utilized for succeeding editions.

Dr. Carstens talks about a directory costing $75,000.00, and that at $2.00, or at most $3.00 per volume, every member of the Association would purchase a copy. This shows that he is ignorant of the details of such work. Many of our members will not subscribe for *any* directory, and the price has been fixed at the lowest amount at which it is estimated that it can be produced. Future editions will be sold at a price to cover cost. The Association is not seeking to make money out of the Directory.

The Reprint Question.—The Trustees have this matter under advisement, and it is now unfinished business for our meeting in October.

Dr. Carstens complains at the price ($1.00) charged for the bound volumes of section reprints, which he intimates cost only 33 cents. The binding and postage alone on the volume subscribed for by Dr. Carstens last year cost the Association 43 cents. This does not include pay for press work, folding, gathering or paper. A close calculation of all such items will show a loss to the Association on section reprints. Instead of a profit of 66 cents, as stated by Dr. Carstens, the Association issues these transaction every year at a loss.

"Why should we accumulate money in stocks and bonds?" asks Dr. Carstens. Such a question made by a business man would need no answer, but, unfortunately, all of us are not business men, or, at least, we have sense enough to get some one to transact our business for us, so that the world does not find us out. No enterprise can be carried on in these days without money to tide over times of disaster. We have had several years of prosperity, but this will not continue, if we are permitted to judge the future by the past. A reaction must follow, and if we have no money then we must fail. Had we no reserve fund, nothing except individual donations could have been made to the California sufferers. The report showed our profits for the year 1905 to have been nearly $18,000.00 less than in 1904. This decrease was accounted for by our having refused $15,000.00 of advertisements that were barred by our rules of admission, and by the cost of maintaining our Council on Pharmacy and Chemistry, and our Council on Medical Education. This year one item alone, a new printing press, will cost us $20,000.00. A new linotype machine will add several thousand dollars to our expense account. As the Association grows, expenses increase *pari passu*. Without this reserve fund our Association would have little or no rating, and its contracts for paper and other stock essential to carrying on its work would not be eagerly sought for. Contracts are now made on the most advantageous terms. Everything is paid for when delivered; all discount being taken advantage of. Had we no money on hand such could not be done. The interest on the reserve will enable the Association more readily to undertake greater things along the line of scientific investigations, original research, etc. What could have been done, say in 1898? Every old member knows how the Association was handicapped in the past for lack of funds. Our officers who have this money under their care are all under heavy bonds, and hence the money can not be lost.

Dr. Carstens' view about publishing a journal without any advertisements is an ideal one, but ideals in this age are rarely attained. Many members would not want a journal with no advertising pages in it. From them they get information as to where they can purchase such supplies as they may need. Many read this part of The Journal first. What we now need and are striving for is a higher class of advertisements, all of them coming fully up to the highest standard of ethics.

The last section of Dr. Carstens' article, wherein he gives the Trustees advice, can be answered in one sentence. "Advice is the cheapest commodity on the market." This reply is written in no contentious spirit but to let the members of the Association know that The Journal force, from editor down to mailing girls, are doing their whole duty, and that the Board of Trustees is attempting conscientiously to do the work assigned them, without fear or favor.

We would add further that we welcome honest criticism, and when it is not made from impure motives (with which we do not charge Dr. Carstens, for we believe him to be a true friend to The Journal) we are ever ready to answer it to the best of our ability.

T. J. Happel,
Chairman Board of Trustees.

Marriages

Edward C. Rosenow, M.D., Chicago, to Miss Lydia Senty, of Arcadia, August 1.

Ira F. Gose, M.D., Eureka Utah, to Miss Willie Sallee, of Danville, Ky., August 15.

James M. Cooper, M.D., Detroit, Mich., to Miss Mattie Craft of Grass Lake, Mich., August 22.

Irvin S. Workman, M.D., Gambier, Ohio, to Miss Ruth Klinger, of Delaware, Ohio, August 14.

C. Louis Hoeffler, M.D., Omaha, Neb., to Miss Marie E. Mallette, of Chelsea, Mass., August 19.

Isador S. Trostler, M.D., Orleans, Neb., to Miss Ruphelle Luce, of New Vineyard, Me., August 16.

Peder Sather Bruguiere, M.D., to Miss Nannie King, both of San Francisco, at Reno, Nev., August 20.

George Hopkinson, M.D., Boston, Mass., to Miss Helen Wright Andrews, of Binghamton, N. Y., July 14.

Walter Remsen Brinckerhoff, M.D., formerly of Boston, but now of Honolulu, to Miss Nellie M. White, of Winchendon, Mass., at Honolulu, August 25.

Deaths

Reynaldo Juan Fitzgerald, M.D. Albany (N. Y.) Medical College, 1882; a member of the Association of Military Surgeons of the United States; surgeon of the Thirteenth Minnesota Infantry, U. S. V., and on duty with that command in the Philippine Islands; a member of the state and county medical societies; the first man to volunteer at the organization of the Minnesota National Guard in 1882, and major-surgeon in that regiment during the Spanish-American War; medical director of the Minnesota National Guard, with the rank of colonel on his return to the United States, and at the time of his death major and surgeon National Guard of Minnesota and assigned to the First Infantry; a prominent practitioner of Minneapolis, died at his home in that city, August 18, as the result of disease contracted in the Philippine Islands, aged 45.

Godfrey R. Martine, M.D. University of Vermont Medical Department, Burlington, 1862, a member of the American Medical Association; International Medical Congress, 1900; New York State Medical Association; formerly president of the Warren County Medical Society, the Tri-County Medical Society, and Warren County Medical Association, who established the Glens Falls Hospital in 1885 and was consulting surgeon for that institution; formerly coroner and health officer of Warren County; one of the oldest and most prominent physicians of Glens Falls, was struck, August 8, by a Hudson Valley Railway express car, two miles north of Glens Falls, and instantly killed, aged 69.

Charles David Hurt, M.D. University of Georgia Medical Department, Augusta, 1881; a member of the American Medical Association; ex-president of the Atlanta Society of Medicine; formerly professor of materia medica in the Southern Medical College, Atlanta; chief surgeon Georgia Railway and Electric Company; professor of therapeutics in the Atlanta School of Medicine; president of the medical board of Wesley Memorial Hospital and a member of the medical board of Grady Hospital; for thirteen years a resident of Atlanta; a Confederate veteran, died at his home in Inman Park, Atlanta, after an illness of more than eight months, August 12, aged 63.

James E. Smith, M.D. Albany (N. Y.) Medical College, 1889, and valedictorian of his class; a member of the Albany County (N. Y.) Medical Society and coroner of the county from 1890 to 1893; a lieutenant during the Spanish-American War and on duty in the Hawaiian Islands; afterward assistant surgeon of the Tenth Battalion, N. G. N. Y.; senior vice-commander of the Department of New York of the Spanish-American War Veterans, was stricken with paralysis at his home in Albany, August 13, and fell, fracturing his skull, dying at the Albany Hospital twenty-four hours later, aged 38.

Hunter P. Cooper, M.D. Medical Department of Columbian University, Washington, D.C., 1883; professor of obstetrics and gynecology in the Atlanta College of Physicians and Surgeons; gynecologist to Wesley Memorial Hospital, Atlanta; local surgeon of the Georgia Railway, Nashville, Chattanooga & St. Louis Railroad, Atlanta & Western Railway and Western of Alabama Railway; a member and ex-president of the Atlanta Society of Medicine, and a member of the Medical Association of Georgia, died at his home in Atlanta, August 24, from septicemia, aged 46.

William Octah Vance, M.D. Louisville National Medical College, 1889; Illinois Medical College, Chicago, 1895; one of the founders of the Louisville National Medical College and a professor in and member of the board of trustees of the institution; for twenty-five years principal of the colored high school in New Albany, Ind., and one of the most influential colored men of his city, died from heart disease at his home, August 16, aged 50.

Joseph W. V. R. Plummer, M.D. Southern Medical College, Atlanta, Ga., 1884; formerly surgeon in the Navy; at the time of his death city health officer of Key West, Fla., and twice mayor of that city, who had done special work in the treatment of yellow fever and other tropical diseases; some time commander of the Department of Florida in the Grand Army of the Republic, died at his home in Key West, August 8, from diabetes, after an illness of four months, aged 64.

Frank P. Grove, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1901, a member of the Medical Society of the State of Pennsylvania and of the Huntingdon County Medical Society, died at his home in Alexandria, Pa., August 20, from tuberculosis, after an illness of eighteen months, aged 30. The county medical society adopted appropriate resolutions regarding the death of Dr. Grove.

Robert J. Preston, M.D. University of Virginia Department of Medicine, Charlottesville, 1867; a member of the American Medical Association, superintendent of the State Hospital for the Insane, Marion, Va., and one of the most prominent alienists of that state, died suddenly from heart disease in New York City, August 20, while on his way to attend the meeting of the British Medical Association at Toronto, aged about 60.

Cornelius C. Beard, M.D. New Orleans (La.) School of Medicine, 1849; a veteran of the Civil War; one of the founders of the New Orleans School of Medicine and professor of anatomy in that institution; for many years a practitioner of New Orleans, died at his home in Brookline, Mass., May 15, after a prolonged illness, aged 78.

William R. Van Tuyl, M.D. Kansas City (Mo.) Medical College, 1889, contract surgeon in the United States Army during the Spanish-American War and on duty in the Philippine Islands, a prominent physician of Leavenworth, Kan., died at his home from heart disease, August 19, after a lingering illness, aged 42.

Bernardino Calabrese, M.D. University of Naples, Italy, 1861; for several years a surgeon in the Italian army and for a long time mayor of his native town of Samfele; for fifteen years a practitioner of Buffalo and official physician to the Italian consulate, died at his home, August 16, after a brief illness, aged 68.

Hugh Henry McIntyre, M.D. University of Georgetown Medical Department, Washington, D. C., of Randolph, Vt.; a veteran of the Civil War; special agent of the United States in connection with the arbitration at Paris in 1892 and 1893, died suddenly from heart disease at Barnard, Vt., August 13, aged 60.

Frederick J. Owens, M.D. Philadelphia College of Medicine and Surgery, 1853; surgeon of the First Delaware Volunteer Infantry during the Civil War; formerly a practitioner of Harrington, Del., died at his home in Denton, Md., from senile debility, August 16, aged 84.

Armstead Jackson Patterson, M.D. Jefferson Medical College, Philadelphia, 1867, a member of the Medical Association of North Carolina, died at his home in Liberty, N. C., July 5, from septicemia following a double pyonephrosis, after an illness of four months, aged 65.

John A. Rice, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1861; a pioneer of Waukesha County, Wis., and for several terms state senator, died at his home in Merton, Wis., August 18, after an illness of one year, aged 75.

Melvin F. Greenfield, M.D. New York University, New York, City, 1881; a former practitioner of Durhamville, N. Y.; for a number of years a medical examiner in that state, died suddenly at his home in Rockland, Mass., August 9, from heart disease, aged 47.

W. A. O'Daniel, M.D. Kentucky School of Medicine, Louisville, Ky., 1885, formerly city physician of Macon and later assistant physician at the State Sanatorium, Milledgeville, Ga., died at his home in Bullards, Ga., August 8, after a long illness, aged 41.

Frederick A. Roberts, M.D. Medico-Chirurgical College of Philadelphia, 1901, a trustee of the Public Library of Wilmington, Mass., died at his home in that place August 11 from peritonitis following an operation for appendicitis, aged 33.

Samuel Wayne Gamble, M.D. Medical College of the State of South Carolina, Charleston, 1888, formerly a member of the House of Representatives of South Carolina, died at his home at Gourdin, S. C., May 22, after an illness of three days.

Joseph A. Stansell, M.D. Starling Medical College, Ohio, 1865, dean of the medical profession in Forest, Ohio, where he has lived for nearly half a century, died at his home, August 11, from Bright's disease, after an illness of several weeks.

George Washington Ewen, a member of the Powell County (Ky.) Medical Society and an esteemed practitioner of Slade, died at his home in that place, August 1, from tuberculosis, after an illness of two years and four months, aged 48.

James MacNider, M.D. College of Physicians and Surgeons in the City of New York, 1896, formerly an interne in Roosevelt Hospital, New York City, died May 26 in a sanitarium in New York, from pneumonia following influenza, aged 32.

Alvah D. Dearborn, M.D. Medical School of Maine at Bowdoin College, Brunswick, 1870, city physician at Somerville, Mass., for several years, died at his home August, 19, after an illness of two years, from heart disease, aged 64.

James Napoleon Rutherford, M.D. Kentucky School of Medicine, Louisville, 1893, died at his home in Cotton Gin, Tex., July 12, from carcinoma of the pancreas, after an illness of two and a half months, aged 49.

Austin F. Morris, M.D. Bellevue Hospital Medical College, New York City, 1893, died at his country home in Warren County, N. J., August 22, from the effect of an automobile accident a year before, aged 38.

William Fegers, M.D. Northwestern University Medical School, Chicago, 1879, of McHenry, Ill., died suddenly at his camp at Palm Beach, Pistakee Bay, August 7, from heart disease, aged 72.

James Grange, M.D. University of Victoria College, Coburg, Ontario, 1860, a member of the Tri-State Medical Association, died at his home in Chattanooga, Tenn., from heart disease, August 3, aged 81.

John L. Shepard, M.D. Rush Medical College, Chicago, 1865, for many years a practitioner in Sheboygan Falls, Wis., died in the National Soldiers' Home, Milwaukee, August 17, aged 75.

Robert R. Livingston, M.D. Omaha Medical College, 1888, formerly of Plattsmouth, Neb., died at St. Elizabeth's Hospital, Lincoln, from an overdose of morhpin, July 23, aged about 40.

Sereno Burnell, M.D. New York University, New York City, 1859, one of the best known practitioners of Suffolk County, N.Y., died at his home in Holbrook, August 3, aged 87.

Edward L. Birch, M.D. Miami Medical College, Cincinnati, 1879, died at his home in Robinson, Ill., August 7, from ptomaine poisoning, after an illness of two months.

Frank F. Laird, M.D. Hahnemann Medical College, Philadelphia, 1880, formerly of Utica, N. Y., died at Atlantic City, N. J., August 20, from cardiac asthma, aged 50.

Reuben C. Curry, M.D. Medical Faculty of the University of Toronto, 1857; one of the oldest practitioners of Ontario, died recently at his home in Guelph, Ontario.

Wesley F. Collier, M.D. Missouri Medical College, St. Louis, 1880, formerly of Thomasville, Mo., died at his home in Benton, Mo., June 30, from nervous prostration.

William S. Campbell, M.D. Rush Medical College, Chicago, 1885, died suddenly at his home in Detroit, Mich., July 13, as a result of heat prostration, aged 68.

Louis Welty Fahrney, M.D. Jefferson Medical College, Philadelphia, 1891, died at his home in Hagerstown, Md., August 22, from nephritis, aged 48.

George D. Hamilton, M.D. University of Nashville Medical Department, 1899, a practitioner of Jackson, Tenn., surgeon of the Second Infantry, Tennessee National Guard, died in St. Joseph's Hospital, Memphis, August 18, after an operation for gallstones, aged 36.

D. W. L. Herrod (Examination, Indian Territory), was shot by Dr. Price Patterson at Maysville, I. T., August 11, and died a few hours later.

Jonathan G. Pelton, M.D. Geneva (N.Y.) Medical College, 1846, died at his home in Minneapolis, Minn., August 26, aged 81.

William Neil, M.D. St. Louis Medical College, 1877, died at his home in Pattonsburg, Mo., July 1, aged 64.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

METHODS OF PREPARING CATGUT.

Sayre, Pa., Aug. 15, 1906.

To the Editor:—Kindly give the method of preparing "Mayo's (iodized) catgut." Do the Mayos use the iodized gut exclusively, or do they also use the chromicised catgut and silk for part of their work? Will you also kindly give method of preparing chromicised catgut (20 day).

T. J. W.

Answer.—The Mayos have no method of their own for sterilizing catgut, but use what is known as the "Bartlett Gut," prepared after the method of W. Bartlett of St. Louis. Bartlett describes this method in the *Interstate Medical Journal,* March, 1905, in brief as follows:

"The strands are cut in convenient length, say 30 inches, and made into little coils about as large as a silver quarter. These coils are then strung like beads on to a thread so that the whole quantity can be conveniently handled by simply grasping the thread The string of catgut coils is dried for one hour at a temperature of 180 F. and then for a second hour at 220 F., the change in temperature being accomplished gradually. The catgut is then placed in liquid albolene, where it is allowed to remain until perfectly clear, in the sense that the term is used in the preparation of histologic specimens. This is usually accomplished in a few hours, though it has been Bartlett's custom to allow the gut to remain in the oil over night. The vessel containing the oil is next placed on a sandbath and the temperature raised during one hour to 320 F., and this temperature is maintained for a second hour. By seizing the thread with sterile forceps the catgut is lifted out of the oil and placed in a mixture of iodin crystals, 1 part, in Columbian spirits, 100 parts. In this fluid it is stored permanently, and is ready for use in twenty-four hours; the thread is then cut and withdrawn."

Chromicised catgut may be prepared as follows: The gut is freed from fat by soaking for twenty-four hours in ether. It is then soaked for about twenty-four hours in a watery solution of chromic acid from 1 to 4 per cent., dried in an oven, and boiled in cumol. The catgut may be chromicised after being sterilized by almost any method, as for instance the one mentioned above, by simply soaking the gut in a sterile, watery solution of chromic acid about one part to a thousand, from twenty-four to forty-eight hours.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of Medical Officers, U. S. Army, for the week ending Aug. 25, 1906:

Deshon, George D., surgeon, left Fort Des Moines, Iowa, with Eleventh Cavalry, en route to Camp of Instruction, Fort Riley, Kan.

Havard, Valery, asst.-surgeon general, Fauntleroy, P. C., asst.-surgeon, detailed to represent the Medical Department of the Army at the fifteenth annual meeting of the Association of Military Surgeons of the United States, to be held in Buffalo, N. Y., Sept. 11 to 14, 1906.

Huntington, P. W., asst.-surgeon, left Fort Rosecrans, Cal., en route to Camp of Instruction, Murray, Wash.

Waterhouse, S. M., asst.-surgeon, left Fort Worden en route to Camp Tacoma, Wash., for duty.

Hanner, John W., asst.-surgeon, left West Point, N. Y., with cadets on practice march.

Walker, Freeman V., asst.-surgeon, having been appointed to his former grade of assistant surgeon with rank of captain, is placed on the retired list of the Army, by direction of the President, Aug. 20, 1906.

O'Connor, R. P., asst.-surgeon, granted thirty days leave of absence.

Noble, R. E., asst.-surgeon, leave of absence extended one month.

Wing, Franklin F., dental surgeon, ordered to report to commanding general, Camp of Instruction near Fort D. A. Russell, Wyo., for duty.

Cass, W. E., contract surgeon, reports at Fort Worden, Wash., for temporary duty.

Wertenbaker, C. I., dental surgeon, returned to Madison Barracks, N. Y., from leave of absence.

Cutliffe, William O., contract surgeon, arrived at San Francisco, Cal., on three months' leave of absence.

Sanford, Joseph L., contract surgeon, arrived at San Francisco, Cal., on one month's leave of absence.

Cattermole, Charles A., contract surgeon, ordered to proceed from Manhattan, Nev., to San Francisco, Cal., and take transport to sail from the latter place on or about Sept. 5, 1906, for the Philippine Islands, and on arrival at Manila to report in person to the commanding general, Philippines Division, for assignment to duty.

Prentice, Arthur D., contract surgeon, relieved from duty in the Philippines Division, and ordered to proceed by first available transport to San Francisco, and on arrival report by telegraph to the Military Secretary of the Army for further orders.

Navy Changes.

Changes in the Medical Corps U S. Navy, for the week ending Aug. 25, 1906:

Elliot, M. S., surgeon, detached from the *Florida* and ordered to the *St. Louis*.

Ideu, P. A. surgeon, to the *Florida*.

Pease, T. N., asst.-surgeon, resignation as an assistant surgeon in the Navy accepted to take effect August 21, 1906:

Jones, A. McK., acting asst.-surgeon, to the Naval Hospital, Norfolk, Va.

Baker, M. C., acting asst.-surgeon, to the Naval Hospital, Newport, R. I.

Longabaugh, R. I., acting asst.-surgeon, ordered to Naval Hospital, Mare Island, Cal.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Aug. 22, 1906:

Pettus, W. J., assistant surgeon-general, granted leave of absence for thirteen days, from August 20.

Rosenau, M. J., P. A. surgeon, granted leave of absence for fourteen days from August 20.

Nydegger, J. A., P. A. surgeon, leave of absence granted for three months from August 11, amended to read one month and fifteen days from September 3.

Cumming, H. S., P. A. surgeon, granted leave of absence for one month from September 15.

Anderson, J. F., P. A. surgeon, detailed as temporary chairman of board convened July 2, 1906, to investigate the origin and prevalence of typhoid fever in the District of Columbia, to serve during the absence of P. A. Surgeon M. J. Rosenau, on fourteen days' leave from August 20.

Hunt, Reid, chief Division of Pharmacology, and Rochrig, A. M., pharmacist, detailed to represent the service at the 54th Annual Meeting of the American Pharmaceutical Association at Indianapolis, September 3.

Porter, J. Y., sanitary inspector, granted leave of absence for seven days from August 6.

Dunn, James, acting asst.-surgeon, granted leave of absence for twenty-three days from August 13.

Townsend, F., acting asst.-surgeon, granted leave of absence for seven days.

Goodman, F. S., pharmacist, granted leave of absence for ten days, from September 10.

Ryder, L. W., pharmacist, granted leave of absence for twenty-five days from August 20.

Carlton, C. G., pharmacist, granted leave of absence for twenty-four days on account of sickness from July 9.

Hall, L. P., pharmacist, granted leave of absence for seven days from August 17, under Paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 24, 1906:

SMALLPOX—UNITED STATES.

Illinois: Chicago, August 11-18, 2 cases.
Louisiana: New Orleans, August 4-18, 14 cases.
Oregon: General, July 1-31, 11 cases.
Tennessee: Knoxville, August 4-11, 1 case.
Utah: General, July 1-31, 32 cases.
Wisconsin: Appleton, August 11-18, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 7-14, 2 cases.
Brazil: Bahia, June 30-July 28, 15 cases; Rio de Janeiro, July 1-8, 1 case; July 22-29, 2 cases, 1 death.
Chile: Antofagasta, July 1-13, 23 cases, 4 deaths.
France: Paris, July 21-August 4, 7 cases.
India: Calcutta, June 30-July 7, 11 deaths; Madras, July 7-13, 3 deaths.
Russia: Odessa, July 21-28, 3 cases, 1 death; St. Petersburg, July 7-28, 8 cases, 3 deaths.
Siberia: Vladivostock, June 28-July 5, 3 cases.
Spain: Seville, July 1-31, 20 deaths.
Turkey: Constantinople, July 21-29, 1 death.
Uruguay: Montevideo, June 1-30, 1 death.

YELLOW FEVER—UNITED STATES.

Louisiana: New Iberia, August 19, 1 case.

YELLOW FEVER—FOREIGN.

Mexico: Merida, July 29-August 4, 6 cases, 2 deaths; Progreso, August 7, 1 case, 1 death.

CHOLERA.

India: Calcutta, June 30-July 7, 18 deaths; Madras, July 7-13, 12 deaths.

PLAGUE—INSULAR.

Hawaii: Honolulu, August 30, 1 death.

PLAGUE—FOREIGN.

Brazil: Rio de Janeiro, July 1-8, 2 cases; July 22-29, 1 case.
Chile: Antofagasta, July 1-13, 4 cases, 2 deaths.
China: Hongkong, June 30-July 7, 12 cases, 7 deaths.
Egypt: Alexandria, July 13-27, 11 cases, 6 deaths; Port Said, July 17, 1 case; Suez, July 14-27, 6 cases, 3 deaths.
Assioot Province: Assioot, July 19-28, 2 cases.
India: General, June 30-July 7, 630 cases, 536 deaths; Calcutta, June 30-July 7, 9 deaths.
Japan: Formosa, General, July 10-30, 45 cases, 40 deaths.
Persia: Seistan, June 23-July 22, 90 cases, 85 deaths.
Peru: Lima, July 14-21, 1 case; Mollendo, July 4-18, 2 cases, 2 deaths.

Society Proceedings

COMING MEETINGS.

Medical Soc. of the Missouri Valley, Council Bluffs, Iowa, Sept. 6-7.
Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

The President, Dr. Bart E. MacKenzie, Toronto, in the Chair.

Dr. MacKenzie delivered the president's annual address. He referred to the great problems that now confront the medical profession as a whole. These problems should be recognized to relate as closely to orthopedic surgeons as to any physicians; the specialist in any branch of medical work must always remember that first of all he is a member of the great profession of medicine, and that what affects the profession as a whole affects him. Subjects that especially unite orthopedic surgery to general medicine are tuberculosis and fresh fractures. Perhaps no group of men are so well qualified to care for fresh fractures as orthopedic surgeons. The orthopedist's experience in local treatment trains him especially well to treat also early paralyses, and neuroses that simulate organic lesions.

The president referred to the deaths of members during the year and Dr. Roswell Park, Buffalo, spoke of the pathology in the case of Dr. Louis A. Weigel, one of the members who had died. He said that the *x*-ray dermatitis on Dr. Weigel's hands came on about two years before he died. The right hand and part of the left had to be amputated on account of carcinomatous development, and in February, 1906, metastases were removed from the axillæ, and the breast was amputated. Dr. Weigel's illness was exceedingly painful, but was most bravely borne. He died a victim to his devotion to the Roentgen ray.

With reference in general to the effect of the Roentgen ray on the surface structures, Dr. Park said that apparently the blood vessels were primarily affected, producing blood stasis. A toxic substance is evolved, and this produces the dermatitis. The Roentgen ray can produce keratosis, but leads to cancer only indirectly through chronic irritation in the same way that a burn by ordinary heat may lead to malignant development.

Officers Elected.

The following officers were elected: President, Dr. Joel E. Goldthwait, Boston; vice-presidents, Dr. Henry Ling Taylor, New York; and Dr. Ansel G. Cook, Hartford, Conn.; secretary, Dr. Robert B. Osgood, Boston; treasurer, Dr. E. G. Brackett, Boston; executive committee, Dr. John Ridlon, Chicago; Dr. D. R. Townsend, New York; Dr. H. Augustus Wilson, Philadelphia; Dr. Goldthwait and Dr. Osgood, ex-officio.

The next meeting will be held in Washington, D. C., as a section of the Congress of American Physicians and Surgeons.

Scoliosis.

Dr. **Edwin W. Ryerson**, Chicago, read a paper entitled "A Case of Sclerosis Due to Injury of Abdominal Muscle." A typical sclerosis rapidly developed after abdominal section that had been made to repair a penetrating wound over McBurney's point. The wound had been kept open for drainage. The deformity was increasing in spite of treatment by exercises. If the condition continued to become worse, the author was disposed to consider excision of the scar and shortening of the now lengthened muscles.

Experimental Pressure on Spine.

Dr. **Robert Soutter**, Boston, read a paper entitled, "A Study of the Effects of Pressure on the Curve and Rotation of the Spine." Cadavera of subjects 5 and 12 years old were used. The spines were exposed by dissection, but the ligaments and rib attachments were not disturbed. The effects of side pressure at various levels and with the subjects in suspension, sitting, prone, and supine were studied. The results showed that pressure on the ribs could be utilized to correct lateral curvature, and indicated in which position of the subject this correction would be most effectively applied for the various types of curve.

(To be Continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

Despite the extreme heat, which was said to be the greatest in the history of Toronto for many years, the second meeting of the British Medical Association held outside of the United Kingdom was a marked success, and reflected the greatest possible credit on the association and on the various committees which had the arrangements in charge. These committees did their work thoroughly and well, the space provided for the registration and office force, the registration and the administration bureaus was ample, the section meeting-places were well grouped together, and, as a rule, excellently adapted for their purposes.

Toronto and Its University.

The University of Toronto, beautifully located on high ground, within easy distance of the central portion of the city, gave up practically all its buildings for the use of the association. In the main building were located the administration office, registration bureau, information bureau, rest, smoking and tea rooms, post office, exhibits, office of the *British Medical Journal* and dining hall. Here, also, the sections on dermatology, laryngology and otology, obstetrics and gynecology, ophthalmology, pediatrics and psychology held their sessions. The sections on anatomy, and pathology and bacteriology met in the biological building; the sections on medicine, physiology and therapeutics in the medical building, the section on state medicine in the new science building, and the section on surgery in the chemistry building. The pathologic museum was located in the laboratories of the medical building.

Registration.

The total registration up to noon August 24, was 1,986, of whom 650 were from the United States. Of these 1,390 were registered as members and 596 as visitors.

Of those registered as members, 1,078 were from the Dominion of Canada, 145 from England, 48 from Scotland, 19 from Ireland, 4 from Wales, 17 from the British colonies, 3 from Continental Europe, and 54 from the United States, chiefly from the following states: New York, 9; Illinois, 7; Massachusetts, 5; Michigan, 4, etc. Of the 596 visitors, 8 registered from Europe, 26 from Canada, and the remainder, 562, from the United States, chiefly as follows: New York, 152; Pennsylvania, 55; Ohio, 49; Illinois, 47; Michigan, 43; Massachusetts, 38; Maryland, 36.

Work in all the sections commenced on the morning of August 21 and continued each morning from 9:30 until 12:30 during the meeting.

Opening Ceremonies.

On the afternoon of August 21, the formal opening exercises were held in the beautiful new, and still unfinished, convocation hall on the university grounds. The officials and guests in academic gowns and uniforms formed in procession in the quadrangle and marched across the grounds to the hall. The valedictory address was delivered by the retiring president, Mr. George Cooper Franklin, Leicester, who introduced the President-elect, Dr. Richard Andrew Reeve, dean of the Medical Faculty of the University of Toronto, and thus formally inducted him into office. Dr. Frederic N. G. Starr, Toronto, honorary local secretary, presented the president with his badge of office, a gold locket bearing the arms of the City of Toronto and of the university, and containing a photograph of the president's "very own child," convocation hall.

Reception to Delegates and Addresses of Welcome.

Dr. Starr then called the rolls of the vice-presidents, of delegates from the council, from representative meetings, from universities and colleges, from colonial branches, from the American Medical Association, and from Europe, and each delegate, as his name was called, came to the platform and was welcomed by the president.

The retiring president, Mr. George Cooper Franklin, F.R.C.S., was elected a vice-president of the association for life on account of his distinguished services to the association, and the same honor was conferred on Sir Victor Horsley.

Addresses of welcome to the association were delivered by Mayor Coatsworth of Toronto, on behalf of the city; by Mr. Irving H. Cameron, F.R.C.S., Toronto, on behalf of the local reception committee; by Dr. Alexander McPhedran, Toronto, on behalf of the Canadian Medical Association, and by Dr. George A. Bingham, Toronto, on behalf of the Ontario Medical Association.

President's Address.

In his annual address, which closed the proceedings, Dr. Richard Andrew Reeve mentioned briefly the history of the association, which in 1832 numbered only 140, but which now has a membership of more than 20,000. He made special mention of the research work which the association is supervising, and on which it has spent thus far about $70,000 of its funds. He then spoke of the progress of medicine during the last decade, giving due credit to Lister, Pasteur, Metchnikoff and Behring, through whose efforts had been given to the world antisepsis, asepsis, immunity and serum therapy. Nursing has become a fine art; diphtheria has been largely robbed of its terrors; and the mortality of typhoid fever has been decreased one-half, but notwithstanding all this the mortality from cancer is steadily increasing; tuberculosis is still prevalent, and the death rate from infantile diseases is very high, but not now on the increase. There is still ample scope for state medicine to apply its persuasive powers until men are made to think aright about matters which affect the health and well being of the community. In the matter of compulsory vaccination, the paternalism of the state with the aid of the medical profession should override all scruples. When the procedure is done aseptically with pure vaccine, the risk is practically nil. He advocated the prophylactic non-medical treatment of disease. The best remedies are not drugs, but diet, exercise, bathing and massage. These are also preventives of disease, and if they be followed, the common or ordinary complaints will be in a large degree averted. He paid grateful tribute to Sir Victor Horsley for his research wark in physiology, and mentioned especially the work of the lamented Lazear and Meyers.

Honorary Degrees Conferred.

On Thursday the Senate of Toronto University conferred the honorary degree of doctor of laws on the following visitors and delegates: Dr. W. J. Mayo, Rochester, Minn., president of the American Medical Association; Dr. Louis Lapicque, Paris; Prof. Dr. L. Aschoff, Freiburg, Germany; Sir Thomas Clifford Allbutt, Cambridge; Dr. A. H. Freeland Barbour, Edinburgh;

Sir Thomas Barlow, M.D., London; Sir James Barr, M.D., Liverpool; Sir William Broadbent, M.D., London; Dr. Henry William Langley Brown, West Bromwich, chairman of the council of the British Medical Association; Mr. George Cooper Franklin, F.R.C.S., Leicester, past-president of the British Medical Association; Dr. W. Dobinson, Halliburton, London; Sir Victor Horsley, F.R.C.S., London; Dr. Donald McAlister, Cambridge, president of the British Medical Council, and Sir William Julius Mickle, London.

THE GENERAL ADDRESSES.

Teaching of Obstetrics.

This subject was chosen by Dr. W. S. A. Griffith for the address on obstetrics. He says that some of the obvious imperfections in the teaching of obstetrics are for the most part due to the difficulty of providing practical clinical teaching. When attended by students who have had the necessary preliminary clinical teaching the out-patient maternities provide the most important and valuable training that any medical student can obtain, for as in private practice he is then placed almost entirely on his own resources. Another factor which has delayed the provision of adequate teaching in obstetrics, is the old ingrained idea that the process of labor is a single function of Nature, requiring for the most part a competent nurse only and that the practitioners of obstetrics, although recognized in theory as of equal standing, are to be looked down on in comparison with their colleagues in the other great branches of medicine and surgery. As the result of this, both in teaching and in examinations, the study of obstetrics has been relegated to a position totally unworthy of its immense importance to the practitioner and to the national welfare. Another defect in the teaching is due to the fact that the lecturers frequently have had little experience in the practice of obstetrics. The lecturer presides over no obstetric clinic, and has often had but little experience. He is an obstetrician in name, not in practice. In many of the provincial schools the lecturer is a successful general practitioner, to whom the fates have given a large obstetric experience, but whose experience as a teacher may have been quite inadequate. To place the teaching of obstetrics on the same basis as the teaching of medicine and surgery, it is essential that the clinical teaching be given in hospitals provided for the purpose, where a sufficient and continuous series of patients can be admitted, and having a large externe department where the advanced students can attend patients at their own homes. Lying-in wards in a general hospital would be equally valuable if there were a sufficiently large number of beds to ensure a regular series of patients in sufficient numbers. A large number of cases is less of a necessity than a continuous series. Every clinical teacher of obstetrics should be a practitioner of obstetrics having charge of the obstetric wards and externe maternity department, whose office as professor or lecturer would necessarily terminate with the cessation of his clinical duties. While it is perfectly clear that there are many general practitioners able to give excellent instruction in some of the details of practical midwifery, it is equally certain that there are many others whose methods of practice, especially in the disregard of aseptic precautions, would make them dangerous teachers, and would lead to the continuance of methods which tend to the perpetuation of the still high mortality from puerperal fever. The training of the student is also discussed.

Technic of Operations on Central Nervous System.

Sir Victor Horsley discussed this subject in his address in surgery. He said that the advance in technic of the surgical treatment of diseases of the brain and the spinal cord has been relatively less than the improvement in our knowledge of the seat and nature of the diseases for which surgical intervention is useful and necessary. Correct diagnosis of these affections is still far to seek, and yet operative treatment in such a difficult field is often expected to yield equally good results as the relatively easier and simpler work of curing hernias or of removing abdominal tumors. In this connection Horsley considers both the palliative and the curative surgical procedures to be adopted, the details of these procedures, such as previous preparation, anesthesia, maintenance of the bodily temperature, etc. Although he at one time favored a combined anesthesia of morphin with chloroform, he now uses pure chloroform. Ether he regards inadmissible as an anesthetic in operations on the central nervous system. To prevent shock and to maintain the physiologic energy during these operations on the brain, the wound should be irrigated constantly, usually with a solution of sublimate, 1 to 10,000, or with saline solution at a temperature of 115. This will also arrest capillary and arterial hemorrhage. Venous bleeding and capillary oozing can be controlled by the inhalation of oxygen. As to the method of opening the skull, the bone should be divided with as little vertically applied force as possible and removed with the least possible pressure on the brain and dura. This can best be done by first removing a trephine disc, then marking with a large saw the area to be removed, and finally cutting away the bone with a large bone forceps, all traction being directed outward. Horsley says that the less drainage is employed the better, and consequently every effort should be made to close the skin wound as early as possible. In all these cases operations should be resorted to as early as possible and the tumor should be freely exposed and examined and extirpated with the surrounding tissue. If it can not be removed without undue interference with important or essential structures, there remains some possibility of its undergoing retrogression in a certain number of cases.

The Circulation Viewed from the Periphery.

Sir James Barr took the above as the subject of the address in medicine. Diseases of the heart most frequently arise from causes acting on the periphery and the man who studies the circulation with the aid of the stethoscope only, is a positive danger to society. The capillaries varying from 0.5 to 1 mm. in length and from 7 to 13 microns in diameter, have a blood pressure of from 50 to 2,000 mm. of water and a velocity of from 0.5 to 25 mm. per second. Attempts to arrive at their capacity or sectional area have given unreliable results, because of the complicated factors influencing the pressure and rate of flow. Barr estimates the velocity of the capillary circulation by pressure on the skin driving out the blood, and noting the time occupied in its return. The velocity of the flow and the pressure stand in an inverse relation to each other; the greater the obstruction to the outflow the greater the capillary pressure and the less velocity of the blood in them. If an obstruction to venous outflow is imposed, the pressure in the veins tends to approach but does not equal that in the capillaries, and the pressure in the capillaries approaches but does not equal that in the arteries. Gravity increases the pressure in the capillaries in a varying degree in different persons, but seldom to more than half the difference in the hydrostatic pressure. The velocity in the capillaries varies as the general blood pressure, but is diminished by contraction of the arterioles which supply the part. The blood in the capillaries becomes surcharged with carbon dioxid when the velocity is reduced below 1 mm. per second, giving a dusky hue to the skin; this is often more apparent in the upper extremities because the circulation is more active in the capillaries of the feet on account of gravity. Viscosity of the blood, normally five times that of distilled water, varies greatly, is increased by CO_2, diminished by high temperature, and is increased in many diseases and forms the chief obstacle to the flow of blood through the capillaries. The arterioles interpose an obstruction which reduces the effect of arterial pressure on the capillaries; hence the more the arterioles are contracted the less the pressure in the capillaries and *vice versa*. The regulation of the circulation by the vasomotor nerves saves the nerve centers of the brain from being completely depleted as happens to a rabbit with paralyzed vasomotor nerves when he is hung up by the ears. The varying pressure to which the walls of the capillaries are subject and the permeability of the vessel walls account, in the author's opinion, for the phenomena of transudation and absorption, without assuming a secretory activity on the part of the endothelia. Liquid is forced out near the arterial end where the pressure is high and enters again near the venous end where pressure is low. A high pressure causes the exudation of a liquid low in albumin because albumin does not pass out as readily as water.

The capillary circulation of various areas of the body merits special consideration. In the skin the fulness of the capillaries varies greatly from variations in the arterioles under vasomotor control; in many states of pallor they are early, in local syncope, entirely empty. With general vasomotor paralysis the intracapillary pressure is increased, the velocity diminished; in local paralysis, the general blood pressure being maintained, both velocity and pressure are increased. After meals there is an exudation of lymph so that blood taken from the finger is mixed with this lymph and this mixture showing increase of leucocytes, has fallaciously led to the belief in a general digestion leucocytosis not shown in this way. The author admits a digestion leucocytosis, but it is in the splanchnic area, the capillaries given off in the deeper structures are large and subject to high pressure to provide for secretion, while the later derived vessels are fine, ramify near the surface, are under low pressure, and here is where absorption takes place. The capillaries of the liver are very permeable and exudation readily takes place in the first stage of cirrhosis or in cardiac weakness. The liver acts as a reservoir for the right side of the heart.

The capillaries of the kidney are protected from excessive pressure by contraction of the arterioles, and from backward venous pressure by a second set of veins. In orthostatic albuminuria dilatation of the vessels occurs in the upright posture. In contracted kidney the pressure is high, the filtrate bulky, but not concentrated.

The capillaries and arterioles of the muscles are supplementary to those of the splanchnic area. The capillaries and arterioles of the brain are not controlled apparently by vasomotor nerves. The flow through them is rapid and the lateral pressure comparatively small. Hence exudation is small and the cerebrospinal fluid is poor in albumin. The coronary vessels also appear to be devoid of vasomotor nerves; the larger branches under the strain of aortic pressure are very liable to degeneration, but the terminal branches are not usually much affected. Hence if a coronary artery is blocked, the heart may be supplied from the venous side. The circulation in the lungs depends chiefly on the force of the right heart. The vessels are subject to very slight change of caliber under nervous action. Large areas may be cut off by inflammation or pressure and then the burden on the right heart is greater. Hence the chief cause of death in pneumonia is failure of the right heart. The lungs act as a reservoir to the left side of the heart.

The lymph circulation depends on the capillary circulation, but Oliver has shown that it is markedly influenced by certain ingredients of the food, in themselves not nutritive, such as uric acid, xanthin, etc., which have the power to influence the capillary circulation. The flow in the veins is subject to little obstruction to the vessel walls and depends on three factors: (a), action of respiration, inspiration causing a negative, expiration a positive pressure in the large veins near the chest; (b), hydrostatic effect of the column of blood; (c), the pressure transmitted from the capillaries.

After explaining the nicety of the relations between the resiliency of the arteries and the action of the heart, the significance of a slow transmission of the pulse wave as evidence of a properly yielding artery, Barr states that digitalis is sometimes useful in aortic regurgitation although usually condemned in this disease. A combination of cardiac tonics with vasomotor relaxants is sometimes useful, but it is always well to have a clear indication of the object to be accomplished. The following pertinent sentence is worthy of marked attention. "The circulation of the blood is one of the most perfect pieces of mechanism in the universe, and no amateur should be trusted to keep it in repair, yet people pour tons of baneful drugs down their throats every year on the recommendation of advertising quacks, who care nothing for the lives and health of the community, and care for nothing but their money." The relations of arterial pressure are explained at some length and the point is brought out that it is a relaxed rather than a contracted artery which expands in the systole and which becomes tortuous.

Entertainments.

The entertainment provided for the delegates included a garden party given by the lieutenant-governor and Mrs. Mortimer Clarke, in the Government House grounds, on Tuesday afternoon; a reception by the president and Mrs. Reeves on the university quadrangle on the same evening; garden parties given by H. C. Cox, Esq., and Mrs. Cox and by the trustees of the Toronto General Hospital on Wednesday afternoon; a reception given by the mayor and city council at the new city hall on the same evening; a band concert in the dean's garden at the University on Thursday evening; a garden party on the invitation of E. B. Osler, M.P., and Mrs. Osler at Rosedale Friday evening, and a reception given by the commander and the members of the Royal Canadian Yacht Club at the club house on the island on the same evening. There were also a number of special entertainments for the ladies and a number of excursions on Saturday to Niagara Falls, Muskoka Lakes, the Ontario Agricultural College at Guelph, etc.

Dominion Alliance Luncheon.

At a luncheon given by the Dominion Alliance to the association, a strong representation of temperance workers was present.

The principal address was made by Sir Victor Horsley, who spoke strongly against the use of alcohol as a drug and mentioned that for several years the British government had been urged to take more definite steps to give both hygiene and temperance a prominent place in the elementary instruction of the nation. He stated that 40 years ago the expenditure for alcohol in the seven great London hospitals was about $40,000 and for milk about $10,000, while at the present time the expenditure for alcohol was about $15,000 and for milk about $40,000 annually, showing that the two liquids had changed places. Action has long been urged by the association whereby the educational value of temperance and hygiene might be more fully recognized. He expressed the hope that progress would continue along these lines whereby Great Britain would assume her proper place, would resist the physical deterioration of nations and give due prominence to conditions making for improvement.

Dr. George Sims Woodhead, Cambridge, was of the opinion that there had been a change of opinion in regard to the use of alcohol and that men who at one time had looked on alcohol as valuable in the treatment of febrile conditions, now believed that the agent exercised an injurious effect on the resisting powers of the patient against disease. He recalled the statement of Muirhead that he had never any fear for pneumonia patients who were total abstainers. He believed that alcohol would gradually fall into disuse in medicine, but until all question concerning its effects had been definitely settled, physicians should be very careful as to the use of alcohol and should resort to other drugs recognized as substitutes.

Dr. Henry O. Marcy, Boston, moved a vote of thanks to the alliance committee and spoke of the work done by the American Association for the Study and Prevention of Inebriety

Annual Dinner.

On Thursday evening, about five hundred guests sat down to the annual banquet of the association, over which the president of the association presided. Toasts were responded to by the lieutenant-governor, Sir James Grant, Montreal, who spoke for the Parliament, and by E. B. Osler, M.P. Prof. Goldwin Smith spoke to the toast of the British Medical Association. He sketched briefly the progress of modern medical science, the development of hospitals, the training of nurses, etc., and charged the association to guard its privileges, "for they are not the privileges of your profession alone but the safeguard of society against empirical murder." He closed with a tribute of hospitality and greeting. Sir William Broadbent and Dr. MacDonald, Toronto, responded for the association, Sir William Hingston proposed the health of the guests. A few brief remarks in reply were made by Prof. Dr. Aschoff, for Germany, Dr. Lapicque for France, Dr. Frederick W. Mott for England, and Dr. W. J. Mayo, representing the American medical profession.

(To be Continued.)

Miscellany

Advertisers and the Gullible.—The Dutch member of the newly founded International Antiquackery Association, van Elk, tells the story that an advertisement appeared in the papers stating that for 75 cents a powder would be sent which, if scattered on the waters of a stream or pond, would stock it with edible fish. A man sent the 75 cents for the powder, but his money was returned to him with the statement that the advertisement was inserted on a wager that no paper would accept such a nonsensical advertisement and that no one would be found foolish enough to respond to it if published. The letter added that the applicant was not the only one; he had been preceded by 256 others.

Experimental Arteriosclerosis and Iodin.—According to an item in the *Med. Klinik* for April 29, Koranyi recently reported at a scientific meeting at Budapest that he had been able to control arteriosclerosis. He injected 17 rabbits at two-day intervals with 0.15 c.c. of a standard preparation of suprarenal extract. A small amount of a preparation of iodin was injected at the same time, also intravenously. After about 9 injections the animals were killed. In 8 of the 9 animals who had not been injected with iodin changes were found in the aorta characteristic of the "adrenalin arteriosclerosis" first described by Josué. Only one of the animals was sound in this respect, while of the animals treated with iodin, 6 were sound, and merely slight evidences of the arteriosclerosis were found in the 2 others. It seems evident from this research that iodin has a favorable influence on the arteries, modifying the great fluctuations of the blood pressure which are probably the principal factor in the experimental arteriosclerosis.

Auto-Narcosis for the Wounded and Others in Severe Pain.—We learn that Prof. C. L. Schleich of Berlin has recently published a pamphlet entitled "Auto-narcosis for the Wounded in War and Peace"—"Die Selbstnarkose der Verwundeten in Krieg und Frieden." It describes a little contrivance which he thinks may prove very useful. A small aluminum case holds three small bottles, each containing a long cotton wad fastened to the cork and impregnated with 50 gm. of his anesthetic mixture. This consists of 2 parts ethyl chlorid, 4 parts chloroform and 12 parts ether, the whole having a boiling point at 38 C., the fumes thus being of the same tension as the air in the lungs. The stopper is drawn from one of the bottles and the fumes inhaled. Analgesia is immediate and is followed by profound sleep. He believes that this harmless method of auto-anesthesia or its equivalent is destined to supplant morphin hypodermics. The appliances should be kept on hand in mines, factories and elsewhere, and the anesthetic be given before transporting the wounded persons.

Photographing the Dead for Identification.—The London *Lancet* for May 5 states that the coroner at two recent inquests commented on the unsatisfactory character of the photographs of the unidentified dead taken by the police authorities. It adds that Dr. Minovici has contributed a valuable communication to this subject from his experience as director of the Medicolegal Institute of Bucharest. He describes his methods in an article published in the *Archives d'Anthropologie Criminelle* for Nov. 15, 1904. He substitutes artificial eyes, and gives a natural appearance to the lids by means of lead foil or by pinning them with a fine pin to the eyeball. The jaws are drawn together with threads, and the face drawn to a natural expression by an arrangement of pins, evacuating accumulations of gases by incision in the scalp or mouth. He gives photographs of the various steps of this preparation of the corpse for photography, and states that by this means he was successful in one case in which the body had been immersed in water for six weeks, the identity being finally established by the photograph.

Injurious Influence of Night Work on the Composition of the Blood.—Gardenghi has been conducting research which apparently shows that light is as indispensable to human beings as to plants for normal growth and development. There seems to be a deficiency in the assimilation of iron under the influence of the lack of daylight, with consequent deficient formation of hemoglobin. Light seems to be required for normal production of hemoglobin the same as for the production of chlorophyll in plants. He presented the conclusions of his research at the recent International Congress for Professional Affections at Milan, dwelling especially on the harmfulness of night work. Long series of examinations of bakers at Parma, his home, showed that while the proportions of the blood corpuscles were about normal, the percentage of hemoglobin was very much below par in those who worked exclusively during the night. His article is reproduced in German in the *Wien. klin.-therap. Wochschr.*, xiii, 697.

Quackery.—In the address to the graduates at Edinburgh university, an abstract of which appears in the *Medical Press*, August 8, Thomas Annandale, professor of surgery, said that two theories have been suggested to explain why primitive man first had recourse to internal remedies for the cure of disease, the one being that it was accidental and the other that it was in imitation of the lower animals. He referred to Pliny's account of the origin of venesection that the hippopotamus, having become too fat and unwieldly through overeating, thrust his nose against a sharp-pointed reed, and when he had drawn sufficient blood closed the wound with clay. He said that probably the first special treatment of disease was due to the Egyptians or Chaldeans; from them the Greeks obtained their knowledge, and Cheiron was the first to instruct his countrymen, among them Esculapius, who is credited with being the originator of medicine as a distinct profession. Between the days Esculapius, who flourished in 1200 B.C., and those of Hippocrates, 400 years later, medicine and myth are inextricably intermingled; the practice of the art seems to have been in the hands of a priesthood, who worshiped in temples devoted to Esculapius as the god of physic. With the writings of Hippocrates a new era dawned, for they show a marvelous knowledge of injuries and disease and contain methods of treatment founded on sound principles. As knowledge and civilization advanced, although improvements in the art of medicine took place, quackery continued rampant. The credulity which the study of quackery discovers almost approaches monomania or insanity. This credulity is explained by the fact that in all times there have been men and women of strong personalities and unlimited self-assertion who dominate their fellow creatures and exercise a power for evil as well as good, and it is also explained by the natural tendency of a patient with a chronic illness to seek help from any source. He mentioned the exponents of quackery in the past. There was Buley, for instance, in the days of Edward VI, who gave roasted rats as remedies to sick children; touching for the king's evil, which attained its height in the reign of Charles II; the quack oculists of Queen Anne, who suffered from weak eyes and was treated by William Reade, a tailor, and Roger Grant, a cobbler and Anabaptist preacher. Mesmer flourished in 1776, and a commission of the French Academy of Science was deputed by the king to investigate his claims. Among noted quacks of the past, Annandale said, were Katterfelto, who wandered through the country with a caravan full of black cats and was finally condemned as a vagabond by the mayor of Shrewsbury; a Dr. Graham, who sold an elixir of life to any one who would pay him $5,000 for it, and conducted a Temple of Health, in which Lady Hamilton, Lord Nelson's goddess, took part in musical performances. Again, there was the fat, ugly, tippling Mrs. Mapp, with her carriage and four, who was esteemed as a bone-setter and known popularly as "Crazy Sally of Epsom." A very notorious quack was St. John Long, son of an Irish basketmaker, who acquired fame as a healer. His house in Harley Street was flocked to by the rank and fashion of the day, who were treated by inhaling some mixture through a tube. The street was often blocked by his patients' carriages; he was received into the best society; it is said that he made $67,000 in one year. He ended by being tried for manslaughter at the Old Bailey, but escaped with a fine of $1,250. Faith cures and cures acting on the imagination have thus flourished from very early times, Annandale said, and more recently a faith cure under the name of Christian Science has sprung up. In this history is repeating itself. In ancient and more modern days so-called faith cures have been carried out by the aid of ceremonies and incantations and the erection of temples to aid the imagination.

According to what we read and hear, Eddyites are following in the same footsteps. If they aid in promoting temperance in alcohol and tobacco they will do good, but if they profess to cure disease by their methods or to assert that there is no such thing as real pain, then we are justified in calling them quacks. How can quackery be checked? In the first place, medical men must not practice quackery themselves, for it is too true that it exists inside as well as outside of the profession. Then it is important to individualize in treatment, so that patients may reap the greatest benefit, while careful and accurate diagnosis and prognosis will help to guard against disappointment. In Great Britain, he said, there is no legislation against quackery. The government receives $1,500.000 annually from the licenses and stamp duties on the sale of "patent medicines." Many "patent medicines" in no way comply with the law requiring that they must be genuine original inventions, and that a complete description of them must be filed at the patent office. In both France and Germany there is at present a great deal of agitation in favor of greater stringency in dealing with quackery and stricter supervision of proprietary remedies. In conclusion he said that it is important to realize the responsibilities resting on those entering on the practice of medicine, both in exercising the sympathetic faculty and in cultivating friendly intercourse with patients of all classes.

The Choice of a Holiday.—The summer holiday is usually believed to be a season for recuperation and for renovation, says the *Medical Press;* a time when the jaded tissues are able to cast off effete products of over-activity, and to lay in a store of energy for the coming months. If the holiday is to be this, and not a mere new-sensation-hunting performance, the choice of the place in which it is to be passed is of great importance. To go to a seaside town or a mountainous district simply because a friend has gone thither and liked it, is not to plan one's holiday scientifically; which is another way of saying that for a holiday to do one good, the selection of the place where it is to be passed must be determined by the necessities and conditions of the individual. To many delicate women strong breezes and bracing air cause exhaustion and prostration, while, again, the relaxing atmosphere of some sheltered resorts sends the young and vigorous home but little the better for the trip. Especially needful is the exercise of care in advising old people as to their change. To send elderly and overworked men to the high altitudes is to cause them some not inconsiderable danger of apoplexy, and if they are asthmatic or subject to chronic bronchitis the rarified air of high mountains may cause ruinous damage to lungs and heart. Climatology as an exact science is yet in its infancy, but it is sufficiently advanced for a well-educated medical man to be able to advise wisely on the choice of a holiday resort, and people generally would do well to consult their professional attendant before booking rooms a month or six weeks ahead.

Travel Notes

(*Continued from page 612.*)

DISEASES AND HOSPITALS OF PORTUGUESE EAST AFRICA.

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CHICAGO.

Portugal has a claim on Africa by the right of discovery, and in the apportionment of the country by the great powers of Europe she has held her own and her flag floats in the breeze of both coasts. Her possession on the east coast consists of a long, narrow strip of land, extending from German East Africa southward to Tongoland and including the Island of Mozambique. The country is only thinly settled, owing to the prevalence of malaria, which makes it dangerous for Europeans to make their homes anywhere on the vast stretch of lowlands, where the soil is most productive. The Portuguese have to contend here, like their neighbors, the Germans, with all kinds of tropical diseases, notably malaria and dysentery.

MOZAMBIQUE.

Boys who study geography are sure to preserve the names of certain places, cities, rivers, capes, islands, etc., in their memory long after they have forgotten the exact boundaries of familiar states and countries and the length and course of well-known rivers. The names that have clung to me ever since I left the hard benches of the country schoolhouse were Tahiti, Zanzibar and Mozambique. I have now seen all of these places and none of them has presented the aspects which would correspond with the mental picture that I had drawn of them. Of these historic and interesting islands, Mozambique was the most disappointing. I had dreamed of a larger island with volcanic mountains and valleys green with luxuriant tropic vegetation, noble wild animals, birds of plumage, monkeys traveling over land by leaping from tree to tree, using their long mobile tails as an additional and most important prehensile limb; a very ancient city, with streets so narrow that two persons would find it difficult to walk abreast. Imagine my surprise when we sighted an island in the small Mokambo Bay, almost filling the same and only three miles long and on an average not more than three-quarters of a mile wide, flat and sandy, a little oasis in the Indian Ocean, hugging the mainland closely, as if in fear of being engulfed by the sea, with here and there a timid palm raising its feathery crown above the plain, square, white, two- and one-story flat-roofed houses. As we came nearer a fleet of East Indian dhous was seen anchored in front of the landing-place, as well as a small gunboat with four guns, flying the Portuguese flag. The official inspection by the health officer and the custom-house officials was over in a short time, and we at once went ashore in a rowboat to utilize the few hours to the best advantage in seeing the sights of the city. Our haste proved useless, as there was not much to be seen. There are neither horses nor any kind of traction or riding animals in the city, and the only conveyance obtainable for those who can not or are not willing to walk is a jinrikisha. The blacks here make as good jinrikisha men as the Japanese, who are experts in this kind of getting about.

Military and Civil Hospital Mozambique.

Mozambique, a city of 7,000 to 8.000 inhabitants, has no hotel and no regular restaurants. The city has many wine-houses, but has made no satisfactory provisions for the hungry stranger, who is glad to return to his ship when mealtime comes. The streets are in excellent condition, but sidewalks are either very narrow or entirely wanting. A few little parks with scrubby, hardy shade-trees relieve the eyes, which everywhere else see nothing but sand. Trees and flowers show by their puny appearance their burning thirst for water. All the shops are small, containing only what the people most need. The blacks here are very independent in their bearing, showing very plainly that they have the upper hand in the management of the affairs of the city. The small military force stationed here, as well as the police, is made up exclusively of blacks under the command of white officers. We visited the market and saw what is brought over from the nearby mainland and what the sea furnishes. Several negro women, the most ugly and vicious-looking that we have seen so far, who were selling palm wine, did the best business. The wine in large earthen jars was still fermenting and bubbling. Two cents bought a gourdbowlful, holding about a quart. Two such doses make the black happy for the balance of the day. The behavior of the Amazons who dispensed this stuff was enough to show that they had done their share in emptying their vessels. We tasted this palm toddy. It was cool and pleasant to the taste, slightly sour and had some of the pungency of dry champagne. There were fish, fresh and fried, bananas, thin, narrow strips of bread fresh from the stove, served hot on banana leaves, cocoanuts, papaya, manihot roots, raw and boiled, several kinds of capsicum, small bundles of split firewood, etc., all articles for which only the natives have use. What little is left of the island outside of the city is a sandy desert.

The sight that I presume every visitor who lands here goes to see is the old fort of St. Sebastian. It is this ancient fort, with its grim, high walls blackened with age, which is seen first when the city comes in view. The building of this fort dates to the time of Da Gama, when he sailed along the east coast of Africa in search of a new waterway to East India. The fort is built on a narrow spit of the island, covering its entire width, and the thick, solid walls rise from the sea on three sides. It is kept in good repair and now serves as a barrack for the soldiers. The walls rise high above the inner even court, where the black soldiers are drilled in the art of war. On the top of the rampart facing the sea the portholes are occupied by ancient cannons of prodigious size, mounted on carriages with rickety wooden wheels. These fearful engines of war probably have never spoken, but were ready centuries ago to spit fire and destruction had any foreign power made an attempt to gain possession of the little island. This ancient citadel, with its historic guns, would be helpless against a single modern battleship, but it has been respected in the past, and may well be proud to have outlived other more formidable strongholds over which the flag of many a conqueror has floated since their foundations were laid. The veteran fortress shows only one scar, and that was made by an accidental explosion of dynamite and is now being repaired with the utmost care.

The Roman Catholic church rules here supreme. The cathedral is a very modest church and the other two churches show no greater pretensions. The church has been prudent in the expenditure of money. Schools had to be erected and maintained. In the yard of one of these schools we saw the black children at play after the morning lessons were over, and they were indeed a cheerful, happy lot.

Portuguese and natives live on the best of terms throughout this possession. There is no conflict nor even manifest dissatisfaction here. The government treats its black subjects leniently and with much consideration. Experience has shown that the negro can be led, but not forced, to do a thing which comes in conflict with his own ideas of right and justice; he is a lamb when led, a mule when forced. Only two Germans and nine Englishmen live in the city and only a very few East Indians and Arabs. Mozambique has its own postage stamps, and the money in circulation is coined for Portuguese East Africa.

MOZAMBIQUE MILITARY AND CIVIL HOSPITAL.

I have never been in a colony or protectorate where the native sick are treated with so much consideration and are taken care of so well as in Portuguese East Africa. The colony has no separate hospitals for Europeans, as in British and in German East Africa, but white and black live under the same roof and receive the same care. We miss here the superb, costly buildings set aside exclusively for the care of Europeans, such as I have described in speaking of British East Africa and German East Africa. Of all nations owning or protecting foreign lands, Portugal has had the longest experience and has learned how to treat alien subjects without causing friction. The sentiments of the people are considered in formulating rules for their government. Perhaps the most important secret of Portuguese peaceful colonial rule is found in the fact that the line of division between the officers and the people of the home government and the blacks is not as sharply drawn as in the colonies of other nations. It is the conspicuous preference given to the whites that stings the blacks, the rightful owners of the soil. The Portuguese have learned this by a long experience and shape their rules accordingly.

I can give no more striking example of Portugal's lenient foreign policy than by a brief description of the Mozambique Military and Civil Hospital, which answers to the construction and administration of every other government hospital in Portuguese East Africa, of which there are several. In the first place, these hospitals are built and, at least in part, maintained by the government, and are in charge of Portuguese military surgeons, especially trained for their manifold functions. In the second place, the sick in the colony, white and black, officers, government officials, soldiers, policemen, rich and poor, educated and ignorant, old and young, men, women and children, are under the same administration. While the whites are given preferences, these do not stand out in the eyes of the natives in such sharp lines as in the hospitals of most of the other colonies. The same doctor who treats the whites attends to the blacks; the same sisters who nurse the Europeans take care of the natives. The difference, if any, is in degree, not in kind, and it is considerations like these that the negro knows how to appreciate.

The hospital was built twenty-five years ago, and at that time it would have compared well with most of the hospitals of Europe and America in construction and equipment. Its architecture is decidedly Spanish in style. Like all other substantial houses on the coast of Africa, it is built of rough stones of coral rock, with a heavy inside and outside coating of cement. The two main buildings are two stories high and serve for private rooms of patients of the first class, small wards for the second class, directors' apartments, pharmacy, storerooms, chapel and dormitory for the sisters. The large wards for patients of the third class and all charity cases are in one-story pavilions, the blacks in separate wards. The first-class patients pay $2 per day, the second-class 75 cents and the third-class 25 cents. Light and air flood every room of the handsome, well-arranged complex of buildings, which on one side face the principal street of the city and park and on the other the harbor. As the city of Mozambique must rely on rain for its water supply, each house has its own cistern. The hospital has two immense underground cisterns, with a total capacity of 600,000 tons, which furnish an abundance of pure, cool drinking water. These cisterns are located between the pavilions. The spaces between the main buildings and the wings are paved with flat stones and are kept as clean as the mosaic tile floors in the interior of the buildings. The hospital has 200 beds, and during the rainy season, when malaria is most prevalent, its full capacity is heavily taxed, but at the present time the number of patients is only eighty. The pharmacy is in charge of a competent druggist and is well stocked, and the two large storerooms are well supplied with medicines, dressing materials, bedding, etc. The operating room is small but well constructed and equipped for modern surgical work. Very little surgery is done here, as in all other East African hospitals, on an average not more than two operations a day, and most of these are minor operations. A Roentgen apparatus has recently arrived and will be put in operation as soon as electric power can be secured, and then it will be the first one to be employed on the East Coast of Africa. Dr. Francisco Maria do Amaral is the director of the hospital and is assisted by three other military surgeons. He speaks English fluently and has kept pace with the modern progress in medicine and surgery. He took great pains in explaining the details of the hospital work and in showing the interesting cases then under treatment.

Eight Catholic sisters have charge of the nursing and they are assisted by orderlies and native helpers. The average number of patients during the year is about 2,000. The patients come from all parts of the province of Mozambique. Dr. Amaral has been stationed here for a long time and has never seen a case either of carcinoma or appendicitis in the black. The same holds true of the Eskimos of the far north, as I ascertained last summer when I went to Etah, the most northern habitation of man. It seems, then, from the geographical limits of these diseases that civilization with its complicated dietetics is responsible, to a large extent, for their prevalence in Europe and the United States.

DISEASES OF THE PROVINCE OF MOZAMBIQUE.

From information obtained from Dr. Amaral and from scanning over the last report of the Service of Health (*Relatorio de Servico de Saude do Provincia de Mozambique Estatistica Hospitallare Anno 1904*) for 1904, a government publication replete with painstaking, accurate statistics, I gained a fair insight into the prevailing diseases of this part of Portuguese colonial Africa. I have already mentioned that Dr. Amaral had never seen during his long residence here a case of carcinoma or of inflammatory disease of the appendix in the negro. There is a little laboratory in the hospital, where bacteriologic studies are made and pathologic specimens are examined microscopically, so that we have reason to believe that these diseases were not overlooked. In the report I find, under the head of "Cancer and other Malignant Tumors," three deaths reported from Lorenzo Marques, one of which was from sarcoma of the breast, one from intestinal neoplasm, and in one, a negro, 17 years of age, the cause of death is given as cancer of the pancreas, the diagnosis having been confirmed by autopsy.

TOTAL MORTALITY.

The total mortality of the province for the year was 1,222. Of this number there were 202 Europeans, 125 Asiatics, 892 Africans and 4 white Americans. The list includes 6 intra-uterine deaths, 973 males and 249 females, and of these 500 died in different hospitals and 722 outside of the hospitals.

HOSPITALS.

The nine hospitals of the province are located at Lorenzo Marques, Mozambique, Quelimane, Inhambane, Chinde, Chibuto, Angoche, Tete and Mossuril. The total number of patients treated in these hospitals for the year was 9,055, of which 4,141 were military and 4,914 civil; 8,213 males and 822 females. Of this large number of hospital cases there were only forty-two children below the age of 5 years, a figure showing again and most conclusively that the blacks have little use for hospitals in the care of their sick children.

In visiting the hospitals of the coast I was struck by the small number of children under treatment. Most of the children I saw were not ill, but accompanied their sick mothers.

MALARIA.

Malaria here, as well as everywhere else on the coast, is the prevailing disease, and the patients suffering from this disease fill the hospitals to overflowing during the rainy season. In the nine hospitals 3,661 cases, or more than one-third of the whole number of patients, were treated for malaria, with eighty-three deaths, the mortality varying with the hospital, being lowest at Chibuto, 1.2 per cent., and highest at Chinde, 6.3 per cent. Malarial diseases are classified as follows:

	Number of Cases.	Deaths.	Percentage.
Intermittent fever	3,577	1	0.03
Remittent fever	19	1	5.3
Pernicious fever	39	26	66.6
Bilious fever	171	43	25.1
Malarial cachexia	175	12	6.9

Among the malarial patients the whites figure largely in excess of the blacks, their total number being 3,175, with 67 of the total number of 83 deaths. Next to the whites the half-castes suffer most frequently from the grave forms of malaria and contribute most to the mortality list.

TREATMENT OF MALARIA BY SUBCUTANEOUS INJECTIONS OF QUININ.

Dr. Amaral is very partial to this method of treatment in all grave forms of malaria. The preparation he uses is a solution of half a gram of quinin, kept ready for instantaneous use in a glass capsule drawn out on opposite sides and sealed by heating the ends. The hypodermic needle is charged by breaking off one of the ends, when the fluid is aspirated directly from the capsule and is at once injected under strictest aseptic precautions. If the case is severe he makes the injections morning and evening until the disease is under control. This way of administering quinin would seem to recommend itself in all grave cases, more especially in military practice.

SMALLPOX.

This disease appears to visit the colony almost every year, but on the whole is on the decline. Only 118 cases were observed during the year, of which the disease proved fatal in six. During the year, 4,590 persons were vaccinated, and of this large number there were only 32 whites and an equal number of half-castes. At Quelimane alone 2,162 negroes were vaccinated.

DYSENTERY.

During the whole of the year, 224 cases of this disease entered the hospital for treatment. Of this number 98 died, a very large mortality. Of the 83 whites, only 8 died, showing that the mortality from the disease is greater among the blacks than the whites, probably in consequence of neglect and improper diet, as well as for the reason that they do not apply for treatment in time. The disease is more frequent in the country than the cities, and its greater prevalence there is attributed by the physicians to the drinking of polluted water and the eating of improper food.

TUBERCULOSIS.

Pulmonary tuberculosis is on the increase on the coast where the blacks are brought in contact with the Europeans. The number of deaths from this disease in the province of Mozambique for 1904 was 185, divided among the different nationalities as follows: Europeans, 24; Asiatics, 26; Africans, 34, and 1 American. Here for the first time I found mention in the reports of cold abscesses and general tuberculosis occurring in the natives on the coast.

SYPHILIS AND VENEREAL DISEASES.

The presence of venereal diseases is well shown in the following table for the year 1904:

	Men.	Women.	Total.
Syphilis	334	106	440
Soft chancre	171	48	219
Gonorrhea	186	240	426

This table gives by no means the whole number of venereal diseases, as many of the blacks, especially the women, do not apply for treatment.

PNEUMONIA.

This disease is very fatal. Of the 40 cases treated in the hospitals, 18 died, a mortality of 45 per cent.

DISEASES OF DIGESTIVE ORGANS.

These diseases are grouped together under the head of diarrhea and enteritis. The total number is given at 178, which, of course, included only the grave cases. Of this number 67 were Europeans, with 5 deaths. Of 321 cases of disease of the stomach none resulted in death.

SLEEPING DISEASE.

This disease has never been known to originate in the city of Mozambique. Two deaths from it are recorded in the report. One of the patients was a native soldier, who contracted the disease on the coast; the other was a negro, who came affected with the disease from Angola, Portuguese West Africa.

LEPROSY.

The number of lepers is given at 30, distributed over the province as follows: Lorenzo Marques, 19; Mozambique, 1; Inhambane, 9, and Tete, 1. Lepers are not admitted into any of the hospitals. Dr. Amaral has recommended to the government the establishment of a home for these unfortunates, who are now entirely neglected and have to depend on their relatives and friends for support and care.

DISEASES OF THE SPLEEN.

Considering the prevalence of malaria in the province, the number of cases of enlargement of the spleen, as given in the report, is remarkably small, only 29; of these, 24 were whites, 1 yellow and 4 blacks. The negroes are very resistant to chronic malarial poisoning and are very rarely affected with enlargement of the spleen as compared with the whites.

BERIBERI.

This disease was observed 18 times during the year. Lorenzo Marques furnished 15 cases, Mozambique 1 and Chile 2. Of this number, 5 died.

RHEUMATISM.

Of this disease there are recorded 370 cases, 230 acute and 120 chronic, with a mortality of 4, 2 from the acute and 2 from the chronic form of the disease.

We miss in this enumeration of diseases carcinoma, with the exception, perhaps, of a doubtful case, also appendicitis and typhoid fever. Strangely enough, typhoid fever has not as yet gained a foothold on the soil of the east coast of Africa, although the sanitary conditions in many places are such as would seem favorable to the growth and spread of the bacillus of the disease. Neither is there mention made of the most common diseases of childhood: measles, diphtheria, scarlatina and whooping-cough. Twelve cases of cerebrospinal meningitis were observed, with a mortality of 5. Considering the severity of the climate, the prevalence of malaria and its many complications and the doubtful water supply of the people living in the interior, the general mortality could not be called excessive. The national vice of laziness and the absence of manufacturing establishments of any importance account for the small number of injuries, only 449 cases.

BEIRA.

Beira, at the mouth of the Pungwe River and a short distance south from the delta of the great Zambesi River, is the most important port of Portuguese East Africa. The little city is located on a narrow, sandy strip of land between the mouth of the Pungwe River, which serves as an excellent harbor, and Mazangzani Bay. The terminus of the Rhodesia Railroad here adds much to the commercial and shipping importance of the city. Most of the houses are solid two-story brick and cement buildings, with tile or corrugated iron roofs. There are only two or three horse vehicles here. The principal street bisects the city and has in the middle a narrow-gauge track of the man trolley cars, a great convenience for getting about the far-spun-out city and for the transfer of freight. Most of the professional and business men have their own private car and their own man to push it. Two persons can sit comfortably side by side, and in case of need a third can be sandwiched in between. There are only a few short sidewalks in the city, so that most of the walking must be done by wading ankle-deep in the loose, hot sand. At the time of our visit the heat was very oppressive. There are a few large stores, in which almost everything is kept which is most needed, but at prices which stun the visitor. Among the several hotels the Savoy and Queen's Hotel are the best. The table of the former, for such a place as this, is excellent, and the rooms are large and airy. A bank, several steamship offices and the railway office handle the bulk of the money. The prison, in the heart of the business part of the city, is a most unique building. It is small and has all the appearances of a neat chapel if it were not for the strong iron bars of the high, narrow and numerous windows. The city is only ten years old. The next city on the coast south from here, Sofula, was for several hundred years the port. The good harbor here made it necessary to transfer business and shipping to this place. A few kinds of hardy trees, cocoa palms, eucalyptus, acacia, wild almond, etc., have been planted and seem to thrive in this dry, hot, sandy soil. Most of the natives are kaffirs, black as coal and fine specimens of physical development and muscular strength. Most of the laborers wore nothing but a loin cloth, and this in most instances was none too wide.

Beira has an unenviable reputation as a fever nest. Mr. Bryce, who visited this place before the railroad was completed, made the statement that no white man could remain three consecutive days anywhere between Beira and the inland mountain plateau and escape an attack of fever. All the white people who have lived here for several years have had their good share of malaria. I examined a number of negro children and they all had the prominent abdomen seen in children living in malarial districts, and in all of them the enlarged spleen could be felt several inches below the costal arch. All the white women I saw were pale, emaciated and evidently much enfeebled, as was shown by their drawn faces and languid walk. Their little children were in the same condition. Several of the sisters in the hospital were very anemic, poor in flesh and none too strong for the arduous duties in care of the sick in their charge.

Beira is one of the hottest places on the coast. The hottest months are December and January. At this time the thermometer not infrequently registers 120 F. in the shade, and I was told that eggs placed on the hot sand and exposed to the burning rays of the sun were cooked hard in a short time. Throughout the year it is disagreeably warm from 10 o'clock in the morning until 4 in the afternoon, and during this time the people remain in their houses and very little work, if any, is done. Even the postoffice officials have their midday siesta. The mealtimes are so arranged that they do not interfere with the working hours. The first plain breakfast early in the morning is followed by a second one at 11:30 a. m., which is a substantial meal. Dinner is served late in the evening.

BEIRA GOVERNMENT HOSPITAL.

Beira has only one hospital, which was built and is maintained at government expense. It is beautifully located in park-like grounds and faces the principal street on one side and on the other side the bay. The hospital was built ten years ago at a cost of $25,000 and has room for sixty patients. At present, the coolest and healthiest season of the year, the number of patients does not exceed thirty, and most of these are suffering from malaria. The government physician, Dr. José Aranjo de Lacerda, is in charge of the hospital and the nursing is under the care of five Sisters of St. Francis. The hospital consists of two one-story brick and cement barracks, one for the whites and the other for the blacks. The cots in the latter building are the narrowest I have ever seen, hardly eighteen inches in width. The framework is made of iron bars, on which a piece of canvas is stretched. Each cot is supplied with two white sheets and a pillow, and the patients on these, the narrowest of all beds, appeared to be comfortable. Simple and plain as these beds are, they must seem a luxury to the blacks, who know no softer bed than a mat on the bare ground. In the cottage for the whites are a number of plainly furnished but very comfortable private rooms, for which a charge of $5 a day is made. In the little wards the second-class patients pay $1 a day. Few of the negroes are able to pay anything, and as this class of patients during the year is large they become a heavy tax on the financial resources of the hospital.

I saw and examined here patients suffering from malaria in all its multitudinous forms. In the acute form the temperature curves were nearly the same in all cases. A chill, followed by a temperature of 40.8 C., then under quinin treatment a speedy fall to normal. Dr. Lacerda, like Dr. Amaral, relies largely on the subcutaneous use of quinin in doses of seven and one-half to fifteen grains, administered once or twice during twenty-four hours. In some cases quinin is given at the same time by the mouth, and to prevent its being ejected by vomiting it is mixed with pulverized gentian. If, as is often the case, a light icterus makes its appearance, three grains of calomel are given, followed by a saline cathartic. In the beginning of the attack evaporating camphorated lotions are employed to reduce the high temperature, and phenacetin is given to relieve the intense headache. In chronic cases arsenic is frequently used in combination with quinin. In the pernicious form of malaria the system is saturated as quickly as possible with quinin, given subcutaneously and by the stomach, so that the patient receives at least forty-five grains during the first twenty-four hours. One case of blackwater fever was under treatment and well on the way to recovery. Beside malaria, I found in the ward for the natives a case of advanced pulmonary tuberculosis, parenchymatous mammitis in a syphilitic woman, tropical abscess in a boy about 12 years old and a case of chronic dysentery. In front of this ward we saw squatting on the sand an old negro, a mere skeleton, evidently the subject of some mental derangement. He refused to eat rice, meat and other nutritious articles of the hospital diet, but made his evening meal of black coffee and a piece of bread, which he tore in pieces and moistened in the black fluid. Dr. Lacerda has never seen a case of carcinoma or appendicitis in the negro, and believes that these diseases do not affect the race. Typhoid fever is unknown here.

The drinking water is obtained from a subterranean cement cistern, in which the rainwater is collected. For other purposes the water is obtained from a well on the hospital grounds. The sisters live in a separate building. In another completely detached small building are the bathrooms and closets. The wash-house is in an open shed, in which there are a number of large cement tubs, in which the native employés do the washing by hand in the customary primitive way. Provision for postmortem is made in a small morgue, where two large slab tables were waiting for the next victims, who will not be long in coming. The hospital has a large dressing-room, where the outdoor patients are attended to and where the few operations are performed, as there is no room set aside for this special purpose. Dr. Lacerda said that during the year not more than two capital operations are performed. From all I have seen the east coast of Africa is no place for surgery. The physician who has a thorough knowledge of malaria and its treatment, and is well-grounded in the diagnosis of syphilitic affections and the rational use of mercury and potassic iodid, and who can treat most successfully blennorrhea without leaving any of its many complications, is the man most needed, and he will meet with the greatest success financially, and in gaining a permanent and widespread reputation, for malaria and syphilis are the white pests of the coast.

(To be Continued.)

State Boards of Registration

COMING EXAMINATIONS.

Wyoming State Board of Medical Examiners, State Capitol, Cheyenne, September 5. Secretary, S. B. Miller, Laramie.

Massachusetts Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

Iowa State Board of Medical Examiners, Capitol Building, Des Moines, September 11-13. Secretary, J. F. Kennedy, Des Moines.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Connecticut July Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 10-11, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 76. The total number of candidates examined was 37, of whom 28 passed and 9 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Yale University	(1905) 81; (1906) 78, 83.2,	85.2
University of Maryland	(1906)	77.5
Johns Hopkins Med. School	(1906)	86.8
Baltimore Med. Coll.	(1906) 75.2, 76.8,	78.4
College of P. and S., Baltimore	(1906) 76.6,	82.1
Harvard University Med. School	(1896) 81.7,	86.2
Dartmouth Med. Coll.	(1905)	75.4
Cornell University	(1906)	81.3
Long Island Coll. Hosp.	(1906)	83.1
University and Bellevue Hosp. Med. Coll.,	(1896) 76.4; (1906)	83.2
College of P. and S., New York,	(1904) 84.1, (1905) 85; (1906)	85.3, 85.4.
Jefferson Medical College	(1906) 81.3, 82.6,	84 1
University of Pennsylvania	(1904)	76.7
McGill University, Canada	(1906)	78.6
University of Vienna	(1902)	82.1

FAILED.

College.	Year. Grad.	Per Cent.
College of P. and S., Chicago	(1905)	71.9
Maryland Med. College.	(1897)	74
Baltimore Med. Coll.	(1906)	70.8
College of P. and S., Baltimore	(1906) 72.8,	73.9
Tufts Med. Coll.	(1905)	69.3
Jefferson Med. Coll.	(1906)	71.5
University of the South	(1905)	71
College of P. and S., Boston	(1906)	52.1

The following questions were asked:

PRACTICE, PATHOLOGY AND DIAGNOSIS.

1. Etiology, symptoms and treatment of cholera infantum. 2. Contrast the symptoms of exophthalmic goiter and myxedema. 3. Give the symptoms and pathology of each of the three stages in acute lobar pneumonia. 4. Differentiate between scarlatina, rubeola and rubella: (a) Length of period of incubation of each. (b) Symptoms of the stages of: 1. Invasion; 2, eruption; 3, desquamation. (c) Principal complications and sequelæ. 5. Give the changes in the blood of pernicious anemia. 6. State the point of greatest intensity and direction of transmission of the following heart murmurs: (a) Aortic diastolic. (b) Mitral systolic. 7. Causes of pulmonary edema. 8. Causes of infantile convulsions. 9. Define aphasia and give its different forms and the seat of the lesion of each. 10. Treatment of eczema both constitutional and local.

PHYSIOLOGY.

1. Describe the red blood corpuscles, (a) as to origin and fate, (b) form, (c) size, (d) number, (e) function. 2. What are the agents concerned in the circulation of the blood? 3. Describe normal pulmonary sounds. 4. Define primary anemia, and how is it distinguished from that known as secondary? 5. What and where are Brunner's glands? (b) Peyer's patches? (c) The functions of each? 6. What are the influences necessary to increased urinary secretion? (b) What is the most important ingredient in urine, and what does it represent? 7. State the function of (a) the vas deferens, (b) the vesiculæ seminales, (c) the prostate gland. 8. Classify nervous functions. (b) What are reflex centers? (c) What are automatic centers? 9. Through what channels and by what processes are the end products of digestion conveyed to the blood? 10. Discuss the characteristic features of the fetal circulation, (a) ductus venosus, (b) ductus arteriosus, (c) the foramen ovale, (d) the hypogastric arteries, (e) the umbilical vein.

MATERIA MEDICA AND THERAPEUTICS.

1. What is the physiologic action of cocain? 2. What are the symptoms of iodism, and how prevented while continuing the drug?. 3. Contrast the action of belladonna and opium. 4. Give the treatment of acute nephritis. 5. Name the different preparations of mercury and their doses. 6. Name three drugs whose action differs in promoting diuresis. Give an example of each. 7. Give the treatment of the following intestinal parasites: (1) *Tænia solium.* (2) *Ascaris lumbricoides.* (3) *Oxyuris vermicularis.* 8. What are the therapeutic uses of aconite? 9. Therapeutic uses of compound jalap powder, its composition and doses. 10. Physiologic action of jaborandi; its therapeutic uses.

ANATOMY.

1. Describe the differences between the sacrum of the male and that of the female. 2. Give the minute anatomy of the skin. 3. What veins return the blood from the head and face? 4. Give a general outline of the trifacial nerve, mentioning its principal subdivisions: make open drawing. 5. Describe the tongue, (a) structure, (b) muscular connections, (c) nerve supply, (d) blood supply. 6. What are the valvulæ conniventes and how are they formed? 7. What is a femoral hernia? Mention the covering of the same from without, inward. 8. Give the relations of the heart to adjacent organs and tissues. 9. Describe the pancreas. 10. What is the abdomen? Describe its boundaries, its regions and parts included in each. Make a sketch.

OBSTETRICS AND GYNECOLOGY.

1. Define and give the pathology of: (a) Pelvic hematocele; (b) pelvic hematoma. Give treatment for each. 2. What are the factors in the production of pyelitis in pregnancy? At what time does it occur, and which kidney is more often involved? 3. Is the eclampsia in pregnancy due to renal or extrarenal conditions? What are the most recent theories as to its cause? 4. What are the varieties of fibroid tumors: (a) Signs and symptoms? (b) The treatment for the hemorrhage. 5. Describe the cause and mechanism of (a) rotation and (b) expulsion of the head in the second stage of labor. 6. Describe (a) hematophilia, (b) cephal-hematomata, (c) meningocele. 7. Define Bandl's ring. Explain how it retards labor. 8. Give the technic of the various methods of pelvimetry. 9. What are the characteristics of a hydrosalpinx? 10. Discuss ophthalmia neonatorum and the practical importance of its prevention. .

SURGERY.

1. Give symptoms of surgical shock and explain their significance. 2. Describe the various ways of arresting hemorrhage. 3. Discuss local anesthesia, and describe the technic of its application in some major operation. 4. Describe the technic of ether narcosis, and give contra-indications to the use of the drug. 5. Describe Allis' or Bigelow's method of reducing outward dislocation of the hip joint, explaining the reason for each step. 6. Name the symptoms and signs which in your judgment would require immediate operation in a case of appendicitis. 7. What history and what present condition would lead you to advise operation in a latent or arrested case of appendicitis? 8. Symptoms and treatment of fracture of the clavicle? 9. Give the early symptoms of cancer of the stomach. 10. Give the symptoms and signs of strangulated inguinal hernia and describe a satisfactory operation for the condition.

CHEMISTRY AND HYGIENE.

1. Name the portals of entry in tuberculosis. How is bovine tuberculosis transmitted to mankind? 2. Give the formula for salt. What is its function in the animal economy? How is its presence demonstrated in the urine? 3. What are: (a) normal salts? (b) acid salts? (c) basic salts? (d) double salts? 4. Do the various fruits of the market infect the intestinal canal? How would you render the strawberry free from parasites and ova? 5. Describe hemoglobin. Name some of its properties. How is it changed to oxyhemoglobin? Give in detail the best test for it. 6. What conditions should condemn water for drinking purposes? 7. What is glycerin, butter, lecithin? Explain their relations to the fats. 8. Which is the most common poisonous compound of arsenic? How does it enter the system? Give symptoms and treatment. 9. What is uric acid? Does it occur free in the urine? What does its presence in the urine indicate? 10. What is the amount of CO_2 in the atmosphere? How does it vitiate it in crowded rooms? To avoid atmospheric vitiation, how much space should be allowed occupant of dormitories and hospitals?

Colorado July Report.—Dr. S. D. Van Meter, secretary of the Colorado State Board of Medical Examiners, reports the written and oral examination held at Denver, July 3, 1906. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 70. The total number of candidates examined was 16, of whom 11 passed and 5 failed, including one undergraduate and one osteopath. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Colorado	(1906)	72.3, 76.3, 81
College of P. & S., Los Angeles	(1905)	74.1
Denver Homeo. Med. Coll.	(1906)	72.4, 75, 76.1
Northwestern Univ. Med. School	(1901)	78.7
Eclectic Med. Inst., Cincinnati	(1906)	72.5
Jefferson Med. Coll.	(1905)	70
Royal University of Padua	(1884)	71.2
FAILED.		
Kentucky University	(1903)	66
Barnes Med. Coll.	(1905)	65.9
Missouri Med. Coll.	(1888)	48.7

Besides the following who were registered on presentation of acceptable credentials, there were also registered two old practitioners, one of whom was an army surgeon during the Civil War:

Cooper Medical College	(1894)
University of Colorado	(10, 1906)
Denver and Gross College of Medicine	(1, 1905), (18, 1906)
College of P. and S. Chicago	(1, 1904), (2, 1905)
Northwestern University Medical School	(1906)
Rush Medical College	(1888), (1892)
Bennett College of Eclectic Med. and Surg.	(1882)
College of P. and S., Keokuk	(1887), (1904)
Tulane University	(1901)
Maryland Medical College	(1905)
College of P. and S., Boston	(1894)
Harvard University Medical School	(1899)
University of Michigan	(1904)
University of Minnesota	(1904)
University Med. Coll., Kansas City	(1891), (1906)
Ensworth Medical College	(1897)
Northwestern Medical College, St. Joseph	(1892)
Barnes Medical College	(1893)
Niagara University	(1890)
New York Med. Coll. and Hospital for Women	(1894)
Albany Medical College	(1881)
Western Reserve University	(1883), (1904)
Eclectic Medical Institute	(1886), (1893)
University of the South	(1900)
University of Vermont	(1889)
Ecolé de Med. de Paris	(1904)

The following were rejected on account of not having acceptable credentials:

Northwestern University Medical School	(1897)
Chattanooga Medical College	(1903)
Fifth Medical College, Nagasaki, Japan	(1897)

Indian Territory July Report.—Dr. M. F. Williams, secretary of the Board of Medical Examiners of the Western District, sends us a list of individuals registered on their credentials without examination, at the meeting held at Muskogee, July 2, 1906. The following colleges were represented:

REGISTERED.

Howard University	(1904)
Georgia College of Eclectic Medicine and Surgery	(1898)
Northwestern University Medical School	(1905)
National Medical University	(1903)
Indiana Medical College (Purdue University)	(1906)
Keokuk Medical College	(1900)
University of Louisville	(1894), (2, 1906)
Maryland Medical College	(1905)
Washington University, St. Louis	(1906)
College of P. and S., St. Louis	(3, 1906)
Barnes Medical College	(3, 1906)
Kansas City Medical College	(1901)
Missouri Medical College	(1884), (1906)
University Medical College, Kansas City	(1905)
Memphis Hosp. Med. Coll.	(1901), (1906)
Meharry Medical College	(1898), (1905), (5, 1906)
REJECTED.	
Gate City Medical College*	(1905)

* School not recognized.

Iowa May and June Reports.—Dr. J. F. Kennedy, secretary of the Iowa State Board of Medical Examiners, reports the written examinations held at Keokuk, Sioux City, Iowa City and Des Moines, May 23-24, May 31-June 2, June 6-8 and June 11-13, 1906, respectively. The number of subjects examined in was 8; total number of questions asked, 100; percentage required to pass, 75.

At the examination held at Keokuk the total number of candidates examined was 52, of whom 43 passed and 9 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Keokuk Med. Coll. of P. & S .(1905) 75; (1906) the grade of 77 was reached by two, 78 by six, 79 by three, 80 by two, 81 by one, 82 by six, 83 and 84 by five each, 85 by three, 86 by four, 87 by one and 88 by four.		
FAILED.		
Keokuk Med. Coll. of P. & S.	(1906)	60, 65, 67, 72, 73, 73, 74, 74
College of P. & S., St. Louis	(1906)	60

At the examination held at Sioux City the total number of candidates examined was 17, of whom 14 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Sioux City Coll. of Med. (1906) the grades of 75 and 79 were reached by one each, 80 by five and 82, 83, 85 and 86 each by one each.		
Illinois Med. Coll.	(1904)	75
Creighton Med. Coll.	(1906)	86
New York University	(1893)	91
FAILED.		
Sioux City Coll. of Med.	(1906)	70, 73, 73

At the examination held at Iowa City the total number of candidates examined was 59, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Iowa (1906) the grade of 77 was reached by three, 78 by one, 79 by three, 80 and 81 by four each, 82 and 83 by seven each, 84 by five, 85 by four, 86 by six, 87 by eight, 88 by one, 89 by two and 90, 92 and 93 by one each.		
University of Louisville	(1906)	86

At the examination held at Des Moines the total number of candidates examined was 30, of whom 27 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Yale University	(1903)	86
Drake University	(1906)	79, 82, 83, 85, 86, 87, 88, 89, 91
Bennett Med. Coll. Eclec., Chicago	(1906)	85
College of P. & S., Chicago	(1906)	81, 82, 83, 88
Northwestern Univ. Med. School	(1904)	90
Rush Med. Coll	(1902)	81
University of Michigan	(1904)	90
Creighton Med. Coll	(1906)	76, 78, 79, 81, 81, 85
Jefferson Med. Coll	(1906)	84
Meharry Med. Coll	(1902)	75
Royal University, Christiania, Norway	(1903)	80
FAILED.		
Hahnemann Med. Coll., Chicago	(1906)	60
Ensworth Med. Coll	(1905)	72
Queen's University, Kingston	(1906)	68

New Mexico May Report.—Dr. B. D. Black, secretary of the New Mexico Board of Health, sends us a report of those registered on their credentials without examination, at the meeting held May, 1906. The following colleges were represented:

Arkansas University	(1884)
Denver and Gross College of Medicine	(1905)
Gross Medical College	(1888)
Atlanta Medical College	(1898)
Bennett College of Eclectic Medicine and Surgery, Chicago	(1884)
Northwestern University Medical School	(1896)
Rush Medical College	(1903)
Indiana Medical College*	(1873)
Hahnemann Medical College, Chicago,	(1890), (1903)
Hospital Coll. of Med. Louisville	(1894), (1900), (2, 1904), (1905)
University of Louisville	(1903)
Kentucky School of Medicine	(1898)
Tulane University	(1898), (1902)
Baltimore Med College	(1892)
University of Michigan	(1883)
College of P. & S., St. Joseph	(1882)
University Med. Coll., Kansas City	(1900), (2, 1904)
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(2, 1897) (1899), 1904), (1905).
University of Missouri	(1905)
St. Louis Medical College†	(1890)
University of Minnesota	(1898)
Cornell University	(1899), (1902)
Long Island College Hospital	(1884)
New York Homeopathic Medical College and Hospital	(1904)
Medical College of Ohio	(1887)
Miami Medical College	(1878), (1881)
Pulte Medical College	(1887)
Western Reserve University	(1890)
Starling Medical College	(1897), (1898)
Jefferson Medical College	(1898), (1903)
Vanderbilt University	(1887)

* In 1878 became Medical College of Indiana.

† Became Med. Dept. Washington University in 1891.

Medical Organization

Georgia.

Washington County Medical Society.—With the aid of Dr. W. W. Pilcher, Warrenton, councilor for the Tenth district, the physicians of Washington County met at Sandersville, organized a county medical society on the standard plan and elected the following officers: Dr. David E. McMaster, Tennille, president; Dr. Oscar L. Rodgers, Sandersville, vice-president: Dr. Henry A. Hermann, Sandersville, secretary and treasurer, and Drs. Eugene A. Harris, Sandersville; Julian H. Evans, Davisborough, and D. L. Cheatham, Sandersville, censors.

Illinois.

Massac County Medical Society.—At a meeting held in Metropolis recently Dr. Henry C. Mitchell, Carbondale, councilor for the Ninth district, organized a county medical society on the standard plan.

Perry County Medical Society.—At a meeting of the physicians of Perry County, held in Pinckneyville, a county society was organized on the standard plan with the following officers: Dr. William L. McCandless, Pinckneyville, president; Dr. Martin C. Carr, Du Quoin, vice-president, and Dr. James W. Smith, Cutler, secretary and treasurer.

Indian Territory.

Northern District Medical Society.—At a meeting of this society in Pryor Creek, Dr. William T. Tilley, Pryor Creek, was elected president and Dr. Robert H. Harper, Afton, secretary.

Fifteenth District Medical Society.—The physicians of the Fifteenth district met in South McAlester, June 30, on call of Dr. Eliphalet N. Wright, Olney, councilor for the central district, to organize a new society in conformity with the new arrangements under statehood.

Tulsa County Medical Society.—The physicians of Tulsa met July 7 with Dr. B. J. Vance, Checota, councilor for the Western district and organized a medical society on the standard plan with the following officers: Dr. J. C. W. Bland, Tulsa, president; Dr. W. Albert Cook, Tulsa, vice-president; Dr. C. L. Reeder, secretary, and Dr. C. T. Hendershort, treasurer. Drs. Kennedy, Hawley and Webb, censors.

Twenty-sixth Recording District Medical Society.—On June 8 a medical society was organized at Marietta by Dr. Herbert P. Wilson, Wynnewood, councilor for the Southern district. Of the twenty-four physicians in the district, twenty were present and were enrolled as charter members. The following officers were elected: Dr. A. E. Martin, Marietta, president; Dr. Benjamin S. Gardner, Marietta, vice-president, and Dr. John D. Batson, Marietta, secretary and treasurer.

Twenty-first Recording District Medical Society.—At a meeting of the physicians of the Twenty-first recording recording district, held in Ardmore, July 19, Dr. Herbert P. Wilson, Wynnewood, councilor for the Southern district, presided and an organization was formed, to include the county in which Ardmore is situated when the counties are laid out for the new State of Oklahoma. The constitution and by-laws recommended by the American Medical Association were adopted. Dr. Philip H. Stephens, Ardmore, was elected president; Dr. William T. Bogie, Ardmore, vice-president, and Dr. Robert H. Alvis, Ardmore, secretary and treasurer; Dr. Thomas S. Booth, delegate to the State Medical Society, and Dr. Jerome C. McNees, Ardmore, alternate.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Nasal Hemorrhages.

According to Anton Weisner in an abstract in *Post Grad.*, among the many methods employed to check epistaxis, the simple, and as a rule effective method of making pressure on the septum, with the thumb and forefinger should always be tried. The lateral nasal cartilages should be thoroughly pressed, and this commonly checks any hemorrhage coming from the lower anterior portion of the septum. This pressure should be steadily kept up for at least one minute. In case the bleeding point is far back in the nose strips of sterile gauze should be used and the chamber packed. The disadvantage of this method is that when the packing is removed the clots are torn from the vessels and hemorrhage recurs. In such instances it is recommended that a thin rubber bag be attached to a catheter, lubricated with an antiseptic oil, and after being introduced far back into the naris, inflated. The pressure thus made is of value in checking the hemorrhage, and when a proper length of time has elapsed for the blood clots to form, the bag may be allowed to collapse, when it can be removed without difficulty. According to Weisner extremes of heat and cold are of comparatively little value in checking such hemorrhages, as the degree of heat required, in order to be effective, causes entirely too much pain. Cold water is somewhat more serviceable, used as ice-cold douches to the bleeding wall or as cold applications to the outside. Reflexly, benefit is said to be derived from the applications of cold to the nape of the neck, especially in plethoric individuals, and as some writers state, even wrapping the scrotum in cold applications is serviceable on a similar theory.

The actual cautery used at a red heat is of great assistance in blocking these arteries. The crusts left after the cautery should not be disturbed, as they are aseptic.

Panezewicz, in the same periodical, emphasizes the value of introducing small oblong pieces of ice into both nares and replacing them by fresh pieces as fast as they are melted, and keeping this treatment up for a period of from five to ten minutes. The author mentions other preparations, as vinegar, chromic acid, alum, silver nitrate, perchlorid of iron and turpentine. The perchlorid of iron is not only an unpleasant preparation to use, but may cause sloughing with the danger of formation of a pyemic embolus.

He recommends the following combination as a powder to be insufflated into the nares as necessary:

℞.	Acidi tannici	gr. viii	|50
	Antipyrini	gr. xv	1|00
	Sacchari pulvis	ʒiiss	10|00

M. Sig.: A small amount to be insufflated into the affected side of the nose as necessary to check the hemorrhage.

Gelatin, in from 5 to 10 per cent. strength, warmed, and injected into the nose, has been recommended, especially in cases of hemophilia. This preparation not only checks the hemorrhage, but has a tendency to nourish the tissues with which it comes in contact.

X-Ray Burns.

The following combination is recommended by Mewborn in St. Louis *Med. Review* as giving prompt relief from *x*-ray burns:

℞.	Plumbi acetatis	gr. c	6|65
	Aquæ	℥iiss	75|
Solve et adde:			
	Aluminis sulph	ʒi	4|
	Sodii sulph	gr. x	|65
	Aquæ	℥iv	120|

M. Sig.: Apply locally to the affected areas.

Carcinoma of Stomach.

Before resorting to morphin in the treatment of gastric carcinoma, the following combinations are recommended in the *Medico-Chir. Jour.*:

R.	Cocainæ hydrochlor		|
	Codeinæ, āā	gr. viiss	|50
	Aquæ calcis	ʒv	150|

M. Sig.: One teaspoonful at a dose as the individual case may require.

Or,

R.	Bismuthi subnit	ʒi	4|
	Acidi carbolici	gr. xv	1|
	Aquæ dest.	℥iv	120|

M. Sig.: Shake the bottle and take one teaspoonful every hour until relieved.

Chorea.

In an article on chorea in Merck's Archives, Shoemaker states that this disease more frequently occurs in childhood, and from the fifteenth to twentieth year, and especially in females and the white race. It not infrequently follows some of the infectious diseases, probably due to the exhaustive influences exerted on the central nervous system. It most commonly follows scarlet fever, diphtheria, measles, typhoid fever and rheumatism with heart complications.

The treatment should consist in increasing the elimination by the bowel and stimulating the liver function. For this purpose the mild chlorid of mercury is recommended in doses of gr. 1/10 each, combined with the same amount of sodium bicarbonate and repeated every half hour for fifteen doses. One hour after giving the last powder, magnesium citrate, drams 6 (24.00) should be administered.

To control the choreiform movements in some of these cases Shoemaker recommends the administration of cimicifuga racemosa, giving the fluidextract in 5 minim doses (.20), three times a day after food. The dose should be increased daily until full physiologic effects are produced. The symptoms thus produced are vertigo, intense headache and nausea. This preparation, according to Shoemaker, not only ameliorates the symptoms by lessening the reflex activity in the spinal cord, but when prescribed in small doses it aids and stimulates digestion by awakening the action of the glands along the alimentary tract.

In cases in which the menstrual flow has been checked this preparation is also of value. It serves as a stimulant to the heart and general circulation similarly to digitalis. As an efficient form of medication to be used along with cimicifuga as a synerguist, the following combination is recommended:

R.	Ext. hyoscyami			
	Ext. cannabis indicæ, āā	gr. ¼		015
	Camphoræ monobromatis	gr. v		30
	Olei theobromatis, q. s.			

M. Ft. suppository No. i. Sig.: One suppository inserted into the rectum three times daily.

Salicylic Acid.

IN PRURITUS.

The following combination containing salicylic acid is recommended by Ringer in the treatment of pruritus of the vulva and anus:

R.	Acidi salicylici	ʒii	8	
	Olei theobromæ	ʒvi	24	
	Olei myristicæ	f. ʒii	8	

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

FOR CORNS.

In the treatment of corns Hare recommends the following combination:

℞.	Acidi salicylici	gr. xxx	2	
	Ext. cannabis ind.	gr. v		30
	Collodii	f. ℥ss	15	

M. Sig.: Apply with a brush until a good coat is formed.

FOR WORMS.

To get rid of thread worms or seat worms the following injection by the bowel is recommended:

R.	Acidi salicylici			
	Sodii boratis, āā	ʒss	2	
	Aquæ	Oi	500	

M. Sig.: Warm gently and inject into the bowels.

For a child the amount should be reduced one-half in strength.

FOR BROMIDROSIS.

In the treatment of bromidrosis of the feet associated with fetor, salicylic acid is of service, dusted over the parts, or the following powder may be used:

R.	Acidi salicylici			
	Pulv. amyli, āā	℥ss	15	

M. Sig.: Apply locally to the feet.

FOR ECZEMA.

In eczema of the face and hands, when the eczema is moist, the following combination is advised, applied locally:

R.	Acidi salicylici	gr. v-x		30-.65
	Pulv. amyli			
	Pulv. zinci oxidi, āā	ʒii	8	
	Petrolati, liq.	f. ℥ss	15	

M. Ft. unguentum. Sig.: Apply locally.

FOR CHANCRES.

In the treatment of soft chancres and venereal sores salicylic acid is sometimes of value:

R.	Acidi salicylici	gr. xx	1	20
	Alcoholis	gtt. xlv	3	
	Adipis benzoinati	℥ii	60	

M. Sig.: Apply locally.

Or.

℞.	Acidi salicylici	gr. xv	1	
	Pulv. amyli vel cretæ	ʒii	8	

M. Sig.: Apply locally.

Incompatibility of Potassium Iodid.

In speaking of the frequency of prescribing preparations which are incompatible, our attention is called to an article by Jennings in *London Hosp. Gazette*, who states that potassium iodid, when prescribed with other preparations, frequently causes trouble. This preparation, in a simple solution, when exposed to the light, often liberates iodin.

Potassium iodid should never be prescribed with ferric chlorid as the latter preparation is rapidly decomposed, forming ferrous iodid and free iodin. According to Jennings, however, the two scale preparations, iron and ammonium citrate, and tartarized iron are compatible with potassium iodid.

A crystalline precipitate of strychnia iodid is formed when strychnin hydrochlorid is mixed with a solution of potassium iodid, and in concentrated solutions a precipitate may be formed immediately.

Spirits of nitrous ether contains a small amount of free nitrous acid and a free acid where combined with potassium iodid may liberate iodin. In the same way sodium nitrite may produce like results.

The following combination serves as an example of this incompatibility:

℞.	Sodii nitritis	gr. ii		12
	Potassii iodidi	gr. v		30
	Caffeinæ citratis	gr. x		65
	Aquæ	f. ℥i	30	

M. Sig.: As directed.

In the foregoing free iodin will be liberated.

Caffein citrate in the above, being a very weak base, is separated into the alkaloid caffein and citric acid when mixed with water, and the latter decomposes the sodium nitrite, forming the nitrous acid.

Bismuth oxynitrate is incompatible with potassium iodid, when the two are mixed with water, producing a yellowish color, changing to a brick color later. This is a case of double decomposition, no free iodin being produced.

Ocular Eczema.

In the treatment of ocular eczema, which is most commonly a disease of childhood, and which forms 21 per cent. of all the diseases of childhood, Frederick Krauss in *Med. Record* states that three phases of treatment should be considered: 1. Hygienic and dietetic; 2, medicinal; 3, local. The hygienic treatment, according to Krauss, should consist in fresh air, wholesome, nourishing food, the abstinence from sweets, pastry of all sorts, and in severe cases absolute rest in bed. The room should be so situated as to exclude the direct sun's rays, but should admit plenty of light. A dark room should never be permitted, but the eyes should be protected from strong light by tinted lenses, a shade or a bandage over the eyes if the discharge is not too great.

The diet should consist of milk properly modified, eggs, fresh cooked meat or raw meat juice, orange juice, stewed fruits, etc., omitting puddings and pies and all pastries. Sugar corn, bananas, peanuts and pretzels should be especially excluded from the diet.

Salt water baths daily are recommended, given warm at bedtime. The medical treatment consists of tonics and alteratives with the relief of constipation.

Krauss recommends the following combination as a tonic and alterative:

℞.	Syr. ferri iodidi	ʒiv	15	
	Syr. acidi hydriodici	℥i	30	
	Syr. hypophos. co. (N. F.)	℥iss	45	

M. Sig.: One teaspoonful in water before each meal. In children from twelve to fifteen years of age two teaspoonfuls may be given.

Attention must also be directed to eczema of other parts of the body, especially to the nares, for which an alkaline cleansing wash, followed by a bland ointment, such as the unguentum acidi borici is advised.

The local treatment to be carried out in the milder cases of eczema of the conjunctiva is a simple boric acid wash, with the addition of a small amount of cocain and adrenalin, if much itching be present. This preparation, however, should be used with care.

For this purpose the following combination is recommended by Krauss:

℞.	Acidi borici	gr. xxv	1	65
	Cocainæ hydrochlorici	gr. v		30
	Sol. adrenalin (1/1.000)	ʒi	4	
	Aquæ dest.	℥ii	60	

M. Ft. solutio. Sig.: Five drops in the eyes every three hours.

When the cornea is attacked the ciliary muscle should be put at rest by the use of a mydriatic, such as atropin. The following combination is recommended locally:

℞.	Hydrarg. oxidi flavi	gr. i		06
	Petrolati	ʒii	8	

M. Ft. unguentum. Sig.: A small amount to be introduced into the eye at night.

This ointment should not be employed too early in the disease. After the disease has passed the acute stage insufflations of iodoform or calomel into the ulcer act beneficially according to Krauss.

In the treatment of eczema of the lids and face the following combination is recommended:

℞.	Acidi borici	gr. xv	1	
	Petrolati, liq.	ʒiv-℥i	15-30	

M. Ft. unguentum. Sig.: Apply freely to the affected areas.

Turpentine in Typhoid Fever.

The following combinations are recommended by Hare for the relief of flatulency in typhoid fever:

℞.	Olei cinnamomii	gtt. xx	1	20
	Olei terebinthinæ	f. ʒiv	15	
	Mucil. acaciæ, q. s. ad	f. ℥iv	120	

M. Sig.: One teaspoonful every four hours.

Or.

℞.	Olei terebinthinæ	f. ʒi	4	
	Olei amygdalæ	exp. f. ℥ss	15	
	Tinct. opii	f. ʒii	8	
	Mucil. acaciæ	f. ʒv	20	
	Aquæ laurocerosi	f. ℥ss	15	

M. Sig.: One teaspoonful every four hours to relieve the tympanites.

As an enema the following combination is recommended:

℞.	Olei terebinthinæ	f. ℥i	30	
	Olei olivæ	f.℥iss	45	
	Pulv. camphoræ	gr. xx	1	20
	Mucil. acaciæ	f. ℥ss	15	
	Aquæ	f. ℥x	300	

M. Sig.: Stir well and use as an enema.

Medicolegal

Powers Under Health Law.

The Court of Appeals of Kentucky holds, in Meyers vs. Duddenhauser, that where the general council of a city was authorized by statute to establish and enforce quarantine laws and regulations to prevent the introduction and spread of contagious diseases in the city, to regulate hospitals, infirmaries, etc., within the city, and to secure the general health of the inhabitants of the city, under this provision the city had power to pass an ordinance to the effect that no person dying in the city should be interred in the city cemetery without a burial permit from the board of health. The board of health was authorized to make reasonable regulations as to the issuing of such permits, and it was not an unreasonable regulation to require the certificate of the attending physician as to the cause of the patient's death.

Attending Physicians May Testify as to Probabilities—Cross-Examination.

The Supreme Court of Iowa says, in the personal injury case of Vohs vs. Shorthill & Co., that the rule, as generally applied, may be conceded to exclude medical testimony of merely possible or speculative results of the present condition of an injured party. But it is also too well settled to require citation of authorities that where an injury negligently occasioned is permanent or, if not permanent, recovery is not complete at the time of the trial, the injured party is entitled to damages already accrued, and such other damages, also, as the evidence shows him reasonably certain to sustain in the future. As bearing on that point it is certainly competent for a physician who has examined and treated him and knows his condition to express an expert opinion as to future consequences reasonably to be expected to follow the injury. And the court says of a certain physician that he was not asked to state results which were merely possible, but whether a given result was "likely;" i. e., probable, or reasonably to be expected. This, the court thinks, was competent within the rule. It must also be remembered that this witness was testifying from his personal examination, knowledge, and treatment of the plaintiff's injury, and there was no occasion for propounding hypothetical questions or to assume or state any especial fact or series of facts as a foundation for the inquiry to which answer was sought. Again, it says, with reference to the cross-examination of another physician, that, in the cross-examination of witnesses, and especially of expert witnesses, it is ordinarily allowable for counsel to cover a much broader range of inquiry than would be permitted in the examination of a friendly witness in chief, and the limit was not exceeded in this instance by asking the witness, who had expressed an opinion negativing the likelihood of any loss of vision in the plaintiff's right or well eye, whether certain deleterious effects mentioned might not yet appear.

Power of Executor of Will to Waive Privilege.

The Supreme Court of Indiana says, in Heaston vs. Kreig, that the statute which makes physicians incompetent to testify to matters concerning their patients which they learn by reason of their professional relation contains no qualifying terms. As the patient may waive the privilege, since it is for his benefit, this court recognizes as proper its holdings that the executor of the patient who enjoyed such privilege may, for the purpose of upholding his attempted testamentary disposition of his property, waive the privilege which the statute confers. But the court would regard it as a perversion of said holdings to attempt to apply them to this case, where there were two wills involved, one dated April 30, 1903, and the other, dated Sept. 1, 1903, the attack in this case being solely on the latter, and the executor of the former (whose wife was a legatee thereunder) attempting to waive the objection that certain physicians were incompetent to testify in aid of such attack. Had this contest come after the formal probating of the instrument of Sept. 1, 1903, and the issuing of letters of administration with the will annexed, the holder of such letters would have been charged with a duty of seeking to maintain said instrument, and he alone, in view of the posture of the case, could have waived the privilege of his decedent. The fact that these steps were not taken made no difference so far as the former will was concerned; those who claimed under it could not waive the objection to a disqualified witness in order that they might overthrow what was prima facie the valid act of the decedent, for whose benefit the statute had interposed the bar. It was not a race of diligence as to who could first procure the probating of the will which he possessed, so as to put the other party on the defensive; a waiver must have its basis in the right of the decedent, and in such a case as this it can only be invoked by the executor who is seeking to support what prima facie at least was the valid act of his testator.

Manslaughter—Failure of Husband to Call Physician.

The Court of Appeals of Kentucky says, in Westrup vs. Commonwealth, that where the husband neglects to provide necessaries for his wife, or medical attention in case of her illness, he will be guilty of involuntary manslaughter, provided it appear that she was in a helpless state and unable to appeal elsewhere for aid, and that the death, though not intended nor anticipated by him, was the natural and reasonable consequence of his negligence.

In this case there was a conviction of involuntary manslaughter, alleged to have been committed by the accused by wilfully neglecting to furnish his wife, then pregnant and about to be delivered of a child, with such care and attention as were necessary during her confinement in childbirth, thereby causing her death. But it was manifest from the evidence that the confinement came five days sooner than they expected it; that the wife, having read, besides other books, "Tokology," and corresponded with its author, had resolved to do without the services of a physician in her confinement, and had influenced her husband to adopt her opinion that the services of a physician would be unnecessary at such a time; that during her labor he dutifully remained with her, and assisted her to the best of his ability, and as she directed him; that when he discovered her peril he called in two women living in the same house to assist him in caring for both mother and babe; and that on the suggestion of one of them he immediately, and over his wife's objection, sent for a competent physician to minister to her, and that the latter, in spite of her protestations, apparently did what he could, and all she would allow him to do, to relieve her, but failed to preserve her life. In view of these facts, and the further facts that the husband was an affectionate one, and had never appeared indifferent to his wife or neglectful of any conjugal duty, and that in failing to earlier call in a physician he acted in good faith and at her request, though he doubtless erred in so doing, this court fails to find any just or reasonable ground for the verdict of the jury; indeed, it thinks it wholly without support from the evidence.

Those of us who reverence the medical profession and implicitly trust the learning and skill of the family physician, the court goes on to say, may be disposed to attribute to ignorance or prejudice such a lack of confidence in that profession as was manifested by this wife, and wonder that the husband, in the face of such a crisis as confronted them, should have allowed himself to be influenced to trust to Nature's laws, or supernatural aid, rather than medical skill; but the fact remains that there are many who reject, as they did, both medicine and surgery for other means, or supposed means, of healing, and are perfectly sincere in doing so. We may concede that the wife made a grievous mistake in adhering to her purpose of rejecting medical aid, yet in view of the suffering, and, in the end, death, to which she subjected herself, her sincerity can not be doubted. And certainly there was nothing in the evidence which tended to prove that the husband, though making the same mistake, was any less sincere than she, unless it was the fact of his sending for a physician after the birth of the child. This act, however, appeared from the evidence to have resulted more from his desire to leave nothing undone for her relief than from a belief that benefit would result to the wife from the physician's presence or treatment. In any event, it was the very opposite of neglect, and should go to the credit, instead of the debit, side in the husband's accounting for the offense charged in the indictment. One cannot be said in any manner to neglect or refuse to perform a duty unless he has knowledge of the condition of things which require performance at his hands.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 Medical Education and Medical Progress. G. H. Grant, Richmond, Ind.
2 *Insane Lovers. J. W. Stevens, Amityville, L. I.
3 Medical Inspection in Public Schools. I. C. Philbrick, Lincoln, Neb.
4 *Removal of an Intraligamentary Cyst and Bilateral Oöphorectomy During Early Pregnancy Without Interrupting Gestation. A. Brothers, New York.
5 *Contribution to the Etiology of Otitis Media Acuta Suppurativa Post Morbillos. G. Baar, Portland, Ore.

2. Insane Lovers.—Stevens calls attention to this subject as one of much importance to the general practitioner who first sees these cases. They are not uncommon in asylums and in neurologic practice. The patient may seem clear and rational on all other subjects, so that for some time he or she is considered entirely sane. The maniacal, insane lovers differ in certain prominent features from those of the paranoid class. In the former group the origin of this love is always to be traced to the abnormal sexual excitement, increased susceptibility to stimuli, facilitated release of impulses, and the lack of the restraining influence of the ethical sensibilities in the presence of elation and sense of well-being. At the beginning of this condition delusions and hallucinations are nearly always absent. In the paranoid case this love is only a part of a progressive and systematized delusional state. A strangely erotic element is not necessarily present. The maniacal patient often recognizes the abnormal nature of her impulses, while the paranoiac never does. The paranoiac is practically always monogamous, the maniacal often polygamous. In the latter the love disappears with the subsidence of the active symptoms of the individual attack, while in the former it remains throughout life. These patients should be carefully looked out for, not only for their own sake, but for the sake of their victims.

4. Bilateral Oöphorectomy and Removal of Intraligamentary Cyst.—Brothers operated in a case of this kind. The patient was seven weeks pregnant. The tumor lay quite low in the cul-de-sac of Douglas. Laparatomy was performed through a suprapubic transverse incision. The intraligamentary cyst was found on the right side, behind the uterus, and was removed in one mass with the closely connected Fallopian tube and cystic ovary. The ovary of the left side was found enlarged and microcystic. This ovary was exsected. Convalescence was uninterrupted, and the patient was delivered at term of a healthy child.

5. Etiology of Otitis Media Suppurativa Post Morbillos. Baar reports the history of five children in the same family who were attacked with measles. In all of them there appeared an acute suppurative otitis media. In three of these children the mastoid process, the antrum and the cranial cavity had to be opened on account of alarming cerebral symptoms which appeared in spite of previous painstaking antiphlogistic and antiseptic treatment, poultices and drainage after careful irrigation of the exterior auditory meatus with warm solutions of borax or instillation with peroxid of hydrogen and drying. Baar declares that the appearance of purulent inflammation of the middle ear at the end of the second week of illness seems to speak very much against the universal view that the measles otitides are caused by the primary exanthem. The pus taken from the depth of the exterior meatus, as well as from the antrum, mastoid process, and extradural abscesses, contained the same staphylococcus.

New York Medical Journal.

August 18.

6 *A Model for a New Ophthalmotrope; the Gonioscope. Some Phases of Ocular Motility. (To be concluded.) D. K. Shute, Washington, D. C.
7 Treatment of Cancer of the Rectum. S. G. Gant, New York.
8 Case of Vesicular Keratitis with a Filamentous Formation of the Detached Epithelium. B. Chance, Philadelphia.
9 Present Status of the Treatment of Appendicitis; the Family Physician's Responsibility. R. C. Coffey, Portland, Ore.
10 Our Duties as Citizens in the Prevention of Tuberculosis. G. H. Kress, Los Angeles, Cal.
11 Report of the Year's Work in the Gynecologic Service of the Samaritan Hospital, Including the Technic. F. C. Hammond, Philadelphia.
12 Value of the Bier Treatment. E. Adams, New York.
13 Scientific Murder. J. E. Herman, Brooklyn.
14 An Observation Chart. J. H. Barach, Pittsburg, Pa.

6. The Gonioscope; New Ophthalmotrope.—Shute's device is constructed on the same principle as Landolt's, but differs from the latter in its simplicity, and in the ease with which it can be constructed by any one out of very simple materials, such as an india-rubber ball, a hat pin and a tobacco box. It also differs from Landolt's apparatus in the fact that the rubber ball can be so easily painted, or marked with ink and made to serve as a model of an eyeball, instead of looking like a mere frame work of rings as does Landolt's; it also has the great merit of concentrating the attention of the student on a single axis at a time instead of distracting his attention by the presence of a number of very different axes. It can be made to show the rotation of the eye about axes in Listing's plane, thus giving lessons in physiology; or it can represent movements of the eyeball about axes perpendicular to individual muscle planes and thus out of Listing's plane so that the pathology of ocular motility can be investigated with the greatest accuracy. It readily permits also a study of ocular rotations under the influence of internal and external recti when attached to the eyeball, either too high or too low. Lastly, it differs from Landolt's instrument, in that it was primarily constructed for the purpose of demonstrating the necessity of diversity, instead of community of axes for the obliques on the one hand, and the superior and inferior recti on the other hand. In short, the instrument differs from all others, Shute states, in its extreme simplicity, flexibility and adaptability for demonstrating all the known ocular rotations on sound physiologic principles. The reader is referred to the original article for a complete description of the apparatus and the method of its use.

Boston Medical and Surgical Journal.
August 16.

15 *Two Cases of Gastrosuccorrhea or Gastric Hypersecretion Associated with Atrophic Cirrhosis of the Liver. H. F. Hewes, Boston.
16 *Serum Treatment of Exophthalmic Goiter. G. A. Waterman, Boston.
17 Introduction to the Study of the Fundamental Cause of Splanchnoptosis—Abdominal Incompetence. A. C. Vietor, Boston.
18 Incontinence of Urine. C. G. Kerley, New York.

15. **Gastrosuccorrhea Associated with Atrophic Cirrhosis ot Liver.**—The special points of interest in connection with the few cases reported by Hewes are the following: The cases represented, in their special symptomatology, the history of the symptoms and the character of the findings revealed by the examination of the contents of the stomach, typical cases of gastrosuccorrhea, one of continuous hypersecretion, the other of intermittent or periodic hypersecretion; and this stomach symptomatology represented, at the time the cases first came under observation, the prominent and only definite symptoms present. The special pathologic conditions of the stomach, with which hypersecretion such as was present in these cases is ordinarily associated, that is, which most frequently prove to be the primary causes of hypersecretion, gastrectasis, or ulcer of the stomach, were not present in these cases. This fact was proven in the first case, that of continuous hypersecretion, by the findings at autopsy in addition to the results of clinical examination. In the second case it was indicated by the results of clinical examination. The pathologic condition of cirrhosis of the liver was present in both cases. In the first case atrophic cirrhosis of advanced degree was found at autopsy. In the second case the diagnosis of cirrhosis was based on the finding of an enlarged liver plus the marked alcoholic history of the patient.

16. **Serum Treatment of Exophthalmic Goiter.**—The serum in the treatment of the five cases reported by Waterman was derived from blood drawn from the jugular vein of a goat two weeks or more after the removal of the thyroid gland. It was invariably used subcutaneously. The first patient received the serum in 1 c.c. doses, about five times a week, for the first three months, and then 2 c.c. doses, about twice a week, for the next three months, after which time 3 c.c. were given every eight or ten days for two months. The patient has been free from any signs of the disease for a year and a half. The pulse varies between 70 and 75. The second patient was given daily doses of 2 c.c. of serum for a week, when a general urticaria developed necessitating the discontinuance of the treatment for two weeks. At the end of this time she was given daily doses of 1.5 c.c. for a period two weeks, and then 3 c.c. once a week for two months, and once a month for three months. Six months after the treatment was stopped there were no signs of the disease and the patient was well in every respect. The same treatment was given in the remaining three cases, but not with equally good results. Two of the patients were improved, while one remained unimproved. In one of the improved patients the treatment was continued for eight months, and it is interesting to note that the hair of this patient has become dry and brittle and is turning gray. In none of these cases was the disease of more than four years' duration. The two patients who were cured were of one year and four years' duration, respectively.

Lancet-Clinic, Cincinnati.
August 18.

19 Some Features of Gastric Ulcer. W. D. Haines, Cincinnati.
20 Address to Graduating Class of the Medical College of Ohio. A. Ravogli, Cincinnati.

St. Louis Medical Review.
August 11.

21 An Unusual Case of Glaucoma. J. M. Ball, St. Louis.
22 Origin and Heredity of Matter. (To be continued.) J Wright, New York.

New Orleans Medical and Surgical Journal.
August.

23 Affections Characterized by Gastroenteric Catarrh. G. P LaRoque, Richmond.
24 Abortion. T. A. Roy, Avoyelles Parish.
25 Typhoid Fever. F. M. Thornhill, Arcadia.
26 Anomalies of Typhoid Fever. J. Atkinson, Arcadia.
27 *Surgical Treatment of Prostatic Hypertrophy. S. P. Delaup, New Orleans.

27. **Treatment of Prostatic Hypertrophy.**—Delaup reviews the operative treatments for prostatic hypertrophy that have been found to be the best, and concludes as follows: A routine method is not applicable to the treatment of prostatic hypertrophy; every case is a law unto itself, and the treatment will depend on the various conditions presented in each individual case. The prostatic suffering from persistent severe cystitis, or difficulty or pain in catheterism, should early receive operative relief; delay is destructive to his urinary apparatus, and hence to his chance for life and comfort. The dangers attendant on the daily catheterism are greater than those of a radical operation performed at the onset of the symptoms caused by the obstruction, and the earlier the operation the fewer will be the complications encountered. The choice of operation must be determined partly by the patient's vigor and partly by the condition of the bladder and kidneys. In patients too weak to withstand an operation, suprapubic drainage is advised, and if improvement follows this procedure, then a radical operation is indicated. The proper time to perform a radical operation is reached as soon as it becomes necessary for a patient to resort to daily catheterism. A perineal prostatectomy is best suited for those patients in whom the enlargement of the lateral lobes has a tendency to progress toward the rectum, to obstruct the urethra; or to project backward into the bladder. This method is applicable in fully 90 per cent. of all cases, and is the surest, the safest and probably the quickest method of curing the patient. In early operations the results are most satisfactory, recovery rapid, the mortality varying between 5 and 7 per cent. Suprapubic prostatectomy, combined with perineal drainage, is wisest when there is an enormous intravesical hypertrophy of the lobes, especially if the condition is associated with tumor formation projecting well back into the bladder. A prostatectomy is usually attended with more risk than the Bottini operation, and the convalescence is more prolonged. Therefore, in suitable cases in which the general health and kidneys contraindicate more radical measures, and also in those cases in which prostatectomy is refused, the Bottini operation is especially indicated.

The Canada Lancet, Toronto.
August.

28 *Nostrums and Proprietary Medicines. J. Hunter, Toronto.
29 Medical Thoughts, Facts, Fads and Fancies. J. S. Sprague, Stirling, Ontario.
30 Sir Charles Hastings, the Founder of the British Medical Association. J. Ferguson, Toronto.

28. **Nostrums and Proprietary Remedies.**—Hunter prescribes conditions as they exist and suggests remedial measures. He says that materia media, pharmacy and therapeutics, as compared with the other branches of medicine, are in a morbid state. Our knowledge of these is, he declares, lamentably defective, the literature is rankly unscientific, and our practice empirical and eratic. The first thing necessary in the way of a remedy is a radical change in the curricula of our medical colleges. The most competent teachers should be provided, and these should be enthusiasts. There is too much nihilism in therapeutics. Time and facilities for teaching these sub-

jects profitably and intelligently should be provided. The importance and value of a thorough knowledge of materia medica and therapeutics should be indellibly impressed on the mind of every medical student. Therapeutics should be taught not only rationally and practically, but in minute detail. The mere enumeration of principles is not sufficient. A suitable selection of drugs should be made and the properties of these thoroughly learned, in order that the student may know how to prescribe them so as to get their full medicinal effects. When physicians have learned the art of prescribing standard remedies in an attractive and palatable form the field of rational and scientific therapeutics will be reclaimed.

The individual physician should replenish his library with the best literature to be procured on these subjects. He should not be led astray, Hunter says, by mercenary or fraudulent literature into prescribing nostrums whose composition is unknown. Every physician should take the time necessary to become thoroughly acquainted with all the drugs and remedies he needs to use. Every physician should point out to his patients the evils arising from the indiscriminate use of any drug or remedy. Medical associations and societies should use every means at their command to mitigate these evils. Far more attention should be given to materia medica and therapeutics at medical meetings. Committees should be appointed to investigate all new remedies. Medical journals should positively refuse to advertise any preparation, drug or compound whose composition and qualities are unknown. No medical journal, manufacturer or exploiter has any right to imperil the lives of others for gain or any purpose whatever.

Chicago Medical Recorder.

August 15.

31 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
32 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur Filtered Water, Steam and Formaldehyd Sterilizers and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
33 Physical Examinations for the United States Army. C. L. Wheaton, Chicago.
34 *Indications for the Surgical Removal of Tonsils and the Best Methods for Doing So. O. J. Stein, Chicago.
35 Intravenous Injections of Mercury as a Therapeutic Test for Syphilis. W. F. Bernart, Chicago.
36 Hemorrhoids. C. J. Drueck, Chicago.
37 Treatment of Abortion and Miscarriage. M. Whise, Chicago.

34. **Removal of Tonsils.**—Stein believes that the best method of surgical treatment of the tonsils is the one that insures the possibility of the removal of all of the glands. He employs a procedure that combines the best features of two of the oldest and best known methods—namely, dissection and use of the tonsillotome. After the tonsil and the faucial pillars have been anesthetized, the gland is dissected free from its mucus and any fibrous attachment. The important feature of this part of the operation is that the gland must be deeply and firmly engaged in the tenaculum forceps in order to secure a very firm hold on the mass when traction is brought to bear. The traction is at first inward, toward the mouth, downard and backward. This is furthered by a backward rotation of the engaged forceps. The attachments are now all at extreme tension, and with a small sharp bistoury or small curved scissors incision is commenced well up in the epitonsillar fossa and carried down along the anterior edge of the palatoglossal muscle, hugging the capsule and avoiding the muscular fibers. Any posterior attachments are severed in the same manner, but by reversing the rotation of the engaged forceps to a forward position. Special effort should be directed to the liberation of the large mass of the gland found tucked away in the epitonsillar fossa. The fenestra of a Mackenzie pattern tonsillotome is now made to encircle the gland close to its posterior attachment, and while strong traction with the forceps is continued, the blade of the tonsillotome is driven forward, severing at one stroke the remaining portions. In place of the tonsillotome a special pair of curved scissors, or the cold or electric cautery wire loop, may be used with success.

Journal of Cutaneous Diseases, New York.

August.

38 *Treatment of Epithelioma by Means of Caustic Potash. A. Van Harlingen, New York.
39 Length of the Primary Incubation Stage of Syphilis. A. Post, Boston.
40 Arsenic in Pityriasis Rubra Pilaris. M. L. Heidinsfeld, Cincinnati.
41 *Case of Lupus Erythematosus in Early Childhood. J. F. Schamberg, Philadelphia.

38. **Treatment of Epithelioma by Caustic Potash.**—Van Harlingen records the results he has obtained in the treatment of 55 cases of epithelioma by the use of caustic potash. The ages of the patients ranged between 35 and 94 years. Thirty patients were males and 25 were females. Almost all tumors were located on the face. The left cheek was the seat of the lesion in 10 cases; the left side of the nose in 9 cases; the right side of the nose, the right cheek and the right temporal region, 4 cases of each; left cheek and left temporal region, 3 cases each; left lower eyelid, 3 cases; each ear, 1 case; each side of the upper lip, 1 case. Most of the lesions were quite small, the largest measuring 3 cm. in diameter. In almost all the cases entire reliance was placed on the caustic potash. Occasionally, slight relapses, or what appeared to be such, were treated with one of the mineral acids, formalin, etc. The wounds healed in from ten days to eight weeks, the average duration being four weeks. In the majority of cases so treated, the results were entirely satisfactory. In seven instances, the treatment was unsatisfactory or a complete failure, from several causes. Van Harlingen concludes that cases of epitheliomata of the skin that display small, well-defined pearly lesions, from one-half to 1 or even 2 cm. in diameter, found chiefly on the face and adjacent parts, are best treated by the use of caustic potash. Larger lesions are best treated by the *x*-ray, but here caustic potash may be used to soften and to dissolve the horny epithelium and in some cases as an adjuvant. In cases treated with caustic potash the use of the *x*-ray does not appear to hasten the process of reparation or to modify to any marked degree the cicatrix resulting from cauterization.

41. **Lupus Erythematosus in Early Childhood.**—The patient referred to by Schamberg was four years and three months old when the disease began. The first lesion appeared on the right cheek in the form of a pimple. This gradually increased in size, and later another lesion appeared on the left cheek. There is no dilatation of sebaceous glandular orifices. The case represents the vascular type of the disease.

Western Medical Review, Lincoln, Neb.

July.

42 *Collateral Circulation, Following Ligation of the Femoral Artery. F. Rustin, Omaha.
43 Neuralgia. F. E. Coulter, Omaha.
44 Intraocular Foreign Bodies. W. M. Cowgill, Lincoln.
45 Surgical Fever. J. M. McLeod, Lincoln.

42. **Collateral Circulation Following Ligation of Femoral Artery.**—Rustin reports a case of successful ligation of the femoral artery for popliteal aneurism and in which two years later he did a hip-joint amputation for a septic gonorrheal knee. The aneurism was of traumatic origin following a gunshot wound. Two silk ligatures were brought around the femoral artery, about two inches below the profunda and about one-half inch apart. The artery was not cut between the ligatures. For a few days after the operation there was some swelling and edema of the leg and foot; then the leg gradually became normal; the tumor diminished in size and there was every evidence of complete return of circulation below the ligature. As stated, a hip-joint amputation was done two years later. The amputated leg was preserved and the artery injected. The section showed that the main line of circulation was carried on through the anastomosis of the profunda artery, which was very much enlarged. The perforating arteries of the profunda were large and tortuous and anastomosed freely with the ascending branches of the popliteal artery. The external circumflex artery anastomosed freely with the superior articular branch of the popliteal artery. There were few anastomoses between the external circumflex branch of the profunda with the vessels in the gluteal region. Rustin says that at the time of operation he noticed that there were many small vessels, more than are usually encountered in the ordinary hip-joint amputation. The original aneurismal sac was obliterated, and its only remnant was a cord-like mass about four inches long and an eighth of an inch in diameter.

Ohio State Medical Journal, Columbus.

August 15.

46 *Stiff and Painful Shoulders. E. A. Codman, Boston.
47 Syphilis in Relation to Crime. A. Ravogli, Cincinnati.
48 Experience in Treating Diseases of the Lachrymal Duct Without Operation. W. H. Snyder, Toledo.
49 *Case of Extrauterine Gestation; Operation, a Living Child Delivered Weighing Three Pounds. H. T. Sutton Zanesville.
50 Points in the Hygiene and Sanitation of Rearing Children. D. S. Hanson, Cleveland.
51 Address of Welcome Delivered Before the Ohio State Medical Association at Canton, Ohio, May 9, 1906. J. F. Marchand, Canton.
52 Report of the President of the Ohio State Medical Association. T. C. Martin, Cleveland.
53 Cesarean Section—Twin Pregnancy, Multiple, Fibroids, Hysterectomy. J. F. Baldwin, Columbus.

46. **Stiff and Painful Shoulders.**—Under this title Codman considers cases of obscure lesions of the shoulder joint, often called rheumatism, fibrous ankylosis, paralysis of the deltoid, etc., the result of a blow, sudden muscular exertion, pressure, overuse or inaccustomed use. Codman believes that the trouble is due to subdeltoid adhesions and that the logical treatment is breaking up of these adhesions and then preventing their reformation by means of a splint which holds the arm in abduction and external rotation, thus bringing raw surfaces opposite healthy ones. The frame of the splint he uses is made of light iron wire, one-quarter of an inch in diameter and stiff enough to maintain its form and to carry the weight of the arm. Sufficient cotton wadding to thoroughly pad it is bandaged over it, and the whole is covered with cotton or a linen cloth. The splint should be long enough to extend from the axilla to the seat of the chair on which the patient sits. It is best held in position by a belt around the pelvis and a figure of 8 flannel bandage about the shoulder, crossing back of the neck. The pad should be placed on the opposite axilla to prevent excoriation of the skin by the bandage. The splint passes along the under surface of the arm, which is elevated in front of the body on a level with the head and slightly flexed, to the axilla, and then down the side of the chest over the hip to a point where it will just touch the seat of the chair on which the patient sits.

49. **Extrauterine Gestation.**—Sutton reports an unusual case of this kind. The patient was a primpara, 26 years of age. At three months uterine pains became so severe that the attending physician advised an attempt to empty the uterus, but he failed to deliver the fetus. At six months the same performance was gone through with by another physician, with the same result. At eight months she was taken very ill with pain over the abdomen, nausea, vomiting and great weakness. An extrauterine gestation was diagnosed and an operation advised. The abdominal incision brought into view a ruptured sac with a head presentation. A living child was delivered. A supravaginal hysterectomy was then done and the sac and uterus removed together. The patient died from shock thirty-six hours afterward. The child lived twelve hours. It was perfectly formed and weighed 3 pounds.

American Journal of Urology, New York.

August.

54 American Urological Association. F. C. Valentine, New York.
55 President's Inaugural Address to the New England Urological Society. O. C. Smith, Hartford, Conn.
56 *Sequelæ of Prostatectomy. R. F. O'Neil, Boston.
57 *Results of Prostatectomy. H. Cabot, Boston.
58 Indications, Contraindications and Management of Prostatectomy. C. G. Camston, Boston.
59 *Sigmate Ureteral Obstruction. A. E. Gallant, New York.
60 Intravesical Operations with the Aid of the Cystoscope. H. Meyer, San Francisco.

56. **Sequelæ of Prostatectomy.**—O'Neil reviews 115 cases of perineal and 93 cases of suprapubic operation recorded by Proust. Of the perineal operations, 8 patients died, of the remaining 107, 55 cases had some postoperative condition, often several, orchitis occurring 14 times, fistulæ 14 times, of which 5 were temporary, residual urine 20 times. In 10 cases there was marked frequency of urination. In 30 other cases, only 8 of which are included in the 55 because of other conditions, a moderate amount of frequency of urination was present, that is, from two to four times at night and every three hours during the day. The beginning of micturition was given in 66 cases; longest 70 days after operation; shortest 5 days; average 26 days. Of the 93 suprapubic cases, 11 patients died. Of the remaining 82, 12 patients had sequelæ (this includes 2 cases of shock and 1 of hemorrhage), 4 suffered from frequency of urination, 2 from slight residual urine. 1 from abscess, 2 had orchitis, one of the latter cases proving fatl. Micturition began on an average 17 days after operation, the longest time being 45 days after operation, the shortest three days. By comparing the two series of cases, it is evident that the perineal route is much the more liable to troublesome sequelæ.

57. **Results of Prostatectomy.**—Cabot uses as a basis for his study the reports of surgeons of experience, who report not less than 14 cases, one year or more after operation. Of 495 patients operated on, 388, or 78 per cent., were cured. The percentage of cures was much greater in the cases of complete retention than in those of incomplete retention; 85 per cent. in the former, and 40 per cent. in the latter.

59. **Sigmate Ureteral Obstruction.**—Gallant cites the history of a patient suffering from an abdominal tumor, which apparently originated in the pelvis, but proved to be a hydronephrotic kidney induced by prolapse and the subsequent formation and agglutination of an s-shaped flexure of the ureter at its junction with the renal pelvis. Points of interest which came up during the course of the case were (a) the complete restoration of the ureteral caliber as soon as the inflammatory bands were removed; (b) the resumption of secretory function shortly after the kidney was replaced and the ureter freed; (c) the gradual recurrence of obstruction, with infection of the kidney and pelvis; (d) the excellent work of the remaining kidney after the affected kidney had been removed.

The Post-Graduate, New York.

August.

61 A Few Wounds Observed During the Japanese-Russian War. C. Lynch, U. S. Army.
62 *Some Operations of Unusual Interest on Women. A. Brothers, New York.
63 Cases of Hematuria. F. Cabot, New York.
64 African Recurrens. R. Koch, New York.

62. **Operations of Interest.**—The first case reported by Brothers is one of appendicectomy performed on a woman, pregnant three and a half months, without interrupting pregnancy. The appendix contained three fecal concretions. The second case was one of LeFort's operation for vaginal hernia following hysterectomy in a woman 60 years of age. The result was perfectly satisfactory. In the third case the uterus and vagina were removed *en masse* by vaginal hysterectomy for the cure of prolapsus uteri in a woman 50 years old. The patient recovered. The fourth case was one of perforation of the intestine by a fish bone. The patient, a woman, 60 years old, had apparently been cured two and a half years previously of tuberculous peritonitis by incision and drainage. A sinus leaking during the six months following left her with a ventral hernia. After considerable difficulty the intestines were separated from the anterior abdominal wall and from each other until a large cavity, containing about 8 ounces of a straw-colored liquid, was perforated with the finger. While separating adhesions an ulcer of the intestine presented and projecting from its center was a sharp point which proved to be a fish bone measuring nearly 1¼ inches in length. After depressing and inverting the ulcer its base was drawn together by means of a circular tobacco-pouch suture passed around the margin of the ulcer. To reinforce this suture a few extra Lembert sutures were passed in a second tier, completely burying the first suture. The hernia was treated in the usual manner.

Louisville Monthly Journal of Medicine and Surgery.

August.

65 Louisville's Milk Supply. R. McD. Allen, Lexington.
66 Milk as an Infant Food. R. B. Gilbert, Louisville.
67 Chemistry of Milk. P. F. Barbour, Louisville.
68 Constipation. D. O. Hancock, Henderson.
69 *Veratrum Viride in Eclampsia. J. W. Fletcher, Princeton.
70 *Thoughts on the Symposium on Puerperal Eclampsia. C. G. Thornton, Lebanon.
71 Case of Hyperemesis Gravidarum. E. S. Bramlett, Oxford.

69. **Veratrum Virid in Eclampsia.**—Fletcher regards veratrum as much of a specific in eclampsia as is quinin in malaria. He administers the veratrum hypodermically in doses of from 15 to 65 minims, depending on the severity of the case. He has also used it with benefit in cases of infantile convulsions,

delirium tremens, pleurisy, pneumonia, sunstroke, gastralgia, enteralgia and other conditions accompanied by spasmodic pain.

70. **Venesection in Puerperal Eclampsia.**—Thornton advocates venesection, withdrawing at least a quart of blood by actual measurement. He does not think it necessary to inject saline solution because of the ever present edema.

California State Journal of Medicine, San Francisco.

June.

72 President's Address, Thirty-sixth Annual Session of the Medical Society of the State of California. R. F. Rooney, Auburn.
73. Abdominal Exploration. C. M. Cooper, San Francisco.
74 Liver Infection from Appendicitis. W. S. Thorne, San Francisco.
75 Football Injuries. R. L. Wilbur, Stanford University.
76 Importance of More Careful Observation of Patients After Operations on the Pelvic Viscera. C. G. Bull, Alameda.
77 General Diseases as a Cause of Diseases of the Eye. W. W. Ward, Woodland.

Physician and Surgeon, Detroit and Ann Arbor.

July.

78 Rural City Milk Supplies and Their Relation to Infant Feeding. Home Modification Versus Laboratory Modification. A. M. Cook and D. M. Cowie, Ann Arbor.
79 Lessons in Longevity. J. S. Caulkins.
80 Necrosis of the Mastoid Process. W. J. Benn, Bay City, Mich.

Virginia Medical Semi-Monthly, Richmond.

July 27.

81 Chronic Indigestion. J. E. Walsh, Washington, D. C.
82 Salt Action and Salt Solutions. A. L. Muirhead, Omaha, Neb.
83 Neurasthenia. J. D. Bartram, Ashland, Ky.
84 Tumors of the Intestine. G. P. LaRoque, Richmond.
85 Ourselves as Others See Us. J. R. Cook, Fairmont, W. Va.
86 Pathologic Findings and Causation of Eclampsia and Hyperemesis. G. Baughman, Richmond.

August 10.

87 Tuberculosis of the Bladder and a Plea for Early Diagnosis. F. R. Hagner, Washington, D. C.
88 Diagnosis and Treatment of Tuberculous Bone and Joint Lesions, from the General Practitioner's Standpoint; Question of the Responsibility for Deformity. R. T. Taylor, Baltimore.
89 Observations in the Treatment of Continued Fever. A. J. Hetherington, Phoenix, Ariz.
90 Cases of Functional Anuria. C. W. Astrop, Surry, Va.
91 Cancer; Its Cause and Spread. F. A. Butler, Harvard, Neb.
92 Adrenalin Chlorid in Variola. L. Eliot, Washington, D. C.
93 Compound Fracture of Great Toe and Contusion of Foot Followed by Phlegmonous Erysipelas. D. W. Scott, McDonough, Ga.

American Journal of Surgery, New York.

August.

94 Malignant and Non-Malignant Growths. W. S. Bainbridge, New York.
95 Surgical Treatment of Gonorrhea in Women. J. W. Bovée, Washington, D. C.
96 Sociologic Aspects of Gonococcus Infection. P. A. Morrow, New York.
97 Intussusception. W. L. Estes, South Bethlehem, Pa.
98 Bandage for the Stump After Amputation Through the Thigh. H. M. Hays, New York.

Texas State Journal of Medicine, Ft. Worth.

August.

99 Ocular Manifestations of Nephritis. J. O. McReynolds, Dallas.
100 Symptoms and Diagnosis of Acute Nephritis. R. T. Morris, Houston.
101 Nephritis Complicating Typhoid Fever. J. M. Frazier, Belton.
102 Treatment of Acute Nephritis. J. W. Scott, Houston.
103 Diagnosis and Treatment of Chronic Nephritis. M. M. Scott, Brownwood.
104 Etiology of Acute Nephritis. S. C. Red, Houston.
105 Case of Multiple Sclerosis G. H. Moody, San Antonio.

Albany Medical Annals.

August.

106 An Address to the Graduating Class of St. Peter's Hospital Training School for Nurses. H. Hun, Albany.
107 Etiology and Treatment of Hemorrholds; a Review. D. C. Moriarta, Saratoga Springs, N. Y.
108 Sanitary Department of Armies and the Military Medical Officer. J. V. R. Hoff, U. S. Army.
109 Victims of the Medicis and the Borgias in France from a Medical Standpoint. C. G. Cumston, Boston.

Mississippi Medical Monthly, Vicksburg.

August.

110 The Physician and Some of His Duties. J. W. Henderson, Lyon.
111 Benefits to be Derived from a Well-Organized Country Society. A. C. Norman, Cato.
112 Light Rays. J. W. Unger, West Point.
113 The State of Alkaloidal Medicine Versus the Old Galenical Preparations. F. E. Lee, Aberdeen.
114 Tuberculosis. W. A. Cox, Pascagoula.

Buffalo Medical Journal.

August.

115 Address to the Graduates in Medicine, Law, Dentistry and Pharmacy, at the Sixtieth Annual Commencement of the University of Buffalo, N. Y., June 1, 1906. E. N. Brush, Baltimore.
116 Story of the Discovery of the Circulation. R. Park, Buffalo.
117 Some of the Leading Men and Events in the History of American Medicine. F. Thoma, Buffalo.

Maryland Medical Journal, Baltimore.

August.

118 Report of the Women's Venereal Department of the Johns Hopkins Hospital Dispensary. F. Pollock, Baltimore.

Journal of the Medical Society of New Jersey, Orange.

August.

119 Nutrition During the First Year. H. L. Coit, Newark.
120 Digestion of Fats, Proteids and Carbohydrates in the First Year. J. F. Bell, Englewood.
121 Suitable Diet During the Second Year. M. P. Brewster, Grantwood.
122 Second Year Disorders of Infantile Digestion. A. McAlister, Camden.

Kentucky Medical Journal, Louisville.

August.

123 Acute Meningitis. J. H. Souther, Three Forks.
124 Cerebral Thrombosis. D. A. Campbell, Bowling Green.
125 Fractures of the Humerus. G. A. Hendon, Louisville.
126 "Patent" and "Proprietary" Remedies. H. H. Roberts, Lexington.

The Alienist and Neurologist, St. Louis, Mo.

August.

127 Adolescent Insanity (Dementia Præcox). E. Trommer, Hamburg.
128 Training of Mentally Defective Children. M. W. Barr, Elwyn, Pa.
129 Psychoencephalonasthenia or Cerebrasthenia Simplex, and Psychoencephalonasthenia or Cerebrasthenia Insaniens. C. H. Hughes, St. Louis.
130 Mixoscopic Adolescent Survivals in Art, Literature and Pseudo-Ethics. (To be continued.) J. G. Kiernan, Chicago.
131 A Case of Reflex Epilepsy. C. E. Ingbert, Independence, Iowa.
132 Erotic Symbolism. (To be continued.) H. Ellis, Carbis Water, Lelant, Cornwall England.
133 A Morphiamaniac on Trial for Murder. A Medicolegal Study of the Matthews Case. T. D. Crothers, Hartford, Conn.
134 Sadism. D. S. Booth, St. Louis.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 4.

1 Development of the Treatment of Uterine Fibromyomata within the Last Twenty-five years. F. W. N. Haultain.
2 *Dysmenorrhea. A. Routh.
3 *Series of Fifty Consecutive Abdominal Sections. R. P. R. Lyle.
4 *Obstetric Experiences. J. Lindsay.
5 Evaporation of Chloroform During Inhalation. A. G. Levy.
6 Landry's Paralysis. E. MacNamara and J. Bernstein.
7 *Case of Abdominal Fissure. H. Stevenson.
8 Ascaris Lumbricoides as Cause of Appendicitis. A. Castellani.

2. **Dysmenorrhea.**—In the treatment of dysmenorrhea due to anemia, Routh has found the following an excellent prescription to be taken, after food, three times daily:

℞. Liq. ammoniæ acetatis	ʒii	8	
Ferri et ammoniæ citratis	gr. vii		5
Tr. calumbæ	♏xxx	2	
Liq. potass. arsenicalis	♏iii		2
Magnesii sulph. q. s.			
Aquæ chloroformi ad	℥i	30	

M. Fiat haustus.

A week before the period is due, ten grains of bromid of potassium may be added to this combination, or salicylate of soda, if a rheumatic tendency is present. For the relief of pain Routh has found the following very serviceable:

℞. Tinct. cardamomi co.	℥ss	2	
Tinct. zingiberis fort.	♏c		3
Liq. ammoniæ acetatis	ʒiv	16	
Antipyrini	gr. v		3
Potassii bromid	gr. xv	1	
Aquæ caryophylli ad	℥i	30	

M. Fiat haustus.

A dose of this is to be taken when the pain is present, and repeated, if need be, in two hours. If stronger sedatives are required, a cachet containing three grains each of antipyrin, phenacetin and citrate of caffein has been found to answer better than larger doses of the same drugs separately. If the extremities are cold, or if the patient feels chilly, prompt relief may be afforded by the inhalation of amyl nitrate (3 minims), or by taking nitroglycerin (grain 1/100). In congestive dysmenorrhea, where the antispasmodics fail, extract of cannabis indica (grain 1/3) or a combination of hydrastis, belladonna and bromid of potassium or sodium afford prompt relief. In cases of pelvic congestion with cold extremities and cold skin, Routh has found nitroglycerin to be remarkably effective. Ten grains of the compound powder of ipecac, combined with 30 grains of bromid of potassium, is often very useful if the patient is seen towards night time. Hot douches, local applications of iodin, glycerin tampons, gelatin pessaries, and assuming the genu-pectoral position for ten minutes at bedtime, are also useful means of emptying the pelvis of venous blood.

3. **Fifty Consecutive Abdominal Sections.**—Lyle reports 50 consecutive abdominal sections performed in an ordinary attic of a small (six beds) hospital, under the most restricted conditions and with the simplest technic. Every possible precaution was taken to avoid sepsis or shock. There was only one death.

The following operations were performed: Ovariotomy, 17; supravaginal hysterectomy, 8; salpingectomy, 5; salpingo-ovariectomy, 4; enucleation of broad ligament cyst, 4; ciliotomy, 4; myomectomy, 3; ventrofixation, 3; panhysterectomy, 2. Six patients operated on for rupture ectopic gestation made uninterrupted recoveries. The one patient who died had a suppurating multilocular ovarian cyst with purulent peritonitis. Lyle concludes that his good results may be ascribed to a correct diagnosis, simplicity in technic, use of few instruments and appliances, limitation of size of abdominal incision, correct adjustment of all cut peritoneal surfaces, complete closure of the abdominal cavity without any drainage, and the free use of normal saline solution in cases in which purulent material is accidentally spilled in the pelvis or abdomen during the performance of an operation.

4. **Obstetric Experiences.**—Lindsay discusses his experiences with 5,845 cases of labor distributed over a period of 47 years. These cases occurred in his own practice, although about half of the number were in charge of his assistants. More than half of the deliveries were conducted with the patient on her knees, holding on by a chair, the woman refusing to go to bed. No use was made of antiseptics, except an antiseptic oil or grease for the finger, hand or instruments. The most careful asepsis was insisted on. There was no shaving of the parts, no washing, no syringing. Lindsay did all his work without uncovering the patient, except when using instruments or when anything unusual arose. During his first ten years of practice, when antiseptics had no place in the obstetric bag, he did not have a death. His first death was the result of puerperal fever, imported by a nurse. Among this total number of cases there were 2,309 forceps cases; 19 cases of version; 12 cases of placenta prævia; 13 cord presentations; 40 breech or feet presentations; 71 cases of twins; 3 cases of triplets; 52 occipito-posterior presentations; 13 face presentations; 2 cases of inversion of the uterus; 2 cases of hydatidiform mole; 8 monstrosities; 126 premature births; 3 cases of rupture of the uterus; and 5 cases of indentation of the frontal bone, due to forceps delivery.

There were 28 deaths in this series of cases, only one being the result of puerperal fever. Other causes of death were erysipelas, pneumonia, measles, phlebitis, peritonitis, convulsions and embolism. In the entire series there were only 6 cases of rupture of the perineum; none were complete.

7. **Fissure of Abdominal Wall.**—The subject of the report made by Stevenson was a seven to eight months' premature female child, first seen about two hours after birth. A large mass of bowel lay exposed outside of the abdomen without peritoneal or other covering. It consisted of all the large intestine and several inches of the small, with a patent Meckel's diverticulum about two inches in length. The fissure was between one and two inches in length. Stevenson removed the diverticulum flush with the bowel and closed the fissure. The child rallied well from the operation. The stitches were removed on the fifth day, when everything seemed well. On the sixth day the child became jaundiced and the evening of the eighth day it died.

The Lancet, London.

August 4.

9 Pathology of Skin Diseases. G. S. Woodhead.
10 Removal of a Cerebral Tumor (Endothelioma) which had Invaded the Overlying Cranial Bone. H. G. Barling.
11 *Blood Pressure and Pigmentation in Addison's Disease. A. R. Short.
12 Appointment of Qualified Women with Special Reference to the Hygiene and Feeding of Infants. J. S. Cameron.
13 Caterpillar Rash. J. C. Thresh.
14 Some of the Pseudo-Parasites of Cancer. A. S. Grunbaum.
15 *Case of Acute Rheumatism; Hyperpyrexia; Recovery. E. B. Smith.
16 *Treatment of Catarrhal and Gangrenous Dysentery. C. B. S. Amos.

11. **Addison's Disease.**—Short summarizes his paper as follows: 1. The symptoms of Addison's disease are due to vasomotor paralysis. This is due to absence of adrenalin, the normal excitant of the sympathetic nerve endings, from the blood. 2. The pigmentation is due to vascular relaxation of the skin causing exaggerated functional activity of the pigment cells. 3. The most promising line of treatment, on theoretical grounds, is the administration of vasoconstrictors of prolonged action; digitalin has given good results in one case.

15. **Hyperpyrexia in Rheumatism.**—The highest temperature, by rectum, in the case reported by Smith was 109.3; highest mouth temperature, 107.2. Cold baths were employed to reduce the temperature, and to these is ascribed the recovery of the patient.

16. **Treatment of Dysentery.**—Amos has had very satisfactory results in the treatment of dysentery from the employment of Manson's method of administering ipecac, associated with the following diet: All his patients are Africans, Asiatics, or Turks, and nearly all of them evince a very great repugnance to milk diet, frequently starving themselves for days rather than take it. Moreover, unless the milk is greatly diluted, hard curds constantly appear in the patients' stools. He has therefore abandoned a fluid diet in all cases of dysentery and has had recourse to a drier diet which the patients relish and take readily, even when in a most serious condition. They receive half a pint of milk at 7 a. m., when those without hemorrhage also have a small piece of bread; at 11 a. m. a plate of finely mashed rice, potatoes, lentils, macaroni, or beans, over which a little meat soup has been poured, is served. Convalescents also have a small piece of bread. At 5:30 p. m. they have a similar meal. During the night they have a pint of milk diluted with water to the patient's liking. Those who are very weak have in addition each day the whites of four eggs beaten up with brandy or water. The yelks of eggs they can not digest. No pure water is given, but a 1 in 3,000 solution of lactic acid is placed at the bedside for them to sip at will. With this dietary blackened tongues become moist and clean in one or two days, thirst disappears, no undigested food appears in the stools, and no difficulty is found in inducing the patients to take nourishment.

Indian Medical Gazette, Calcutta.

June.

17 Extraction of the Lens in Its Capsule; an Experience of 311 Cases, and a Method of Recording Cases. G. T. Birdwood.
18 Irrigation in Cataract Extraction. R. H. Elliott.
19 *Practical Points About Vaccine Lymph. J. Entrican.
20 *Value of Revaccination. R. D. Macgregor.
21 Splenic Abscess in a Malarial Liver. A. R. S. Anderson.
22 Cysticercus Cellulosæ of Tongue, with a Note on the Helminthology of One of the Madras Jails. C. L. Williams.

19. **Practical Points About Vaccine Lymph.**—Enterican describes an apparatus by means of which it is possible to fill hundreds of capillary tubes with vaccine lymph at one time with a great saving of lymph. The apparatus has been in use for over a year and has stood the test of time and experience.

20. **Value of Revaccination.**—This subject has been made one of careful study by Macgregor, and as a result of his work he draws the following conclusions: In adults not previously revaccinated the greater number are successful on revaccination, though this majority is not large. One previous revaccination, whether successful or not, renders the chances equal of a second revaccination succeeding or otherwise. In case of two previous revaccinations, successful or otherwise, success at a third revaccination is improbable. The period of life at which revaccination is more likely to succeed is before the age of 25 years. Those with good scars are much more likely to take on revaccination than those with poor scars.

Intercolonial Medical Journal of Australasia.

June.

23 Alcohol as a Beverage. J. W. Springthorpe, Melbourne.
24 Alcohol in Children's Diseases. A. J. Wood.
25 Effect of Alcohol on the Throat and Voice. C. L. M. Iredell.
26 Brachioplegia of Cerebellar Type and Rhythmical Tremor, with an Attempt to Explain the Symptoms and to Localize the Lesions. H. C. Maudsley.
27 Laryngeal Diphtheria in an Infant. R. Huckell.
28 Hematemesis in Typhoid Fever. S. W. Ferguson.
29 Intestinal Obstruction by a Band Eighteen Months After Appendicectomy. R. A. Stirling.

The Australasian Medical Gazette, Sydney.

June.

30 Hydrorrhæa Gravidarum. A. Austin.
31 Clinical Value of Accurate Estimation of Blood Pressure. S. Gillies.
32 *Foreign Body Retained in Orbit for Nearly Four Years. F. A. Pockley.
33 Causes of Cancer. J. B. Cleland, Sydney.
34 Leptothrix. W. J. Munro.
35 Exophthalmic Goiter. W. T. Chenhall.
36 Vasodilatation in Hemoptysis. E. T. Smith.

32. **Foreign Body in Orbit.**—Pockley reports rather a curious case. A boy, while playing at school, was knocked against a wooden fence and immediately afterward pulled a splinter of hard wood out of his right eye. As soon as he recovered from the concussion he discovered that he had no perception of light in that eye and that the ball was protruded somewhat. There was tenderness on pressure in the orbit below the eye, but not elsewhere. An incision was made through the conjunctiva, midway between the inferior oblique and inferior rectus, and a hard wood splinter three-quarters of an inch long was withdrawn. Careful probing revealed no other foreign body. The disc of that eye eventually passed into a condition of white atrophy, the eye being normal in position and range of movement. There was no pain or tenderness. Four years afterward, on awakening in the morning, the boy found sticking out of the corner of his eye a piece of wood one and on-equarter inches in length, and one-eighth inch in thickness. There had been no pain or swelling previously and nothing had been noticed when the boy went to bed the night before.

Semaine Médicale, Paris.

37 (XXVI, No. 29.) *Le fonctionnement du service de santé de l'armée japonaise pendant la guerre russo-japonaise de 1904-1905. Koiké (medical inspector general of Japanese armies).
38 (No. 30.) *Le pseudo-rétrécissement mitral fonctionnel (false mitral stenosis). L. Bard.
39 La désinfection est-elle une mesure efficace pour reduire la morbidité des maladies transmissibles.
40 (No. 31.) *L'origine rénale de l'hypertension artérielle permanente. L. Ambard.
41 New Degree of "Superior Medical Studies."—Réformes dans la mode de recrutement des agrégés des Facultés et des professeurs des Ecoles de médecine en France. See editorial, page 587.

37. **Sanitary Conditions in Japanese Army.**—This official communication from the medical inspector general of the Japanese armies describes the principles followed and the results obtained in the effort to keep the soldiers in good health. It concludes with the proud statement: "If it can be said that the Russo-Japanese war has no precedent in history in modern times in regard to its extent and its importance, it may be said with equal truth that our sanitary institutions won an equally unique victory." The mortality from disease was only a third of that from wounds. Beriberi was the cause of 25 per cent. of all the admissions from disease to the hospitals. The percentage of wounded was about 14.58 per cent. of the total active force. Smallpox, typhoid fever and dysentery reign in Manchuria nearly all the year, and as the soldiers were quartered by preference in the Chinese houses, the danger of infection was great. To attenuate this danger physicians were sent in advance of the troops and every available house and family were examined in order to recognize the contaminated and to exclude such houses from the occupancy of the troops, while the sick persons encountered were given careful treatment. A portable apparatus for steam sterilization of clothing and blankets was extensively used, and with excellent results. No injections of serum for typhoid fever dysentery, cholera or plague were made, as their effects are not always constant and with such an extensive battle line it would have been impossible always to wait for the febrile reaction. Each hospital ship had its own steam sterilizing plant, and each hospital train was carefully cleaned and disinfected each time after unloading.

38. **False Mitral Stenosis.**—Bard reviews the points useful for the differentiation of true from false mitral stenosis. The latter should be suggested by the occurrence of the signs in young chlorotic girls or nervous individuals. On the other hand, the presence of infantilism or tardy development should suggest the possibility of organic defect. An important differentiating point is what he calls the "vibration clôturale," that is, the changes in the audible vibration as the valve closes, the normal vibration being modified by the rigidity and induration of the valve in case of organic defect. This "clotural vibration" is plainer to the palpating hand than the modifications in the sounds to the ear. It is not affected materially by arrhythmia or tachycardia, which are liable to arrest the thrill. The exaggeration of mitral vibration from mere hyperfunction, without organic changes, is revealed by a wide, diffuse vibration without any localizable maximum, while it is scarcely attenuated by the interposed hands, and is exactly proportional to the extensive shaking of the wall over the heart. With organic changes there is more localized vibration; it has a deeper, more acute character, with little if any shaking of the wall. There can be no confusion between these two types except in case of pronounced palpitations and exaggerated functioning masking the character of the vibration. By waiting for a period of calm, the characteristics of the hard vibration may be detected. In false mitral stenosis the thrill is discerned, but the hard "clotural vibration" is absent, and this absence renders the significance of the thrill somewhat dubious. Differentiation is possible only by careful study of all the usual signs, but the special characteristics of the audible mitral vibration are of especial importance in this respect.

40. **Renal Origin of Permanent Arterial Hypertension.**—Ambard reviews the various types of arterial hypertension and the mechanism of its production. He is convinced that an exclusively mechanical hampering of the kidney secretion is the cause of the various types of exaggerated arterial tension encountered in the course of nephritis. When this mechanical hampering is variable, the arterial tension varies with it, and when it is invariable the hypertension is invariable. The variable effects of the retention of salt in the different types of nephritis are like an experimental demonstration of the part played by the kidney in the production of arterial hypertension. The fact that primary arterial hypertension seems to exist in certain cases is due to the presence of an unsuspected nephritis not accompanied by albuminuria, revealing its presence only by this mechanical interference with the kidney secreting function. It may be compensated by the increased arterial tension so perfectly that the existence of the nephritis is rendered dubious. Careful investigation of the permeability of the kidneys and autopsy of individuals of this category, dying accidentally, reveal the latent nephritis. In conclusion he remarks that the more one examines in detail these cases of permanent hypertension, the more convincing are the findings to the effect that there can be no permanent arterial hypertension without nephritis.

Berliner klinische Wochenschrift.

42 (XLIII, No. 22.) *Pyurie durch Leukocytose; Leukocytose-Pyämie. S. Talma (Utrecht).
43 *Precipitins of Cow's Milk in Infant's Blood.—Ueber den Nachweis der präcipitablen Substanz der Kuhmlich im Blute atrophischer Säuglinge. J. Bauer.
44 *Ist Hysterie eine Nervenkrankheit? P. Kronthal.
45 *Ueber Schleimhaut-Lupus der oberen Luftwege. M. Senator.
46 *Functional Treatment of Fractures.—Die funktionelle Behandlung der Knochenbrüche. C. Deutschländer. (Concluded.)
47 *Beiträge zur Chlorose und ihrer Behandlung. H. Bach. (Concluded.)
48 *Zur Therapie der barnsäuren Diathese (uric-acid diathesis). Grimm.
49 Physical Laws and Influence of Mineral Waters on Stomach Functions.—Können wir den Einfluss der Mineralwässer auf die Magenfunktion auf Grund physikalischer Gesetze erklären? B. Tausz.

42. **Pyuria Without Suppurative Processes.**—Talma describes 2 cases in which pus cells were found in the blood and urine

ithout a suppurative process being discovered anywhere in ie body at autopsy. Large numbers of polynuclear leucocytes ere found in the urine, and pus was discovered in small nounts in nearly all the organs, but without any local sup-iration anywhere. The kidneys were perfectly sound in ap-arance. The pyuria was induced solely by leucocytosis in th cases reported, favored possibly by exaggerated per-eability of the vessel walls. The patients were men 34 and years old. The second patient had a small contracted kid-y and chronic tuberculous lung lesions, but no suppurating ocess.

43. **Precipitins of Cow's Milk Found in Infant's Blood.**—auer was able to detect by the biologic hemolytic test the esence of cow milk precipitin in the blood of an infant suf-ring from severe atrophy. The toxic action of a foreign bumin has long been established, and this may have been the use of the severe atrophy. The test was made with progres-vely smaller amounts of the human serum, plus 0.03 c.c. the precipitating rabbit serum, plus 0.4 c.c. of fresh goat rum, the whole kept at 37 C. for an hour and a half. Then c.c. of a 5 per cent. suspension of sensitized corpuscles from at blood was added.

44. **Definition of Hysteria.**—Kronthal argues that hysteria n not be regarded as a nervous affection. It is the varying orbid reaction of the cells constituting the individual. reatment should aim to influence the morbidly reacting cells changing the environment and by strengthening the cells -the benefit from which has long been established empirically.

45. **Lupus of the Mucosa of Upper Air Passages.**—Senator s had occasion to observe 35 cases of lupus of the face in hich the affection involved the mucosa of the upper air pas-ges. In 22 the affection had commenced before the age of 5. Treatment of these comparatively inaccessible regions is curetting into sound tissue, and examining the patient ery three or four weeks to remove any foci overlooked or curring. A 50 per cent. solution of lactic acid may be found seful when for any reason it is impossible to use the curette. reatment with direct sunshine might be advisable for laryn-eal lupus according to Sorgo's successful technic.

46. **Functional Treatment of Fractures.**—Deutschländer re-ects immobilization and sparing the limb after a fracture as irrational and harmful method of treatment. On the con-ary, he preaches that the natural healing processes are pro-oted and hastened by functional use of the limb from the art. Massage is a subordinate aid. The functional use of e limb, however, must be guided, as not all movements are eneficial. Those only must be allowed which correspond to e pathologic conditions and the mechanism of the parts. he novice in this method should commence with treatment f fractures of the finger phalanges. The functional technic particularly effectual in case of fractures of joints. The esults in 73 workingmen with fractures of the arms, treated y this functional technic, were that the fracture healed in 7 without impairing in the least the working capacity. The orking capacity was impaired permanently about 50 per cent. 2; about 40 per cent. in 2, and 10 per cent. in 2. Nearly 0 of these patients were over 40. He uses adjustable and movable immobilizing appliances, but always with a view the functional use of the parts. The Bardenheuer extension eatment is a kind of functional therapy. He follows Hoffa's irections in regard to massage which must not be left to lay ands in case of fractures. The exercises of the limb must be ow and systematic and adapted to the individual conditions, sually with slight traction on the fractured limb. The ovements may describe quite wide excursions, but they ust not be abrupt nor excessive, and must never injure the ew tissues forming in the process of repair. Both during the assage and the exercises the fragments must be fixed in the osition in which healing is desired, with at the same time light correcting pressure on them.

47. **Treatment of Chlorosis.**—Bach found gastric hypoacidity only a small proportion of 224 cases of primary chlorosis. he acidity declined under treatment with iron. He gives the abulated findings in 11 cases under iron treatment.

48. **Uric Acid Diathesis.**—Grimm ascribes the deposits of urates to the peculiarly low standard temperature of individuals exhibiting signs of the uric acid diathesis. Some of his patients have permanently a temperature in the axilla of 35.8 C. The low temperature of the blood prevents the proper dissolving of the uric acid in the blood, and urates are deposited at the points where the temperature is constantly lowest, that is in the ears, hands, feet and joints. This assumption suggests an explanation for the rarity of gout in tropical regions. The metabolism is sluggish, and on account of this sluggish metabolism the uric acid is precipitated at various points in the body. Treatment should aim to stimulate metabolism, and he has found the Sauerbrunn mineral waters remarkably effectual in such cases. He has tested the dissolving action of these waters a hundred times by placing a number of small kidney stones in urine from a uric acid patient. He weighed the stones before and after leaving them in the urine for a day or two. The patient then ingested a quart or three pints of the Sauerbrunn waters daily and the test with the kidney stones was repeated. They were found to lose constantly in weight in the urine voided under the influence of the mineral water. Five small stones in one instance, weighing 45 mg., weighed only 28 mg. after three days in the urine, rendered strongly alkaline by drinking the Sauerbrunn waters. One of the stones crumbled to pieces. In treating the acute attack, warmth only should be allowed. With the Sauerbrunn waters, hydrotherapy, exercise and superheated air, he claims that even the oldest cases of uric acid diathesis can be improved and in many instances cured.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

50 (XXXII, No. 27.) Prevention and Treatment of Alopecia of Various Etiology.—Verhütung und Bekämpfung der Kahlheit. O. Lassar. Clinical lecture.
51 *Zur Frage der Entstehung der Lungen-Tuberculose (origin) A. Schlossmann and St. Engel.
52 Ueber Untersuchungen der Nasenrachenhöhle gesunder Menschen auf Meningococcen (in healthy throats). K. Kutscher
53 Ueber die Flagellaten-Form des tropischen Malaria-Parasiten F. C. Wellman.
54 Substitute for "Four Cell Bath."—Ueber einen wirklichen Ersatz des Vierzellenbades. Boruttau (Göttingen).
55 *Behandlung des Caput obstipum. H. Doering.
56 Negative Action of Antistreptococcus Serum.—Wirkung des Antistreptococcen-Serums. W. Zangemeister.
57 *Ueber Gonosan und Gonorrhoe-Therapie. C. Schindler and C. Siebert.
58 Kartoffel-Speisen für Diabetes und Adipositas (potatoes in diet). W. Sternberg.
59 Power for Physician's Automobile.—Motorstärke des Aerzte Kraftwagen. Sänger.

51. **Origin of Pulmonary Tuberculosis.**—Schlossmann and Engel make out a strong case in support of the assumption that tubercle bacilli ingested are taken up into the system by the same route as particles of food. The mesenteric glands are used to the passage through them of corpuscular elements, droplets of fat, etc., and their behavior during digestion indicates that they differ functionally from the other lymph glands in the body. The bacilli entering the mesenteric glands are passed along to the thoracic duct, and from here they can readily infect the lungs and bronchi. Ingested bacilli are able to pass through the intact intestinal wall, through the glands and into the thoracic duct as readily and as rapidly as the food particles follow the same route. The authors found the tubercle bacilli in the lungs in young guinea-pigs a few hours after the bacilli had been administered in milk. Tuberculosis should be regarded as a "children's disease," in so far as its inception almost invariably occurs during childhood, although its manifestations frequently do not appear until later. Contracted pelvis causes no disturbances until the child-bearing age, and yet it is the result of a rachitic process in youth. The practical conclusions of the article are urgent appeals for the prevention and cure of tuberculosis in childhood. By strengthening the child's organism it becomes able to conquer the existing disease and develop an effectual immunity.

55. **Treatment of Wryneck.**—Doering describes the operative measures that have been successfully followed in 35 cases of congenital torticollis. Simple open tenotomy is the standard technic and the results are even better than with more complicated procedures. In 32 of the cases, including a number of severe ones, the cure was complete and permanent.

57. **Gonosan and Treatment of Gonorrhea.**—Schindler and Siebert comment on the extensively advertised drugs for internal treatment of gonorrhea, referring especially to gonosan. They assert that such drugs are dangerous, as they have a tendency to supplant the essential and indispensable local treatment. If it were not for this, they remark, "the manufacturing chemists and the charlatans—whose ranks include many apothecaries, unfortunately—might be left in peace to profit by the sale of this convenient and consequently popular method of treating gonorrhea." "But," they add, "internal treatment of gonorrhea is not effectual. Extensive tests and experiments at Neisser's clinic have demonstrated the absolute worthlessness of any treatment not strictly antibacterial, especially internal treatment. Gonosan has been subjected lately to special tests which have established that its internal administration does not affect the gonococci in any way and hence has no influence on the course of the disease." After taking 10 capsules of gonosan a day for three days they mixed 1 c.c. of the urine on the third day with a suspension of gonococci. Even under these extremely favorable conditions the gonosan urine did not have the slightest inhibiting effect on the growth of the gonococci in the test tube. Local tests of the gonosan showed that it was far less bactericidal than the silver salts, oxycyanid of mercury or ichthyol. They query therefore, why, if gonosan has no favorable influence whatever on gonorrhea, either internally or externally, that is, does not kill the gonococci or inhibit their growth, why has it happened that, notwithstanding this, gonosan has met with such a cordial reception on the part of many physicians? They ascribe this, first, to the fact that it is much more convenient to prescribe capsules internally than to apply effectual local treatment, and secondly, to the fact that many physicians still cling to the delusion that if the symptoms, the pain, smarting and discharge can be banished in the early stages, the disease is cured. And yet countless experiences have shown that the gonococci still lurk in the parts. It is the practice at Neisser's clinic to refrain from arresting the discharge at once, as otherwise the patient thinks he is cured and grows careless. Neisser prefers freshly prepared solutions of a silver salt for the local treatment, commenced at the earliest possible moment. If this does not always accomplish the desired result the trouble is generally in the inadequate technic on the part of the patients, and, unfortunately, on the part of some physicians. Everything claimed for the action of gonosan is uncertain and inconstant, while good results are invariably obtained by an early, energetic course of local treatment.

Münchener medizinische Wochenschrift.

60 (LIII, No. 23.) Ueber Cholera- und Typhus-Endotoxine. M Hahn.
61 *Study of Bier's Congestive Hyperemia from Standpoint of Endotoxin Theory.—Die Biersche Stauungshyperämie vom Standpunkt der Endotoxinlehre. A. Wolff-Eisner (Senator's clinic, Berlin).
62 Verfahren zur Verminderung der Infectionsmöglichkeit bei Operationen in der Bauchhöhle (to reduce possibility of infection in abdominal surgery). A. Theilhaber.
63 *Measurement of Blood Pressure.—Ueber Blutdruckmessungen. T. Schilling.
64 *Zur Behandlung der Prostata-Hypertrophie. Rörig II.
65 *Pregnancy and Laryngeal Tuberculosis.—Schwangerschaft und Kehlkopftub. Levinger.
66 *Case of Permanent Spinal Paralysis After Spinal Anesthesia.—Bleibende Rückenmarkslähmung nach Lumbalanästhesie. Fritz König (Altona).
67 Two Cases of Left Abducent Paralysis After Spinal Anesthesia.—Zwei Fälle von linksseitiger Abduzenslähmung nach Rückenmarksanästhesie. P. Roeder (Israel's clinic, Berlin).
68 *Zur Kasuistik der Polycythämie, zugleich ein Beitrag zur Aetiologie der Migraine ophthalmique. G. Köster. (Concluded.)

61. **Congestive Hyperemia from Standpoint of Endotoxin Theory.**—The results of experimental research harmonize with the clinical phenomena observed and emphasize the fact that the proper indications for the application of Bier's congestive hyperemia are the same as for the bactericidal serums. Wolff-Eisner reviews them in detail. The congestive hyperemia has the advantage over the serums that the evacuation of the endotoxins can be easily secured by incision. This evacuation is indispensable, and it is a mistake to suppose that the congestive hyperemia takes the place of surgical measures excep in the very mildest cases. Lexer has shown that the congestiv hyperemia causes destruction of some of the bacteria and consequent liberation of endotoxins, but the bacteriolysis is no complete, and some bacilli are proliferating while others ar being destroyed. Unless an ample outlet is maintained fo the escape of the endotoxins, the measure does more harm tha good. But if free escape is provided, then the conditions ar remarkably favorable for rapid healing. Wolff-Eisner remark in addition to the above, that bacteriology and immunizatio and their problems should not be left exclusively to th theorizers, but should be taken into the clinic. They will ther yield valuable fruits and the clinic in turn will render them of greater use. Modern clinical institutes should be equippe for such work with medical men trained in it and able to interpret the phenomena observed. This would prevent th blind and wasteful use of expensive serums on patients without the proper indications. The endotoxin theory is destined he thinks, to play a most important part not only in th study of the origin of the disease, but also in its prevention an cure.

63. **Measurement of the Blood Pressure.**—Schilling expatiate on the great difference in the results observed when the constricting band is wide. He advises the use of a band 12 cm wide, which gives much more accurate findings. The norma range is found to be less extensive than when a narrow ban is used. With the Riva-Rocci and the 12 cm. band the bloo pressure of the healthy adult ranged only from 110 to 12 mm. The average in 100 men was 118.1 mm. In 1,000 test on 350 persons he found that instrumental measuremen alone is reliable. Notwithstanding his wide experience, i estimating the blood pressure without the instrument, h frequently found that his impressions were far from th truth when the results were compared with those registere by the instrument. In many cases the blood pressure finding were the only clue to effectual treatment. He has sometime derived great benefit from digitalis in cases with high pressure, the general health improving as the blood pressur dropped. As a rule, however, it is only a symptom and doe not need to be treated separately. Krehl has recently pointe out that it may be merely a means of defense on the part o the organism in some cases.

64. **Treatment of Hypertrophy of the Prostate.**—Rörig ha performed the Bottini operation in 203 cases, and has had onl one mishap and one death in this series. The one patient wh died succumbed to the results of uremic intoxication a fe weeks after the operation. Rörig is an earnest advocate of th Bottini operation, believing that it should be the standard an that resection or excision of the prostate should be reserve for exceptional cases. His results are a complete cure in 4 out of 51 cases of chronic, absolute retention, that is, in 9 per cent., with 1 patient improved. In 132 cases of chroni relative retention of urine, acute, intermittent retentio tenesmus and difficulty in catheterizing, 83 patients, 62 pe cent., were completely cured, while 34 per cent. were much improved, and no result was obtained in 3, that is, in 2.27 pe cent. In 20 cases of slight hypertrophy, 9 patients were improved and no effect could be discovered in the 11 other He has never had recurrence in any of his cases. He alway operates with the patient standing erect. He inflates th cleansed bladder with air, introduces the apparatus, hooks i in and allows the air to escape. When the patient states tha he feels a desire to urinate, the knife is sprung back into it sheath, under 50 amperes, and air is injected again, afte which the operation is continued. He then instills 10 c.c. of 1 per cent. silver nitrate solution and has the patient li down. In case of much congestion he leaves a catheter in th bladder. The prostate presents in such a way with th patient standing that a single cut is sometimes sufficient. H never operates under general anesthesia, as the bladder wall are liable to relax and the prostate to alter its shape. H ascribes to the chloroform anesthesia most of his failures, a in these he happened to operate under general anesthesia. second operation later without chloroform soon rendered th cure complete.

65. **Evil Effect of Pregnancy on Laryngeal Tuberculosis.**—vinger's opinion as to the injury from a pregnancy in case laryngeal tuberculosis has been amply confirmed by his ex-rience in 3 cases. In the first the woman died from the pid progress of the laryngeal affection about two weeks ter she had been delivered of an apparently healthy child. ith the exception of hoarseness for two years (no laryn-logic examination), there had been no indications of a roat trouble until after delivery, when an attack of suf-cation and fever led to the discovery of the tuberculous mor in the throat and lesions in the lungs. The patient did t survive excision more than a week or so, succumbing to moptysis. In a second case Levinger delivered the patient the end of the fifth month on account of aggravation of throat and pulmonary tuberculous affection as the preg-ncy progressed. The patient bore the operation well, as so excision of the tuberculous tumor in the throat, and has nce been in comparatively good health. In a third patient e deleterious influence of the pregnancy was likewise unmis-kable.

66. **Permanent Paralysis After Spinal Anesthesia.**—König's atient was a man of 35, who fell, while drunk, and fractured e patella. A week later the patella was sutured under ovain spinal anesthesia, about 0.06 gm. stovain being mixed ith the patient's own cerebrospinal fluid, which was then injected between the third and fourth lumbar vertebræ. In ss than fifteen minutes there was complete anesthesia to the mbilicus, but none of the functions of the parts below the mbilicus returned; bladder, rectum and legs were entirely aralyzed, the motor and sensory functions, and the tendon nd cutaneous reflexes were alike abolished. The entire region elow the seventh dorsal vertebra was as dead as after a total sion of the spinal cord, and after the usual sequence of ystitis and decubitus, death occurred in a little more than hree months. Headache, nausea and fever had also been ob-erved. The paralysis was complete from the very first, hich speaks against an infectious origin. Autopsy showed he spinal cord adherent to the dura below the ninth vertebra, ith signs of softening in the lumbar region and to a less ex-ent in the thoracic, with a purulent fluid escaping on trans-erse section.

68. **Polycythemia.**—Köster remarks that nearly all the cases f polycythemia known were in middle-aged persons, the oungest was 20 and the oldest 60. He reviews the arious cases that have been published and one from his own xperience. The etiology seems to be still as obscure as ever, lthough it is apparent that the cause can not be a single one. he only point firmly established to date is the change in the lood-forming organs, but whether this is primary or sec-ndary is still a mystery. See editorial in THE JOURNAL, ug. 18, 1906, p. 510.

Hospitalstidende, Copenhagen.

Last indexed, page 158.

69 (XLIX, No. 12.) *Om Fractura olecrani. A. Lendorf.
70 (No. 13.) *Paralyse under Forløbet af kroupøs Pneumoni. F. Vogelius.
71 Et Tilfælde af medfødt Kæmpevækst (congenital giant growth). E. Böcher.
72 (No. 14.) *Catgut That Can Be Boiled.—Om Kogecatgut. C. F. Heerfordt.
73 (Nos. 15-16.) Et Tilfælde af Tabes dorsalis og Aortaaneurysme, med Stenose af Trachea, Hæmo-Pneumothorax, Hjertetilfælde og universal Hydrops, etc. Helbredelse Højfebril Hæmethorax). Nordentoft. Recovery.
74 Et Tilfælde af Luxatio traumatica nervi ulnaris. A. Holm.
75 (No. 17.) Tilfælde af rhinogen Pyæmi. S. Bentzen.
76 (No. 18.) *Et Tilfælde af Salpingitis tuberculosa diagnosticeret ved Tuberkulin-Injektion. S. Kemp.
77 *Huntington's Korea. Wimmer.
78 (Nos. 19-20.) *Gastric Ulcer.—Bidrag til Mavesaarets Patologi og Terapi. Det Reichmann'ske Symptom. V. Rubow.
79 Anwendelse af dræbt Kultur til Widal-Reaktion. G. Dreyer. Killed cultures.

69. **Fracture of the Olecranon.**—The proportion of fractures of the elbow was 103 to 8,650 fractures of all kinds in von Bruns' experience up to 1903. Lendorf has encountered 21 cases in a total of 3,756 fractures. He describes and illustrates the various types, and says that treatment depends on whether the accessory extension apparatus is injured or not. If it is, operative measures are indispensable, and they are not indicated unless this is the case. The state of the accessory stretching apparatus is the key to treatment, and it must be determined as early as possible. When the point of the olecranon is involved in the fracture, and the anamnesis suggests that there was great strain on the muscles, the rupture is generally transverse and extensive. With the usual direct fracture, the diastasis is very large, while it is small if the tendons still hold. The more the upper fragments are fastened in a flexed position, so that they can not slip around from side to side, the greater the probability that the rupture is small. As soon as the local pain has somewhat subsided, sometimes the same day, but usually not for a few days after the accident, the condition of the stretching apparatus can be tested by having the patient extend his arm. This can be done without fear of rupture as the tendon fibers are too strong to tear with this exercise. The arm should be held so that the movements can be done in the horizontal plane. When the arm is extended it can also be ascertained whether or not the patient is able to hold it in the position which allows a weight on the forearm to cause it to bend. This same test is extremely useful in examining a fractured patella. One of his patients with the stumps fully 1 cm. apart was able—a few hours after the accident—to raise his leg while extended. This showed that the accessory stretching apparatus was almost intact—an important guide to treatment and prognosis. This exercise must be done very cautiously, and if it is excessively painful it is best to postpone it, although the results of treatment are better, the earlier it is undertaken. It is not enough to suture the bone, the ruptured tendons must also be sutured. The arm must be immobilized in a flexed position. If operative measures are not required, massage and movements are indispensable. Tilanus massages in all cases, beginning at once after the accident with daily séances, applying a flannel bandage to promote reabsorption of the extravasated blood in and around the joint, and fastening the arm in a splint holding it in extension. Passive bending and stretching of the arm follow and the bandages are discarded after three weeks, when the patient is allowed to use his arm. It is important not to allow active movements before this date. Flexion is more dangerous in all cases as the patient exposes the tendons to injury when he feels pain and strains the triceps. The arm must be held stretched during these first séances.

70. **Paralysis During Croupous Pneumonia.**—In Vogelius' 2 cases hemiplegia with aphasia developed three days after the crisis of croupous pneumonia in one case, and two days after the onset in the other. Both patients were young men and the paralysis proved permanent. One patient died a few months later of purulent meningitis and pericarditis. The few cases of pneumonic paralysis on record are reviewed and compared. Vogelius' patients were free from syphilis, alcoholism and arteriosclerosis, and had shown no cardiac symptoms. The meningitis was probably a pneumococcus metastasis. The patches of necrosis found in the brain in the case that came to autopsy explain the hemiplegia observed. The same can be said of the muscular atrophy and other changes in the legs in the other patients. Death is the rule in older persons; in the young the paralysis may persist for a long time, but in all the cases previously published complete recovery followed at last. The 2 cases now reported are peculiar on this account as one terminated fatally and there has been little improvement in the paralysis in the other to date. In the 5 fatal cases on record of tardy paralysis after pneumonia, meningomyelitis was found in 2, while there were no signs of it in the others. The trouble is probably the result of the direct action of the pneumococcus toxin on the nervous system, similar to the paralysis after diphtheria.

72. **Catgut That Can Be Boiled.**—Heerfordt has been trying for years to produce a catgut than can be boiled, like the instruments, just before using. He announced in 1904 that preliminary treatment with formaldehyd rendered the catgut able to resist the action of boiling water. At the same time, however, he stated that there was no certainty as to the sterilization of catgut thus treated, as it lost too much in strength if the process was pushed far enough to ensure sterility. He now

announces that this difficulty can be overcome by using catgut previously sterilized with dry heat or with Claudius' technic of leaving the raw catgut for 8 days in a solution of equal parts iodin and potassium iodid in 100 parts water, or if the catgut is sterilized by leaving for fourteen days in a 2 per cent. solution of carbolic acid, twice changed. The catgut thus sterilized is loosely wound on a frame and left for 24 hours in an aqueous 4 per cent. solution of formaldehyd. The frame with the catgut is then rinsed for a few moments in running water, and then placed for a few hours in a 2 per cent. aqueous solution of ammonia. The catgut is then wound into coils, rinsed in running water for about 24 hours, then placed in the ammonia solution for 8 hours, and rinsed in running water for about 12 hours. It is then carefully dried and wound in coils or on spools, ready to use. It resembles raw catgut in appearance at this stage. Just before using, it is placed in boiling water for from 10 to 20 minutes. The "koge-catgut" (catgut that can be boiled), prepared in this way, has only a very slight irritating action on the tissues, and sometimes none at all. In 12 tests the catgut was introduced into the cornea or into the anterior chamber of rabbits' eyes, and the symptoms of irritation were minimal. In 10 cases there was an insignificant pericorneal congestion, and in the others no symptoms developed indicating any irritation. The catgut was completely absorbed by the end of 2 weeks in every instance. One precaution must always be observed, namely, that the catgut must be taut when it is placed in the boiling water. He has devised a special suture holder for the purpose, which stretches the catgut and prevents its snarling, neither the needle nor the catgut coming in contact with the fingers. When the catgut is lifted out of the boiling water and left exposed to the air for a few moments, the partially dry surface offers an especially favorable consistency for suturing. Catgut thus prepared is in constant use in the ophthalmic clinic at Copenhagen and in Rovsing's hospital and private practice. It is regarded as an important progress both for the hospital surgeon and the general practitioner. Even the finest catgut (OO and OOO) can be threaded dry in a very fine needle, and after both needle and catgut have been boiled, can be used in suturing nerves or blood vessels or in operations on the eyes. Before placing the catgut in the formaldehyd solution mentioned above, if it was sterilized with carbolic acid or with the iodo-iodid solution, these chemicals must be thoroughly removed by soaking the catgut in a 2 per cent. aqueous solution of ammonia for 2 hours and then rinsing thoroughly in running water. Catgut sterilized with dry heat is prepared by soaking for an hour in boiled water. After these preliminaries the sterilized catgut is ready for the formaldehyd mentioned above. Heerfordt would like to have sterile catgut prepared for surgical purposes under state guarantee. He thinks that the importance of the subject and the enormous demand justify something of the kind. It is rarely possible for tests of the sterilization of catgut to be absolutely decisive under present conditions. The real touchstone, that is, the most resistant germs—are seldom procurable.

76. **Tuberculosis of Adnexa Diagnosed with Tuberculin.**—Kemp's patient was a housemaid of 24, scrofulous as a child, but otherwise healthy until abdominal and slight pulmonary symptoms developed, varying in intensity during 3 years, with suppression of the menses for one year, with their reappearance later. Pains in the iliac region, especially on the left side, were frequent, and the girl became much emaciated. The tuberculin test was positive and tuberculous lesions were found in the tubes and one ovary, which were removed, leaving the other ovary. The patient rapidly recovered and no further symptoms have been observed, either from the lungs or abdomen. The case was rendered specially interesting by the lack of any local reaction in the lungs after the injection of tuberculin. This indicated that the lung process had healed, and encouraged operative treatment of the gynecologic tuberculous process. With the exception of the tuberculin reaction, none of the symptoms were pathognomonic of a tuberculous affection. He remarks that the tuberculin test has been applied in gynecology only ten times to date, according to the literature. Bossi, Meyer and Birnbaum used it in 10 cases, with a positive response in 6. Absolutely negative findings indicate the non-tuberculous character of the lesions, or, at least, that they do not require active operative intervention. A positive response without any local reaction also speaks against a gynecologic tuberculous affection.

77. **Huntington's Chorea.**—Wimmer's patient was a 1-para of 47 whose father, twin sister and 2 brothers presented the same syndrome. She had never had acute febrile rheumatism and also denied syphilis. Another patient was a physician 51 years old, who had suffered several times from recurring acute articular rheumatism during the last 10 or 12 years. His father had succumbed to paralytic dementia. Hallucinations in sight and hearing developed three years before the choreic movements were noticed, with obsessions of persecution and depression, and a rapid decline. The pathologic anatomy in this case is described in detail.

78. **Gastric Ulcer.**—Rubow reports 12 cases in all of which hypersecretion of gastric juice coincided with an ulcer. In 3 cases the diagnosis of ulcer was confirmed by an operation, in 4 others by the prompt success of treatment directed against the assumed ulcer, and in the others the history of the case rendered certain an ulcer with stenosis and cancerous degeneration. All these cases confirmed the intimate connection between an ulcer and the gastrosuccorrhea. The latter can be accepted, therefore, as an almost certain sign of ulcer. The finding of 50 c.c. of fluid or more in the fasting stomach in the morning, especially if very acid, is presumptive evidence of an ulcer. It decided the question in several dubious cases in his experience, especially in some in which obstinate constipation or other intestinal affection might have been responsible for the gastric symptoms. An ulcer in cancerous degeneration is liable likely to be accompanied by gastrosuccorrhea if the mucosa is still functionally capable. Madsen has reported 2 cases of cancer of the stomach accompanied by hypersecretion of gastric juice. How frequently it accompanies ulcer is not known, but it is more likely to be observed with the more chronic ulcers rather than in the new-forming ones. Its differential importance may be great, especially in cases in which the diagnosis wavers between ulcer, chronic intestinal trouble and a gallstone affection. In examining for gastrosuccorrhea it must be established that the patient did not drink during the night, and also that the tip of the sound is actually in the lowest part of the stomach, which in case of gastroptosis may be very low.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

OBSTETRICS. Edited by J. B. De Lee, A.M., M.D., Professor of Obstetrics Northwestern University Medical School, with the Collaboration of D. Roehler, M.D., and H. M. Stowe, M.D. Vol. 5 of the Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School. Series 1906. Cloth. Pp. 256. Chicago: The Year Book Publishers, 1906.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, etc. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, with the Collaboration of W. Osler, M.D., J. H. Musser, M.D., and others. Vol. II. Sixteenth Series, 1906. Cloth. Pp. 302. Price, $2.00 net. Philadelphia: J. B. Lippincott Company, 1906.

TEXT-BOOK OF MEDICAL JURISPRUDENCE AND TOXICOLOGY. By J. J. Reese, M.D., Late Professor of Medical Jurisprudence and Toxicology in the University of Pennsylvania. Seventh edition. Revised by H. Leffmann, A.M., M.D., Professor of Chemistry and Toxicology in the Woman's Medical College of Pennsylvania. Cloth. Pp. 656. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1906.

ELEMENTS OF GENERAL CHEMISTRY, with Experiments, by J. H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition. Revised and Enlarged. Cloth. Pp. 443. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co., 1906.

PHILADELPHIA HOSPITAL REPORTS. Edited by H. B. Allyn, M.D. Vol. VI. 1905. Cloth. Pp. 276. Philadelphia: Bradley Printing Co. 1905.

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Address

THE OPPORTUNITY OF THE PEDIATRICIAN.*

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THEN AND NOW.

In the year 1880, in the city of Richmond, in a small room containing a mere handful of physicians, I had the honor, as secretary of this Section on Diseases of Children, to sit face to face with the first members who inaugurated a great advance in medical investigation.

Your leader then who, although over a quarter of a century has passed by, still represents preëminently the broad principles of pediatric science, was chairman of this Section and established it on a firm basis. We were thus honored in the very beginning of our existence by having as our presiding officer the father of pediatrics in America—Abraham Jacobi. The name has proved of good omen, and the meeting of 1880 was an epoch in the history of the American Medical Association.

To-day I have been bidden, and have accepted the privilege with pleasure, to welcome in Boston the fully-developed Section on Diseases of Children of the present day; a Section which is no longer a handful of pioneers, of explorers in an almost unknown field, but which is large in numbers, assured by success, representing all parts of our great country; a Section no longer striving even for recognition, but constituting one of the strong, vital principles of the whole Association, and working on a ground which has been well broken and which has brought forth a harvest of original American ideas.

I welcome you to this eastern city which is so distant from your homes that we can but deem it a compliment that you have journeyed so far. I congratulate you on the progress which, through your efforts, has been made in your chosen branch of medical science, a branch as important as it is intensely interesting.

IMPORTANCE OF PEDIATRICS.

What more important, what more worthy work for the adult brain can there be than by the study of the early periods of life to aid in securing better conditions, physical and mental, in the infant, the child and the adult, and thus to strive to make the people of the future in our great republic worthy of, and fitted to deal with, the responsibilities which such a republic brings with it?

In your hands and brains rests the duty and power to make or to mar the citizens of the future, and to see that in this respect one decade is superior to the previous one.

What this Section was needed for, what it was formed for, what it was from the first intended to do, was to place the study of pediatrics on the same elevated plane that had been established for adult life. To accomplish this it had in the early years of its existence to be iconoclastic. This iconoclasm and patient originality have been the weapons with which those who have devoted their thought to the study of early life have fought their way to the front, and placed the standard of pediatrics where it ought to be—side by side with the more perfected anatomic and physiologic investigations of adult life, which have become the true basis for the enlightened clinical study of human beings.

In order to understand the fully developed man in health and disease, it is self-evident that the anatomy and physiology, not only of the final stage of growth, but also of the various stages of development, from embryo to infant, infant to child and child to adult should be successively dealt with. Looking at the study of pediatrics from this point of view, it is to be noted that the subject is not a specialty, as is that of the eye or ear, but that it is a subject which requires special study, that there is a clinical medicine of infancy and childhood as there is of adult life and old age. One is almost distinct from the other; all are equally important, although it has been held by certain advanced thinkers that the clinical medicine of early life is most important, as it leads up to and influences so greatly that of a later period. In this sense, the study of disease in early life merely represents a large and important division of clinical medicine in general. That the study of the clinical medicine of early life should be taught separately and that it should be promoted by special societies, special journals, special books, special medical departments and special hospitals, is without question, for, as surely as the subject is left to general societies, general hospitals, general literature and general medicine, so will it be neglected and allowed to retrograde. This has been proved over and over again.

With few exceptions, there are no special diseases of children; on the contrary, it is the study of the manifestations of the different diseases as they appear in children which is so important and which shows how different are these manifestations from those of the same diseases as they appear in adults.

WORK OF THE SECTION.

As I look on the members of this Section, representing all parts of the United States, it is impressed on me that it is in your power to develop advanced and general truths; that you should deal in your sectional work with the living questions of the day, and that the results of your deliberations should be authoritatively promulgated by each individual far and wide throughout the whole country. Thus only can the unenlightened influence of the general profession or the laity be curbed in the harm which it is continually doing to the scientific work connected with the early periods of life. Thus only

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[*] Address of welcome given at the opening session of the Section on Diseases of Children of the American Medical Association in Boston, June 5, 1906.

can the self-sufficient ignorance regarding the most critical phase of human existence be properly combated, and the general physician be forced to understand that he has but a limited knowledge of what he has been in the habit of considering simple questions, and on which he has been accustomed to give off-hand opinions and advice to the credulous mother of the suffering child.

Beyond the important questions of prophylaxis and hygiene, which play such a great rôle in the normal development of young human beings, it is no exaggeration to state that a large number of infants and young children throughout the land are suffering as much from the vigorous and ill-judged treatment of their zealous medical attendants as from the disease with which they started. This should be stopped. This it is the mission of the Section on Diseases of Children to terminate.

NEED OF CORRECT THERAPEUTICS.

The therapeutics of infancy and childhood, as understood by thousands of practitioners in Germany and France, in England and in America, is often a wonderful exhibition of the vagaries in which the human mind, sound on other subjects, can be induced to indulge. There is a total disregard of natural processes, an over-exaggeration of symptoms which in the adult mean danger and require active treatment, while in the child they may be but simple and harmless manifestations of an over excited nervous system. Such is the *ignis fatuus,* so misleading not only to those who have not especially studied the early years of life, but also to those who have seen much of it, but with eyes blinded by traditions of the past.

In this age of rapid progress, of quick change and interchange of ideas, the precision of investigators in all branches of research has almost placed medicine on a level with the exact sciences. It would seem that we, who are endeavoring to place our especial branch on firmer ground, should consider with unusual care the opinions which we express to the profession at large, and to the laity, and that our writings should be founded on principles as accurate as the science of our day can make them.

NEED OF RELIABLE LITERATURE.

This has been but little done, and, consequently, in the last fifty years we have amassed volumes of most unreliable pediatric literature. This is one of the vital living questions of the day, which we should appreciate and grapple with.

The literature of a society gives evidence of the work which has been done by its members long after their individual labors have ceased and their places have been filled by a younger generation. If that literature has been well considered and shows evidence of representing not the hasty judgment of the day, but of being built on the broad foundation of exact science, it will be worthy of the study of our descendants and aid them in their work. As a sound unquestioned nucleus it will give them encouragement to broaden the field of their inquiry and to add new knowledge year by year.

It should be the aim of this Section that a lasting literature of this kind, ever young and fresh in the truths which it enunciates, ever presenting a solid center from which may radiate more extended investigation, shall emanate from its members. Let the papers presented to this Section so teem with unquestioned truths, with pages recording facts and finding small place for theories, that on their face they will prove the truth and not the fallacy of the ancient lines, which, in the present age of unbridled literature, might well be questioned—lines which read:

Give books! They live when you are dead,
Light on the darkened mind they shed,
Good seed they sow, from age to age,
Through all this mortal pilgrimage.
They nurse the germ of holy trust,
They wake, untired, when you are dust.

Gentlemen of the Section on Diseases of Children, I again give you sincere welcome and wish you all success in your deliberations.

Original Articles

POSTCRITICAL FEVER AND OTHER SEQUELÆ OF CROUPOUS PNEUMONIA.*

JAMES E. TALLEY, M.D.
PHILADELPHIA.

A study of the last 325 cases at the Presbyterian Hospital, Philadelphia, forms the basis for this article. Almost naturally one thinks of suppuration somewhere as the commonest cause of the persistence of fever after the crisis in pneumonia, though apparently endocardial and pericardial inflammation is a close second.

Among the suppurative cases we found five of empyema, one being interlobar, one encysted and one genuine case of lung abscess which was large enough to be diagnosed antemortem.

EMPYEMA.

An empyema with typical development as illustrated by the following cases makes the diagnosis easy:

Case 1.—A white woman, aged 47, with typical signs and symptoms of pneumonia involving the lower two-thirds of the left lung, had apparently a crisis (there being a simultaneous fall in temperature, pulse and respiration) on the seventh day, but the temperature immediately went up again, fluctuating between normal and 102 F. The recurrence of the fever, coupled with the fact that though the bronchial breathing and râles in the left chest began to disappear, the percussion note became flat and there was a progressive loss of fremitus, pointed to the presence of fluid there. This, in connection with the fact that the leucocytes which were 17,800 two days before the crisis, increased to 31,600 two days after the crisis, made empyema almost sure. The needle showed pus, and the operation evacuated about two quarts.

Case 2.—This was less characteristic than the preceding case. The patient was a corpulent woman, aged 48, who had had pneumonia at fourteen and several attacks of pleurisy during her life. On admission to the hospital she showed the signs and symptoms of consolidation of the left lung with a friction rub at the base and the squeaking râles of bronchitis on the right. There was no attempt at a crisis, the temperature ranging from 100 to 104 F. throughout the course of the disease with very small diurnal remissions. In addition to the signs in the left chest, the patient developed a somewhat enlarged and tender gall bladder and diarrhea; the Widal reaction was positive, which made one suspect that the patient was developing typhoid, as it was prevalent at the time, though a leucocytosis of 36,400 rather negatived the idea. Death ensued on the twentieth day from the chill, and the postmortem showed that the left lung was in a state of gray hepatization, and that the left pleura contained semisolid pus which would not pass through any needle ordinarily used for exploratory tests.

Case 3.—This case of interlobar empyema was in a colored girl aged 13 who had a typical croupous pneumonia involving the whole apex and the posterior aspect of the right lung below. The crisis occurred on the twelfth day with a simultaneous fall of temperature, pulse and respiration. However, though the respirations fell from an average of sixty to the twenties, the pulse rate and temperature did not reach normal. The latter ranged from 100 to 101 and 102 F., which was supposed to be due to a purulent otitis that had developed about the tenth day; but though the otitis improved, the temperature still persisted and made one look for other causes. Three examinations of the sputum on the twelfth, fifteenth and nineteenth days showed pneumococci and streptococci, but no tubercle bacilli. The leucocytosis kept in general about the same level. It was 28,800 soon after admission, 45,200 at the time the otitis was developing, and nine counts from this time until pus was actually demonstrated, showed 32,066. The persistence of leucocytosis, the hectic-like temperature, the continued indicanuria, and the whole aspect of the patient made pus somewhere probable, though the classic sweats and chills were wanting. It was only after aspirating three times that pus was located. The case is reported in full by Dr. Jopson and myself[1] with the reasons for considering it an interlobar empyema, therein set forth.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Case 4.—This case of encysted empyema occurred in a negro teamster of twenty-eight who had his crisis, with profuse sweats, five days from the initial chill, but the temperature soon rose again and remained elevated until death ten days later. He showed on admission signs of consolidation on the left side from the apex to the fifth rib, and posteriorally, over the whole left lung. Also there were some signs of consolidation at the right base. Within a few days the absolute dullness, distinct breath sounds and absence of vocal friction aroused the suspicion that there was liquid in the left upper chest, which suspicion was confirmed by aspiration. The operation evacuated 32 ounces of pus, which immediately accumulated again as shown by postmortem. Also there developed pleural friction and marked consolidation of the right side, and pericardial friction before death.

Autopsy.—The autopsy showed that the left pleura contained one and a half quarts of fluid pus which was encysted in the space from the apex to the seventh rib. The right pleura showed some signs of friable adhesions. The left lower lobe was entirely collapsed and showed one small abscess cavity and several very small abscesses. The right showed a consolidated lower lobe. The pericardium was in a condition of fibrinous lace work, and in a large branch of the pulmonary artery, a long, well organized clot, firmly adherent to the walls and evidently septic in origin, was found.

Case 5.—The fifth case of empyema was in a boy of six, and furnishes an example of the wide-spread changes that may occur in the short space of eleven days counting from the initial chill to death. The attack began with vomiting, chill, fever, and in rapid sequence, delirium, herpes, rigidity of the neck and consolidation of the left base, followed. The temperature remained about 102 F. until three days preceding death, when it fell by lysis to normal and arose again to 104 F. just previous to dissolution. The left lower lobe, and the lower portion of the upper lobe, showed throughout signs of consolidation with a rapid development of absolute flatness and muffling of respiratory sounds and râles during the last two days of life. The right lung gradually developed signs of consolidation, but never so markedly as the left. Two days before death there developed over the right side, a tympanitic note with a distinct metallic tinkle heard both during inspiration and expiration. The coin test was very marked also, thus pointing to the presence of pneumothorax, probably due to the rupture of one of the small abscesses found postmortem.

Autopsy.—Both the right and left chest showed purulent pleuritis. The pleural cavities were full of yellow pus and many soft adhesions were present. The left lung showed complete consolidation of its lower lobe and a part of the upper. The upper lobe of the right lung contained three abscesses about the size of hazel nuts. The middle lobe contained multiple small abscesses, and a few were also found in the upper portion of the lower lobe.

Though not pertinent to the immediate subject, the markedly contracted colon, and a thin-walled diverticulum on the lower aspect of the greater curvature of the stomach, were interesting.

ABSCESS.

Case 6.—The typical abscess was in a white woman, aged 27, who was admitted to the hospital too ill to give any history except that she had had pneumonia. She was coughing up almost continually large amounts of foul smelling purulent material. Three examinations of the sputum at intervals of several days, showed uniformly that streptococci were abundant, elastic tissue present in small amount, and tubercle bacilli, hematoidin and cholesterin crystals were always absent. The temperature ranged from 100 to 102.3 F., presenting a moderate evening rise and morning fall until the fourth day before death, when it went down by the same remission, to sub-normal.

Examination.—Repeated examinations of the chest showed that the right side appeared larger than the left and expanded more on deep inspiration. From the apex to the third interspace on the right side there were all the signs of consolidation. In this area also were found the cracked-pot sound and amorphic breathing, more marked posteriorally. There were also bubbling râles. Below the spine of the scapula the note was hyper-resonant. The left side was less expansile than the right. Tactile fremitus, percussion resonance, and bronchial breathing all were impaired, but less so than on the right. Especially, below the spine of the scapula were the breath sounds less broncial and more distant. Friction sounds were well developed toward the base.

Heart: The apex beat of the heart was palpable in the midaxillary line, seventh interspace. There was a mitral systolic murmur transmitted and heard faintly in the back. The aortic and pulmonic sounds were heard best to the left of the midclavicular line.

Liver: The liver was a finger-breadth below the costal margin, and there was some tenderness in the right iliac fossa. Two apirations in the usual places on the inner side gave negative results.

X-Ray Examination.—The *x*-ray examination with the screen, showed what appeared to be an empty abscess cavity in the upper part of the right chest, and a filled cavity in the lower part of the right chest. The skiagraph pointed to the same conditions. The autopsy showed that the inference was right about the empty cavity above, but the supposed filled cavity in the lower part was in reality a bronchiectasis in which the bronchial tubes were filled with secretion.

Autopsy.—The right lung, upper lobe, was completely consolidated. A small abscess with thick organized wall on the anterior surface, and a large abscess near the hilum with numerous small metastatic abscesses in the lower portion were found. The middle lobe was normal. The lower lobe was crepitant. There were no nodules. The bronchi were markedly dilated in the lower portion and surrounded with a good deal of fibrous tissue. The left lung showed complete bronchiectasis and atelectasis and obliterative pleuritis, and there were also obliterative pericarditis, dilatation of the ventricles of the heart and some atheroma of the mitral valves, and commencing hypertrophic cirrhosis of the liver.

Case 7.—The second case of single abscess was in a white man who had pneumonia and hemorrhagic nephritis. It was hardly large enough to be diagnosed during life, since it was only about half an inch in diameter, but it had a well-developed encircling wall of fibrous tissue.

ENDOCARDITIS AND PERICARDITIS.

Case 8.—A colored man, aged 25, who had had rheumatism and typhoid fever, developed pneumonia of the right side from the spine of the scapula to the base. There was also a patch of consolidation beneath the left scapula. The crisis occurred on the tenth day, but the temperature rose gradually again to 102 F. and kept elevated for about a month. The heart showed no murmur on admission, but the sounds were dull and the apex was a little outside of the normal position. During this interval of fever, the sputum on several occasions showed pneumococci but no tubercle bacilli, and a blood culture a few days before the crisis was negative. Almost a months after the crisis there was an exacerbation of fever, pain in the left chest with the development of a pericardial friction at the base, and a well-marked systolic and diastolic murmur at the apex with reduplication of the second sounds. Later there was also a pericardial friction at the apex. Still another month later the pericardial friction had entirely disappeared and the endocardiac murmur had improved, though that persisted at the time of his discharge.

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[1] Archives of Pediatrics, September, 1905.

CASE 9.—A white man who said he was fifty, but who looked sixty, had emphysema, myocarditis and atheroma. The fourth day after admission he showed a consolidation of the right apex, and about this time there was acute dilatation of the heart. The apex beat became diffuse, the percussion area somewhat increased and the pulse ran to 200 and above, the rhythm being fetal in type. On the eighth day the temperature fell to normal and remained at about normal for a week. During this time the pulse ranged from 80 to 90. At the end of the week the temperature rapidly arose, reaching 104 F. in the next few days. The pulse ran up from 100 to 140 and became irregular. Then a well-developed systolic murmur at the aortic cartilage, well transmitted into the neck, developed and later this murmur became both systolic and diastolic, with its maximum intensity at the aortic cartilage. The aortic second sound was entirely obliterated, the pulse became of the Corrigan type and the man died on the fifth day from the onset of the endocarditis.

CASE 10.—Another case of endocarditis was that of a colored man, aged 23, who had pneumonia on the right side posteriorly with crisis on the eighth day. The heart sounds were perfectly normal on admission. He had a practically normal temperature for six days after the crisis, when there was a simultaneous rise in temperature and development of a roughening of the mitral systolic sounds. The temperature persisted for twelve days and then fell to normal, but the systolic roughening still persisted when the patient was discharged almost a month after its first appearance.

CASE 11.—A white woman, aged 20, had a chill and developed at once a consolidation and pleuritic rub at the right base. She had on admission a presystolic mitral murmur which was evidently an old condition. A week after the chill, the signs of mitral obstruction had increased and there had developed an indistinct diastolic murmur heard best over the aortic area. Still a few days later and there were plain signs of aortic insufficiency, as shown by a soft-blowing diastolic murmur faintly heard in the aortic region transmitted down the right side to the sternum, and still heard at the ensiform. The aortic second sound could not be heard. A little less than a month after the onset of the pneumonia, the heart appeared to have returned to its condition on admission; the temperature came down by lysis, reaching normal on the ninth day, and during the days when the roughening at the aorta was developing the temperature was normal or slightly subnormal. Also the endocarditis did not appear to affect the leucocytosis, as the leucocytes on the third, fifth and tenth days were, 23,400, 17,600 and 11,600, respectively.

Two of the cases of endocarditis, one with pneumonia and meningitis, developed a pericardial friction during the course of the disease.

RELAPSING PNEUMONIA.

CASE 12.—A colored woman, aged 22, was admitted to the hospital with all the typical signs and symptoms of croupous pneumonia of the upper third of the right lung. On the twelfth day from the onset she had what appeared to be a true crisis, but almost immediately the temperature rose again and at the same time she complained of pain at the opposite apex and gradually developed consolidation of the whole posterior aspect of the left lung. The temperature persisted in her case for five weeks from the onset. The left side was tapped twice, once with no result and once half an ounce of cloudy fluid was withdrawn, which on examination showed no pus. Her mother had died of pneumonia, her father of tuberculosis and during the attack she, herself, gave but a slight reaction to the infection as shown by the mild temperature variations and the moderate leucocytosis ranging from 9,000 to 12,000. However, her sputum was always free from tubercle bacilli and she made a good recovery.

PLEURISY.

CASE 13.—A woman, aged 25, with pneumonia of the left base, proved rather conclusively that occasionally persistent pleurisy may be the cause of continued fever after the crisis. She had her crisis on the seventh day, but the friction rubs persisted at both bases, especially on the affected side. A week after the crisis there developed severe pain over the previously consolidated area, which persisted for over two weeks and was accompanied by a temperature of about 100 F. That this was due to the pleurisy, seemed evident from the persistent pain, the disappearance of the previous bronchial breathing, the impaired vocal resonance, the distant breath sounds and from the fact that the screen showed that the area of consolidation had largely cleared up above and at the very base, but that above the base and at the site of the most acute pain, a deeper shadow still persisted.

BRONCHITIS.

Several cases of bronchitis showed a mild persistence of temperature for some time after the crisis which it seemed perfectly plausible to attribute to the bronchitis which existed in the unaffected lung, and in one case in the unconsolidated portion of the affected lung. All the signs and symptoms of the pneumonia pointed to a croupous process. It seems probable that we do not dwell enough on the rôle that a bronchitis, especially in the unaffected lung, may play in the prognosis of pneumonia. Such a condition has seemed to me to be particularly apt to exist in those past middle life who have already an existing heart lesion.

OTITIS MEDIA AND MENINGITIS.

In two cases in the series there was a return or increase of the fever due to otitis. Of course, it is only the obscure cases of ear trouble that are confusing.

CASE 14.—A robust man, aged 35, developed a typical pneumonia of the right lower lobe. Headache followed by delirium was an early symptom. One the fifth day from the chill he showed a retraction and rigidity of the neck, and well-developed Kernig's sign. The spinal fluid showed pneumococci and a well-marked to and fro pericardial friction sound at the base of the heart developed the day before death which occurred six days from the onset.

PAROTITIS.

Six years ago I reported[2] a case of suppurative parotitis occurring during an attack of croupous pneumonia in an elderly woman. The first evidence of suppuration was on the seventh day, but so rapid was the development that it discharged on the tenth day. The patient made a good recovery and died, a year later, of interstitial nephritis, which existed at the time of the pneumonia. The number of cases that were reported immediately afterward seemed to show that parotitis as a complication of pneumonia was not so rare as the published cases led one to suppose.

HEMORRHAGIC NEPHRITIS.

CASE 15.—A young white man, aged 25, a silver printer by occupation, was admitted with signs of consolidation of both bases, but worse on the right. The urine on admission showed only albumin .05 per cent and hyaline casts, but a few days later there developed evidences of hemorrhagic nephritis—albumin, hyaline, pale and dark granular, leucocytic and blood casts, with some red blood corpuscles, were found. Just when and how the process began is not clear from the history, but the temperature fell from 103 F. to normal the second day after admission and remained at normal or a little sub-normal, until death eight days later despite the fact of the small circumscribed abscess in the lower right lobe, and of the nephritis.

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[2] Philadelphia Med. Jour., March, 1900.

Autopsy.—The autopsy showed the right lower lobe solid, the upper half in a condition of gray hepatization, and the lower half in red hepatization. Deep in the substance was an abscess one-third of an inch in diameter, with a well-defined wall. The left lower lobe showed scattered pneumonic areas. Of the kidneys there is recorded only that the cortex was diminished and the congestion of the entire organs, intense. The cultures after the postmortem showed in the heart a mixed culture of colon bacilli and *Staphylococci aurei* in about equal parts. The spleen and right lung showed pure colon bacilli, and the left lung pure staphylococci.

Remarks.—There is much to be desired in the history of this case to determine whether it really was a true case of croupous pneumonia with secondary infection, or whether it was primarily due to the bacteria found postmorten.

THROMBOSIS AND NEURITIS.

Case 16.—A white woman, aged 39, with pneumonia of the left lower lobe had her crisis on the eighth day. Four days later there was a very slight elevation of temperature, and a sharp pain developed in the left leg from the middle of the thigh to the heel. There was no tenderness on pressure, and no disturbance of sensation other than the pain. About a week after the first appearance of the pain, the leg began to show an edematous swelling. The whole history pointed to the fact that it was a femoral thrombosis. This same woman first complained of numbness of the right hand along the course of the ulnar nerve, two weeks after this crisis. Two days later there was distinct numbness of the distribution of the left ulnar nerve. There was some pain, some weakness and disturbance of sensation of both arms and hands. The limitation of the numbness to both ulnars would make one think it was probably due to pressure, but there was nothing peculiar noted about the patient's decubitus at any time, and at the time the neuritis developed, she could be propped up and could soon sit alone. The disturbance was marked enough at one time to require splinting of the right arm and hand. The hands were better, but not well when she left the hospital about six weeks after her admission.

COLITIS.

Case 17.—During the past winter a robust man who appeared to be doing well with pneumonia, was seized with most intense enteritis which resisted all treatment and to which the patient soon succumbed. As a postmortem examination was refused, one can only infer from its remarkable severity, that it was a croupous colitis.

OTHER SEQUELÆ OF PNEUMONIA.

Among the sequelæ of pneumonia that were evident to the naked eye were two cases of carbuncle, one at the back, the other at the neck, which developed in two young white men about a week after the crisis. Both men had good kidneys. A third man of middle life had two abscesses of the chest, one of which might have been due to the single salt injection that he had had, but the other one was so far from the site of the single puncture as to make this cause unlikely.

Case 18.—A white man, aged 40, who drank from ten to fifteen glasses of whisky daily, well demonstrates some of the phases of pneumonia in the alcoholic. His attack began with a temperature of about 100 F. which usually reached normal in the mornings and which persisted for over two weeks. The sputum was bloody and at times was profuse enough to be called a hemorrhage. After two weeks the material expectorated became rather milky white, but showed only pus and no tubercle bacilli. The consolidation was under the right scapula. Ten days after admission he developed delirium tremens, and after the delirium tremens he relapsed into a condition of confusional insanity which persisted for many weeks, but he finally made a good recovery.

Several patients had delirium for a few days after the crisis, which cleared up on forced feeding more rapidly than the delirium in cases of typhoid fever, which often persists for a much longer time because the inanition is greater in consequence of the longer duration of the fever.

SUMMARY.

The causes, then, of postcritical fever in croupous pneumonia are evidently manifold, and the exact cause can be determined in a given case only by careful and repeated examinations of the patient. Even when such examinations are apparently negative one should be slow in attributing the fever simply to delayed resolution or to autolysis alone. The number of small abscesses found in the stage of gray hepatization, postmortem, would incline one to believe that it is not alone the slow resolution, but perhaps more often a varying degree of this purulent tendency, especially in the stage of gray hepatization, that explains the fever. Though the abscesses are usually multiple, one case showed distinctly one small abscess which in itself might have caused the persistence of fever, and it is conceivable that such an abscess may discharge undetected, or, surrounded by an encysting wall, be gradually absorbed and the patient recover without the exact cause of the fever ever being known. Even an encysted empyema, if small, may be hard to demonstrate.

The value of the Roentgen ray in detecting these conditions in the chest is variable. It is the common experience of a thickened pleura in this class of cases that renders the x-ray of less value. Given a previous consolidation without much thickening of the pleura and the shadow is less uniformly dense than that of fluid in the pleura, so that under such circumstances a loculated empyema or a full abscess cavity is apt to stand out by its dense shadow in contrast to the less homogeneous shadow of the resolving pneumonic consolidation. Under similar circumstances an empty cavity is even more evident, surrounded, as it usually is, by its wall. One case showed that an area of bronchiectasis, with the bronchial tubes filled with secretion, simulated an abscess. The mistake was all the more natural, as there existed above a well-defined cavity of an abscess that had discharged.

It is doubtful if the number of endocardial and pericardial involvements in this series really represents the vast importance that must be attached to this cause as the factor in many fatal cases. One must be alert for this complication, especially in patients who have an old endocarditis or atheroma. The cases here detailed show that the right side of the heart is by no means free from serious involvement. The development of a systolic murmur may be explained by the anemia well known after pneumonia or by the relative insufficiency due to the weakened heart muscle, but the development also of a diastolic murmur usually means that there is genuine endocarditis, as is proven by the autopsies.

DISCUSSION.

Dr. DeLancey Rochester, Buffalo, said that mediastinal abscess as a course of postcritical fever had twice occurred in his practice. He also wished to confirm the statements made regarding ear troubles. He had two cases of pus in the middle ear without pain and without the presence of pus in the external meatus. In another case he had there was a subdural abscess producing a hemiplegia on the opposite side of the body, but that most cases of postcritical fever were due to empyema of the pleura.

Dr. N. S. Davis, Chicago, said that unquestionably the most important cause of postcritical fever met with after croupous pneumonia is inflammation of the pleura and he believed it to be our duty to search with the greatest care for this cause in every case of persistent fever following the crisis in pneumonia. It should not be forgotten that inflammation might occur elsewhere and cause fever. For instance, now and again inflammation may be met with in one or more joints as a result of secondary infection; of these cases he has seen many. It was well known too that an acute bronchitis occurred often as the result of infection by the organisms of croupous pneumonia, cases in which a true croupous pneumonia did not develop. He said he had seen cases in which there was a persistent fever following the occurrence of a croupous pneumonia; which he could not account for except on the theory that the bronchitis persisting after the pneumonia had passed the crisis, was its cause.

The possible presence of an endocarditis should not be forgotten in these cases, even when no endocardial murmurs, or no clearly defined evidences of endocarditis are discernible. The long persistence of fever following pneumonia is usually due to malignant endocarditis.

Dr. J. A. Lichty, Pittsburg, said that an examination of the ears in cases of prolonged fever following a croupous pneumonia would often result in finding the cause. Another point that had not as yet been touched on was the relighting of an old tuberculous focus, one which had apparently been healed or one which one knew nothing about. This would be followed by symptoms of an ordinary pulmonary tuberculosis.

Dr. Alexander Lambert, New York, said that the frequency with which empyema developed and the difficulties attending the diagnosis were well known. One reason why it so often escaped detection was because it was more often a complication of the pneumonia than a sequela. Any one man's personal experience is too small to generalize on, but so far as his experience went it was more often a complication than a sequela of pneumonia. Some years ago he studied the variations of leucocytosis during pneumonia, taking a daily count. In those cases in which empyema developed the number of leucocytes was doubled in 24 hours. Only in those cases in which empyema developed did the leucocyte count increase 100 per cent. or more in 24 hours and often without any change in the physical signs. In some cases there was only a slight rise in the number of respirations a minute. Often when one lobe of a lung was becoming involved and another lobe simultaneously resolving, there would be a great increase in the leucocytosis; or, if a large area of lung resolved quickly the leucocytosis would be greatly increased. From various causes the leucocytes would sometimes rapidly increase for two or three days, so that at the end of that time they would be more than double the first count. But only in empyema has he found an increase of 100 per cent. or more in any single 24 hours. This doubling of the leucocyte within 24 hours was, in his opinion, the surest sign, but to be sure of the fact, a daily count must be made, a thing which, of course, was not always possible.

Dr. Louis LeRoy, Nashville, Tenn., spoke of a malarial infection giving rise to postcritical fever after an attack of croupous pneumonia, a point that had not yet been brought out. He recalled two or three cases, following a crisis, in which the temperature persisted, running as high as 103, and then down, and with absence of any signs; a blood examination was made, revealing the presence of the plasmodium. He said that he had seen this same rise follow the shock of an operation for appendicitis. These patients, no doubt, had their diseases in a latent state, and they were rekindled by the pneumonia or by operation. An attack of malaria was brought on in each case; the disease had remained quiescent, the patient having been a sufferer more or less chronically for years.

It Helps Him.—The physician who joins his county society and becomes an active member, expects to get something more than protection for his own pocket. He expects, as he hears his fellow-members read and discuss papers, detailing their experiences, and as they submit pathologic specimens, to gain knowledge and wisdom. He goes away from the meetings better able to cope with the difficulties that arise in everyday practice. This is especially so in sparsely settled districts, where it is not possible at critical times to call in a brother physician in conference.—*Medical Sentinel.*

INCURABLE EYESTRAIN.*

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I can find in text-books no systematization, no explicit statements, not even any distinct recognition of a series of clinical facts illustrated somewhat frequently in office practice, and still more frequently in hospital and dispensary work.

In thinking over my cases I have been surprised that so many have had eyestrain from causes beyond eradication or neutralization. The conditions being as they were, it was impossible to stop symptoms that were evidently due to what we call eyestrain. The causes simply could not be reached. We have looked at these conditions from every other standpoint except that of eyestrain, while it was precisely the eyestrain that mostly concerned the patient. Let us take this point of view:

Eyestrain[1] may be defined as the local reflex, or general results of ocular effort caused by congenital or acquired defects or weaknesses of the optical or sensation-making mechanisms of the eyes, by over-use of normal eyes, by injurious occupation, etc., or by diseases of other organs, which interfere with ocular function. Eyestrain is incurable, of course, when these pathogenic causes are ineradicable.

The recognition, in an individual case, of the precise reasons why eyestrain is incurable, or of the conditions impossible to remove, is highly necessary, in order:

1. That we may make the patient understand the unfortunate limits and circumstances of his life; that we may advise him against certain occupations, prescribe for him the best hygienic safeguards, whereby symptoms may be avoided, dangers lessened, etc. In such cases it is especially necessary that he understand the precise nature of the fatalism under which his life must be lived.

2. That other physicians, in ignorance of the nature of his trouble, may not err by treatment of the patient, or by operations, which can not affect the single source of the mischief. It is bad enough that thousands of patients should be gastrologized, laryngologized, gynecologized, etc., for easily curable eyestrain, but it is far worse when the eyestrain is incurable. Hunted by their mysterious disease, patients blindly and vainly pursue relief by running from one physician to another, drift into invalidism, or into a despair which often ends in the suicide either of self-delusion (quackery, Eddyism, etc.,) or of genuine self-murder.

The causes of eyestrain that we are unable to abrogate or neutralize may be classified as follows:

1. Congenital anomalies.
2. High degree of ametropia.
3. The sequelæ of inflammatory disease, traumatism, etc.
4. Amblyopia, or other injury of ametropia.
5. Chronic heterophoria or heterotropia.
6. Interruptions or contraindications of the normal coördinations of dextrocularity and dextromanuality.
7. Cerebral or neural disease.
8. Systemic disease, or diseases of interrelated special organs.
9. Injurious occupations, unhygienic use of the eyes, etc.

1. *Incurable Eyestrain Due to Congenital Defects, Etc.*—The most important and most frequent of these congenital anomalies is albinism, that strange failure to secrete the customary pigment of the dermal structures of the body, of the retina, iris, etc. Many years ago I

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] "Eyestrain" is an incorrect and misnaming word, but it has become so common and accepted that it is now impossible to supply its place by a better and more accurate term.

published the results of a good deal of study of "The Pernicious Influence of Albinism on the Eye." It is a pity that the lessons of that study have been so little heeded by ophthalmologists, for the pathologic significance of albinism is almost wholly confined to the eye, and there is no class of possible patients more in need of our help and none so neglected. Although we can not do away with all of their afflictions, we may greatly mitigate them. The crushing pressure of the lids to shut out the light produces a high degree of astigmatism, at axis 90 degrees in hyperopes, and this, with much patience in diagnosis, may be relieved. In this relief there is perhaps a doubling of the visual acuteness. But at best we can bring the albino to only about 20/50 of normal vision. Possibly also by this lessening of the amblyopia we lessen a little the nystagmus. I gather that this nystagmus of the albino is the result of a continuous and never-to-be renounced search for a portion of the retina not so exhausted by the flooding light as is the macula region, whereon the image may fall, and which will give the brain a more delimited or defined image as a stimulus. The significance of ocular albinism pertains preponderatingly to the iris. If that could be pigmented the albino's case would not be so hopeless or grievous. In one case I tried an experiment of fitting a 1/4 in. ametropia-correcting lens in the center of a deep tinted London-smoked toric lens. The sudden cessation of the nystagmus which resulted brought the man down in a swoon and I could get no repetition of the experiment.

Colobomas and many other anatomic defects of the eyes may in many ways interfere with the formation of optical images. These anomalies of the fundus, I think, are not so likely to produce eyestrain as are those of the iris. For a number of years I have treated a girl with a coloboma of the iris directly below the pupil in the left eye, about ¼ in. wide at the pupillary margin and narrowing at the corneal border. While she was a child and not studying much there was not a severe eyestrain, but as she advanced in years and scholarship there was no correction of her ametropia that gave more than the palliation of her severe headaches, brought on by study. If one might dare, if there were no danger, and if the operation were surgically successful, thorough tattooing of the cornea over this rent would undoubtedly give her relief. The continuance of her studies, amount of near-work permitted, and the ordering of her life depend on the severity of her eyestrain symptoms.

There are many other kinds of congenital anomalies which might produce eyestrain, such as microphthalmos, cataracts, peripherally located pupil, malformations and malpositions of the lenses, persistent hyaloid artery, pupilary membrane, enophthalmos, etc. I have no sufficiently well-observed cases to report illustrative of the principle involved. I have no doubt I have negligently overlooked a number. In congenital cataract or in case of lenticular pigment spots occupying much of the pupillary area it may be best to permanently atropinize the eye.

2. *High Degrees of Ametropia.*—These are in one sense, perhaps, examples of congenital anomaly, especially that of hyperopia of six or more diopters. Illustrative cases have occurred in all of our practices. What we are likely to forget is that they must almost always necessarily handicap the patient, even if, as may rarely happen, the normal visual acuteness may be retained. This will arise either because amblyopia has been chronic or has been firmly established before proper glasses have been secured, or because no glasses can give perfect correction of such cases. I remember one patient whose errors were:

R. + S. 8.00 + C. 2.75 ax. 68°;
L. + S. 7.75 + C. 2.75 ax. 105°.

Neither eye had been disused and the vision in each was 20/60, later 20/50. It would have been better if this defect had been anisometropic. A second case shows the same amblyopia:

R. + S. 8.00 + C. 1.00 ax. 20° = 20/60
L. + S. 7.50 + C. 1.00 ax. 150° = 20/60

After six years' struggle reduced to 20/20.

In another case showing:

R. + S. 6.00 + C. 2.50 ax. 180°
L. + S. 5.75 + C. 1.75 ax. 150°

the right had been excluded and only 20/60 vision retained, while the other eye was brought to 20/20. In such cases anisometropia is a poor, but preferable blessing. If we could place our lenses (as has been dreamed of) inside the lids, and give them the same motion as the eyeball, the problem would be solved, at least in great part. It is possible, but not probable, that this may be done. In approximation to this ideal our lenses should be toric, set as close to the cornea as possible, after close cropping of the lashes.

In high astigmatism the first effect of full correction may be rejected as irritating until the ocular mechanism has become habited to it, and until the necessity becomes unconscious of turning the head instead of the eyes, in looking at objects not in the center of the field of vision. When there is high anisometropia, there may be some degree of persisting eyestrain, although I have found it will generally and eventually yield to obstinate persistence, unless the amblyopia has by neglect become incurable. I have one patient, coming to me in middle life, who is now successfully wearing over a six-diopter correction of monocular astigmatism, with re-establishment of almost lost visual acuteness, and with relief of long-existing ocular reflexes. The sole ametropia of extreme proportions that can not possibly produce eyestrain is simple myopia in a one-eyed person. One of my patients, a great literary genius, lived for about thirty-five years, and during this time did an enormous amount of literary labor every day, with a single eye, having about twenty-five diopters of uncomplicated myopia, and he did this without the use of correcting lens. His pen point was necessarily placed about three inches from the cornea. He never showed a sign of eyestrain as we define the term. His optical defect and necessity had a subtle and profound influence on his intellect and character, and on the literary qualities of his published works—but "that is another matter."

In hyperopic defects, and especially in those of high degree, there is, of course, and almost always, a greater or less admixture of astigmatism; and this demands correction with perfect nicety, in order to prevent malfunction. Toric, close-fitting lenses, usually bifocals, frequent changes, skill of the optician, and all the rest, are of the utmost importance. Moreover, in high binocular ametropias there is likely to be incoördination of the external ocular muscles, and also, not to be overlooked, frequent irregularities of accommodation. Partial paralysis of accommodation, or undevelopment from disuse, is likely to exist in such cases and differing in degree in the two eyes.

As to high defects the following are noteworthy:

R. + S. 0.50 — C. 4.50 ax. 15° = 20/50
L. + S. 0.50 — C. 5.50 ax. 180° = 20/50

The anomalous axis of the right did not throw this eye out of function, because the man was a right-handed man, and the left clung to life because of its normal 180° axis.

I have a little fellow twenty-seven months old who is wearing B. E. + Sph. 10.00, apparently with almost equal acuteness of each eye. We shall probably find some astigmatism when he is a year or two older. His strabismic eye is now straight, and the glasses are so grateful to his nervous system that the baby yells, *Wo sind meine Gläzele,* if they are left off a minute.

A man of 36 could barely count the fingers with his right eye, and no lens seemed to improve. I stuck to the problem instead of calling it "amblyopia," and I found that — Sph. 6.50 + Cyl. 9.00 ax 10° saved the man's eye and gave him 20/50 vision. This 15.5 D. in a non-traumatic case, at least in one meridian, is the highest I have ever met. There was 6.00 D. in the left, with 20/40 vision.

3. *Inflammations and Traumatisms.*—These may have such organic and irremediable defects in one, or even in both, eyes, that the visual act becomes thereby pathogenic. The most common of these conditions is, perhaps, the nebulous or leucomatous cornea following keratitis. In the young (and the younger the better the success) we may often lessen the opalescence by Pagenstecher's ointment and massage, and other methods of treatment. Unfortunately, Dr. Alleman's proposal of electric stimulation by the contact electrode has not, as was hoped, been adopted or demonstrated of much value.

A profound impression was left on my mind by the history of one patient, a man sent to me by a general physician, with the ready-made diagnosis of "migraine." The man had never had sick headache, so his disease was not "migraine;" the general physician could not cure this patient's headaches, so he sent him to me. I at once notified the physician, 1, that the man never had had "migraine;" 2, that the man's headaches were caused by eyestrain; 3, that in all probability I could not cure the man of his eyestrain headaches. This was because he had a nebulous cornea of the left eye, also a very high mixed astigmatism, giving about 20/50 vision. I ordered glasses, and impressed on the patient the necessity of returning soon and frequently. Pursued by the relentless mystery of his pain, the man fled to the neurologist, who drugged and massaged him without relief; the neurologist then turned him over to the rhinologist, who took out all the turbinates of one side of the nose, saying those of the other side must be taken out, and eventually the frontal sinus opened up "by two holes." The man fled. In this man's case, I shall exclude the left eye from vision, if I can get him out of the hands of the operating rhinologists and the neurologists.

These untransparent corneas almost always cause eyestrain sometimes of a most grievous severity. I fear we greatly neglect to take this fact into consideration, and dismiss without explanations to the patient, and sometimes without correction of the ametropia. In rare cases, possibly the ametropic correction may not, especially at first, give relief; it may more rarely even increase the eyestrain, by stimulating the waning and fading effort and possibility of helpful and useful fusion which must be finally renounced. The problem then becomes most complex and perplexing, and demands the highest judgment and skill to meet it. But purposely to exclude an eye from vision under such circumstances is a hazardous procedure, and needs long pondering. I have not, I think, been compelled to do so more than once, while final success has generally followed ingenuity and persistence to save. I have had one most instructive case which astonishingly proved the wisdom of *nil desperandum.* It was that of a man nearly frozen to death. The keratitis had produced such a dense leukoma, and apparently ruined eyeball that several good oculists advised enucleation, fearing sympathetic inflammation of the other imperfect, but still functional eye. Enucleation was not allowed, and later the better fellow was utterly ruined, and now with the eye pronounced doomed, the man has 20/40 vision and lives a useful life.

Incurable eyestrain is a necessary result of conical cornea.

The adherent irises following neglected or badly treated iritis are often sad evidences of professional ignorance and lack of skill. If occlusion of the pupil is added, not much is left except despair, and "making the best of it." I judge that an artificial pupil generally only adds to the misery. In such cases hope of cure being renounced, the choice may lie between *laissez-faire,* or hastening the exclusion of the eye, or of the cortical center, from participation in vision. But, first, there should be a desperate attempt at ametropic correction, for, with it, nature may keep up the struggle with less pain, and with less eyestrain; even a small degree of vision preserved in one eye, avoids the danger of blows, injuries, etc., upon the blind side of the head. Rents at the corneal border of the iris, causing double pupil, etc., inevitably produce eyestrain until nature excludes the eye from visual influence. Should tattooing sometimes be tried before it is too late? I have one patient with traumatic rupture of the iris, the pupilary edge being attached to the cornea. There is also an undiagnosable irregular astigmatism. The eye is too good to exclude from vision, and the patient's symptoms are not those of traction on the adherent iris; they are due to eyestrain, but I can not relieve them. For ten years I treated a patient, one of whose eyes had been ruined by a faulty operation. There were three artificial pupils. I had to exclude the eye from vision until the sensation was dulled and denied.

Cicatrices in or near the cornea from wounds, injuries, and operations, and producing irregular astigmatism, not seldom as we all know, cause eyestrain.

Bungling operations on the lids, entropion, ectropion, etc., have also an influence in making the visual act harder to carry out. One of my patients had a fistulous opening on the cheek through which the tears trickled all her life. It was made by a great surgeon twenty-five years ago in an attempt to open the tear-duct in dacryocystitis. She had had enough of operations, and would not dream of more. "Weeping eyes" suffused with tears are somewhat common, with eyestrain as an inevitable result.

There is in my mind little doubt that the chief cause of senile cataract is uncorrected or miscorrected ametropia. In eyes previously long and properly glassed it does not occur. We all know how incipient cataract often increases eyestrain and necessitates frequent changes in refraction. "The headache of incipient cataract" has become a familiar term. If the cataract is monocular and is advancing, I think it generally advisable to exclude the eye somewhat early. Usually the earliest stages do not affect the center of the pupilary area. When the clear space chosen for vision is at one side of the pupil, eyestrain inevitably follows from the effort to get the macula in line with it.

I have had cases in which vitreous opacities seemed to cause or increase eyestrain. They oftener cause the patient great worry and quacks make much money out of them. Muscæ volitantes do not cause eyestrain, if they are really physiologic, as properly speaking they generally are. One has constantly to calm the fears of patients in reference to them.

Ametropic choroidoretinitis[2] is very common, indeed, almost always exists in long uncorrected ametropia. It is a perfect example of the "vicious circle" of disease, for it is the result of eyestrain, the local effect, and at once it becomes the cause of further eyestrain, both local and general.

Other forms of choroiditis, and of retinochoroiditis, do not usually produce eyestrain unless the macula region is implicated, and unless it has ended in floating vitreous opacities. If one macula is destroyed or badly injured, eyestrain is inevitable until the eye is dulled to functionlessness. If both eyes are affected, the eyestrain must be persistent. I had a patient with both maculas so equally and irremediably hurt that new maculas had formed above the old ones. I sent him to live on a Western ranch, where he is happy.

Tenotomomania usually results in incurable eyestrain. After the muscle-tailor has done his work there is not much we can do, except to apply the proper glasses and wait for Nature's possible undoing of the injury through years of suffering. I remember one patient who had no 'phorias whatever after twenty-eight tenotomies by one graduate tenotomist. The machinery of head and body was largely devoted to getting his head in position to see every degree of change of image. His ocular muscles had been surgically paralyzed.

4. *Amblyopia, or other Injury of Ametropia.*—I have elsewhere published a study of "Amblyopiatrics," or the cure of amblyopia, when it is curable. The majority of patients have some degree of ametropic choroidoretinitis or amblyopia from eyestrain, and the majority of these are entirely curable. In extreme cases it is not curable.

The eyestrain of incurable amblyopia usually depends on the amount of near work done. A young lady patient of mine with 20/40 vision from old uncorrected astigmatism was free from symptoms in her home, but when she went to college there was great suffering. In childhood, in a very few years, strabismus will often render the eye visually useless, even though made cosmetically useful by surgical operation. I had one patient with what I called squint hemianopsia, the temporal half, vertically, of the retina being wholly blind. One may never be sure how much the amblyopia from disuse which follows the eyestrain exclusion of an eye from visual function is due to retinal or cortical causes. And one can also never be sure that the worst cases may not be improved by long and patient amblyopiatric methods.

Some years ago a European physician found a couple of children supposably blind in a blind asylum, who still had some perception of light. He educated this remnant of function, first, in distinctions of light; second, of color; and third, of form, until the children were taught to read and were rescued from a life of blindness. A blind patient over 50 years old has been suddenly brought to perfect physical and sensational vision by operation, but it took some years to perfect intellectual vision. The lesson in all cases of amblyopia is that we should trust Nature and help her by ingenuity and patience to improve amblyopia, and to renounce only when the impossible is demonstrated. I have had but one case in which I had to exclude the eye from vision, because the little improvement possible was a little improvement, and was not further improvable. The influence of dextrocularity in conjunction, of course, with dextromanuality will usually result in the retention of better visual acuity in the right, even with greater ametropia in the right. Nature will always aid more to save the right-eye vision than the left in the dextral.

Accommodationlessness, that is, undeveloped accommodation, may be a result of chronic exclusion of one eye from function for near work, caused, of course, by ametropia. I have had at least three patients whose ametropia was such that one eye was used for near only, and the other only for distance. The latter eye had no accommodational power. If caught early enough in life the defect may be remedied by bifocal lenses. If the patient has passed adolescence, such a device will scarcely prove successful, and the established habit must be permitted to continue; but some eyestrain will also persist. The least intermixture of astigmatism will demand glasses, e. g.,

R. — S. 2.50 — C. 0.50 ax. 50°
L. — Cyl. 0.25 ax. 140°.

and fusion will come at once.

Subnormal accommodation[3] is far more frequent than is supposed, and its existence has been a prolific source of many of our past failures to relieve eyestrain. We must be on our watch for it in every patient. None of my successes have been more brilliant or satisfying both to patient and oculist than the half hundred in the past few years, by attention to this most important condition. I now have a child of nine, and another of twelve, wearing bifocal lenses with admirable results. I have found a few cases in which the subnormality differs in the two eyes.

Only the best conscience and the most expert intellect may rightly decide when to persist in stimulating or coaxing an amblyopic eye into use, and when to exclude it.

5. *Heterophoria.*—This cause of eyestrain appears to me refractional in origin and innervational in mechanism, but when it is too high, or of too long standing, it may produce eyestrain, either because too great injury has been done, or because reinstatement of orthophoria is impossible. Preventable all such conditions are, but I have not seen tenotomy of service. In the young if orthophoria is possible, by operation, it is possible by means of glasses, orthoptic exercises, etc. And without proper glasses no operation is useful, because it was the ametropia that produced the heterophoria.

Strabismus has the same law with the exception that its genesis is in childhood, is quickly established, and the irreparable injury sooner completed. With strabismus fixed eyestrain ceases, because Nature has despaired of help, and has renounced effort. Heterophoria is the cry of the dying eye for help; heterotropia is its epitaph. The strabismic death may sometimes be only resignation and coma, and resuscitation still be possible. Undoubtedly we frequently give up the struggle too quickly. But it is murder to delay intervention, as I was taught, until the child should be 7 years old. Such ophthalmology should be put on trial for murder in the second degree. I have cured strabismus by glasses alone in patients over 30 years of age.

In those patients reaching us over 40 to 50 years of age, with high heterophoria, would it be wise to advise operation? I hardly think so. One of the best illustrative cases I have was that of a woman who had 33° of esophoria. I should have lost my patient if I had demanded operation. I incorporated with her ametropic correction 13° prisms in each eye for distance, and 7° for near, and she has never for years had enough discomfort to make her think of operation. By a marvel of the optician's art her lenses are not very heavy or unsightly.

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[2] See Archives of Ophthalmology, 1890.

[3] See Am. Med., Jan. 21, 1905.

6. *Interruptions or Contradictions of the Normal Coordination of Dextrocularity and Dextromanuality.*—When traumatism, inflammation or other cause conflicts with or extinguishes the established coördination of dextrocularity and dextromanuality so that the left eye (in the dextral) must take up the proper dextral function of the right, eyestrain, at least for a time, almost inevitably results. There is an awkwardness, indecision, slowness, etc., of action, thought or vision, probably of all three, which may be more or less lasting. I have had a number of such cases, but the particulars are too numerous to find room here.

7. *Cerebral or Nerve Disease Occasionally Causes Eyestrain.*—Paralysis of accommodation, not from peripheral causes, but from cerebral ones, may exist, overlooked, in one or both eyes. Some eyestrain will still exist even with bifocal lenses. Failure of detection may be caused by the cycloplegia and may be present without a noticeable mydriasis. I have had a number of such cases.

Permanent myosis may cause incurable eyestrain because of evident optical reasons. I had one such case in which a famous neurologist could find no evidence of neurologic disease to account for it, and we both failed to bring about any alleviation of the symptoms patently eyestrain in nature. I had a theory that the myosis in this man's case was due to a tiny corneal opacity in the center of the pupil. My neurologic friend scorned such a philosophy.

Slight nystagmus, with small and almost undetectable excursions, flutterings, or tremblings, may, as will be readily understood, produce eyestrain. In one patient, a woman of 50, there was the most rare symptom of rotary nystagmus, which no glasses could cure. And I have had one case of monocular nystagmus that to some degree caused incurable eyestrain, although the young man had only 3/200 vision in the affected eye. Possibly the diplopia of paralytic strabismus may not be properly classed as eyestrain, and yet in one sense it is so. I have had to put two such eyes out of function by a steamed or ground glass, so slightly obscure as not to attract attention, and which at the same time would not allow vision.

There is no evidence that color blindness may coöperate in producing eyestrain, but it is possible that it may do so. Certainly in the beginning stages of optic atrophy there would probably be such an effect. I have reported a remarkable instance of hereditary optic atrophy occurring only in males, transmitted only by females, taking place from 28 to 34 years of age, and running through six generations. While the disease was in its early stages and ingravescent, one of these patients had decided eyestrain symptoms, not to be relieved by any means, of course.

I have had several patients in whom tremor of the head was a source of eyestrain.

I recently discovered one of the most unsuspected ways in which a disease of the central nervous system may produce eyestrain. I have no doubt that my little report is so far unique. My glasses had failed, in part, to relieve in a woman of 40 the symptoms of decided eyestrain in reading, not in writing. There was no subnormality of accommodation or other discoverable cause of the perplexing fact, until I noticed that her hands had a rapid and constant tremor. I placed her newspaper or magazine against a solid body, or in a book-rest, and the shivering was stopped, which caused ocular tiring.

8. *Disease of the General System.*—This condition, affecting directly or indirectly the nutrition or functions of the eye, may sometimes have some effect in causing eyestrain. This factor has been so ludicrously overemphasized in the past that it needs no more than mention here. Many "conservatives" who care nothing for scientific refraction problems have practically thrown the baby away with the bath, and have really sought to resolve all eyestrain into systemic disease. Although 99/100 of their contention is ludicrously untrue, there is, nevertheless, a possible 1/100 of truth in it. Although diseases of the nose and accessory organs may rarely affect the eyes, the rhinologist, and surely the operative rhinologist will have little work to do when the enormous influence of eyestrain on the nose is recognized. Much the same may be said of the gynecologist, the celiotomist, the gastrologist, and even the general physician.

9. *Eyestrain Due to Unhygienic Occupation, Use, or Abuse of the Eyes.*—In our offices we have constant evidence of these causes. Most of these cases are obviable or remediable, and their consideration goes over into the chapter on hygiene of the eye. This is indeed a chapter which, speaking resolutely, still remains unwritten, and which, when written, will not become popular reading for a century. During this waiting-time millions of eyes will be ruined, and vast reserves of health foolishly wasted. But in a minority of cases we find ourselves unable to prevent eyestrain, so plainly present. I have often run across the prejudice of employers, school trustees, and especially of railroad officials, against spectacles, even though the employé suffer and the lives of trainloads of people are jeopardized. The trainmen or switchmen say that the superintendent will probably "lay them off" as too old, whether presbyopic or not, if they show themselves in glasses. We should manage to convince the officials of the double folly of their ways.

Half of the clerks, stenographers, bookkeepers, etc., are compelled to carry on their work with poor lights, wrongly placed lights, etc., and when the lighting of their desks is good, the employé himself omits many other wise measures preventing eyestrain. Our school desks and commercial desks are universally flat, but when ophthalmology becomes ophthalmologic, and when civilization becomes civilized, they will be made sharply pitched. The unphysiologic, unophthalmologic, outrageously stupid writing posture of the occidental world begets a big deal of eyestrain, and most of the lateral spinal curvature which curses 27 per cent. of our school children. That we look sharply downward on our writing, etc., instead of off, from, and slightly downward, that we pathogenically angle our paper, are other sources of eyestrain, which we shall long and vainly struggle to change.

There are many other occupations which variously contribute to the conditions of eyestrain.

Lastly comes the fact on which is based the whole theory of the origin of eyestrain, namely, the impossibility of the long and continuous innervation and contraction of any single muscle or set of muscles in the human body. Rhythm is the law of life, and surely of muscular contractility. The modern human eye is often put to tasks which it is incapable of carrying out. Normalized accommodation (that is, accommodation without any ametropic morbidizing), is in fact always subnormal, when it is required to be executed with scarcely a break or change for hours, almost a whole day, and for all days of the year and life. Nature never made the eye for such work, and has not outfitted it with an adequate mechanism.

DISCUSSION.

Dr. Peter A. Callan, New York, said that while Dr. Gould emphasizes the effect of glasses, the use of atropin and the shutting out of one eye, he totally ignores the operative side. Dr. Callan does not think that ophthalmology consists alone in the fitting of glasses; it is something broader than that. He said that when Dr. Gould spoke of the treatment of congenital cataract by the use of atropin he probably meant lenticular pigment spots in the area of the pupil and not the kind of congenital cataract which is generally spoken of as such in which the anterior posterior pole of the lens is affected. Dr. Callan said that it would have been better to consider the best means of treating these cases surgically. Dr. Callan thinks that the mistreatment of iritis in the hands of most men is due to the patient not carrying out instructions. Many times he has been obliged to insist that patients go to the hospital in order that the treatment be properly carried out. Dr. Callan mentioned Dr. Gould's reference to an operation for occlusion of the pupil and said that if Dr. Gould means total occlusion of the pupil it is the imperative duty of the physician to operate. Last year Dr. Callan saw a child of 10, with pupils occluded, who was being educated in an asylum for the blind. He performed an iridectomy and the child is now pursuing its studies in the proper way. He said that Dr. Gould may be right in saying that these patients can not be treated by glasses, but that is no reason for subjecting them to life-long misery when operative measures may give relief.

Dr. Callan declared that one might as well claim to prevent gray hair by the use of glasses as to prevent cataract. If one lives long enough there will be haziness of the nucleus, and, though patients are fitted with the best possible correction, they will eventually develop cataract, and it can not be prevented.

He said that no one appreciates more than he does the good that Dr. Gould is doing in his ophthalmologic writings, but for a teacher to cast slurs on the medical profession and to ignore, as he does, the benefits of operative procedure, Dr. Callan thinks is uncalled for.

Dr. Louis Borsch, Philadelphia, referred to Dr. Gould's ninth cause of eyestrain due to use or abuse of the eyes, in which he cites cases of patients straining their eyes by not wearing glasses, because glasses make them look old, and said that there are many more people who abstain from wearing glasses and thus fatigue their eyes than one would at first be inclined to suppose; especially is this true when the oculist prescribes bifocals, for bifocals are popularly supposed to mark a person's age. Dr. Borsch said that when glasses or bifocals are not worn when required, eyestrain results. On the other hand, very often when they are worn strain results that is just as severe, and this is due to the improper construction of these lenses, as most of them are unsatisfactory. For some years he has been endeavoring to devise a lens which would embody all the desirable features of a bifocal from the oculist's, the optician's and the wearer's point of view. These desirable features are as follows: (1) A bifocal lens having the least perceptible line of junction between the near and far portions of the lens; (2) having no prismatic displacement; (3) having no cement to become loose or cloudy; (4) having the optical and geometric centers corresponding with each other; (5) what is of no little importance, a lens that can be made by any lens grinder and at so modest a cost as to be within the means of any one requiring bifocals to gain a livelihood; (6) a bifocal that won't make the wearer look old.

This he has successfully accomplished, and he exhibited this new bifocal, which consists of two pieces of optical glass of different indices of refraction welded together in an electric furnace, thus making a solid piece of glass.

Dr. George M. Gould, Philadelphia, said, in reference to improperly treated iritis, that we all know that 75 per cent. of the cases are not treated by ophthalmologists. It is a great mistake to think of the profession as consisting of a few excellent ophthalmologists in the cities. A great number of the patients are not seen in the cities, and even there how many cases of iritis get into the hands of the oculist? In regard to the cause of cataract he said that Dr. Risley has long contended that it is due to choroidal disease, and Dr. Gould contends that choroidal disease may be due to eyestrain. He has never seen a patient who had worn proper glasses develop cataract. He does not ignore operations at all. When they are indicated and required, of course, they are to be performed. His remarks referred to cases in which operations are not indicated. As to maligning the profession, that is "tommyrot." It is the patient who must be cared for without regard to injury to our special or professional pride.

AN ANTISEPTIC TREATMENT OF TUBERCULOSIS.

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In the treatment of tuberculosis we have to deal with tubercle bacilli, on the one hand, and the human being on the other. The quantity of powerful drugs daily taken by those unfortunates who have acquired the drug habit demonstrates the power of the human organism to accommodate itself gradually to changed conditions. It appears reasonable to suppose that if powerful poisons, such as chloral, cocain, arsenic, morphin, etc., can be tolerated by the human subject in gigantic quantities, then a like tolerance can be created for certain other drugs of less toxic influence, but possessed of bactericidal properties.

Through a tolerance thus acquired it may be possible to administer such germicidal substances in quantities sufficient to inhibit, damage, or even destroy pathogenic bacteria, such as tubercle bacilli, within the body, and to do this without injury to the human body. This hypothesis presupposes the lack of a similar or at least equal tolerance acquired by the bacteria under these circumstances.

TUBERCLE BACILLUS AND GERMICIDAL AGENTS.

The tubercle bacillus is restricted within a comparatively narrow range of environmental conditions for its growth and other vital activities. Many low forms of vegetable life do not possess an accommodative power equal in degree to that of the higher forms of animal life. In general the human body does not offer favorable conditions for the multiplication and pathogenic activities of the tubercle bacillus, and when such conditions of the human body exist they can by proper measures often be rendered unfavorable for the bacillus. The tubercle bacillus is sensitive to the addition of even small quantities of antiseptic substances to media otherwise favorable for its cultivation, and we have no experimental proof that through the gradual addition of increasing quantities of an antiseptic the bacillus can acquire a tolerance of the toxic effects analogous to that acquired by a human being to certain drugs. When placed in a culture tube under suitable surroundings, and a sufficient quantity of a given antiseptic is added, destruction of the tubercle bacilli results. It matters not how gradually the antiseptic is added; it is only requisite to introduce a certain fixed amount to accomplish the death of the bacilli.

By the judicious introduction into the human system of certain antiseptics proved to be destructive of the tubercle bacillus, great quantities may be ingested without apparent injury to the human tissues, and, it would seem, enough to injure, if not to destroy, the tubercle bacilli. This result is probably attained not solely by the direct germicidal action of the antiseptics used, but also indirectly by the change in the environment of the bacilli and increased efficiency of the defensive forces of the body in combating the germs and their effects. If a patient afflicted with tuberculosis weighs 130 pounds, about one-thirteenth of this weight, or ten pounds, is blood. The introduction of seventy grains of an antiseptic into the circulation would result in a ratio of one part of the antiseptic to one thousand parts of fluid, a concentration fatal in the case of certain antiseptics to many bacteria.

While, of course, we must consider many other factors than the percentage of the antiseptic in the blood, such as its further diffusion in the lymph and tissues, its possible decomposition and rapid elimination, irregularities in its distribution in different parts, still, in view of such considerations as those stated, it does not seem to me to be so hopeless a matter, as is often assumed, to secure direct injury and probably actual destruction of tubercle bacilli within the body by the administration of suitable germicidal substances in requisite amounts, and this without harm to the cells of the host. We have, furthermore, the advantage of being aided by the leucocytes and other vital forces of the human body, and of the fact that the circulating and other fluids of the human body are not so suitable a culture medium for tubercle bacilli as the culture fluid of the laboratory test tube. If I have reasoned correctly, we have now arrived at the point of selecting the most suitable antiseptic or combination of antiseptics.

IODIN AND PHENOL.

We have reason to believe that iodin is a powerful antiseptic, and, in addition, promotes constructive metamorphosis under certain conditions which are usually present in tuberculosis. Iodin is absorbed in combination with alkalis and probably with proteids, and has long been used in the treatment of tuberculosis, although the mode of its action is not well understood. One of the most powerful and generally useful antiseptics, especially in the presence of albuminous material, is phenol, which, furthermore, lessens the irritative properties of iodin and permits administration of the latter in larger doses. In addition to its valuable effects on iodin, phenol, we find, possesses the property of destroying most organized ferments of animal and vegetable life. It is admitted that bacteria and moulds are readily deprived of their characteristic power by solutions of phenol, whilst chemical ferments (enzymes), such as pepsin and ptyalin, are much less readily affected. Some authorities claim that chemical fermentation is entirely prevented by strong solutions of phenol. However this may be, I have found that patients taking daily more than one dram of phenol gained weight for fourteen consecutive days. Hence, phenol under certain conditions also promotes constructive metabolism.

Phenol, like iodin, has irritating and caustic properties which can be materially lessened by proper dilution, and still further by the action of camphor, which is also an antiseptic, and which renders it possible to attain the maximum dose of phenol in the minimum time. Phenol passes through the tissues unchanged for the most part, although a certain part undergoes partial oxidation. The etherial sulphates in the urine are increased, while the ordinary inorganic sulphates are diminished and may disappear. The olive-green discoloration of the urine, familiar to those who misuse the drug, bears no definite relation to the amount of phenol in the blood, nor to the danger of poisoning. The discoloration may be produced by a small amount of phenol, while very much greater quantities make no change in the color of the urine.

By gradually increasing the dose, far greater quantities of carbolic acid may be given to advantage than the authorities would lead us to believe. It has recently come to my attention that as much as twelve to fourteen grains have been administered at a dose every two hours in the treatment of influenza by Wigglesworth, and of plague by I. M. Atkinson,[1] presumably from the start, but my own experience justifies the belief that much better results are obtained by beginning with smaller doses. There are a great many cases of tuberculosis in which such large doses can not be endured from the start, owing probably to functional inabilities of certain organs. It is the injudicious method of using the drug which is responsible for its evil effects.

For many years these drugs have been recommended in the treatment of tuberculosis with uniformly negative results, probably because they were not combined so as to deprive them of some of their evil effects, and consequently they were not pushed to the point essential to accomplish the desired results. In this connection it is interesting to note, in addition to the beneficial results reported by Wigglesworth and by Atkinson, the successful results obtained by Bacelli and Ascoli in the treatment of tetanus by phenol, and by Dr. Quill in the treatment of typhoid fever with a mixture containing phenol and spirits of chloroform.[2] Considerable misapprehension doubtless exists both as to the dosage and as to the toxicity of carbolic acid, a misapprehension based on the cases of poisoning resulting from its external use, or from its administration in too concentrated form. There are unquestionably individual idiosyncracies as regards susceptibility to carbolic acid, but I agree with the authorities cited in the opinion that in proper combination and in proper dilution carbolic acid may be taken internally in far larger doses than have been customary. I, furthermore, believe that a measure of tolerance may be established by gradually increased doses.

DOSAGE.

The doses essential to accomplish the desired results are in conflict with the teachings of recognized authorities, but the results obtained demonstrate the value of the deviation from the accepted teachings. From what some might consider undue quantities, observations failed to reveal any derangement or morbid change in function or structure of any organ or tissue.

The formula which I have successfully used is as follows:

Phenol	m. 160	11
Spiritus of camphor	ʒ 3½	14
Tincture of iodin	m. 160	11
Glycerin C. P.	℥ss	15
Cherry laurel water		
Chloroform water		
Cinnamon water		
Tar water, of each enough to make	℥ 15	450

Mix and allow to stand until all free iodin disappears, then make an emulsion by adding one ounce, each, of cod liver oil and powdered acacia. Begin by giving one teaspoonful in a half cup of water every four hours, and gradually increase the dose to a tablespoonful at intervals of one hour. Should it become necessary, a stronger solution may be substituted here, or the quantity may be further increased, depending on the weight and tolerance of the patient. Technic plays an important part in the management of each individual case.

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[1] The Lancet, 1899, vol. i, p. 958; also 1899, vol. ii, p. 1589, and 1903, vol. ii, p. 754.

[2] Potter: Materia Medica, Pharmacy and Therapeutics, tenth edition, p. 381.

MODE OF ACTION.

As to the precise mode of action of each of the principal ingredients of the foregoing formula, it would be unwarrantable to make too positive statements. I incline to the opinion that there is a combination of direct antiseptic action on the bacilli with a favorable influence, exerted particularly by the iodin and the camphor, on phagocytosis and other protective agencies of the living body. The leucocytes are increased in number, and the symptoms indicate neutralization of toxins or cessation of their formation. An interesting phenomenon is the darker staining of the tubercle bacilli by carbolic fuchsin in the sputum of patients under this treatment.

I reserve for another occasion the detailed report of the results of the treatment, but these results as regards disappearance of the bacilli and increase in weight of the patient, and in a number of instances of even advanced pulmonary tuberculosis as regards apparent arrest of the disease and restoration to health have been so favorable that I desire to place in the hands of the medical profession the opportunity to make trial of the treatment.

While I have been led to the adoption of the treatment partly by hypothetical considerations, which I have set forth, of course, the essential test of its value must rest on facts accumulated by experience, independently of the correctness or error of the hypothesis.

NASAL DISEASE AND NEURALGIA.*

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The intimate relation existing between headache, migraine and neuralgia at times renders the differentiation of one from another of considerable difficulty, but as it is desired to consider only the latter in relation to nasal disease one must clearly appreciate what is meant by this term.

A comprehensive definition is: "Neuralgia is pain in a nerve or nerves, or radiating along the course of a nerve, of a severe, darting or throbbing character, intermittent, with sensitiveness of the skin and tender points where the cutaneous branches are given off from the deeper parts."

As with headache, the nose is a frequent and yet unrecognized cause of many cases of trifacial neuralgia, and, while it is not desired to imply that nasal and accessory sinus diseases are the most frequent factors in its production, yet they play an important rôle. Hence in all such cases of neuralgia these parts should be carefully examined, a procedure which, unfortunately, is rather the exception than the rule.

As both the nasal interior and its accessory sinuses are supplied with sensation by the trifacial nerve and its branches, and as this nerve is more frequently the seat of neuralgia than all other forms combined, it is evident that affections of these structures should not only involve some branches of the nerve reflexity, but, still more important, directly, and this occurs in many cases of trifacial neuralgia when no apparent cause is evident, because these structures are not investigated or are entirely neglected. Corroborative evidence of this is shown in cases in which, after operation in the nasal interior, neuralgic pains are observed along various filaments of the superior maxillary branches of the trifacial nerve, radiating into the teeth of the upper jaw and through the mucous membrane of the buccal surfaces. In common with neuralgia from any cause, that form resulting from disease of the nasal chambers, shows periodic variations in its intensity, in many instances being influenced by pressure between adjacent tissues, but there is usually no definite relation between the focus of disease and the seat of pain, it being not uncommon to find neuralgia in various portions of the head in cases of the same affection, in some instances the pain being on the side opposite to the nasal lesion.

The seat of pain in the individual case is practically constant, and unless additional tissues become involved in the morbid process it is unusual to find the original neuralgia changing its position, but in severe cases one finds, when a main branch of the nerve is involved, that the pain extends in a greater or less degree to other branches. While facial neuralgia frequently results from various nasal affections, but irrespective of the particular nerve which is the seat of the neuralgic process, the type differs in no way from that produced by other causes, either in the nose or sinuses or elsewhere, and from this aspect the basal cause can not be differentiated without obtaining the added light afforded by further studies of the particular case.

Nasal neuralgia, *per se*, that is, neuralgia limited to the nasal structures, does not necessarily follow from disease here, but may be the result of changes in other regions, such as alterations in the Gasserian ganglion or the various nerve trunks emerging from it, when pain may be complained of in the nose in addition to supraorbital or temporal neuralgia. It is also essential to bear in mind that the nasal interior may be abnormal, yet the neuralgia be the result of changes distant from this region, as it has been shown that in primary trifacial neuralgia catarrhal alterations of the nasal mucous membrane are not infrequent as a secondary result; and if care be not exercised these alterations may be mistaken for the cause of the neuralgia and not properly interpreted as one of its results.

So far as the accessory sinuses are concerned, acute sinusitis, and less frequently chronic changes, are a frequent cause of neuralgia and often the excessive pain is considered both by the physician and by patient as the actual disease itself. The character of the pain not infrequently adding to this erroneous impression, as it may last for a week or more with partial intermissions, and then severe exacerbations, the former being ascribed to the analgesics prescribed, with later subsidence of the pain, often accompanied with a purulent nasal discharge, may lead to the correct interpretation of the cause as an attack of acute sinusitis and not, as was believed, an idiopathic neuralgia. In acute inflammation of the sinuses, neuralgia is a frequent symptom, especially supraorbital pain of a throbbing and pulsating character. This location of the neuralgia is the rule, while pain in other regions of the face and head is more or less exceptional. As a presumptive sign of sinus empyema, neuralgia should be given considerable credence, but at the same time it is a deceptive sign and a most irregular one, as it may or may not be present and is rarely localized by the patient with any degree of certainty, although when found in the region of any particular sinus, especially when palpation increases the pain, it may be a symptom of considerable value in detecting the original focus of the trouble.

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* Read before the Kensington Branch of the Philadelphia County Medical Society, May 8, 1906.

NASAL NEURALGIA.

As a type of pure nasal neuralgia, the following case is illustrative:

Case 1.—Mrs. I., aged 23, had left supraorbital neuralgia for four years, with severe attacks at intervals of from a week to ten days and often lasting for three days without relief.

After much treatment with no result, she came to me for nasal stenosis which had not been considered as bearing any relation to the neuralgia. The left inferior turbinate was hypertrophied and jammed against the septum and following removal of its inferior border, which was the only treatment adopted, the neuralgia disappeared as soon as the pressure was removed and has not returned in three years.

HYPERTROPHY OF THE TURBINATE.

Of all the affections involving the nasal chambers independently of sinusitis, hypertrophy of the turbinates, and especially of the middle, is the most frequent cause of neuralgia. Both supraorbital and facial neuralgia result from continued pressure of the middle turbinate against the septum, the former resulting from pressure on the nasal branches of the fifth nerve, which may be greatly enhanced if there is, in addition, sinus involvement. The pain of intranasal pressure may be referred to the eye, to the frontal region or to the nose itself, and occurs with hypertrophy of the posterior part of the inferior turbinate, with synechia or spurs of the septum of sufficient size to cause pressure against the opposite tissues. Neuralgia also occurs in acute rhinitis from excessive congestion and intranasal swelling, but more especially when the sinuses are coincidently involved, and then there may be hammering, piercing pains of the supraorbital region, often synchronous with the pulse beat. In the later stages of the same condition, when there is a purulent discharge with obstruction, and especially when deviation of the septum in its upper portion exists, transient neuralgic pains are not infrequent. Of the other conditions in which this symptom is sometimes a feature, hay fever and intumescent rhinitis require mention, as in the former neuralgic pains of the eyeballs, root of the nose and rarely of the occipital region are not infrequent when the attack is severe, while in intumescent rhinitis, hemicrania or neuralgia of the supraorbital, occipital or temporal regions is often part of the disease.

Slight irritation of the nose may produce a degree of nervous instability sufficient to cause severe neuralgia, yet in the majority of cases in which pressure is continued actual nerve changes are undoubtedly produced; the case reported by Lermoyez demonstrates this in a convincing manner. A myxomatous degeneration of the inferior turbinate was removed with the cold snare and galvanocautery, and this was followed in three months by free nasal respiration, but also with severe supraorbital neuralgia uninfluenced by drugs. The scar on the turbinal tissue was then removed, with permanent disappearance of the neuralgia, and microscopic examination showed that a nerve fiber engaged in the cicatrix was acting as the pathologic basis for the pain.

MAXILLARY SINUSITIS AND NEURALGIA.

As an example of neuralgia resulting from maxillary sinusitis, the following case is suggestive of nerve implication:

Case 2.—Mrs. H., aged 32, had been operated on through the canine fossa of both sides for antral empyema, two years before she came under my observation. The anterior end of the inferior turbinates had been removed and free drainage of the sinuses was obtained by large openings into the external nasal wall of each side. For the past year she has suffered constantly from infraorbital and supraorbital neuralgia.

Examination eliminated other sinus involvement and pointed to nerve implication from necrosed bone in the maxillary sinus walls. This was verified by curetting the softened bone areas, so that following this the neuralgia was no longer a source of annoyance, although a mucopurulent discharge still persisted. A few months later neuralgia recurred on the left side and that sinus showed further caries of its walls, but no further measures have been taken to remove the diseased bone.

The incidence of neuralgia from the maxillary sinus is probably not so common as that from the frontal, although the nerves are more exposed in the former, but its physical conformation is such that pressure of retained morbid secretion is rather infrequent compared with similar conditions of the frontal sinus. Infraorbital, supraorbital and dental neuralgias are not unusual in acute and chronic maxillary sinusitis, and when present are of presumptive value in suggesting antral disease, frontal neuralgia being most common, but any severe facial pain should direct attention to this sinus. In acute inflammation, the pain is often mistaken for simple neuralgia, as it is apt to involve the teeth and to extend into the temple and is a common symptom. In chronic empyema of the maxillary sinus, however, neuralgia is not so frequent, but when present it may involve half of the head, like migraine, or intense pain may be complained of over the facial surface of the superior maxilla. It is often periodic in intensity, increasing in degree for several hours, then diminishing and frequently disappearing later in the day, to return again in the morning. In such instances the neuralgia is a direct symptom of nerve irritation from inflammation of the mucus lining of the sinus, the superior dental nerve running along its walls, and it is not infrequent to find the thin bony covering dehiscent in some areas, so that from the superficial position of these nerves the pain is referred to the nerve trunk and intense neuralgia may result. In some cases this may not be so severe, but there will be points of tenderness over the nerve and especially at the point of exit of the infraorbital nerve.

FRONTAL SINUSITIS AND NEURALGIA.

Acute inflammation of the frontal sinus is always accompanied with headache and not infrequently with severe neuralgia. The following case illustrates this feature:

Case 3.—Miss N. aged 21, following an attack of acute coryza, developed violent right supraorbital neuralgia which was continuous and prevented her from sleeping.

She was seen after the neuralgia had lasted for three days and analgesics had failed to give relief. Examination showed acute right frontal sinusitis with retention of secretion and the slightest pressure over the supraorbital nerve caused exquisite pain. After reducing the swelling of the frontal canal with cocain and adrenalin, a profuse discharge ensued on this side and relief was immediate, the remaining tenderness over the sinus disappearing in a few days.

In all forms of frontal sinusitis, whether due to congestion of its mucous membrane accompanying acute rhinitis or resulting from pus retention of chronic empyema, supraorbital neuralgia of the affected side is frequently observed. It differs in no way from the frontal neuralgia found in many affections, as the pain may be paroxysmal, often periodic and extending toward the occiput; at times it annoys the patient only slightly, again it is excruciating, and the usual medicinal measures used for neuralgia are utterly without value. The pain may be bilateral, but it is more frequently one-sided, and there is tenderness to pressure over the exit of the supraorbital nerve and the lower anterior wall of the sinus. Often in chronic frontal sinusitis when unrecognized, the neuralgia may last for years with variable periods of freedom from pain, the condition usually being considered as one of simple supraorbital neuralgia. Infrequently the pain is in the occipital region, and then mistakes in diagnosis are still more apt to occur. The relation of the supraorbital nerve to the frontal sinus explains the frequency of neuralgia here, as its branches ramify over the anterior and inferior walls and the inflammation of the mucous lining involves the nerve trunk, while, when the sinuses are small, so that retained secretions are under pressure, it can readily be understood that neuralgia must be frequent.

ETHMOIDAL SINUSITIS AND NEURALGIA.

More often productive of headache, empyema of the ethmoid cells may be the exciting factor in occipital and frontal neuralgia, as the following case demonstrates:

Case 4.—Miss G., aged 20, had ethmoid suppuration on both sides, with enlargement of the middle turbinates and pressure against the septum. In addition to almost constant headache, attacks of occipital neuralgia occurred every week or so and incapacitated her for work, while frontal neuralgia was less frequent but unusually severe.

Since removing the middle turbinates in part and curetting the necrosed ethmoid cells for an irregular period of over two years, no neuralgia has been present for three years, although a mucopurulent discharge is at times annoying.

Unrecognized ethmoid disease, with or without neuralgia, is usually treated as postnasal catarrh, or, when neuralgia is severe and frequent, it is often treated as the sole disease and not as a symptom of the causal affection. Supraorbital, occipital and basal neuralgia occur in many cases of ethmoid empyema in which pus is confined under pressure in the various cells of this region, while in open ethmoiditis without obstruction, pain is usually not complained of, or at the most headache may be present to some extent. While it is suggested that empyema of the middle and anterior group of cells produces facial and vertex neuralgia, and that of the posterior cells vertical and occipital pain, yet in the majority of cases this is far from the fact, as it may involve the root of the nose, the lower inner angle of the orbit, the frontal region and the upper part of the cheek, but as a rule the localization of neuralgia from ethmoiditis is vague and in no way characteristic. The basal type of headache or neuralgia should suggest an examination of these sinuses, for in some cases the pain is on a plane with the base of the skull, involving the back of the eyes, the mastoid and temporal regions and the occiput along the same level. In other cases, infrequently observed, there may be a point of tenderness externally between the nasal bone and the lateral cartilage, where the anterior ethmoidal nerve sends an external branch to the skin covering this region.

SPHENOIDAL SINUSITIS AND NEURALGIA.

The least recognized of all these affections are those of the sphenoid sinus, and while empyema here is accompanied with headache more frequently than with neuralgia, yet the latter may occur, as shown by the following case:

Case 5.—Mrs. M., aged 55, has had a postnasal discharge for twenty years and once or twice a month intense neuralgic pains over the entire head, originating from a center situated at the intersection of two lines, one horizontal from the base of the nose, the other vertical from the top of the head. Five years ago the anterior wall of the sphenoid sinus was opened and since then the discharge has materially lessened, while the neuralgia occurs about once in two months, the attacks being as severe as before.

When I first saw her the trouble seemed to be entirely in the sphenoidal sinus and the opening had become obstructed so that retention of secretion caused the neuralgic attacks, while so long as the discharge was small in amount and there was no obstruction to its exit she was free from neuralgia.

In acute sphenoidal sinusitis, neuralgia may involve the frontal and occipital regions and produce intense agony, the pain also being complained of deep in the center of the head. In chronic empyema, however, while the pain may not be so severe, in some instances much suffering may be produced. Its location varies, but not infrequently the eyes are painful, the supraorbital nerve is involved or the pain may be over the vertex.

COMBINED SINUSITIS AND NEURALGIA.

The last case which I desire to mention illustrates a frequent condition, in which there is combined sinusitis and marked intranasal changes:

Case 6.—Miss R., aged 22, complained of a profuse mucopurulent nasal discharge and basal neuralgia, especially severe over the supraorbital regions. When the neuralgia was not present there was a dull headache. The middle and lower turbinates on both sides were swollen and jammed against the septum, while the ethmoid, sphenoid and frontal sinuses were involved, no evidence of antral disease being obtained. As the result of several months of treatment, the headache entirely ceased when the obstruction and pressure had been removed; the supraorbital neuralgia also disappeared and the attacks of basal neuralgia diminished both in frequency and severity. The ethmoid sinusitis which has not entirely disappeared under treatment causes occasional attacks of pain.

The neuralgia observed in such instances is bizarre and exceedingly confusing, and one can never be certain of its relation to any particular changes in the nasal chambers or sinuses until the affected parts have been approximately restored to normal, the retained secretions evacuated and pressure between opposing points has been removed. When during acute coryza or grippe, especially, the location of the neuralgia apparently bears some relation to a particular sinus, one may take it, with many exceptions, however, as an indicator of involvement of that cavity, but on this alone the diagnosis of sinusitis can never be made with certainty, nor can the relation of cause and effect be disclosed without more certain corroborative evidence.

In frontal or sphenoidal sinusitis, persistent occipital neuralgia may be a marked feature, or in either of these, with pathologic alterations of the ethmoid cells, neuralgia localized in the supraorbital or infraorbital regions, with marked tenderness of the orbit, is not infrequent. It must also be borne in mind that in many cases of neuralgia in which there is intranasal or sinus disease it does not follow that the former is dependent on the latter, for no relations at all may exist between the two, but the neuralgia is the result of other causes, the nasal affection being a mere coincidence.

3554 North Broad Street.

Tuberculosis and Nephritis.—Chauffard has noted nephritis in about 9 per cent. of his tuberculous patients. The kidney may be in an amyloid condition or hematuria, albuminuria and casts may indicate acute nephritis. In his study of the subject, published in the *Jour. de Méd. et de Chir. Prat.*, for Nov. 10, 1905, he mentions that in one case the symptoms of nephritis first appeared under tuberculin treatment. Albuminuria followed each injection.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN, BASED ON THE OBSERVATION OF FOURTEEN CASES.

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(*Continued from page 683.*)

WHEN PALLIATIVE OPERATIONS ARE ADVISABLE.

After a careful study of these cases and of the views of the different authors, it will be seen that the weight of opinion is decidedly in favor of palliative operations. The choked disc, headache, vertigo, nausea, vomiting and, to some extent, the convulsions are all favorably influenced by this method of treatment. Relief from these distressing symptoms is by no means to be despised, even though the tumor is not removable. The relief from many of these symptoms is often permanent, i. e., during the period the patient may continue to live, and, as the growth of the tumor is not hastened by the palliative operation and may be slow, we are thankful for a means of removing the distressing symptoms of intense intracranial pressure.

My first case of palliative operation was in 1898, and the operation was performed by Dr. John B. Roberts. The marked improvement that occurred in that case and persisted at least during several years and until the patient passed from our observation convinced me of the benefit to be derived from palliative operations (Case 2 of our series).

In one of our cases (Case 10) headache was so severe that relief was demanded at once. Byrom Bramwell, as already mentioned, has attributed sudden death in some cases of brain tumor to the severity of the headache and sudden inhibition of the action of the heart. The patient to whom I refer suffered such intense pain that he could not be reasoned with and was not responsible for his acts. Occasionally, in his attacks of pain, he grabbed any one who might come within his reach and once bit his mother through the arm. The relief afforded in this case by a palliative operation has been most striking. Indeed, his relief from the previously constant pain has been so great that, as he expresses it, he is "lonesome without his headache."

In another case (Case 11) headache has been the symptom that above all others demanded treatment, and the pain in the head was associated with pain in the neck, shooting down into the upper limbs. The symptom-complex has been in large degree that of cerebellar tumor, but the pain shooting into the upper limbs has made me fear that the tumor was extending downward through the foramen magnum on the cord. Some years ago I had a case of this kind, and at the necropsy a flat tumor was found covering a part of the pons, extending into the posterior part of the fourth ventricle and growing down on the cord for several inches. In that case the development of the symptoms in the upper and lower limbs was more rapid than in the present instance, and, therefore, I feel that the tumor in the latter case may be confined to the region of the cerebellum. If so, I have no explanation for the pain in the upper limbs. The decrease of this pain, together with the decrease of the headache after the dura was opened at the second operation, gives me reason to believe that probably this pain of the limbs was indirectly caused by the cerebellar tumor. Headache and pain still occur occasionally, but the condition of the patient has been vastly improved by the removal of a piece of bone and by opening the dura over the cerebellum.

I am somewhat skeptical as regards disappearance of Jacksonian convulsions after merely opening the skull and dura if the convulsions are very frequent.

In one of my cases in which the brain was exposed by Dr. Edward Martin, and which will be reported by Dr. Martin and myself later, the tumor could not be found at the time of operation. The man was having five or six Jacksonian convulsions within an hour, and relief of intracranial pressure did not in any way check them. He died from exhaustion following the numerous convulsive seizures on the second day after the operation. After death a minute tumor was found nearly in the center of the area exposed, but a little subcortical.

In a still more recent case under my care, in which fracture of the skull and subdural hemorrhage had occurred, trephining probably prolonged life about 24 hours, but did not in any way check the Jacksonian convulsions which before the operation were as frequent as six or seven within an hour, and continued in weakened intensity but with equal frequency after the operation. Opening the skull does not seem to relieve acute irritation of the brain, but it is of benefit in chronic cases, as not rarely convulsions occurring infrequently have been rendered less severe by this procedure.

I have considered whether palliative operations can obscure focal symptoms. Bruns thinks they can not, but the subject is one that has important bearings. It is probable that a small tumor will cause more local disturbance if the general intracranial pressure is increased, not only because the local disturbance is added to the general pressure, but also because any one part of the brain is more irritable when the disturbance of the brain is general. This, however, is not sufficiently important to prevent palliative operation, and I would advise that this should be done before the general symptoms become very intense, and especially before optic neuritis has developed so far that blindness is likely to result. The apparent unanimity of opinion as regards the effect on choked discs of opening the skull makes the necessity of this operation at an early period very evident.

It is a mistake to regard palliative operations as a substitute for radical operations. The tumor should be removed whenever this is possible, and palliative measures are to be considered only when the tumor can not be located, or is too large for removal, or possibly is a glioma. Palliative operations only relieve, except in extraordinary cases such as those reported by Horsley. Codman's views that palliative operations are preferable to radical operations I can not share, and would add that the argument he offers is insufficient, viz., that the former are less dangerous in the hands of inexperienced surgeons. No surgeon who has had little experience in operating on the brain should attempt the removal of a brain tumor, and before advising the attempted removal of a brain tumor I always inquire who is to perform the operation.

The experience of Horsley as regards atrophy of tumors as a result of palliative operations seems to be unique; at least I have found no other similar cases, nor have I ever seen any such result in any of our cases. Broca and Maubrac doubted whether Horsley was correct in believing that partial ablation of a tumor may retard the growth of the rest, but Horsley has observed atrophy of a tumor following a simple opening of the skull and dura. This is a striking statement. I have never seen arrest in the growth of a tumor following the removal of a part, but several times I have seen increase of symptoms result, and I dread the partial removal of a growth, especially if it is a glioma. It has seemed to me that the congestion of the tumor and of the surrounding tissue and the greater space afforded for the growth of the tumor, after partial removal, favor the rapid growth of the remaining portion. I am almost convinced that it is better to leave a tumor untouched if only a part can be removed, especially if the growth is a glioma. The attempt, I think, should never be made to remove a glioma, and yet there seems to be no way to determine before operation that the tumor is a glioma. A patient has been under our care with the diagnosis of brain tumor and was operated on several times by Dr. Frazier. Each time as much of the tumor as could be seen was removed, and yet a return of the symptoms occurred soon after each operation, and when a necropsy was obtained the tumor (a glioma) was found to extend from the upper to the lower surface of one cerebral hemisphere.

I doubt whether it can be held that a palliative operation, by which the tumor is not partially removed, by relieving pressure, favors the growth of an intracranial tumor. Unquestionably the brain has protruded through the opening, as in the cases of Schlesinger, Frazier, and Cushing, but it seems a questionable proceeding to excise the protruding portion. The tumor has grown through the opening and on the outside of the skull (Jolly, Wiener, Putnam and others). In Jolly's case it formed an extracranial mass nearly as large as the man's head. It seems unquestionable that life was prolonged in this case by the operation, although it is doubtful if life under such circumstances is worth having. In Jolly's[33] case the clinical signs extended over a period of thirteen years. In the case that Dr. Martin and I observed, to which reference has been made, the symptoms of brain tumor had existed for eight years.

We have had some extraordinary cases in which the symptoms of brain tumor disappeared entirely or almost entirely after an opening had been made in the skull and dura. Such, for example, are the case observed by Dr. John B. Roberts and myself in 1898 and Cases 4, 5, 6, 9, 10 of our series. It may be thought that the growth of the tumor is arrested by the operation; this is possible, but doubtful. Internal hydrocephalus (meningitis serosa) or some other lesion may give the symptoms of brain tumor, and relief of intracranial pressure may cause great modification or disappearance of the symptoms. In some cases in which relief has followed palliative operations probably an incorrect diagnosis has been made; in others, the relief of pressure has permitted the tumor to grow slowly without causing many symptoms.

My views as a result of my experience and of a study of the literature are:

1. Palliative operations should be performed early in every case in which symptoms of brain tumor are pronounced and before optic neuritis has advanced far, especially where syphilis is improbable, or antisyphilitic treatment has been employed.

2. Partial removal of a tumor, especially of a glioma, is a questionable procedure.

3. Palliative operation does not cause atrophy of a brain tumor and probably does not arrest its growth; on the other hand, it probably does not hasten its growth.

4. Palliative operation is not to take the place of a radical operation when the latter can be performed without great risk to the patient.

5. In some cases the symptoms of brain tumor disappear almost entirely for a long time or permanently after a palliative operation. This result is obtained either by relief of intracranial pressure or by removal of some lesion (meningitis serosa, etc.) other than brain tumor, and yet causing the symptoms of tumor.

REMARKS BY DR. FRAZIER.

The question as to whether a palliative or radical operation is indicated may be determined by answering the question as to whether the tumor is operable or not. The operability of brain tumors has frequently been discussed and the facts and figures which have been presented to us have been based almost exclusively on the autopsy records and not on the finding at the time the operation was performed. The autopsy records may help to determine the percentage of operable tumors in so far as it reveals the nature of the tumor and may be able to fix on its point of origin. The very vascular infiltrating sarcomata should be classed with the inoperable tumors, for I believe the expectation of life and the enjoyment of that much of life which remains to the patient would be greater in the majority of cases after a palliative operation. On the other hand, the fibroma, or the somewhat defined fibrosarcoma and the gumma of limited dimensions should be classified as of the operable group. The size of the tumor as revealed at the autopsy has no practical bearing at all on the problem; the size of the tumor at the time the symptoms first made a diagnosis possible should only be considered. There are some tumors of such large proportion as to make any attempt at removal inadvisable, but, on the other hand, tumors of very small dimensions may lead to a fatal termination.

If it were possible to ascertain the point from which the tumor took its origin we should have some valuable statistics as to the operability of tumors. The farther away the tumor is from the cortex or the nearer it is to the base of the brain the more it approaches the field of inoperable growths. If the statistics are to be of much value to the surgeon they should be based on the records which are made on the operating table or at the autopsy, if the patient dies as a result of operation, only in those cases in which the patient has been brought to the surgeon comparatively early in the course of the disease. One might as well prepare a table and compile statistics as to the operability of carcinoma of the stomach based on the autopsy records of patients who died in the most advanced stages of the disease, when the lymphatic nodes far beyond the primary lesion have been invaded and the tumor is no longer confined to the stomach, but has invaded other organs adjacent to it. The question as to what percentage of tumors of the stomach may be removed must be and is being determined in the very earliest stages and on the operating table. So with tumors of the brain, the greater the number of cases brought to the surgeon in the earliest recognizable stage of the disease the sooner will we be able to say with some degree of accuracy in what percentage of cases there is a reasonable hope of being able to perform a radical operation.

There are two classes of cases in which a decompressive operation may be required. One in which there is reason to believe the tumor can not be removed in its entirety and the other in which the tumor can not be localized and yet the possible loss of vision, the intense headache and distressing vomiting almost demand the immediate adoption of some measure of relief. Cases of tumors of the cerebrum in which localization is impossible are rather the exception, although in cerebellar lesions it not infrequently happens that the tumor can not be localized.

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[33] Jolly: Berl. klin. Wochft., July 17, 1899, p. 636.

A word or two might be said with reference to operations performed for the relief of cerebellar tumors. The anatomic relations of the structure in the suboccipital resemble in certain particulars those in the temporal region. In both the bone is covered with a well-developed musculo-aponeurotic layer, even of a greater bulk in the suboccipital than in the temporal region. For purposes of exploration it is necessary to reflect a flap of considerable size, the incision beginning at the mastoid process and, following the line of the transverse sinus to the occipital protuberance, drops in a vertical direction along the median line. And when the flap is replaced great pains should be taken to approximate carefully not only the cutaneous, but the musculo-aponeurotic layer. When the tumor can not be localized or for any other reason a radical operation is not deemed feasible a less mutilating incision will answer the purpose quite as well. A vertical incision should be made, beginning a little above the superior curved line and extending downward for a distance of three or four inches. The edges of the wound can be retracted sufficiently to afford space necessary to carry on the subsequent steps of the operation. A much more perfect approximation of the wound may be obtained as the muscles are split in the direction of their fibers and not in various angles, as is the case when a curved incision is made following the line of the sinus. This vertical incision enables one to remove the bone only from one side, but, if, for any reason, a bilateral craniectomy seems advisable, the muscle-splitting operation may be repeated on the opposite side. Such a procedure has many advantages over the conventional bilateral craniectomy in which the bone from one mastoid process to the other is removed. There is less chance of disturbance arising from traction on the pons or medulla if an intervening bridge of bone is left. In addition to this the bone in the region of the occipital region is very vascular, often riddled with vascular channels of such dimensions as to admit of a very profuse and sometimes alarming hemorrhage. The region immediately surrounding the occipital protuberance should be regarded as the dangerous zone and as such scrupulously avoided.

Failing to find the tumor, we have in certain cerebellar cases deliberately removed from one-quarter to one-third of the cerebellar hemisphere and have attributed the relief of pressure, in part at least, to this. In all our cases the operation has been confined to one side, and as yet we have not found it necessary to operate a second time for the removal of the bone on the opposite side. Even if it were conceded to be necessary to remove eventually the bone overlying both hemispheres, the operation had better be performed in two stages rather than in one; patients with cerebellar lesions are at the best not very favorable subjects for operative intervention, and preference should be given, therefore, to this procedure, which in giving the desired results will require less time and be attended with less hemorrhage and traumatism of the tissues.

First, as to those cases in which the tumor can not be localized. There are two points in the technic of the operation about which there may be some difference of opinion, namely, the area of the brain to be uncovered and the incision of the dura. The decompressive operation consists solely in the removal of a portion of the cranial vault, with or without incisions into or removal of a portion of the dura. When there is no guide as to the situation of the tumor, the operator is free to select either one of four areas: the frontal, parietal, occipital or temporal. In discussing this question several years ago, attention was called to the desirability for cosmetic reasons of avoiding both the frontal and occipital regions; there remain, therefore, but two areas from which to make the election: the parietal and the temporal. It is desirable, as Sänger suggests, to give preference to that portion of the skull beneath which may be said to exist a silent area of the brain. This is especially true of the right temporal region, so that, in the absence of any contraindication, this may be said to be the region of choice. Through a longitudinal incision, following the direction of the fibers of the temporal muscle, a section of bone equivalent to 6 or 8 square centimeters may be removed. One should be content to make but one opening, at least at the first sitting. This will be found in most cases to be sufficient to afford the necessary relief of pressure. If in the course of events there is evidence of a recurrence of increased tension, as shown by such symptoms as headache, vomiting or choked disc, a second opening may be made on the opposite side of the head. Such were the circumstances in one of our patients (Case 5). The headache, which had been relieved temporarily, recurred. A second opening was made on the opposite side of the head, and since that time, a period of about three years, the patient has enjoyed almost entire relief.

Speaking now only of those cases in which the tumor has been definitely localized, it is impossible to determine prior to the operation whether the tumor is one appropriate for a radical rather than a palliative operation. The duration of the disease is a guide neither to the size nor to the nature of the tumor. Malignant tumors in the brain are, many of them, surprisingly slow in their growth, and, though of many months' or years' duration, may still be in the operable stage. A very large tumor may be present with comparatively slight disturbance, or a very small one may be very serious in its consequences. A tumor of several years' duration may be no larger than a hickory nut or walnut, and yet give rise to a condition which may ultimately prove fatal.

Recently I was called by Dr. Charles K. Mills to operate on a patient who had had symptoms of a tumor for more than a year. The localizing symptoms were very vague, but all seemed to point to a lesion of the left cerebellar hemisphere. This was thoroughly explored, but with negative results, except in so far that there seemed to be a very unusual degree of tension within the cerebellar fossa. This was so suggestive of the presence of a tumor as to justify a very careful search. The results were negative. About two weeks later the patient died, and a tumor as large as a peach was found compressing the under part of the occipital lobe directly in contact with the tentorium cerebelli. Its position satisfactorily explained the existence of cerebellar symptoms. As the brain was being lifted out of the cranium at the autopsy the tumor dropped on the table. Though of large dimensions, it was clearly an operable one, and had the symptoms made it possible to localize the growth it could have been removed without any difficulty, and owing to its benign nature the operation would have resulted in a complete cure. In such a case had the operator proceeded deliberately to the performance of a decompressive operation and not attempted to explore the affected area the opportunity of saving the patient's life and of affording him permanent relief would have been thrown away.

In every instance, therefore, the operator should begin the operation with the intention, first, of attempting to expose the tumor. He should proceed as for the performance of an osteoplastic operation; the flap should be carefully mapped out and reflected and the usual exploratory measures adopted. Failing to find the growth or finding an inoperable one, the propriety of a decompressive operation is clearly indicated. He must then determine as to whether he will remove the bone of the flap, wherever this may be, or close the flap and remove the bone from the area of choice, namely, over the right temporal lobe. When, as is true in the majority of cases, the tumor is situated in the postfrontal (motor) or parietal region the bone over the temporal region may be removed through the same opening, thus avoiding the necessity of another incision. This was the procedure adopted in one of our reported cases. The patient was suffering so intensely from headache that he was operated on the day of his admission to the hospital; not waiting to make a more careful study of the case with a view toward accurately localizing the growth we proceeded at once with the intention of performing a decompressive operation. Sufficient was known of the case to lead us to believe the tumor was in the motor region. Accordingly this was laid bare and a very large vascular tumor, probably a sarcoma, was at once exposed. Deeming it to be inoperable and wishing to afford relief from the intracranial tension, only the lower half of the bone contained in the flap, which extended down to the Sylvian fissure, was removed, but through the same opening a considerable portion of the bone lying below the fissure and under the temporal muscle was also removed with Rongeur forceps. As will be seen in the record (Case 10) the headache was immediately relieved. The most important question, however, in the technic of the decompressive operation is as to whether the dura shall be incised or removed. The region from which the bone is to be removed is by comparison a matter of slight importance. To be able to answer this question one must be in a position to state from experience, first, whether the escape of cerebrospinal fluid through a dural opening is essential, and secondly, whether sufficient relief of tension may be afforded with the dura intact. As to the escape of cerebrospinal fluid there are certain observers, notably v. Bergmann, who believe that the beneficial effect of this operation is largely attributable to the escape of cerebrospinal fluid. It might be difficult, possibly, to prove or disprove this idea on theoretical grounds, but from our own experience we have not been able to note any radical difference in the results between those cases in which the dura was either left intact or if incised for exploration, was closed immediately afterwards. To the escape of a small quantity of cerebrospinal fluid through a temporary opening in the dura could scarcely be attributed the relief, which extends over a period of months or years. In so far, therefore, as the results of the operation are concerned, it makes no difference whether the opportunity for drainage was afforded by a permanent opening in the dura. In the most satisfactory of the cases under our care the dura was closed in one case, particularly, in which an exploratory dural incision was not entirely closed, the patient enjoyed no appreciable benefits from the operation.

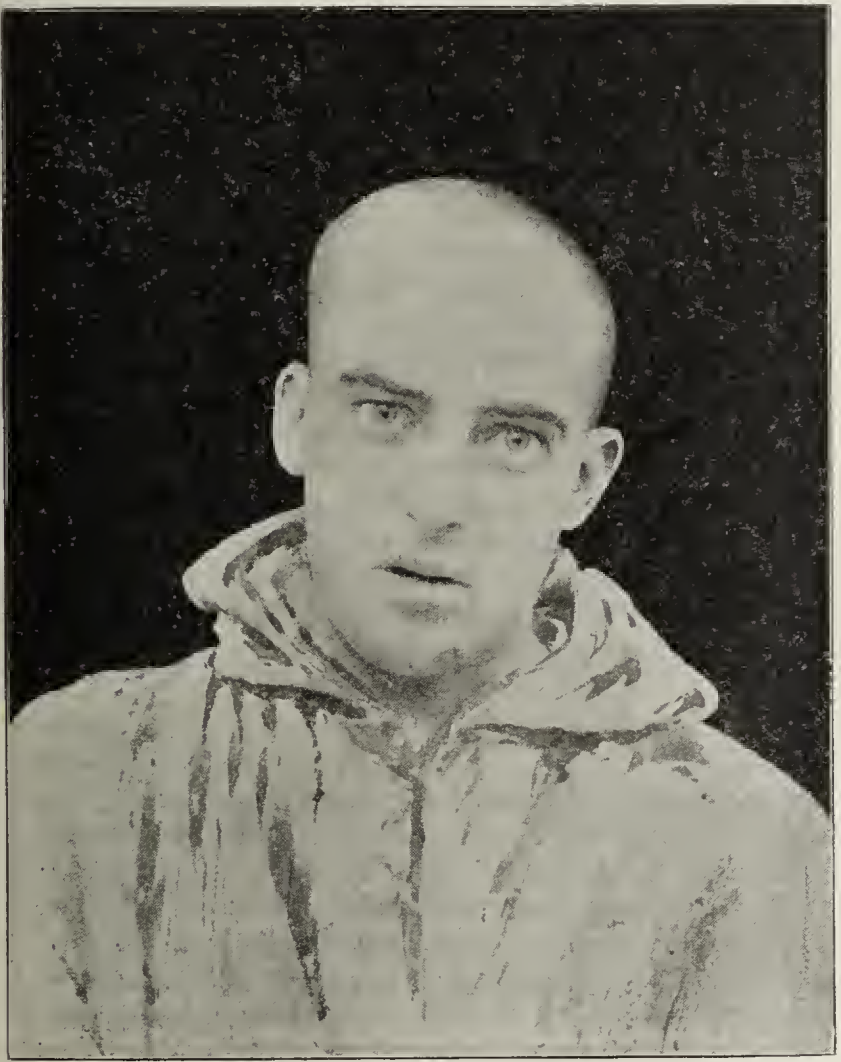

Fig. 1.—Showing the protrusion subsequent to the development of a hernia cerebri following a decompressive operation, in which, after exploration, the dural wound was closed (Case 10).

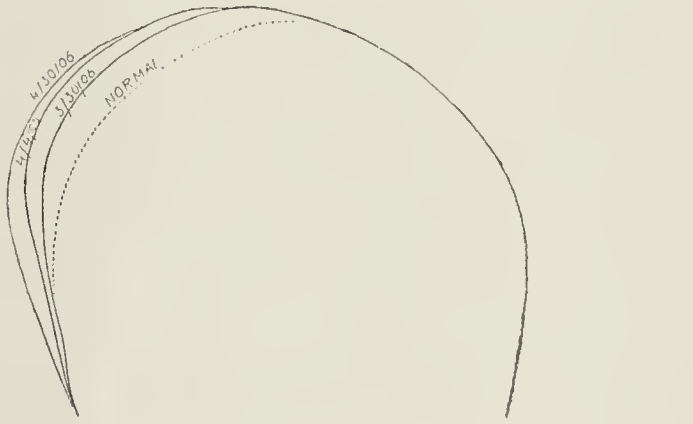

Fig. 2.—Showing the rapid development of a hernia cerebri in the decompressive operation. After the operation the dural wound was closed. The dotted line represents the normal contour on the affected side. The other lines represent the contour of the head: (1) March 30, 1906, one week after the operation, (2) April 4, 1906, twelve days after the operation, (3) April 30, 1906, five weeks after the operation (Case 10).

I think it is very generally believed (by those who have had but little experience with these operations) that the success of the operation depends on the establishment of an opening in the dura as well as in the skull. It is said that the dura is not elastic enough to stretch sufficiently when subjected to pressure. That the dura will stretch, when the overlying bone is removed sufficiently to afford adequate relief of tension, has been demonstrated in our cases over and over again. Take for example, a case which was operated on for a tumor believed to be in the occipital region. The tumor was not to be seen on or near the cortex, but there was a very much dilated right ventricle, possibly due to a tumor at the base, cutting off the intraventricular communication. If we turn to the illustration (Fig. 1), we see a genuine hernia cerebri, a hernia in which the dura as well as the scalp form the coverings. This patient has been under observation for a number of years and for the past year the hernia has not increased in size. The optic neuritis was in this case too far advanced to enable us to save the patient's vision; in other respects the patient enjoys excellent health and is now in attendance at an educational institution. A decompressive operation was not a matter of choice in this case, at least at the outset this was not contemplated. The brain bulged so through the opening that it was impossible to close the flap without removing the bone.

As an example of how rapidly the dura may stretch when subjected to excessive pressure, one of the cases of our series may be cited in which an exploratory craniotomy revealed a large and very vascular ill defined sarcoma. Its removal was out of the question, the incision in the dura was closed and a section of bone removed. Several records were made of the convexity of the head (Fig. 2) at short intervals and it is rather surprising to find how rapidly the dura had expanded to accommodate the growth. On the other hand in another case in which a tumor was exposed and found inoperable the dural incision was only partially closed. The results in this case were as compared with the other, in so far as the relief of symptoms was concerned, much less satisfactory.

Whatever else may be said either in favor of or against the removal of the dura it should be borne in mind that if the dura is removed and any complication arises in the repair of the wound it is more than likely that a fungus cerebri will develop. An accidental wound infection, the persistence of a sinus, the remains of a drainage tract may result in infection of the exposed brain tissue and that very fatal condition, a fungus cerebri. In the hands of operators, experienced in this field of surgery the danger is very slight, but it is questionable whether the removal of the dura should be resorted to as a universal practice. While in a given number of cases the results may not be so pronounced the mortality will be higher unquestionably if the dura is removed in every case. Inasmuch as the brain may herniate through the opening in the skull when the dura is left intact, there is really no necessity for removing more than the overlying bone. If the dura is disturbed at all the operator should be content with making a crucial or radiating incision in it, and in many cases it may be advisable to reserve this step of the operation until indications arise for further intervention. This course was pursued in one of our cerebellar cases in which temporary relief having been afforded the symptoms, particularly pain, recurred. A muscle-splitting incision was made, the edges of the wound retracted and a crucial incision made in the dura. The results were very gratifying and have continued so now for a period of several months.

Mortality.—Every one of the twelve patients operated on at the University Hospital, eleven by Dr. Frazier and one by Dr. Martin, recovered. The absence of any fatalities in the entire series is worthy of note. When one is debating, as to the advisability in a given case of performing a radical or palliative operation, consideration should be given to the fact that there is at least no immediate risk as to life from the decompressive operation. In the palliative measure we have an operation, which almost inevitably relieves the sources of discomfort and suffering, not only without endangering but frequently prolonging life; in the radical measure we are undertaking an operation, which has a comparatively high mortality and is only successful in a small percentage of cases in finding and removing the tumor.

Results.—The opinions expressed in the paper are based on observations in a series of fourteen cases. The first operation was performed in 1898 and the last, March 20, 1906. In but one of the entire series did the operation fail to afford the relief which would justify its performance. There was in this case some immediate improvement, but so slight as not to warrant the promise of relief which was held out to the physician and relatives of the patient. The operation was performed in March of this year, the patient was at the time almost comatose and her life was in immediate danger. At the present writing, May 25, 1906, her physician, Dr. Thomas O. Nock, writes me that the patient has been moved to the country, but her condition is little, if any, improved. All that can be said of this case is that life has been prolonged. The results in this case are a striking contrast to those following an operation performed in October, 1903. This patient probably has two lesions, one in the parietal lobe and one in the cerebellum, and before the operation suffered intensely from headache and neuralgia. When last heard from two and a half years after the operation she still enjoyed absolute relief. Perhaps the most brilliant of the series was a patient who presented the clinical symptoms of a cerebellar lesion, intense choked disc, frightful headaches, and persistent nausea, vomiting and ataxia. This patient (Case 4) was operated on two and one-half years ago and when last seen, February of the present year, he was the picture of health and was engaged in hard manual labor. Neither headache nor nausea recurred, and though he had a choked disc, so elevated that he could scarcely recognize large objects, his vision is now practically normal. Apart from the fact that he occasionally has attacks of what he calls "dizzy spells" he is to all intents perfectly well and now weighs 184 pounds.

The decompressive operation offers to the patient relief from the three cardinal symptoms of cerebral tumor, headache, nausea and vomiting, restores vision, and, if the lesion is in the cerebellar fossa, relieves ataxia and vertigo. Mention has already been made of the dangers of postponing operation once there are signs of choked disc. One of the strongest arguments in favor of the palliative operation is the opportunity to save or restore the patient's eyesight. Without exception the choked discs subsided in every instance, but unfortunately in at least three of our cases the patients remained totally and hopelessly blind because the optic neuritis was of so long duration that the nerve had undergone atrophy. The subsidence of the choked disc takes place as rapidly when the dura is left intact as when it was incised. The case, which in Dr. de Schweinitz's opinion and experience, responded most promptly to the operation was one in which the dura was not disturbed. Although the operation was performed only seven months ago the patient's vision has continued to improve. The prospects of preserving the eyesight alone would justify the operation, but no less so the opportunity of relieving headache. Our results with respect to headache have been uniformly good. There were two or three cases in which the headaches did not entirely cease, but in these there were intervals of relief and the headaches were less severe. As to the duration of the period of relief the longest in our series is between two and one-half and three years. In at least three of our cases the intensity of the pain seemed to be as great as that of a tic douloureux, and one patient had become addicted to the liberal use of morphin; yet in each one of these the relief was immediate, absolute, and permanent. In one instance the suffering was so intense that the operation was performed within a few hours of the patient's admission to the hospital, before an opportunity was afforded to determine with any degree of accuracy the location of the tumor. What has been said of the beneficial effect of the operation on the choked disc, even when the dura was left intact, may be repeated in dealing with headache. Not that the dura was not opened in some cases for exploration, but in almost every instance the dural wound was immediately closed with sutures.

Mention might be made of the fact that in two instances Nature had already begun to relieve the intracranial tension. In these cases the tumor had grown through the dura and in one instance had almost perforated the skull. In conclusion we may say that there is no form of treatment either medical or surgical, which, in the presence of an incurable lesion, causing sometimes great discomfort, sometimes intense suffering, so uniformly affords so great and enduring a measure of relief.

SUMMARY OF CASES.*

	LOCATION OF LESION.	PERIOD SINCE OPERATION.	RESULTS
1. L. . . .	Cerebrum. . .	1 year (operation was not performed but relief of pressure occured spontaneously).	Alive and free from pain.
2. B	Cerebellum. . .	7 years.	Almost complete recovery during 2 or 3 years—present condition unknown.
3. G	Cerebellum and Cerebrum.	2 years and 7 mo.	Alive and free from pain.
4. E.	Cerebellum . .	2½ years.	Alive and free from pain.
5. D.	Cerebellum . .	2½ years.	Alive and free from pain.
6. B.	Cerebrum. . .	1 year and 7 mo. .	Alive and free from pain.
7. M.	Cerebellum. . .	8 months.	Second operation was performed, tumor found and removed.
8. K	Cerebellum. . . .	7 months	Died 7 months after operation.
9. L	Cerebellum. . . .	7 months.	Alive and free from pain.
10. S	Cerebrum. . .	2½ months	Alive and free from pain.
11. F.	Cerebellum. . .	2½ months	Alive and free from pain.
12. D	Cerebellum. . .	2 months	Radical operation was performed 2 months after palliative operation.
13. C.	Cerebrum. . .	. . . .	Alive but little if any relieved.
14. S	Cerebellum. . .	About 3 years . . .	Improved—death from tumor about 3 years after palliative operation.

* A case under the care of Drs. Spiller and Martin to which reference is made in this paper, is not included in this table.

ORIGINAL OBSERVATIONS.

Case 1.—Probably tumor of motor area. The following case is of great interest as it seems to be one in which relief of symptoms from intracranial pressure occurred by escape of cerebrospinal fluid through the cribriform plate of the ethmoid bone without operation, and it may be, therefore, regarded as a case in which relief was afforded in a manner similar to that in palliative operations.

Examination.—L. was seen by Dr. Spiller in consultation with Dr. Ernest Laplace, Aug. 13, 1904, at which time the following notes were taken: In showing the teeth the left corner of the mouth is drawn up better than the right. When drawing up each corner of the mouth separately he draws up the left better than the right. The eyelids are closed equally well on the two sides, and the resistance to any attempt to passively open the lids is as good on one side as on the other. Percussion of the scalp shows no area of tenderness. When the tongue is protruded it tends to deviate a very little towards the right. The movements of the tongue are free in all directions, and the tongue is not atrophied. The movements of the eyeballs seem to be normal in all directions, except that the movement to the left may be a trifle impaired. There is no nystagmus. The reaction of the iris to light is preserved but tardy on both sides. Convergence and accommodation can not be tested satisfactorily on account of the mental condition. The pupils are equal and regular. The masseter muscle contracts well on each side, but the left masseter contracts a little better than the right when the patient bites. He says that he feels touch more distinctly on the left side of his face. Pin prick is probably perceived in the right side of face as well as in the left, but his statements regarding sensation are not to be relied on. He understands what is said to him, although he appears dazed and has difficulty in replying, but apparently is not aphasic.

Upper limbs: The grasp of the right hand is distinctly impaired and is decidedly weaker than that of the left hand. The upper limbs are well developed and equally so. The biceps and triceps tendon reflexes on the right side are distinctly prompter than the corresponding reflexes on the left side. After a spasm the right upper and right lower limbs seemed to be almost completely paralyzed, and Dr. Laplace says that this paralysis following a spasm is only temporary.

Lower limbs: The lower limbs are well developed and there is no atrophy in any part. The patellar reflex is about normal on the left side, but exaggerated on the right side. There is no ankle clonus on either side. The Achilles tendon reflex is about normal on each side, and a trifle prompter on the right than on the left. The Babinski reflex is very pronounced on the right side; the big toe as well as the adjoining toe being drawn distinctly. The Babinski reflex is not present on the left side, the movement being flexion.

During the examination an epileptic attack occurred. It began with slight flexion of the right forearm on the arm. This movement lasted from thirty to sixty seconds before the face was involved. The right lower limb seemed to be involved before the face. Clonic movements of small extension began in the right lower limb, afterwards the movements occurred in the right upper limb. Both right upper and lower limbs were very spastic. The right side of the face was thrown into violent tonic spasm, and the lids on both sides were equally affected. There seemed to be a slight tendency of the eyeballs to turn to the right, but this was not pronounced. The lower part of the left side of the face, the left upper and lower limbs showed no convulsive movements and the left limbs were not spastic. Consciousness did not seem to be lost during the attack. Urine was not voided during the attack, but was immediately after the attack, voluntarily. After the attack the man was drowsy and passed into a light sleep lasting about five minutes.

Further Examination.—A further examination on August 14, gave the following results: Sensation for touch is more acute on the left side of the face; sensation for pain is more acute on the right side of the face; this agrees with the findings of yesterday. The grasp of the right hand is not so good as it was at the beginning of the examination yesterday. A knife or a pencil put into the right hand is distinguished without difficulty when the eyes are closed. The weakness of the right upper limb has been much greater since the attack that we saw yesterday, than at any time previously. He can barely lift the right hand from the bed. The paralysis of the right lower limbs which developed after the attack that we saw yesterday disappeared in part during the afternoon, whereas that of the right upper limb has persisted with very little change. The sensation for touch and pain seems to be more acute in the right lower limb than in the left. He seems to understand what is said to him, but has difficulty in getting words to reply and is partly motor aphasic. He yawns repeatedly, and Dr. Borsch has noticed that during the convulsive attack the eyeballs are drawn toward the right, but remain in this position only during a short part of the attack. The left pupil is larger than the right and the left recovers more slowly than the right.

Subsequent History.—The following notes were obtained from Dr. Laplace: The patient continued to improve under high doses of iodid of sodium (100 grains daily) until all symptoms of paralysis had disappeared. Headaches also disappeared, but the optic neuritis continued. The field of vision gradually lessened until total blindness ensued, January, 1905. The patient remained in this condition until May, when convulsions attended by severe headaches returned, exactly similar to those seen by Dr. Spiller in August. About forty convulsions took place in the course of the first week in May, 1905. He suffered with intense headaches and was suddenly greatly relieved of all headache and of nearly all the other symptoms on expectorating what seemed to be a certain amount of purulent material. [Dr. Laplace did not see the patient at the time of this nasal discharge]. Whether the material contained cerebrospinal fluid or whether it was pus which found its way into the nose, after burrowing its way through the cribriform plate of the ethmoid can, therefore, only be conjectured. In June and July the patient improved, but his lower extremities remained weak. This weakness of the lower extremities has increased gradually from July, 1905, until the present time. Mental hebetude gradually set in, but there has been an absolute freedom from headache, from July, 1905, until now.

Present Condition.—Complete blindness; perfect consciousness. He is thoroughly rational when aroused; otherwise quite listless. There is great weakness of lower extremities, requiring support to enable him to walk. Both arms are quite strong. Excellent appearance; good appetite and digestion; full control of bowels and bladder. Freedom from headache. Last report says that general weakness is gradually becoming more marked. Mercury and iodids have been continued. The patient and his family have opposed any surgical interference.

Case 2.—Tumor of cerebellum (?). Mrs. M. B., was admitted to the Polyclinic Hospital, Dec. 31, 1898, under the care of Dr. Spiller and Dr. Roberts.

History.—Patient had been married 26 years, a widow 18 years; had two children, 25 and 20 years old, respectively, at time of death. Emigrated to America five years ago. She had good health until previous to present trouble. Her present condition began two and one-half years ago with violent headaches in the left occipital region. Her symptoms have gradually increased in number and intensity, until at present they consist of very severe headache in the left occipital region, great tenderness over the same region, extreme vertigo, especially when lying on the left side in bed or attempting to walk; very ataxic gait so that she staggers like a drunken person and falls to the left side or backwards.

Examination.—The patellar reflexes are absent; sensation in the legs is obtunded, and movements of the lower extremities somewhat restricted (she can not cross her legs). During the last few months she has been getting rapidly worse. A diagnosis of cerebellar tumor was made, and the patient was admitted to the wards of the Polyclinic Hospital for an exploratory operation. Urinary examination, color, amber, cloudy; reaction, acid; sp. gr. 1,020; no albumin or sugar.

Operation.—On June 4, 1899, under ether, the skull was opened by trephine and lion-jawed forceps, a hole about 1½ inches in diameter being made over the probable seat of the lesion as indicated above. The dura mater appeared normal, as did the bone removed; the dura mater was laid back, the brain exposed, the finger inserted and the surface of the brain palpated for an area of five inches or more in diameter, but no abnormality was detected. A puncture was then made into the convolutions of the brain in several directions with a grooved director to the depth of three-fourths inch without finding any lesion. The dura mater was then sutured, and the skin flap brought into place and secured. The patient made a good recovery from the anesthetic but her temperature began to rise rapidly that night, reaching 101° F. at 7. p. m. Infection being feared, the dressing was removed, the sutures partially withdrawn, and the wound flushed with normal salt solution. The wound was redressed at frequent intervals since, all the sutures removed.

Results.—June 30. The patient has been slowly improving since the 20th, the temperature having been practically normal. The parietal region on the operated side has almost entirely lost its peculiar tenderness to touch, and the headache occurs only occasionally, is slight and is now located in the frontal region. The patient made a complete surgical recovery, and almost all her symptoms disappeared. After two or three years she returned to Europe.

Case 3.—Tumor of the pons. Mrs. G., aged 45, was admitted to the University Hospital under the care of Dr. Charles K. Mills, October, 1903.

History.—Tumor of the pons, probably second lesion in the parietal lobe; cyst evacuated; permanent disappearance of severe headache and facial neuralgia. This patient, a woman about 45 years old, first came under the care of Dr. Mills in November, 1902. One year before coming under observation she had an attack of vertigo without unconsciousness and after this partial paralysis of the left third nerve was observed, ptosis, dilated pupil and paresis of the internal rectus being present, according to the physician then in attendance. From the history she also appeared to have had temporary paralysis of the left side of the face. She had subsequent similar attacks, some of these shortly before coming under observation. In one of the recent seizures she was found in the cellar, pacing up and down with her hands above her head, eyes dilated and apparently struggling against suffocation. She was taken upstairs and put to bed; she tried to speak, moving her jaws without uttering a sound; her face was pale, her eyes were open. At the time of the first examinations she had paresis of the left side of the face, partial ptosis, pupils equal and responsive, the superior rectus not being as active on the left side as on the right.[34]

Examination.—The patient was again examined by Dr. Mills and Dr. Spiller, Sept. 22, 1903. The left side of the face was paralyzed in the entire distribution of the seventh nerve. She complained of much pain, confined to the left side of the face and in the distribution of the fifth nerve. The masseter and temporal muscles contracted well in chewing on each side. No distinct objective disturbance of sensation on the left side of the face was made out. The left external rectus seemed to be the only external ocular muscle distinctly paretic. Astereognostic conception as tested in the right hand was almost complete.

She complained of much pain on both sides of the forehead, extending down the left side of the face to the lower border of the lower jaw. The pain did not extend below the median line of the lower jaw; it extended to the mastoid process, but not beyond this on the left side; it did not extend into the neck. She had constant pain in both temples, but it was greater in the left than in the right. All points of exit of the fifth nerve were painful to pressure; as much so on the right side as on the left. Sensation for touch and for pain on the two sides of the face seemed to be normal; she felt a touch or pin prick as well on the left side of the face as on the right. In such instances as when chewing a hard crust of bread, the left masseter contracted, but not so well as the right; in opening the mouth the lower jaw did not deviate distinctly. She complained of a sense of numbness in the left side of the face; this involved the entire distribution of the fifth nerve and extended on the left to the temple, but not far beyond the border of the hair. There was considerable improvement in the paralysis of the orbicularis palpebrarum. There was complete paralysis in the lower distribution of the left facial nerve. The right side of the face was normal. She did not have any nausea and seldom had spells of vertigo, although formerly the latter occurred frequently. She showed at times a tendency to fall backward or toward the left, but did not stagger as much as formerly; closing the eyelids did not affect the gait very distinctly. Hemiasynergia was not present on either side.

As the patient was slowly getting worse and was suffering extremely with pain in her head and face, it was finally decided to remove her to the University Hospital for the purpose of having an operation, which might at least be palliative.

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[34] The case is fully reported as Case 6 in a paper by Dr. Charles K. Mills, on "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, with Special Reference to Their Surgical Removal," New York and Phila. Med. Jour., Feb. 11 and 18, 1905.

Her pain increased until it became torturing, and for days before the operation it was necessary to keep her continuously under the effects of morphin or codein. No change of any moment occurred in her focal symptoms after the above recorded notes.

Operation.—The operation was performed by Dr. Frazier, Oct. 14, 1903, under ether anesthesia. A musculocutaneous flap together with the periosteum was reflected and an opening was made in the skull with the chisel and enlarged with Rongeur forceps. Nothing abnormal as regards pulsation nor consistency of the left lateral lobe of the cerebellum was noted. The dural flap was reflected; at one point this flap was adherent to the underlying brain. Cerebellar tissue bulged only moderately through the wound. On exploring with the index finger in the region of the cerebellopontile angle some adhesions were separated on the lateral aspect of the cerebellum. This was followed by a gush of fluid which had evidently been walled off by adhesions. After the evacuation of the cyst the bulging subsided immediately and with a brain retractor it was possible to inspect the region of the cerebellopontile angle and to demonstrate to those present at the operation, the fifth, seventh and eighth cranial nerves. It was noted on the blood pressure chart that when the dura was opened the blood pressure dropped thirty points and that on introducing gauze packing or on compressing the brain with the retractor that the blood pressure rose forty points. The patient's condition was not depressed to any considerable degree by the operation; on her return to bed the pulse was 145; respirations were 40, and blood pressure was 115.

The interesting feature of the case was the ease with which the cranial nerves were exposed after the cyst had been evacuated.

The patient reacted well after the operation and passed a fairly comfortable night. There was very profuse oozing of blood and cerebrospinal fluid, necessitating frequent reinforcement of dressing. The patient was much nauseated, vomiting curds of milk and bile-stained fluid. She complained of pain in her temples. An incomplete examination showed that sensation was present on both sides of the face and no inequality of pupils was noted. On October 15 the wound was dressed and found in good condition; the drainage was removed, there was a free flow of cerebrospinal fluid.

Subsequent History.—An examination by Dr. Mills and Dr. Spiller on October 15 resulted as follows: No cutaneous anesthesia was present on either side; not even any hypesthesia on the left. There was no great impairment of the motor division of the fifth nerve, the masseter and pterygoid muscles being tested. Complete paralysis in the muscles supplied by both the upper and lower branches of the seventh nerve was present. She was completely deaf in the left ear. Slight paralysis in the right upper extremity was noticed. Astereognosis or pseudoastereognosis was present in the right hand. Anesthesia for both touch and pain and hyperesthesia were absent. She had had no pain in the face or head since the operation and had required no anodynes.

October 19: The wound was again dressed and the stitches were removed; the wound was healed, with the exception of one angle; a small piece of gauze was inserted for drainage. The patient's general condition had been very good. Her pupils were normal.

October 24: The surgical condition was entirely satisfactory; the wound was healed, with the exception of one spot, which was rapidly granulating. The patient's general condition had rapidly improved since last noted. She was regaining strength, had been sitting up and was quite comfortable.

October 29: Patient was discharged, the surgical condition left nothing to be desired; the wound was completely healed; there was no bulging of the flap, no signs of inflammation or edema of the scalp. She had not had any pain in the head or ears; the only discomfort had been some irritation of the conjunctiva of the left eye, which was probably due to facial palsy.

Results.—When the patient was last heard from two years after the operation, the relief from headache and neuralgia continued, although, as previously stated, the pain for some time before the operation was of the most intense character. In other respects her general condition has been good. She still continues to be partially paralyzed, with astereognosis and sensory changes on the right side and still has paralysis in the distribution of the left seventh nerve. It is altogether probable that a lesion of some sort is still present; not improbably she has more than one lesion, as the symptoms point both to the pons and to the left parietal lobe. The case is especially interesting as showing how in some cases the cerebellopontile angle can be exposed and how pain and other symptoms of brain tumor are sometimes relieved even when full success is not obtained.

(*To be continued.*)

FEMORAL HERNIOTOMY.*

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The subject of herniotomy for inguinal, umbilical and ventral hernia seems to have come to a practical conclusion by the universal acceptance of the different principles embodied in the methods in inguinal herniotomy introduced by Bassini and further developed by Andrews, Ferguson and Coley; the method of Mayo for umbilical hernia; the method of anatomic dissection and union of corresponding layers in cases of postoperative ventral hernia and hernia of the linea alba.

TREATMENT OF FEMORAL HERNIA.

It is in femoral herniæ that the methods still differ greatly. As a matter of convenience to the reader I have added a short summary of the most important ones of these various methods.

The object of this paper is to introduce into the treatment of femoral hernia a principle which has for many years been universally recognized in surgery and which has, it seems, been employed by only a few surgeons in the treatment of femoral hernia.

It is a well-known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it be lined with a mucous or serous membrane. The anatomic relations at the femoral canal are such as to form ordinarily a definite circular opening.

LITERATURE OF THE SUBJECT.

As early as 1879 Socin[1] speaks of six of these cases which apparently were permanently cured by simply removing the hernial sac and fat and suturing the skin, thus making use of the principle which I have mentioned. Since that time I find in the literature a number of interesting articles written by Anderegg, Lesirink, Munsinger, Julliard and Biedel in which this principle was employed in a measure, but no one seems to have attributed the success of this operation in obtaining a radical cure for femoral hernia to the principle I have mentioned.

Singularly enough surgeons seem to have had perfectly satisfactory results by doing nothing further than thoroughly to dissect, ligate and remove the sac, the preperitoneal fat, and to suture the skin until the method of operating for inguinal hernia was introduced by Bassini. Subsequent literature shows that surgeons, writing on the subject of femoral hernia, reason from the conditions present in inguinal hernia, although anatomically these conditions are entirely different and, therefore, the conclusions arrived at must necessarily be faulty. As a result of this fact a number of methods have been introduced, most of them resulting in a distortion of this opening, and each of these producing a considerable number of recurrences.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Langenbeck's Arch., vol. xxiv.

AUTHOR'S METHOD.

The femoral canal is bounded anteriorly by the transversalis fascia, Poupart's ligament and the falciform process of the fascia lata; posteriorly by the iliac fascia, covering the pubic portion of the fascia lata; externally the fibrous septum separating it from the femoral vein; internally the junction of the processes of the transversalis and iliac fasciæ forming the femoral sheath lying against the outer edge of Gimbernat's ligament. The femoral opening is lined with the serous membrane comprising the hernial sac which is an outfolding of the peritoneum.

In order to change this into an unlined circular opening which must necessarily close spontaneously all that it is necessary to do is carefully to dissect out the hernial sac quite up into the peritoneal cavity beyond the inner surface of the femoral ring, ligate it high up, cut it off and permit the stump to withdraw within the peritoneal cavity. Removing all the fat contained in the femoral canal and simply closing the skin wound completes the operation for femoral hernia. This method is applicable to all simple femoral herniæ in which an actual femoral ring exists.

Occasionally there is a case in which the hernia is of traumatic origin and the opening is formed by the tearing of one edge of the ring, so that the opening is no longer regular and circular. A similar condition may also be due to a congenital deformity. Such an opening may not close spontaneously; in such cases there can be no indication for using this method. Neither is the method applicable to operations for strangulated hernia in which the femoral ring has to be cut to permit reduction.

RESULTS AND DISCUSSION.

I have used this method constantly during a period of fourteen years and am convinced that, barring unusual accidents, recurrences are out of the question if the operation is performed in this manner. I have been able to get definite reports and to examine 30 cases of femoral hernia contained in the following table. None of these operations was followed by recurrence. This number contains only a part of the patients operated, because it was not possible to get information from many of the patients of foreign birth, who do not read or write the English language and who change their residence so often that it is difficult to follow them. but there can be no doubt that the results in these cases correspond to those in which I was able to obtain information.

I have written a letter to each one of the patients on whom I operated for femoral hernia at the Augustana Hospital during the past fourteen years; 56 cases in all. Of these letters thirty-one were answered, twelve were returned through the mail, and thirteen have not been heard from.

Giving all of the answers of those that have responded will, I believe, give a fair idea of the ultimate result in these cases. I have not written to patients operated on in the other hospitals, because the number at the Augustana Hospital seemed sufficient to draw conclusions from. A greater proportion of my English-speaking patients go to this hospital than to my public clinic. I was, therefore, more certain to obtain information from the Augustana Hospital patients than from those operated in the other institutions.

It may be claimed that, if a hernial protrusion has occurred, it will occur again unless some mechanical means be employed for the closure of the femoral opening. A study of the histories of these cases shows that the original cause of the hernia can always be found in some abnormal intra-abdominal pressure of a temporary nature, or in the presence of peritoneal fat in the femoral canal. Severe gaseous distension of the intestines during childhood; whooping-cough; severe cough due to bronchitis recurring every winter; heavy lifting in young girls in the capacity of servants, before they were fully grown; pregnancy; large intra-abdominal tumors; severe sudden strains like lifting a heavy burden or being thrown from a bicycle or a moving carriage, and the presence of preperitoneal fat in the femoral canal are the most common causes. All of these immediate causes can be guarded against, and in this way a recurrence is not likely to occur.

Case 7 will serve as an excellent illustration of the permanency of the closure of the femoral ring when the operation is performed in this manner. The patient was married two years after I performed the operation for hernia. After bearing her first child she noticed a femoral hernia on the opposite side, while the canal on the side operated on remained firmly closed.

Case 8 also serves as an illustration. The patient acquired an incipient inguinal hernia during a period when she did a great deal of heavy lifting. The femoral canal operated remained perfectly closed.

Case 6 is also interesting, because it illustrates the same fact. The patient recovered fully from her herniotomy and remained so until two years later, when she suffered from an intestinal obstruction. A band extending from the mesentery of the ileum to the cecum at the base of the appendix had evidently existed for a long time, there being an indefinite history of peritonitis due to appendicitis several years before the patient came to the hospital for herniotomy. Two days before the patient entered the hospital a portion of the ileum had slipped under this band and had become strangulated. The patient was brought to the hospital with an enormously distended abdomen. She was operated on and recovered. The scar at the seat of the original hernia was stretched together with all the tissues of the abdominal wall, but this did not suffice to cause a recurrence of the hernia.

In cases in which the femoral ring has been artificially closed there is always a distortion of the circular opening unless this closure be according to the method advised by Cushing, Marcy or Kuester consisting in a circular suture which does not interfere with the arrangement of the femoral ring.

The method devised by Kocher, consisting in suturing the pectineal fascia over the opening, and the method advised by Lucus Championierre, which is very similar, are also relatively harmless. The study of the literature shows that the method of closing the opening by distorting the femoral canal will result in keeping it open in a considerable proportion of cases, some of these producing as high as 18 to 20 per cent. of recurrences. These facts seem to indicate that in this definite class of cases of femoral hernia the principle mentioned above should be employed.

PRINCIPAL FEATURES OF METHODS.

In order to sum up this subject somewhat comprehensively in the brief space in which this paper must be limited, it has seemed proper to mention the principal features of the most important methods which have been practiced in a considerable number of cases of femoral hernia.

1. Ligature and extirpation of sac: Socin, Anderegg, Leisrink, Munzinger, Julliard and Riedel.
2. Suturing of Poupart's ligament to pectineal fascia: DeGarmo, Mocher, v. Frey, Berger, Czerny and Schede.
3. Two rows of sutures of Poupart's ligament to pectineal fascia by Bassini.
4. Two rows of sutures attaching falciform to pectineal fascia by Champonierre.
5. Purse string sutures: Cushing.
6. Purse string sutures and pad made by doubling sac: Curtis, MacEwen, Tricome, Coley, Reffa and Fortunat.
7. Purse string suture in several tiers: Kuester.
8. Closing femoral opening by muscular aponeurosis flap: Salzer and Dawborn.
9. Closing femoral opening by periosteal flap: Trendelenburg.
10. Closing femoral opening by decalcified bone: Thiriar.
11. Closing femoral opening by ball of catgut: Schwarz.
12. Cutting through periosteum of ramus; three holes bored through bone; silk suture to Poupart's ligament: Hammersfahr.
13. MacEwen's method of making pad from sac combined with attaching Poupart's ligament to bone with mattress sutures: Nicoll.
14. And suturing Poupart's ligament to bone: Mikuliez.
15. Fastening Poupart's ligament to ramus with staple: Roux.
16. Passing a ligature through obturator foramen to tie down Poupart's ligament: Cavazzani.
17. Cutting Poupart's ligament from its moorings and sewing it to ramus: Fabricius and Delageniere.
18. Changing femoral into inguinal hernia: Ruggi.
19. Fastening conjoined tendon to ramus: Lotheisen. Codivilla and Parry.
20. Cutting entirely through Poupart's ligament just to the inside of the femoral vessels and making a triangular flap which is sutured to the periosteum of the horizontal ramus of the os pubis.

These methods may be classified in four groups:

1. Those in which the sac has been removed high up.
2. Those in which it has been utilized to form a pad.
3. Those in which the femoral canal has been left in the form of a circular opening.
4. Those in which it has been distorted either by cutting or suturing.

It seems reasonable to affirm that every method which does not contain the third of these characteristics must be considered bad from a surgical standpoint.

PROCEDURE OF DIFFERENT METHODS.

In order to make comparison convenient I have tabulated the various steps which are followed by surgeons of the greatest experience who practice the various methods which have been employed in the largest number of operations for the relief of femoral hernia.

I. SOCIN'S METHOD.

1. Skin incision a little below and parallel with Poupart's ligament.
2. Freeing of sac high up into abdominal cavity.
3. Removal of all fat and loose tissue.
4. Pulling down sac by assistant.
5. Ligating and cutting off sac high up.
6. Having stump slip into peritoneal cavity.
7. Suturing of skin incision.

II. CUSHING'S METHOD.

1. Free sac well beyond its neck, transfix it, tie it off as high as possible to avoid a funicular process.
2. Introduce a purse string suture of chromicized catgut through Poupart's ligament, the pectineal fascia and muscle, then outward through fascia lata covering femoral vessels and finally up through Poupart's ligament again coming out one-half inch from where suture was started.
3. Tie the suture and obliterate femoral canal.
4. Suture skin incision.

III. COLEY'S METHOD.

1. Thoroughly free sac well beyond neck.
2. High ligation of sac.
3. Suture is introduced through Poupart's ligament or the inner portion of the canal or crural arch, thence downward into the pectineal muscle or floor of canal, outward through fascia lata overlying the femoral vein and upward through Poupart's ligament or roof of canal, emerging about three-fourths of an inch from point of introduction.
4. On tying suture the floor of canal is brought in apposition with roof of canal and the femoral opening is obliterated.
5. Close superficial fascia with catgut or fine tendon and the skin with horse hair.

IV. CURTIS' METHOD FOR CLOSING THE CANAL AFTER THE SAC HAS BEEN REMOVED.

1. Three superimposed circular purse string sutures of catgut are introduced.
2. The first at the internal femoral opening.
3. The second one-third of an inch outside of this.
4. The third at the external surface of canal.
5. This method is not suitable for large herniæ.

V. LOTHEISSEN'S METHOD.

1. Incision parallel to Poupart's ligament and a little above same dividing fibers of external oblique and extending into external inguinal ring.
2. Expose neck of sac by entering between Poupart's ligament and the internal oblique.
3. Dislocate sac by pulling same, if small, into opening above Poupart's ligament.
4. In large hernia, dislocate the skin at the lower edge of the original incision, expose the external surface of the sac, incise sac and finally dislocate the stump of the sac in manner previously described for small hernia.
5. Suture edge of transversalis and internal oblique muscles to Cooper's ligament.
6. Suture the incisions in the aponeurosis and skin separately.

VI. NICOLL'S METHOD. (A)

1. Expose sac and clear from surrounding tissue, making the incision vertical or transverse.
2. Open sac longitudinally in middle line and clear contents.
3. Separate neck of sac for one inch around abdominal aspect of ring.
4. Bisect sac longitudinally from fundus to neck.
5. Make an aperture in one-half near the neck.
6. Interlock the halves by putting the other through one of the apertures.
7. Reduce whole sac through the femoral ring by detaching its neck from the abdominal aspect of the ring.

B—Closure of femoral ring by use of the pubic ramus.

1. Carry an incision (bone deep) from femoral vein along the pubic ramus to the region of the pubic spine.
2. Detach the periosteum to a limited extent and retract it.
3. Drill one or two holes in the bone near its upper edge one-half inch to one inch apart.
4. Pass loops of strong catgut through the apertures.
5. Divide the loop of ligature. Thread one end in a curved surgical needle and pass a mattress suture through Poupart's ligament. Repeat with second end, carrying it through Poupart's ligament at a higher level, avoiding the deep epigastric artery, and the spermatic cord above in males.
6. By means of probe withdraw both ligaments through the second drill hole in the bone.

7. Tie the ends of each loop separately over the front of the bone, thus drawing Poupart's ligament down to the posterior-superior surface of the bone and fixing it firmly in contact with that surface, constituting in effect an extension outward of Gimbernat's ligament and absolutely closing the ring.
8. Complete the operation with interrupted catgut sutures by uniting the detached margin of the pectineal origin and the pubic portion of the fascia lata to the "anchored" Poupart's ligament.

AUTHOR'S CASES TABULATED.

No.	Hosp. No.	Age and Sex.	Diagnosis.	Date of Operation.	Date of Re-examination.	Result.
1	858	30, F.	R. F. hernia.	March 21. 1892.	May 10, 1906.	Operation a perfect success. General health greatly improved.
2	2850	61, F.	R. F. hernia.	May 6, 1896.	May 13. 1906.	Operation complete success.
3	4307	41, F.	L. F. hernia.	Oct. 29, 1897.	May 16, 1906.	Pefect result.
4	5115	59, M.	R. F. hernia.	July 6, 1898.	May 23, 1906.	Has had no trouble since operation.
5	6615	56, F.	R. F. hernia.	Sept. 18, 1899.	May 13. 1906.	Perfect recovery; patient in perfect health.
6	6801	33, F.	R. F. hernia.	Nov. 5 1899.	May 11, 1906.	A slight stretching of scar tissue following enormous abdominal distention due to intestinal obstruction caused by a band of adhesions across the ileum, but no recurrences.
7	7522	22, F.	L. F. hernia.	April 23. 1900.	May 22, 1906.	Left femoral hernia cured by operation, but a R. F. hernia developed after birth of first child.
8	8162	38, F.	L. F. omental hernia; incarcerated.	Sept. 26. 1900.	May 13, 1906.	Examined patient personally. Found inguinal hernia produced by extremely hard labor four years after operation for femoral hernia. No recurrence.
9	8249	38, F.	L. F. hernia.	Oct. 17, 1900	May 15, 1906.	Result of operation perfect.
10	859	27, F.	R. F. hernia.	Jan. 11, 1901.	May 16, 1906.	Operation a perfect success. General health greatly improved.
11	9040	31, F.	L. F. hernia.	April 22, 1901.	May 14, 1906.	Success of operation perfect. Absolutely no pain or discomfort following recovery.
12	9276	46, F.	R. F. hernia.	June 12, 1901.	May 18, 1906.	Recovered perfectly from the operation for the hernia; is at present having some pain, due to uterine trouble.
13	9462	42. F.	R. F. hernia.	July 26, 1901.	May 14, 1906.	Perfectly recovered.
14	10511	58, F.	L. F. hernia.	March 24, 1902.	May 13, 1906.	Operation successful; patient's general health improved.
15	10918	66, F.	L. F. hernia.	June 20 1902.	May 10, 1906.	Recovery perfect; general health improved.
16	11447	42, F.	R. F. hernia	Oct. 1, 1902.	May 21, 1906.	Operation successful
17	11950	58, M.	Incarcer'ted hernia.	Jan. 9. 1903.	June 13, 1906.	Recovered perfectly.
18	12176	42, F.	R. F. hernia.	Feb. 20, 1903.	May 14, 1906.	Operation successful; patient in perfect health.
19	12301	41, F.	L. F. hernia.	March 16, 1903.	May 23, 1906.	Operation a success; patient felt slight soreness for three months after operation, but has been perfectly comfortable since.
20	12457	49, F.	R. F. hernia. strangul'ted.	Aprll 15. 1903.	May 20. 1906.	Operation successful.
21	12739	34, F.	L. F. hernia.	June 8, 1903.	May 14, 1906.	Operation successful.
22	14300	30, F.	L. F. hernia.	April 22, 1904.	May 16, 1906.	Patient recovered perfectly from hernia operation.
23	14392	44, M.	L. F. hernia.	May 11, 1904.	May 26, 1906.	Operation perfectly successful.
24	14447	45, F.	R. and L. hernia strangulated.	May 21, 1904.	May 10, 1906.	Recovery perfect; patient in perfect health.
25	14899	47, M.	R. and F. hernia strangulated.	Aug. 17, 1904.	May 15, 1906.	Patient well; no return of trouble.
26	15350	32, M.	R. F. hernia strangul'ted.	May 17, 1903.	May 14, 1906.	Operation successful.
27	15793	42, F.	L. F. hernia.	Feb. 27, 1905.	May 22, 1906.	Operation successful; patient constipated since operation, and not before.
28	15820	46, F.	R. and L. F. hernia.	March 6, 1905.	May 19, 1906.	Completely cured.
29	17528	55, M.	E. Ing. and F. hernia.	Dec. 13, 1905.	May 18. 1906.	Cure perfect; improved in health after operation.
30	16314	31, F.	R. F. hernia.	May 51, 1905.	May 18, 1906.	Perfectly well.

VII. DEGARMO'S METHOD.

1. Incision 2 to 3 inches long and parallel with and to inner side of femoral vessels.
2. Sac appears in the wound when the skin and superior fascia are incised.
3. Lift out mass by thumb forceps and blunt dissection.
4. Put traction on sac and ligate same and then it will retract within the abdominal cavity, leaving the femoral canal free from foreign tissue.
5. Open sac and carefully ligate adherent omentum and break up adhesions in case of adherent intestines.
6. Pass needle with strong catgut No. 2, through neck of sac and tie a second time.
7. Examine stump for bleeding vessels and not until then should the ends of the ligature be cut.
8. Close opening by pressing end of finger firmly into femoral opening under Poupart's ligament and passing a strong blunt needle through the ligament on the finger point.
9. Press the finger against ramus of pubes and see that vessels are out of the way, then pass point of needle fully down to the periosteum of pubic bone, taking up all tissues over it.
10. This constitutes the first stitch, but should not be tied until the others are placed in the same manner every one-fourth inch, until near the spine of pubes.
11. Now tie down and cut closely and close the fascia by plain catgut and the skin with buried catgut sutures to prevent any pocket formation.

VIII. HAMMESFAHR'S METHOD.

1. Resect femoral sac and reduce stump.
2. Drill three holes in upper margin of ramus from the slant upward so that the inner opening is close beneath the edge of the crest.
3. Pass strong silk around Poupart's ligament and then through the holes and tie them firmly.

It is, of course, impossible to review the extensive literature on this subject completely within the limits of this paper, but the references made above will, I think, serve for comparison. If the principle mentioned at the beginning of this paper is applicable to this condition, there can be no doubt that Socin's method is the only one which has value in the treatment of this definite class of cases. The accompanying table of my cases seems to support this view conclusively.

FIVE YEARS' EXPERIENCE WITH AN ORIGINAL FILIGREE INTENDED TO PREVENT AND TO CURE ABDOMINAL HERNIÆ.*

WILLARD BARTLETT, A.M., M.D.
ST. LOUIS, MO.

My use of the various filigrees in twenty-two cases has led to certain definite conclusions with reference to the mechanical side of the question.

1. A scar, no matter how thin, if prevented from stretching by embedded wires, constitutes a reliable, integral portion of the abdominal wall.

2. A ready-made filigree answers all possible requirements; hence, the construction of one in the wound constitutes an unnecessary prolongation of the operation.

3. Since scars tend to stretch laterally, the filigree need be made up of only cross wires, held together in the middle by one single-twisted strand, following the direction of the suture line.[1]

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] This arrangement, which I described in the Annals of Surgery, July, 1903, furnishes a network so supple that no resistance is offered to the natural pliability of the tissues. Only a single strand of No. 30 silver wire is used in weaving, hence, there are no sharp ends anywhere, while at the periphery are simply disconnected loops, into which scar tissue must grow.

The accompanying illustration will serve well to give an idea of this filigree, which I devised more than five years ago, and which I have used since that time with growing enthusiasm. To demonstrate the firm hold of new-formed scar tissue on the loops, I can do no better than quote an experiment described in the article just referred to.[1]

> I opened up the abdominal wall of a small dog, separating the intact peritoneum from the overlying structures in the median line, where I embedded a small filigree. This small contrivance had only eight loops on each side, and projected out but three-fourths of an inch under the edge of the wound, not being sutured in position at all (to make the test the more severe). The recti were then sewn together over it with a continuous silver wire as were their anterior sheaths, the skin being united by interrupted sutures of silk. The animal was turned loose without a dressing of any kind, and from the second day he ran around as such animals are accustomed to do under ordinary circumstances, furnishing in this way what can well be considered a crucial test for this method of wound closure. At the expiration of four weeks, the wounds having healed completely, I cut down at one side of the original incision, until the loops forming one edge of the filigree came into view; into four of these I fastened hooks, and then it was only after a tension measured by eleven pounds on a spring balance had been applied, that I managed to loosen the hold which four loops on the opposite side had secured. It was by no means possible to lift the filigree from its bed; the best that could be done was to tear it to pieces, so firmly had Nature anchored it. While such an experiment, of course, does not actually indicate the amount of resistance which such an appliance will manifest against the intra-abdominal pressure directed against its median portion and at right angles to the direction of its cross-wires, still, this is enough to demonstrate that forty-eight such loops, forming both sides of the filigree, which I have used on the human subject, will certainly manifest sufficient resistance for all practical purposes, when it requires a full eleven pounds to dislodge only four of them.

My interest in this has been redoubled since learning that C. H. Mayo has employed it with success and since the publication of Joseph Wiener, Jr.'s, convincing article,[2] in which he reported seven patients cured by its use, and thus gave the latest substantial impetus to this division of surgery. This is especially interesting in view of the fact that a New York surgeon, Dr. Willy Meyer, was the first to call the attention of American surgeons to the possibilities offered by the fiiligree in general.

OPERATIVE TECHNIC.

It seems that no exact procedure has been developed, applicable to all cases of postoperative hernia, in which a filigree is desirable. After considerable experience with all methods of attacking the problem, I unhesitatingly advised the following as a routine:

1. Dissect away the old skin scar, which is usually wide, irregular and unsightly; then there will be only one mark, instead of two, left.

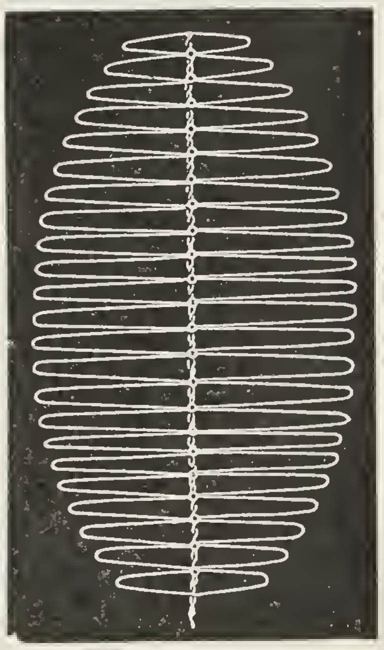
2. Widely open the sac, reduce its contents, divide adhesions and excise omentum where necessary. I will state, in passing, that I do not pay as much attention to adhesions within the sac as formerly, but usually content myself with reducing everything where possible. No doubt, these connective-tissue attachments reform to a great extent, even when they are disturbed at the operation.

3. With the operator's hand inside the sac, it is very easy to dissect it away from the components of the wall, to which its exterior is attached; otherwise this is sometimes a most perplexing task. The excess of the sac is next trimmed away, and the resulting edges sutured in much the same manner as would be done in closing the healthy peritoneum.

4. It is now exceedingly easy to separate peritoneum and transversalis fascia from the posterior surface of the muscles; on the bed thus formed by fascia, a filigree, slightly longer than the opening, is placed and held in position by two sutures at its extremities. If the defect is a large one, it will now be found impossible to reunite the edges of any structure, but the skin; however, this does not matter. All that is necessary is that the edges of the network should be covered for a short distance. I usually employ a continuous catgut strand, with which muscle and fibrous sheaths are partially drawn together in a single layer. Over this, fat and skin are closed in the ordinary manner. The patient is kept in bed for from two to three weeks, according to the necessities of the individual case, and a binder is worn for two or three weeks more.

I am fully convinced that a segment of the abdominal wall, consisting of peritoneum, wire filigree and skin, is just as good as any other, provided the operation has been properly done.

A FILIGREE IN SUPPURATING WOUNDS.



Having experienced an accidental infection in Case 12, which had no effect on the permanent healing or on the efficiency of the filigree, it suggested itself to me that the attempt be made to forestall the frequent ruptures, which we see in drained abdominal lesions, by embodying one of these contrivances in the granulations which close such defects. I succeeded perfectly in one instance, and report the following cases to show that no ill-effect on repair is exerted by the presence of such a foreign body.

Case 15.—Oct. 31, 1905, I implanted a small filigree just beneath the aponeurosis of a twelve-year-old boy, on whom I had operated for purulent appendicitis two weeks previous to that time. His wound gaped widely, and I hoped to prevent, thereby, a hernia, having in mind the favorable result in Case 12, in which a filigree healed in, after infection had taken place. A secondary pus focus became manifest deep in the abdomen, however, a short time after this, and the patient's physician, being unable to reach me at the time, removed the filigree in draining the lesion, hence, this case proves nothing along the line under discussion.

Case 2.—Mr. V., aged 23, was operated on Nov. 4, 1905. Three months previous to this time an assistant of mine had drained an appendicitis pus focus with temporary benefit. On the date mentioned, however, I had to operate for a reoccurrence of the trouble, and, of course, made it my first duty to remove the small offending organ, if it can be so termed. Foul-smelling pus was encountered, and the edges of the wound were more or less soiled. Since an accidental infection had had no ill-effect on the ultimate healing in of one filigree, I implanted one in this abdominal wall, which had been extensively damaged, as a result of two incisions in the same neighborhood. I used one 2¼ by 4 inches in size, embedding it beneath the aponeurosis in the usual way, leaving little strips of gauze between the individual wires. The patient had considerable abdominal trouble following the operation, and there was a discharge of large quantities of pus from the peritoneal cavity, through the wound, as well as through a tube, which I inserted low down in the middle line; but eight days later, he was normal again and eighteen days after the procedure he went home. A few ends of the wire became displaced and had to be clipped off at various times, still, almost the whole of the filigree became permanently embedded in one of the foulest abdominal wounds that I have ever seen, and the wall at that site is as firm to-day as it ever was. The patient is hard at work, and apparently in first-class condition.

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[2] Annals of Surgery, April, 1906.

CASE 21.—May 18, 1906, Mrs. B., aged 33, was operated on for postoperative hernia at the outer border of the right rectus muscle, low down. Sept. 12, 1905, her appendix had been removed with consequent infection of the wound. She had remained in bed six weeks, and had worn a binder until the present time; still, a hernia appeared as soon as she got up, and gradually increased until it was as large as a cocoanut, when I first saw her. At the operation, I found an interstitial hernia, the sac lying between the aponeurosis and the muscles beneath. In this case, I succeeded in reuniting the muscles, on which a large filigree was placed, but the edges of the aponeurosis could not be approximated by more than an inch. Two days later there was evidences of infection, and her physician opened up the wound. The wound is now fully healed, with the filigree in place.

PROPHYLACTIC USE OF A FILIGREE.

Many operations damage the abdominal muscles or nerves, or both, to such an extent as to make postoperative hernia likely, in spite of the most careful suturing. Especially is this true in view of an occupation which necessitates great muscular effort on the patient's part or in view of a pathologic condition which may later be attended by an increase of intra-abdominal tension. Four cases in point illustrate the considerations which lead me to attempt to forestall any such accident.

CASE 17.—Jan. 25, 1906, I did a modified Talma operation on Mr. K., aged 51, for cirrhosis of the liver. There had been an immense collection of fluid in his peritoneal cavity, hence, having in mind Case 2, in which a reaccumulation after a similar procedure resulted in a postoperative hernia, I determined, if possible, to forestall such an occurence, by the use of a filigree. My incision was two inches to the right of the median line, at about the height of the umbilicus, hence, after reuniting the peritoneum and transversalis fascia, I placed a filigree 2¼ inches by 4 inches in size, on the suture line and closed the muscles, as well as the other structures of the abdominal wall, over it. Unfortunately, this case proves nothing, so far as the point under discussion is concerned, since two days after the operation the patient gradually commenced to sink, with every evidence of a deepening autointoxication, and died in a few hours.

CASE 18.—Jan. 28, 1906, I operated on Mr. D., a butcher, aged 57, for gallstone disease. The operation, which included the removal of his gall bladder, for hydrops, as well as a fibrous appendix, necessitated a rather long incision through the right rectus muscle. Having in view the nature of his occupation, in the pursuit of which he was accustomed to lift heavy objects, I naturally was reminded of the likelihood of postoperative hernia in this region, knowing that I had severed some of the abdominal nerves. As usual, a strip of gauze, covered by rubber, was tied to the stump of the cystic duct, and this brought out at the upper angle of the wound. In the rest of its extent, the peritoneum and transversalis fascia were closed, and on the bed thus formed, a filigree of three by four inches was laid. Over it the other structures of the wall were sewn up as usual. Nine days later the gauze was removed, and the canal closed as kindly as though no foreign substance lay at the bottom of the wound. Still nine days later, the patient went home and in two months after the operation he was following his usual vocation, without the slightest bulging or discomfort. At present his abdominal wall is absolutely intact.

CASE 19.—Feb. 19, 1906, Mr. G., aged 49, a blacksmith, was operated on for gallstone disease. The incision was two inches to the right of the middle line, just above the umbilicus. In this case both the appendix and gall bladder had to be removed, consequently, this incision, too, was longer than would otherwise have been made, and, as a matter of course, abdominal nerves were severed. A gauze wick was carried down to the cystic duct, but this time in order that the wound might be closed as firmly as possible, the drain was brought out through a supplementary stab two inches to the right of the incision. A filigree, 2¼ by 4 inches in size, was placed beneath the muscles. Seven days later the drain was withdrawn, and fourteen days after the operation, the patient went home. To-day he is working hard at his forge, and I am encouraged to believe that his abdomen will remain sound, even though he does the hardest kind of labor and that after serious damage was done by the knife.

CASE 20.—Feb. 27, 1906, I operated on Mrs. S. for appendicitis and in this case had to make an incision through the right rectus muscle, very much longer than I would have otherwise done, but it was impossible to make a definite diagnosis before undertakiing her relief by operative means. Hence, I had to examine the gall bladder, stomach, duodenum and appendix, which accounts for the fact that a long incision was made and several abdominal nerves injured. She is a woman who has to work hard, hence, I felt that I must give her every guarantee I could against postoperative hernia. I implanted a filigree, as long as the incision, beneath the muscles, and the wound healed without the slightest difficulty, no drainage being used. She was sitting up on the seventeenth day, went home in due time, and when I saw her recently, assured me that she was perfectly well and free from discomfort.

One point which should be urged in connection with the prophylactic use of the filigree has especial reference to drained cases. In such instances I am decidedly averse on general principles to carrying a drain out through the original incision, the greater portion of which is to be blocked by this contrivance. It seems to me far better to make a stab wound to one side or the other, through which the drain may be conducted without, in any way, disturbing the solidity of the weakest portion of the wall which it is desired to strengthen.

THE RELATION OF THE FILIGREE TO PREGNANCY.

One of the first questions asked me in connection with my early cases was: "What will become of the filigree when it is exposed to greatly increased pressure from within, and what effect will it have on a possible pregnancy?" I am happy to reply, after conclusive evidence of its value has accumulated, that no test has proven too severe and that it has produced no untoward effect under such unusual circumstances. The following cases, I think, will substantiate my claims:

CASE 2.—Exactly five years ago, namely, June 8, 1901, I implanted a large filigree in the abdominal wall of a man suffering from median ventral hernia, as a result of omentopexy, which had been performed six months previously. In spite of the fact that a considerable amount of transudation into the peritoneum took place after the operation, the filigree has done its work to the present day, and the scar is just as strong as it ever was, except at the upper angle of the four-inch wound, which I failed to cover properly, as a result of inexperience, this being only my second case. As soon as the man got up, a small bulging occurred at the site mentioned, but this has not increased, and his abdominal wall is now otherwise sound, five years later.

CASE 10.—July 18, 1903, I implanted a filigree in the median line of Mrs. F's anterior abdominal wall, for a hernia, which had resulted from a drainage operation, done six months previously for peritoneal tuberculosis. This earlier procedure had been carried out by an excellent surgeon, whose good technic I gladly recognized. Still, the exudate reaccumulated, and, with it, a hernia appeared. I implanted a filigree on the recti muscles, which were brought together with silver wire, but I failed to unite the anterior sheaths of these muscles by, at least, half an inch. Still, the hernia was completely cured, und this in spite of the fact that the fluid reaccumulated, and he tuberculous manifestations became so apparent that I had o reopen the abdomen, April, 1904. Without disturbing the vire, I removed the tuberculous Fallopian tubes, by way of lefinitely curing the disease. The patient is well and doing iousework at the present time.

Case 12.—Sept. 29, 1903, Mrs. S., 36 years of age, was perated on. Fifteen years before this time she had been a ubject of a laparatomy, low down in the middle line. A year ater a small hernia had appeared, this growing until I saw er, when it was about the size of an infant's head. The diameter of the ring was 3½ inches, and her symptoms were those f colic and weakness in the abdominal wall. I placed a large iligree behind the recti muscles, and owing to an infection of he wound, she had to remain in bed four and one-half weeks. fistula continued to discharge for some weeks after she was p, but eventually it healed without further treatment. Since hat time she has gone through the ordeal of childbirth, but er abdominal wall is intact at the present date.

This case being of more importance than any other in ny series, it gives me great satisfaction to be able to uote a letter just received from Dr. Hugo Ehrenfest, ssistant professor of obstetrics, St. Louis University. he date is May 26, 1906.

Complying with your request I give you an abstract of the istory of Mrs. Annie S., from my records at the Jewish Hosital Dispensary.

Seen by me for the first time in the Dispensary, Nov. 27, 905, 35 years old, married nineteen years. Had seven fullerm children and four miscarriages.

One full-term pregnancy within the first two years of maried life. About sixteen years ago laparotomy was performed n her in New York (indication unknown). Five weeks after aparotomy she became pregnant, aborted ten weeks later. bout one year later a confinement at normal end of pregancy. About two years after laparotomy small hernia began o appear in scar. The hernia gradually increased in size with he subsequent pregnancies. Dr. Bartlett repaired hernia, lacing a large silver screen into abdominal wall, Sept. 29, 903.

Fourteen months after this operation she became pregnant nd gave birth to a full-term child just five weeks ago.

During this last pregnancy some dragging pain appeared in e scar at about fifth month, very gradually increasing up the time of labor, but never very severe. Confinement pontaneous and normal, according to her statement, the easiest nfinement she ever had. Since confinement no pain whatever, cept some slight backache. Patient now has some difficulty using her abdominal muscles. When she lies down flat on er back on the examination table, or tries to move in this sition, she has to move slowly, otherwise, she has severe pain the scar. Palpation absolutely negative. There is no heria, no tenderness in scar, screen can not be palpated.

INFLUENCE OF DEVELOPMENT.

A filigree implanted in the abdominal wall of a rowing person has been productive of no ill effect thus r. However, I have but one observation to report, nd that of limited value, since it has been in place only venteen months.

Case 13.—Jan. 6, 1905, Helen M., aged 10, was operated on r a small, but troublesome hernia, which had resulted from operation, done by me, six months previous to this time. had removed her appendix and drained a local peritonitis ith gauze and rubber tubes, no sutures having been used in e abdominal wall. After the first operation, she had reained in bed for five weeks and wore a tight binder continusly, still, four months after the operation a bulging, the e of a hickorynut, appeared, gradually increasing. At the cond operation, a filigree, two inches by five in size, was aced between the aponeurosis and the muscles beneath; sixen days later she was out of bed. Four days after this she nt home, and has remained well to the present time.

Of my twenty-two patients, four (Nos. 1, 5, 6, 17) have died since the operation of causes not connected with the implantation of the filigree. These individuals lived six months, three months, ten days, and two days. respectively, and in no instance did the filigree fail to perform its functions. Of the other eighteen, I lost track of two, operated on in 1903; one of them (Case 7), six months after operation; the other (Case 11), two months after, both being in perfect condition when last heard from. I have traced the remaining sixteen up to the present time. One of them was operated on in 1901; two, in 1902; four, in 1903; four. in 1905, and five, in 1906. In one of these (Case 15), the family physician took it on himself to pull out the filigree, as above mentioned, without my knowledge, so this is manifestly not a fair trial. The other patients have remained well to the present time, without exception, and no one of them complains of symptoms occasioned by the presence of the appliance.

An experience with the silver filigree in twenty-two cases during the last five years has served to convince me that its use offers an easy and efficacious means of solving a problem which must otherwise prove very difficult in many instances. My results, detailed above, have proved. I trust, that the contrivance does not absolutely need to have a clean wound for its bed and will also withstand the strain incident to pregnancy and other rigorous conditions. Not one of my patients died as a result of its use, not a single filigree of the twenty-two gave cause for removal, nor have I a failure to record after its use.

Case 1.—This case, with the six which follow, were very fully described in the *Annals of Surgery*, July, 1903. Five years ago on the fifth of last April, I excised the greater part of the lateral abdominal wall in a girl three and one-half years old for sarcoma, bridging over the resultant large defect with a silver filigree. The child died three and one-half months later, of a recurrence *in situ*. During the little girl's life, however, there was, at no time, the slightest bulging of the wound, nor any discomfort from the presence of the filigree.

Case 2.—June 8, 1901, I implanted a filigree for the cure of a postoperative hernia, after an omentopexy of six months before. A very small bulging appeared at the upper end of the wound as soon as the patient got out of bed, otherwise, the impaired area is still perfect in the rest of its extent.

Case 3.—July 1, 1902, I used a filigree on a young woman of eighteen, who suffered from a postoperative hernia, which had resulted from the drainage of an appendix lesion. I saw her recently, and she now has none of her old symptoms, nor does the wound bulge in any part of it. She is employed in a store, is on her feet constantly, goes up and down stairs; in fact, deports herself in every way, as a healthy woman should, whereas, previously, she was a helpless invalid.

Case 4.—July 28, 1902, I did an operation in every way similar to that in Case 3, and for the same cause, on a short, stout man, aged 55. At that time he was totally incapacitated for work. He has had no trouble at all since the filigree was used, and at present has as sound an abdominal wall on the right side as on the left. This is especially noteworthy, in view of the fact that the muscles were flabby, and that there was a great deal of adipose tissue at the time I operated.

Case 5.—Aug. 12, 1902, I operated for umbilical hernia, on a man, aged 67, using two filigrees, one behind and one in front of the rectus muscles. The man, however, died suddenly, ten days later, of what appeared to be a pulmonary embolism, hence, no use can be made of this result so far as statistics are concerned.

Case 6.—Jan. 20, 1903, I excised from a woman, aged 43. the skin, aponeurosis and fascia lata from the right inguinal and femoral regions, over a space about as large as a man's hand. for cancer. The remaining structures of the abdominal wall bulged so much under the influence of extirpation, while the patient was on the table, that I at once decided to implant a filigree. This was done and a hernia, no doubt, was prevented. The patient died five and a half months later, however, of general carcinoma, hence, this case teaches us very little as regards ultimate results.

CASE 7.—Feb. 28, 1903, I operated on a young woman, aged 22, who had had the lower right abdominal wall considerably damaged, as the result of a kick. A filigree was inserted under the shelving edge of Poupart's ligament and the aponeurosis, with the result that the patient, who had been unable to stand erect for two months before the operation, was now enabled to go about her usual vocation without discomfort. Six months later she was in perfect condition, except for a feeling of stiffness in the scar. Since that time I have been unable to get news from her.

CASE 8[3].—June 22, 1903, I operated on an unmarried woman, aged 51, who had suffered for twelve years with an immense interstitial hernia. This had worked its way through the right inguinal opening, up between the aponeurosis and the internal oblique. The two structures were so attenuated, as the result of long-continued pressure, that I considered them hardly sufficient to subserve their normal functions after the removal of the sac; hence, a filigree was implanted between them with most satisfactory results. I have just heard from this patient, and learned that she has had absolutely no sign of weakness in the abdominal wall, or, in fact, no other symptom from the presence of the large mass of silver wire, since the operation, three years ago.

CASE 9.—June 29, 1903, I was permitted by Dr. Deutsch, of this city, to offer some suggestions as to the treatment with a filigree of a patient on whom he operated on that date. The patient was a man, aged 36, who had been subjected to drainage for appendicitis ten years before. Within a year after the first operation a hernia had appeared in the wound, and during the succeeding nine years he had been the subject of constant abdominal colic. A large filigree was placed on the muscles which could be brought together and the aponeurosis sewed partially over this. I saw this man a year later, and there was absolutely no bulging, although, it might be added, that some of the continuous silver wire suture, which had been used in everything but the skin, was attempting to work its way to the surface. I now use catgut in sewing the various layers and have, in consequence, no more of these experiences, disagreeable to the patient and surgeon alike. I heard from this patient two years after the operation for the last time. He was, at that time, still possessed of an intact abdominal wall.

CASE 10.—July 18, 1903, I implanted a filigree in Mrs. F's lower median abdominal wall for the repair of a hernia, which had resulted from a drainage operation, undertaken six months earlier for tuberculosis of the peritoneum. At present she is perfectly well and hard at work.

CASE 11.—July 20, 1903, I treated, by this procedure, one of the most remarkable postoperative herniæ that I have ever seen. The patient, a woman, aged 43, had been subjected to hysterectomy six years before I saw her. She had spent six months in bed before her drained wound healed, but no sooner got up than a small bulging appeared. This gradually increased in size, until the date mentioned, when I found the low median ring, more than four inches in all diameters, and approximately round. This patient was a thin woman, with a board-like abdominal wall, which rendered it manifestly impossible to close the opening by any form of autoplasty. I implanted an immense filigree beneath the recti muscles, which were drawn out of their sheaths sufficiently to permit of them being brought together in the middle line, although the fibrous structures in front could not be approximated by any means. Two months after the operation she was in perfect physical condition, but has not been heard from since that time.[4]

CASE 12.—Sept. 29, 1903, a large filigree was placed low down in the median line of Mrs. S's abdominal wall. She had been operated on fifteen years before, and had an immense hernia. She was seen recently and is in perfect condition.

CASE 13.—June 6, 1905, I implanted a filigree in the lateral abdominal wall of Helen M., aged 10, on whom I had operated for purulent appendicitis six months previously. Extensive drainage had been used, and a small hernia had appeared almost as soon as she got up from bed. Since the second operation she has remained entirely cured, until the present time.

CASE 14.—Oct. 13, 1905, I operated on Mrs. H., aged 52, who was afflicted by a fibromyoma of the uterus, about the size of a man's head, also by an umbilical hernia, about the size of an orange. In addition to this, there was a prolapse of the posterior vaginal wall, all three conditions being treated at one sitting. Through a median incision, which extended from the pubis and around one side of the umbilical ring, I excised this latter, and removed the abdominal growth. In order to close the abdomen at all I had to remove the omentum, which had lain in the hernial sac. In order to make the closure more simple, I simply placed an immense filigree beneath the edges of the thin atrophic recti muscles. It was impossible to bring these together, without too much tension, so I contented myself with merely carrying them a short distance over the ends of the wire loops, so that the filigree would remain in its bed, and over all I closed the skin. In this way it will be readily seen that I accomplished a very simple, and what has proven to be effectual, abdominal closure. In little more than two weeks this patient was up in a chair, and a few days later went home, the abdominal wound being perfectly solid.

CASE 15.—Oct. 31, 1905, I implanted a filigree beneath the aponeurosis of a boy, aged 12, on whom I had operated for purulent appendicitis two weeks earlier, the wound having been left wide open. His physician removed the filigree without my knowledge a few days later.

CASE 16.—Nov. 17, 1905, I implanted a filigree beneath the aponeurosis of Mr. V's abdominal wall. His appendix region had been drained three months before, but the cause of the trouble not removed. In taking out the appendix I damaged the wall to such an extent that I feared a hernia. Much pus was encountered, but, nevertheless, the contrivance healed in with the result that he is now hard at work with a sound abdominal wall.

CASE 17.—Jan. 25, 1906, a large filigree was used on Mr. K., on whom I was operating for cirrhosis of the liver. He died two days later, however, and the case has no especial instructive features.

CASE 18.—Jan. 28, 1906, I implanted a filigree in Mr. D's abdominal wall, in order to forestall a hernia after a long incision for gall-bladder and appendix disease. At present he is engaged in lifting heavy weights, but, nevertheless, has remained perfectly well.

CASE 19.—Feb. 19, 1906, I operated on a blacksmith for gallstone and appendix disease. Fearing that a hernia would result, in the long incision I implanted a filligree in closing the abdomen. He is now working hard at the forge every day, and is in perfect condition.

CASE 20.—Feb. 27, 1906, I made a very long incision to the right of the rectus muscle in Mrs. S., the appendix was removed, and the higher structures examined. To forestall a hernia, a filigree was used in closing the wound. I saw her June 1, 1906, and know that she is in perfect condition.

CASE 21.—May 18, 1906, I used a filigree in the abdominal wall of Mrs. B., aged 33. In September, 1905, her appendix had been removed, the wound was infected and an immense hernia was caused. In spite of an infection, after my operation, the filigree has healed in place as though nothing had happened.

CASE 22.—May 9, 1906, I implanted in the abdominal wall of Mrs. L., a large filigree for the cure of a low median postoperative hernia. The abdomen had been opened seven years previous to this time, and an ovary removed. As soon as she got up from bed, she had a very weak feeling at the site of the incision and always wore a binder. Four years after the operation, a bulging appeared in the scar, which gradually increased in size until now it is as large as the head of a newborn infant. She felt that she had no support at that point she could not lift anything, and could not go upstairs. Her sufferings had made her a complete nervous wreck. On the date mentioned, I opened the sac, removed an immensely long appendix, and implanted a filigree beneath the muscles. Two weeks later she was up, but the next day a little pus and necrotic fat from her immensely thick abdominal wall came out at the lower end of the wound. There was no more trouble after this, however, and she is now in perfect condition.

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[3] Cases 8, 10 and 11 are very fully described in the Interstate Medical Journal, 1903, No. 9.

[4] Cases 12 to 22, inclusive, as well as Case 9, are here reported for the first time.

DISCUSSION.

ON PAPERS OF DRS. OCHSNER AND BARTLETT.

Dr. A. U. Tuttle, Cambridge, Mass., said that about seven or eight years ago he read a paper on the insertion of silver wire in hernia, and that time operated on about fifteen patients. He used the wire in the treatment of ventral herniæ following appendicitis operations, also in umbilical, femoral and inguinal herniæ. Within a month of the present time he pulled out wire that had been breaking up in the patient for about six months, wire that had been put in six or seven years ago. On thinking the matter over he is satisfied that the silver wire is affected by the body juices as much as any other suture, but, perhaps, not quite so fast. After the wire had been placed in the body, whether deep or superficially, whether in a clean or in a suppurating wound, whether in a wound with primary healing or in one with secondary changes, it is only a question of a very short time when the wire becomes brittle, when it will break up and become absolutely valueless so far as holding the wound together is concerned. In regard to the question of recurrence of herniæ, the wire promotes a local irritation; sets up an increase in the connective tissue and scar formation, so that many of these cases have proved successes after the use of the wire. But the fact that silver wire produces local irritation and breaks up and comes out in fragments has been so universally noted that he thinks that after a comparatively short experience with it surgeons will see that some other suture must be used.

Dr. A. H. Ferguson, Chicago, stated that he has done operations for femoral herniæ according to various methods, finally by removing the sac and suturing Poupart's ligament and the falciform process to the pectineus muscle. But if Dr. Ochsner can show such excellent results by a still more simple process, surgeons will do well to discard all other procedures and follow his method. Dr. Ferguson has never seen a return after a radical operation for femoral hernia, either in any of his own cases or in those of others, so that the old operation probably will do as well as any other. With regard to getting at the hernia, he said that he makes his incision above Poupart's ligament parallel with it, about half an inch above it. He retracts the lower lip of the wound after exposing the ligament, then cuts through the thin fascia to Gimbernat's ligament. By this method the surgeon gets at once to the neck of the sac and with one sweep of the hand from within outward can turn out the sac and hernia on the palm of the hand. On the other hand, if he commences to dissect from the top of the hernia he will get adhesions. It will also be found that there are almost two sacs in femoral herniæ, the thin layer which covers the fat, and then the considerable layer of fat, before coming to the true sac. By going at it from above downward there will be no difficulty whatever. Every sac should always be opened. The sac should never be tied off without being opened. The other advantage of making this incision above is that the abdominal ring (external) is exposed and the surgeon can pass his finger through it and inspect the condition of the internal ring. There may be a deficiency there, which by opening up to the internal ring may be rectified and the formation of an oblique inguinal hernia prevented. Dr. Ferguson has seen several cases of oblique inguinal hernia appear on the same side that the femoral hernia was operated on.

Dr. H. M. S. Dawbarn, New York, said that he was impressed with the fact that Dr. Ochsner agrees absolutely in his teachings with other surgeons who have studied this subject carefully. For example, Czerny, Nussbaum, Sewell, Barker, Ball, MacEwen, Bassini, Halstead and others have stated time and again that unless the sac is obliterated the hernia will return. That, Dr. Dawbarn said, is the reason Heaton, the first quack to advocate the cure of rupture without the knife, failed. Heaton emptied the sac, whether it was a femoral or an inguinal hernia, and then filled it, by means of a syringe and long hypodermic needle, with glycerite of tannin, which, acting as an irritant, caused a great exudate of fibrin, "Nature's glue," partly filling the sac and obstructing a return of the hernia. Six months afterward he had the results looked up and there was 100 per cent. of relapses. Little by little, the bowel produced absorption, by pressure from above, of this plug obstructing the entrance to the sac, and finally the original trouble was reproduced. Dr. Dawbarn said that he can see no advantage in doing away with the sac though he does approve of obliterating it as a cavity. It is a mass of vital tissue and it seems wise, he said, for that reason, after dissecting it loose to carry out the MacEwen principle to make use of it, drawing it by gathering string into a solid mass well above the level of Gimbernat's ligament, to oppose by its presence the entrance of a hernia into the beginning of the femoral canal. Dr. Ferguson has used this method three times without having a relapse, although the first patient operated on has not yet passed the three-year limit. His technic is as follows: After doing away with the sac in the manner mentioned above, he dissects the loose tissue off the front wall of the rectus, leaving the bare rectus sheath. Beginning nearly at the level of the umbilicus, a strip, two or three inches wide, of the front sheath of the rectus is dissected for a sufficient distance, leaving the rectus bare. He doubles that flap down on itself, tucks it beneath Poupart's ligament, through the external ring, and sews the lower edge of that sheath with chromicized suture material to the lower edge of the femoral ring and to the pectoralis muscle and fascia. Dr. Ferguson said that it seems remarkable that surgeons generally, both in inguinal and femoral herniæ should forget that excellent principle of military tactics, namely, that if one ever expects to whip the enemy he should never forget the line of retreat. To apply that principle to hernia operations, Dr. Ferguson always makes a large semicircular or horseshoe-shaped skin incision; convex upward in inguinal hernia, convex downward in femoral, instead of the customary straight-skin cuts. These curved incisions are so placed that they surround the place where, if ever a relapse should occur and a truss life be resumed, the pad should properly rest. Consequently, the pad never would have to chafe or press on a scar, as it must do, to the patients' discomfort, if the more usual method be employed, i. e., a straight cut, in attempting radical cure over the greatest prominence of the hernia.

Dr. A. J. Ochsner stated that all the cases he reported date back at least one year, and one fourteen years. He had a most interesting experience with silver wire. About fourteen years ago while visiting Dr. Max Schede's clinic in Hamburg, he found that Dr. Schede used silver wire very freely in preventing hernia after abdominal section and in operating for the radical cure of hernia. Next Dr. Ochsner visited the Edinburgh clinic, and in speaking to Mr. John Chien was told that thirty years before a surgeon in Edinburgh had put in silver wire, and they were still taking it out. Consequently, Dr. Ochsner has not used it. He finds that with the exception of the late results for hernia in which the ring was destroyed, either by the original injury or by the operation for the reduction of strangulation, or by some foolish operation, that almost no one seems to have had a recurrence, provided, as Dr. Dawbarn says, the sac and also the peritoneal fat have been thoroughly removed.

In regard to the similarity between inguinal and femoral hernia, he directed attention to the fact that about eighteen years ago Mr. William Anderson, of St. Thomas Hospital, London, began to operate on inguinal herniæ by simply removing the entire sac, ligating it and permitting the stump to retract and suturing the skin, and when Dr. Ochsner visited his clinic seven years later, Mr. Anderson had operated on some three hundred cases without a recurrence. After that, for a considerable period of time, until Dr. Ferguson's method was published, Dr. Ochsner operated on small and medium-sized inguinal herniæ, in which there was not a congenital deformity, in that manner on one side on all double herniæ and by the Bassini method on the other side. He found that neither method was followed by an appreciable number of recurrences. Later on he made the Bassini on one side and the Ferguson on the other, and now he does the Ferguson operation altogether. But the principles mentioned must be present. Supposing the surgeon wishes to make an artificial vagina, or to keep open a rectum in which there is a stricture, he can not do it unless he lines it with mucous membrane. This principle does not always apply in umbilical hernia in the adult. In the infant where the canal is actually circular, in 97 per cent. of hernia in the adult, where the abdomen shortens umbilical hernia in the adult, where the abdomen shortens laterally, the opening is no longer circular, but becomes enlongated and the principle is abolished. These herniæ do not close by simply removing the sac.

HEREDITY AND ENVIRONMENT AS FACTORS IN THE LIFE AND DISEASES OF CHILDREN.*

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In the first chapter of Genesis and the eleventh verse it is written: "God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit, after his kind, whose seed is in itself upon the earth, and it was so." In the twenty-first verse: "God created great whales and every living creature that moveth, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind." In the twenty-fourth verse, also: "God said, Let the earth bring forth the living creature after his kind, cattle and creeping thing and beast of the earth after his kind, and it was so." And to confirm these statements, it is reiterated, in the twenty-fifth verse that: "God made the beast of the earth after his kind, and the cattle after their kind, and every thing that creepeth upon the earth after his kind; and God saw that it was good." Thus it was a fixed law that in order to avoid confusion, every living thing, whether it be plant or animal, shall produce offspring after its own kind, thus establishing the law of heredity, and also forming at the same time, abundant proof for those who believe in the so-called bathmic evolution.

While no one, from scientist down to the most ignorant casualist, denies the matter of heredity, or that we expect offspring to be like their ancestors, yet many biologists, as well as psychologists, have devised different and even antagonistic theories to account for heredity, and its correlative factor, environment. The firmness of the belief in heredity and its influential factors in determining offspring are especially shown when there appears an apparent exception to the law, that like produces like, or what we call variation. For instance, if an auburn-haired child with blue eyes makes its appearance in a family of dark-haired, dark-eyed parents and brothers and sisters, it causes general comment, and should all questions of legitimacy be settled favorably to the suspected, inquiry will at once be made as to the matter of atavism or reversion to previous ancestors. In order, however, that one may understand, as we proceed, a few definitions may not be out of the way. Heredity is usually defined as the law that accounts for the production of offspring like the ancestors, but as we have occasionally a variation from the ancestors, we usually study heredity and variation together. Variation is usually due to some disturbing factor, which modifies the workings of the law. Weismann, a German biologist of note, held to the theory that only inherent qualities can be transmitted to offspring, acquired characteristics and habits can not be transmitted. According to him, parents are merely trustees to hand down their commingled stocks to their offspring. The effect of training and education of parents can not be inherited by the children. This differs from the saying of the late Oliver Wendell Holmes, that if you want to make a scholar out of a child its training must begin 200 years before it is born. From bad stock, according to Weismann, can come only bad offspring, and if a member of such stock, through special training and education and the result of favorable environment, should prove an exception to his family, yet his offspring will inherit but the old taint, and none of his acquired good qualities. Darwin's views are similar, primarily stated, but when we read his "Descent of Man," his theory of evolution dependent on the two great factors, sexual selection and environment, we must see that in practice, Darwin believes in the transmission of acquired, as well as of inherent, characteristics.

The English philosopher, Locke, believed that all people are endowed with the same amount of qualities or inherent characteristics, and that with the same amount of work and application all could achieve the same results in any field. The very opposite views are held by Galton, as we see in his "Faculty and Education" and his great work on "Nature and Nurture." The latter is probably nearer right than Locke. Haeckel has views similar to Darwin's, and Lamarck is diametrically opposed to Weismann, and many instances can be quoted to prove his contentions. For instance, the matter of telegony is one of them, and, while mentioning the word, I will also define it: Telegony is the reversion in children of one parent to characteristics of a former mate. For instance, a mare, having been bred to a quagga, an animal striped similarly to a zebra, later, when bred again to a horse, produced a colt with the stripes of a quagga. So, also a bitch, that was bred with a mongrel had pups characteristic in color and other qualities similar to the mongrel, yet when bred to a purebred animal of her own kind gave birth to a litter, some of which were marked like her former mongrel mate. Numerous examples could be mentioned which can not be gainsaid. On the other hand, we know that the rite of circumcision has been practiced among the Jews for several thousands of years, yet no Jewish boys are born without foreskins. Shepherds, who amputate the tails of all lambs, and have done so for centuries, must still repeat the process to-day, as so far no bobtailed sheep are born. But, *per contra,* Brown-Séquard, who did many bizarre things and who created artificial epilepsy in guinea-pigs, had the pleasure of seeing epilepsy develop in the offspring, even to the third generation.

Among dogs, retrievers and setters seem to have transmitted their acquired education to their offspring, as a well-born retriever will invariably practice retrieving without being taught; hence it seems the quality of retrieving, originally taught his ancestors, was in this instance transmitted to him. Weismann to the contrary, notwithstanding, Brown-Séquard's epilepsy experiments form a valid excuse now for asking the question that will interest this Section, namely, Are diseases, like certain traits, inherited, that is, transmitted from ancestor to posterity? And, if so, have these diseases always existed in this particular tribe or family, or were they first acquired and then transmitted? If the latter, how can Weismann be right, who says acquired characteristics can not be transmitted? Is there a taint of fatalism in such views that declare we can not change anything permanently, so that hereafter when a certain happy result is accomplished by environment, education and training we can not entrust it to reproduce itself, but must continually keep up the work of the same environment and training? If this were so, what is the use of the practice and study of eugenics, except as they repay us in immediate results?

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

According to the laws of heredity, if a father and a mother were in all respects exactly alike, and not taking into account theoretically their ancestors, then their offspring would exactly resemble them, and also each other. But this assumption is only to help us form the law of coefficients of heredity. Namely, if the quantity of a certain trait in the father were assumed to be one, and the same in the mother, we would expect the child to have the same trait in the same quantity, namely, one. But if one parent have this trait and the other only one-half, then we would expect the child to have only three-fourths, provided there is no prepotency existing in one parent or another in this especial trait. But—yes, but—any given person has, as far back as the tenth generation, a totality of 1,024 ancestors, including his parents, as can easily be shown by calculation. Now, all of these 1,024 have added their share of hereditary influences to his physical, mental, moral and psychical make-up, not to mention telegonic and bathmic influences, plus all the environments of Lamarck, Darwin and Haeckel. Mention of the word bathmic demands some definition. The word is from the Greek bathmos or basic; it refers to certain basic or inherent principles or characteristics existing in every individual to reproduce its own and to revert back to the reproduction of its primitive types, when not trammelled by environment or education or training. An illustration of bathmic evolution exists in the begonia and some other plants, a leaf of a begonia when planted in the ground takes root and grows and reproduces the entire plant, thus showing an inherent growth force. To illustrate more distinctly, no matter what seed is sown and under what circumstances or conditions, if it grows and reproduces at all, it will produce the same kind of organism that gave rise to the seed. By environment and education or training the horticulturist produced many varieties of apples by processes known as budding, grafting or pollenization, yet seed planted from these desirable varieties will revert to the original species, and all the acquired qualities will eventually be lost. Will this also be the case with human stock, rescued by social purity societies, prison reformers, eugenic matings of the social reformers, education of the proletariat, intermarriage of the plebeians with the patricians? If so, it will give the lie to those who claim that the continuous influx of Europeans, most of whom come from the lowest class of peasantry, is a direct benefit to the social melting pot of the earth, the United States of America, where live the greatest people on the earth—consisting of more than your 1,024 ancestors? Or have I taken for granted an aphorism whose truth is questionable and belongs not to the real truths, but the assumed ones, the *argumentum ad hominem?* If so, I have taken less for granted than many things on which rest a great number of the most ultra-scientific theories. Much of this reminds one of the contents of the witches' caldron in Macbeth:

"Round about the caldron go;
In the poisoned entrails throw
Toad that under coldest stone,
Days and nights has thirty one.
Sweltered venom sleeping got,
Boil then first i' the charmed pot;
Double, double, toil and trouble;
Fire burn and caldron bubble,
Fillet of a fenny snake,
In the caldron boil and bake;
Eye of newt, and toe of frog,
Wing of bat and tongue of dog,
Adder's fork and blind worm's sting,
Lizzard's leg and owlet's wing,
For a charm of powerful trouble,
Like a hell broth boil and bubble;
Scale of dragon, tooth of wolf,
Witches mummey, maw and gulf
Of the ravinged salt-sea shark.
Root of hemlock, digged i' the dark,
Liver of blaspheming Jew,
Gall of goat and slips of yew,
Slivered in the moon's eclipse,
Nose of Turk and Tartar's lips,
Finger of a birth-strangled babe,
Bitch delivered by a drab,
Make the gruel thick and slab,
And thereto a tiger's chaudron,
For the ingredients of our caldron,
Cook it with a baboon's blood,
Then the charm is firm and good."

This is quite a mixture and smacks of polypharmacy, yet it is a mild and harmless mess when compared to the 1,024 that come to our shores as factors in that product, called the elect of the earth—Uncle Sam's children. Is it a wonder we still have wars, murders, theft, defalcation, social evils, rebate evils, insurance swindles, and crime in high places and low, when "the butcher, the baker and the candle-stick maker," aye, far worse indeed, commingle in marriage to form the ancestors of the coming nations of the earth? Man still makes "countless thousands mourn" as in the days of the plowboy of Ayr. My ultra-scientific friends may accuse me of making a mess of scientific things and poetry yet poetry is the very spirit of truth, and of poet and scientist the former has often proved the greater seer. I might prate more wisely of the pangenesis of Darwin with his theory of gemmules which collect in the reproductive cells, and may be called "undeveloped atoms," and how they are supposed to be transmitted from parent to child, where they are said to remain in embryo undeveloped and later under suitable conditions develop and give so-called transmitted characteristics to the offspring, the theory that helped Darwin out of many rough places in formulating his theories of heredity, but, as no one yet has seen one of Dalton's atoms, so no one has seen Darwin's gemmules, or undeveloped atoms, so you see even the scientist goes begging at times for hypotheses when he is short on facts. Weismann, dissatisfied with the theory of gemmules, conceived that a germ-plasm, which was supposed by him to be a substance contained within each cell and a part of which after transmission to the offspring was never entirely used up, but transmitted to the next generation, and so on, in order to account for the continuity of the germ-plasm through ages and generations. We know cells, we know their nuclei or nucleoli, and their network and frame work, but we have never know germ-plasm, that has hitherto escaped us, though we courted it with aniline stain and acetic acid. One may as well quote poetry as such science.

The same is true of the theory of gametes and the applications of algebra, the formulæ of the calculus to establish the variant coefficients, the study of hypothetical zygotes, the elusive doctrine of Lloyd Morgan's metakinesis, the "something which is not yet consciousness, but which may develop into consciousness." All these theories and others too numerous to mention are often met with solid cold facts that are hard to harmonize. We may ask why do we continually seek to improve existing conditions, why teach or instruct, if all of it must continually be done over again, if nothing good has a continuance or abiding place, when we must fear overeducation and overtraining in one as much as undertraining in another? Will our striving ever attain some permanency? It does seem so at least! Can we improve bad stock without at the same time causing deterioration of the good stock when we practice sexual selection? Has the good and beautiful any prepotency over the bad and the ugly? Is an average better than two classes, the good and the bad? Or must we in so-called stirpiculture finally aim at the destruction of the bad by the good? Is not that a somewhat questionable procedure by the good? One is reminded, even if not forcibly of a conversation between an impertinent inquirer into the history of the ancestry of Dumas the younger. Said he: "I understand your father was a mulatto?" "Yes," answered Dumas. "And your grandfather?" Dumas answered, "He was a negro." "And his ancestor?" still probed the inquisitor. "He was an ape," said Dumas; "you see my ancestry begins where yours ends." Also another incident comes to my memory in the matter of improving our race by destroying the bad and vicious. Long ago I read an investigation into the doctrine of original sin by that great Bostonian who invented the hub around which the universe spins, the story of Elsie Venner, in which the question arose as to the right to exist, for instance, of the cats and the rats, yet the especial object in life of the cats was to destroy the rats. Did he mean that the good should destroy the bad? So far as the laws of Nature are concerned, the matter of pity has no place in her code. If an innocent babe should violate the law of gravity on a window sill of one of our skyscrapers, no good angel will interpose and intercept the falling innocent to prevent its horrid death and thus stay a tragedy in the breast of its mother. So, I think, when Nature herself is slow in making selection and survival of the fittest, man should hasten the process by the aid of environment. It may be foreign to the letter of this paper to include what I wish to say to you, but it may be useful to do so, and utility may be a reasonable excuse for any transgression of a theory. I think it would be right if, by legal enactment, the defective, the degenerate and the vicious could be so treated that procreation from such stock would be an impossibility. The researches of Dugdale remind us of the notable case of the Juke family of New York, who furnished in their progeny 1,200 people, most of whom were paupers, thieves or prostitutes, and who cost the Empire State, in trials, prisons and almshouse relief, no less than one and a quarter million dollars. How much property, misery, crime, sorrow and worry could have been saved if that old fisherman, drunkard and libertine, Juke, could have been emasculated before he set up that dynasty of crime and vice so rich in offspring, the spawn of corruption?

Our adolescent youth should have it impressed on them not to form partnerships in life with the descendants of the vicious, for it is literally true that "as we sow, so shall we reap." If parents would exercise as much of their prerogative in selecting marriage partners for their children from this standpoint as they usually do from that of worldly means and social standing, our race would be more desirable in future years than it has ever been since the disobedience of the first pair. I am sure our pseudo-reformers may mean well, but certainly do much harm, when they train the semi-idiotic and the feeble-minded and attempt the reformation of vicious criminals—the vicious youths in our reformatories and others—if they do not at the same time see to it that these hordes do not reproduce their own kind as the sands of the seashore. In doing as they now do, they only arouse their Nemesis, as Frankenstein created the monster without heart or conscience, that strangled without compunction, all that was dear to him on earth. The educated imbeciles and reformed criminals breed, if not prevented, like flies and rats. They even marry the good, if not the wise, who know not their antecedents, and thus dilute the human race with vice and degeneracy.

In the study of heredity we observe that the biologist and physicist often overlap boundaries with the psychologist, yet it is not speculating in theories that will lead us out of the realm of error into that of light so much as aiming at practical results in the study of child life that will produce the ideal boy and man, as well as the perfect girl and woman. The human embryo originates from a spermatozoön that differs very little from that of the horse, dog, ape, worm, fish or fowl, and in its history of prenatal life apparently passes through all the evolutionary forms of the various lower animals. As an analogue we may say the child in its growth and social development passes up through all the various stages of civilization from the most brutal and primitive savage to the highest forms of ideal existence. May this not by a form of atavism account for some of the usually unaccountable origins of crime, murders, thefts, the desire for tramping, sea roving, etc.? I ask, but do not answer. Despite the dictum of Weismann, that acquired characteristics are not transmissible from ancestor to offspring, the consensus of opinion of philosopher, philanthropist and statesman, of scientist and sage, is that Weismann is wrong so far as the practical results of education and training are concerned. If so, it gives pediatrists courage to go on in their good work, not only in combating and treating diseases in children, but in preventing, by proper advice and training, disease tendencies, be they diseases of the body only or those of the mind and psychic existence. These, then, are the lessons we can draw from such a study, whether we hold with Weismann that by eternal vigilance we shall obtain the prize or by holding the converse we can, by a joyous optimism, hope to see the fruits of our labors accumulate in that perfect man and woman we may see, even though only from the Pisgah of our hopes.

If Weismann be correct, if the bad by the environments of education and training can be made good, though bad stock can not be converted into good stock, then we see how grave a responsibility rests at present on every one who has to consider the problems relating to state endowments of education, the making and administering of poor laws, the conduct of charities which yearly spend immense sums. In all these problems the blind social instinct and the individual bias form strong factors in our judgment. Yet these very problems are the ones which, affecting the whole future of society, its stability and efficiency, require us, as good citizens, to understand and to obey the laws of healthy social development. The examples we have considered will not prove futile, nor its lessons worthless, even should Weismann's views, after all, be wrong. It is plain that in social problems such as I have referred to, the laws of heredity, whatever they may be, must certainly influence our judgment. The conduct of parent to child and of society to all its members can never be placed on permanent bases unless regard be paid to what science has to tell us of the fundamental problems of inheritance. The theory of evolution is not merely a passive intellectual view of Nature; it applies to man in his communities as it applies to all forms of life. It teaches us the art of living, of building up stable and great nations, and is as important to statesmen and philanthropists in council as for the scientist in his laboratory or the naturalist in the field. The laboratory experiments of a biologist may have a greater weight in practical life than all the theories of Plato, Hegel or Schleiermacher.

The scientific classification of facts, biologic or historical, the observation of their correlation and sequence, the resulting absolute as opposed to individual judgment, these are the sole means by which we can reach truth in such a vital social question as that of heredity.

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DISCUSSION.

Dr. F. A. Rhodes, Pittsburg, said that notable writers are diametrically opposite in their conclusions. The question will never be solved until we are able to tell what life is. Some years ago he formulated the definition that animal life (the only life with which we are intimately acquainted) is a correlation of irritable tissues. We may have in our body organs which are apparently healthy, but there may be one small organ, e. g., the pituitary body, which is diseased, and although the condition may be unknown, there is a great loss in correlation of the entire body. In regard to the investigations mentioned by Dr. Wahrer the most recent commentators are of the opinion that the results of some of the experiments are not as given by the investigator himself; that many mistakes have been made in the conclusions. The investigations in the animal kingdom at the present time are very interesting. We accept the conclusions of Burbank for the vegetable kingdom; but as in the animal kingdom the high and low forms of life are very different, so there is still a greater difference between the vegetable and animal forms of life.

That which concerns physicians most is the transmission of characteristics of physical conditions from the parent to the child, which will be for the betterment of the community. Many teach that the child who is born in the hovel of parents who are drunkards or degenerates will be a degenerate; not because of the environments, but because of the parentage. This he does not accept. While we should accept the teaching of Dr. Holmes on the preparation of a child many years in advance of its birth, yet he believes that the environment in which we live has much to do with what we ourselves or our children shall be. An illustration of this is seen in a young man who has passed from the country to the city. He has been virtuous and all the community has considered him such. When he reaches the city and becomes associated with companions of bad habits he may change completely. If the young man had the acquired characteristics which were stable and which would be permanent throughout his life, why should he, when placed in different environment, become different? Dr. Rhodes thinks children will be in accord with the environments in which they live. He studies this subject for the pleasure it gives, but is no nearer the solution at the present time than when he began, nor does he ever expect to be.

Dr. D. S. Hanson, Cleveland, Ohio, called attention to the rapid changes due to environment. For instance, it takes years and years of careful selection of seed, as in raising corn, and requires good soil to produce an ear of corn with the requisite number of seeds to cover the cob. Yet that good seed, planted successfully for a number of years, if placed in poor soil will produce a corn-cob not covered with seed. In other words, poor environment will soon destroy all that was gained by heredity. This will work out also in the animal kingdom. We see horses bred for years and a great speed developed. If such a horse is put into a plow and given the same surroundings as an ordinary horse and all training stopped, in the course of two or three generations there will be a breed incapable of development as were the former ones. In other words, environment makes rapid changes, but the changes of heredity are slow.

Dr. R. B. Gilbert, Louisville, Ky., agreed that the subject of maternal impressions is a big one. He believes that it is well established that accidents to the fetus in utero result from impressions made on the mother or even from traumatisms. He had hoped that Dr. Wahrer would make it plain just how these maternal impressions exist and what is the physiologic law governing them.

Dr. G. E. Robbins, Chillicothe, Ohio, said that he can not believe in heredity further than as a reproductive function. He can not but feel that it is environment that develops the race as we see it. If this were not true we would not be so careful of our children. As parents, said he, we are extremely careful how we rear them and how they are placed. Outside of the purely physical characteristics that may be transmitted he has no faith in heredity, but he does believe in environment.

Dr. M. E. Dunning, Newburgh, N. Y., referred to the children of the blind and deaf. Blindness is much less frequently transmitted to the offspring than deafness. More parents are born deaf than blind. A few years ago in certain statistics it was found that about 10 per cent. of the children were born blind and that the majority of parents had acquired their blindness through accident or disease. It was found that the blindness which had been acquired by the parents was transmitted so seldom to the offspring that it seemed almost an accident when it did occur.

Dr. Wahrer said his paper was certainly liable to misconceptions. He wanted to make himself clear on the point of maternal impressions. He does not believe in them in the usual understanding of the term, and they can not be substantiated except by the most careless, unscientific, hear-say evidence. The first thing many mothers ask is, "Doctor, is the child marked?" If a child is born with a deformity some one is sure to believe that the father or mother has been guilty of some sin or indiscretion. Why should the innocent one be punished? Dr. Wahrer does not believe in the idea, and the trend of medical education is away from it.

His paper was not intended to be a full treatise on heredity. It has been said that certain diseases are hereditary, but this idea is fifty years behind the time. Tuberculosis is not hereditary. We don't know whether cancer is inherited. The same thing is true of many diseases of the child. He said a study of this subject by every pediatrist would give him a different viewpoint on many things pertaining to the chld and would be to the mutual betterment of the child and its medical attendant.

A FURTHER CONTRIBUTION TO THE STUDY OF STOOLS OF STARCH-FED INFANTS.*

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The work was undertaken with a view to adding to our information of the digestive capacity of infants for starch foods, a subject on which we have had many and varying expressions of opinion, based on clinical observations.

All the infants on whom tests were made were inmates of the New York Infant Asylum. The advantage of making such a study in institution children is obvious, when we remember that the feeding of such patients (the amount of starch given, for example) can here be kept in perfect control. Further, the test is more severe, for the reason that the institution child does not possess the vigor and vitality of those more fortunately situated.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The study comprises the observations made on eighty-seven children, 677 stool examinations having been made. Because of defective technic and errors in the early examinations, which our time allowance does not permit us to discuss at this time, the findings in twenty-seven children, comprising 353 examinations, are excluded.

The report to which we will call your attention covers observations on sixty children, 324 examinations having been made. The stools were collected as follows: One ounce tin ointment boxes with the child's name pasted on the cover were given the nurse in charge. A close watch was kept on the children, who were so grouped as to make this possible. As soon as an evacuation occurred, a portion of the stool was placed in the tin box and sent to the laboratory. It was our intention to have at least one examination of a stool on five successive days from each patient.

In order to make the test a severe one, raw barley flour was used for the feeding which was cooked one and one-half hours. In some cases barley water formed the milk diluent; in others it was given plain as the only nutriment.

The delicacy of the iodin test for starch is much greater than is generally supposed. A starch solution, 1 to 300,000, is given by Hill as the possibility of the iodin test. In familiarizing ourselves with the color changes, using starch solutions of various strengths, we found that a solution, 1 to 10,000, reacted markedly to iodin.

The method which we found the most reliable and which was used exclusively in the sixty cases was that known as the von Jaksch test. A considerable portion of the stool, a piece the size of a pea or larger, was placed in two drachms of water, boiled and shaken so as thoroughly to disintegrate the fecal particles. A few drops of Lugol's solution were then added and the solution was filtered and cooled. If starch is present, the characteristic blue color appears. Filtration of the solution appeared to make but little difference as to the delicacy or reliability of the test. In the cases in which starch was not found, several portions of the stool were examined in order to make the examination thorough.

The ages of the sixty children were as follows: Seven were under 4 weeks; thirteen were between 1 and 3 months; fifteen were between 3 and 6 months; eighteen were between 6 and 9 months; seven were between 9 and 12 months; twenty-five were in good health; thirty-five were delicate, below normal weight and vitality. Of these thirty-five, four had bronchopneumonia and one had nasal diphtheria and was removed from the institution. Fourteen had acute diarrhea, three hereditary syphilis, three athrepsia, one sepsis, three acute bronchitis and three marasmus. In two, one examination was made; in one, three examinations were made; in one, four examinations were made; in thirty-five, five examinations were made; in six, six examinations were made; in three, seven examinations were made; in two, eight examinations were made; in ten, nine examinations were made.

In thirty-three children the examinations were persistently negative to starch. Of these, 22 were 6 months old or older, 11 being under 6 months. Among those under 6 months, one was 19 days old; he took 142 grains of flour daily, the stool being negative to the two examinations made on two successive days. One was 21 days old; he took 225 grains every twenty-four hours. One was 5 months and 26 days old; he was given 375 grains daily. Five examinations were made, all being negative. One was five and a half months of age. For three days 450 grains were given. It was then thought wise to increase the flour and test his digestive capacity. Accordingly, 1,560 grains were given daily for two days. The stools failed to respond to the iodin test. One was 1 month and 22 days old. The patient's condition was thin and he had diarrhea. Four hundred grains were given the first day followed by a negative stool. Three hundred and ninety grains were given on four successive days, the stools remaining negative. One was 1 month and 19 days old; 185 grains were given for three days; stools negative. The flour was then increased to 300 grains for two days; the stools remained negative. In 14 of these negative cases there was moderate diarrhea and in one severe diarrhea.

Seven cases were persistently positive. One was a well-developed 8-day-old child, weighing 8 pounds and 5 ounces. For two days he received 255 grains daily, the stool showing positive to both tests. For the next three days he was given 127 grains daily; the stools still showed positive. The flour was then reduced so that only 63 grains were given in 24 hours. The stools showed positive during the two days of its administration. Another was a child 9 months of age with acute diarrhea. But 250 grains were given daily; five examinations on five successive days were made and all were positive. Another was that of a three and a half months old child; there was a moderate diarrhea; three to four passages daily. Six hundred grains were given daily; five examinations were made on five successive days and all were persistently positive. One had a septic cord. Among the seven persistently positive two had diarrhea and four were very young, under 1 month.

The remaining twenty children showed sometimes positive, sometimes negative, sometimes red at the different examinations. As to those which reacted red we will refer later. Eight were positive in the majority of the examinations and are recorded as showing a positive tendency. All of these had diarrhea. Twelve were negative in the majority of the examinations on the different days and are recorded as showing a negative tendency. Eight of these had diarrhea. An interesting case in this group was a child 2 months of age who had diarrhea. On the first day he received 300 grains with an absence of milk from the diet. The starch reaction was marked. On the second day he received 200 grains; starch still showed positive. On the third day 300 grains were given and repeated on three successive days. As a result of cutting off the milk diet the stools improved and the examinations thereafter for three days were negative for starch.

Of the twenty-seven who showed starch at some time seven were under 1 month old, five were between 1 and 2 months old, seven were between 2 and 4 months old, making nineteen under 4 months old; five were between 4 and 6 months old, three were between 9 and 12 months old.

Among the sixty cases, 41 showed a good starch capacity; of these, 11 had diarrhea and 19 showed poor starch capacity. Of these, one was 8 days old; the others had diarrhea or were marasmic.

In the testing of solutions of starch of different strengths, plain and dextrinized, with iodin it was found that a starch solution which was boiled, diastase added and then cooled, produced a pinkish red color on the addition of iodin, this being the reaction of dextrin to iodin.

"The first step in the digestion of starch is the formation of soluble starch, amylodextrin. In the second stage the soluble starch is decomposed into maltose and a substance giving a red color with iodin. This substance has been given the name of erythrodextrin by Brücke. In the third stage this erythrodextrin is further split up into a dextrin, which gives no coloration with iodin and is called achroodextrin and a further quantity of maltose. In short, the digestion of starch consists in breaking up by several more or less well defined stages through a process of gradual hydrolysis of a very complex molecule into simpler ones. Starch and water and the presence of a suitable ferment yield maltose and the different dextrins."

The dextrin reaction was present at times in ten children, having been found in 18 examinations. We interpret this reaction as meaning that dextrin was present in the stool, representing an incomplete starch digestion, due, perhaps, to the too rapid passage of the fecal contents, as it was present in several of the diarrhea cases; or it was due to a deficiency in diastatic enzyme, not enough being present in the intestine to produce a complete splitting up of the starch product.

That some of the starch may have undergone fermentation in the intestine is, of course, possible. That it was not a factor of great consequence is proven in that the child did not evidence any more bowel distension than usual. Dextrin was present at times in a considerable number of the examinations, showing a partial conversion due to the presence of starch enzyme. Further, the children were maintained in fair nutrition during the period of the exclusive meal diet. Several of the meal-fed infants in whom the stools were negative to iodin were delicate and of very tender age. This led us to undertake the study of the stools of infants fed exclusively on the breast with a view to determine, if possible, the presence of starch enzyme in the feces in the very young. Of the stools in 26 children, 161 tests were made and starch enzyme found in all. The ages were: Under 2 weeks, 22; between 1 and 2 months, 3; one, the oldest child, was 2½ months old.*

DISCUSSION.

Dr. Samuel Amberg, Baltimore, said that the starch reaction in the feces being changed with the change of food may perhaps be explained by the fact that the bacterial flora of the intestines is dependent to a large extent on the food given, and that some of the intestinal bacteria certainly possess amylolyptic power, although sugar may not be produced. It has been shown that the pancreas of young infants contains diastase. In regard to the disappearance of starch in the intestinal canal, besides the ferments produced by the organism, the bacterial flora of the intestines must be taken into consideration.

Dr. Godfrey R. Pisek, New York City, said that many children are brought to the dispensaries who have been fed on starches in the early weeks and have done well. Those who believe in the modification of cow's milk with cereals want to use this method not only after six months, but before six months, if it is proved that the starch will be digested. As Dr. Kerley pointed out, there are cases that will fail here as they will fail with milk alone and we should not condemn from isolated observations.

Dr. Thomas S. Southworth, New York City, said that the most valuable findings were those in which no starch was found in the stools, because they clearly demonstrated that starch solutions can be taken care of by the young infant. It was also shown that none of the children were disturbed by the starch, even though, apparently, some starch reaction was obtained in the stools. Dr. Kerley mentioned the length of time which he cooked the raw starch, 1½ hours. This suggests the remark that there has been of late a more general awakening to the fact that all starch preparations used as foods should be cooked longer than has usually been the custom. Recently one of the agents for a prepared food told him that they had changed the minimum of time for cooking this food from six to thirty minutes.

Dr. T. W. Kilmer, New York City, remarked that there should be no age limit in regard to the giving of starch, the quantity of milk or cream a baby should take, or in regard to its clothing. Some babies at one month can digest more cream than others at nine. More attention should be paid to the stools to see whether the baby is digesting the starch.

Dr. A. H. Wentworth, Boston, said that although the modification of milk has been brought down to a fraction, it is unnecessary. If it had been necessary all the babies would have died years ago. The average baby does well on a rough mixture. It would be foolish in the early months of the baby's life to give it more digestive work than it can do and, therefore, the milk should be modified in a manner to suit that digestion. Similarly, the starch should be reduced to an amount that could be taken care of by the baby. The time for the child to become gradually accustomed to a modified diet is during the early weeks of life.

Dr. Kerley said that feeding babies in country districts is an entirely different matter from feeding them in larger cities. In the country they have fresh milk, fresh air and usually a healthy child to start with, without the poor heredity and unfavorable environment which often obtains in city children. There is really no comparison to be made between feeding children under the two conditions.

THE PATHOLOGY OF BILE.*

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That the bile is altered as a result of disease was noticed by Tacconi[1] as far back as 1740. He remarked that in fever the bile changes in color and taste. Tacconi's observations were very few and superficial. Much more accurate were the studies of Uffelmann[2] on the subject, carried out in 1874. He had the good fortune to make observations on the flow of bile from a patient with a biliary fistula who had an attack of pneumonia and noticed that the secretion of bile ceased with the onset of the disease. The same patient was later taken sick with dysentery. Again there was a disturbance of the activity of the liver. The secretion of bile almost stopped, he reported, with the manifestation of the disease.

Similar observations on the human subject were made more recently by Noel Paton and J. M. Balfour.[3] About ten weeks after cholecystotomy for gallstones was performed the patient had a rise of temperature, which peristed for thirteen days. During the pyrexia the secretion of bile fell from 650 c.c. to 475 c.c. in twenty-four hours. There was likewise a marked diminution in the excretion of total solids. Paton and Balfour report a reduction from 9.8 gm. to 3.709 gm. in twenty-four hours, or a decrease to 37 per cent. of the normal output. After a second febrile attack, which occurred later, the difference between the rate of secretion of bile in health and in disease was even more pronounced. During the non-febrile interval the average amount of bile secreted in twenty-four hours was 592 c.c. During the febrile period it fell to 238 c.c. in twenty-four hours, a reduction of about 60 per cent. The solid constituents suffered almost a like reduction of about 65 per cent. It is of interest to observe that it was the organic constituents alone that suffered diminution during fever in the case reported. The inorganic constituents remained unchanged, or were but little diminished. Among other changes in the bile during fever that were noticed by these two observers was a diminution or total absence of color.

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* A complete report of this work was read before the American Pediatric Society at Atlantic City, June 1, 1906, and will appear later in the Archives of Pediatrics and in the transactions of that society.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Physiologic Chemistry, Columbia University.

[1] Tacconi: "De raris quibusdam hepatis aliorumque viscerum affectibus observationes," Bologna, 1740.

[2] Uffelman: "Ein physiologisch-pathologischer Versuch," Deutsch. Arch. f. klin. Med., 1874, vol. xiv, p. 241.

[3] Paton, Noel, and Balfour, J. M.: "Reports from the Laboratory of the Royal College of Physicians," Edinburgh, 1891, vol. iii, pp. 191 to 240.

That fever induces important changes in the character of the bile is made further probable by chemical studies of bile removed from the gall bladder at autopsy. Thus Charcot,[4] in his work on the diseases of the liver and kidneys, states that the bile salts are diminished in typhoid, in tuberculosis, pneumonia, hepatitis of tropical countries, while fat, leucin and tryosin are increased in quantity.

The studies of clinicians and pathologists on the changes in the secretion and composition of the bile in fever have received some confirmation by experiments on animals. Pisenti[5] carried out a series of observations on dogs provided with permanent gall-bladder fistulas in which pyrexia was induced by the subcutaneous injection of putrid material or by confining the animal under observation in a chamber kept at a temperature raised above the normal, but still compatible with life. In dogs with septic fever he found a marked diminution in the quantity of bile secreted as well as a reduction of the total solids as compared with the controls. Two days after the onset of fever the secretion was improved both as regards amount and composition, but it never reached in these respects the controls obtained in afebrile condition. Diminished secretion of bile was likewise noticed in dogs with "retention fever," but the percentage composition of solids was greater than in normal bile. In both cases the changes induced in the bile seemed to be due to functional derangement and not to structural changes of the liver, no lesions having been found by Pisenti on microscopic examination of the organ.

The study of the secretion of the bile in malignant disease has received but scant attention. It is, therefore, of interest to note the results obtained by Yeo and Herroun.[6] These observers reported rather careful studies they made on the bile of a patient with a biliary fistula who had carcinoma of the common bile duct. Their protocols show markedly diminished secretion of bile. In 24 hours only 375 c.c. of bile were collected, the total solids of which amounted to 1.24 per cent. They also estimated the quantity of bile salts and found 0.165 per cent. of sodium glycocholate and 0.055 per cent. of sodium taurocholate. As in the case reported by Noel Paton and Balfour,[3] the quantity of inorganic matter showed no deviation from the normal. That the bile is influenced in cancer of the liver is also maintained by Charcot.[4] He stated that in this condition the bile is poorer in bile salts.

In the investigations on the bile considered thus far, it will be noticed that the study of the bile pigments was not given much attention. Considerable work was done on this subject by clinicians who investigated the subject experimentally on animals with the object of elucidating the pathology of jaundice, and by pathologists who were occasionally attracted by the unusual appearance of the bile in some cases examined postmortem.

To pathologists belongs the credit of the interesting observations that in certain forms of disease the widest range of variation in color is possible. Thus Frerichs[7] describes the contents of the gall bladder in atrophic cirrhosis as a pale liquid rich in mucus. Ritter[8] found colorless bile in the gall bladder of cases of fatty degeneration of the liver. Andral,[9] in his clinic, recorded pigmentary acholia in fatty degeneration of the liver, extreme atrophy or hypertrophy of the liver. Pouchet,[10] who examined the bile at autopsy in a number of patients who died of cholera, stated that the bile was colorless. Moxon[11] found the same in a case of stricture of the hepatic duct. Hanot[12] and his pupil Letienne[13] claimed to have found white bile in tuberculosis of the liver. According to the latter observers, the color of human bile is subject to considerable variations. In 53 cases examined postmortem, the bile in some was black, in some brown, yellowish green or red An increased amount of bile pigment, as is well known, has been found in conditions accompanied by rapid destruction of red blood cells. Thus Stadelmann[14] found relatively great quantities of bile pigment in the bile after poisoning animals with arsenuretted hydrogen, toluylendiamin and phosphorus. In the human subject, Rosenstein[15] and von Noorden[16] maintained that the bile is richer in pigments in certain forms of cirrhosis of the liver. The truth of this statement was questioned by Minkowski.[15] If the enterogenic origin of urobilin from bile pigment be accepted, the presence of large quantities of urobilin in the urine found in a variety of conditions, as after hemorrhage, in cardiac diseases, intoxication, certain forms of infectious diseases and fever, will serve as indirect proof of the increased formation and elimination of bile pigments in disease.

The presence of abnormal constituents in the bile has been looked for by several investigators who made observations on man and animals in various pathologic conditions during life as well as postmortem. Thus, according to Bouchard,[17] unaltered blood pigments have been found after poisoning rabbits with pyrogallol, potassium chlorate, aniline, toluylendiamin, arsenic and phosphorus. After the injection of phloridzin in dogs subcutaneously, intraperitoneally or into the portal vein. Levene[18] found considerable quantities of dextrose in the bile. Mosler[19] found a glycocholia after intravenous injection of 65 to 80 gm. dextrose into dogs. He also found cane sugar in the bile when injected in a similar way. In bile of dogs with pancreas diabetes, Brauer[20] detected considerable quantities of dextrose. According to Naunyn,[21] dextrose was present in the bile of rabbits in which puncture diabetes was induced. He also reported the presence of dextrose in the bile of normal rabbits. According to Charcot,[4] after ligating the ureters in birds, uric acid in the form of sodium urates was found in considerable quantities in the bile. Traces of urea have been found in normal bile of animals, as well as in the human bile, but no systematic quantitative determinations of any value have been made in health or disease.

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[4] Charcot: "Leçons sur les Maladies de Foie et des Reins." 1877, p. 83.

[5] Pisenti: "Ueber die Veranderungen der Gallen abson derung während des Fiebers," Arch. f. Exp. Path. u. Pharm., 1886, vol. xxi, p. 218.

[6] Yeo and Herroun: Jour. of Physiol., 1884, vol. v, p. 116.

[7] Frerichs: "Untersuchungen über die Galle," Hanover, 1845.

[8] Ritter: Compt. Rend., 1872, vol. lxxiv, p. 814.

[9] Andral: Clinique Médicale, 1839, vol. ii, p. 275.

[10] Pouchet: Compt. Rend. de l'Acad. des Sciences, 1884, vol. xcix, p. 847; also 1885, vol. c, p. 220.

[11] Moxon: Trans. Path. Soc., London, 1873, vol. xxiv, p. 129.

[12] Hanot: Semaine Médicale, 1895, No. 23, p. 197.

[13] Letienne: "De la Bile et l'Etat Pathologique." Paris, 1891.

[14] Stadelmann: Arch. f. Exp. Path. u. Pharm., 1881, vol. xiv, p. 231; also 1882, vol. xv, p. 336; 1882, vol. xvi, pp. 118 and 221.

[15] Minkowski: "Störung der Leberfunction. Ergebnisse der Allgemeinen Pathologie," Lubarsch und Ostritag, 1895, vol., ii, p. 679.

[16] von Noorden: "Lehrbuch der Path. der Stoffwechsels," 1893, p. 286.

[17] Bouchard: Traite de Pathologie, 1895, vol. i, p. 966.

[18] Levene: Jour. Exp. Med., 1897, vol. ii, p. 107.

[19] Mosler: "Untersuchungen über den Ubergang von Stoffen aus dem Blute in die Galle," Giessen, 1857.

The presence of albumin in the bile under pathologic conditions has been noticed by several observers. Boisson[22] was probably among the earliest observers to discover albumin in the bile. He was the first writer who used the term albuminocholia to designate this condition. Lehmann,[23] who examined, postmortem, bile from the gall bladder in 100 cases, found albumin in nutmeg liver, fatty liver and parenchymatous hepatitis. Pouchet[24] found albumin in the bile of six patients who died of cholera. Among recent observers may be mentioned Brauer,[20] who has reported similar findings in typhus and parenchymatous nephritis. Hallauer[25] analyzed the bile in a number of cases. He found albumin in 5 out of 6 cases of cloudy swelling of the liver, associated with pneumonia, miliary tuberculosis and sepsis, also in some cases of fatty liver, none in cirrhosis of the liver. Experimentally, in rabbits, he obtained an albuminocholia after intravenous injection of albumose. According to Mosler,[19] albumin was found in bile after the intravenous injection of large quantities of water.

Within the past two years several other investigations on the experimental production of albuminocholia have been described. Brauer[20] reported the presence of albumin in the bile of dogs after giving ethyl alcohol and small quantities (3 to 5 c.c.) of amyl alcohol. At his suggestion, Pilzecker[26] carried out a similar study of the bile from dogs with permanent gall-bladder fistulas after poisoning with phosphorus and arsenic. His result seemed to corroborate the work of Brauer. Another interesting statement both observers made is thus: Albumin passes more readily into the bile than it does into the urine. In this connection attention might be called to the work of Hallauer and Gürber,[27] who, after the intravenous injection of casein solution into rabbits, recovered considerable quantities of it in the bile as well as in the urine. They also found albumin in the urine and in the bile.

While not disputing the possibility of albuminocholia under the conditions of the experiments of Brauer and Pilzecker, it seems they have not proved that the albumin they found in the bile was eliminated by the liver. It is just as possible that it was due to inflammation of the gall-bladder and biliary passages which they observed on autopsy. To reduce the possibility of error from this source a number of experiments were carried out on dogs, each of which was under anesthesia with temporary biliary fistula. The neck of the gall bladder in each case was ligated previous to the introduction of a cannula into the common bile duct. The bile was collected and tested for albumin according to Brauer's method. Either amyl alcohol or ethyl alcohol alone or a mixture of the two was injected into the stomach or small intestines. The bile collected was, as from the controls, tested for albumin.

The results obtained were not uniform. Distinct cloudiness on boiling appeared in the bile of one experiment before and after poisoning with amyl alcohol. On the other hand, in another experiment the bile remained perfectly clear on boiling before and even after injection of amyl alcohol. After administration of small quantities of amyl alcohol, 5 c.c., etc., there was no albuminocholia. Only after the injection of 20 to 30 c.c. did the bile become distinctly cloudy on boiling after slight acidification with acetic acid. In none of the experiments carried out as indicated were found more than traces of albumin in the bile. One experiment on a dog poisoned with ricin was an exception. The dog received two subcutaneous injections of ricin, 1 mg. per kilo, in 3 days. He was found dead the day after the last injection. The bile removed from the gall bladder showed the presence of a considerable quantity of albumin.

It seems probable, therefore, that the albuminocholia after poisoning with ethyl alcohol or amyl alcohol, as observed in animals with permanent fistulas, might have been due to irritation of the bladder and only perhaps slightly to lesions in the liver. The question whether albumin passes more readily into the bile than it does into the urine was also studied. The results in every instance examined showed considerable quantities of albumin in the urine after poisoning with amyl alcohol.

A few experiments on rabbits have also been undertaken. Cantharidin or arsenic was injected subcutaneously until albuminuria or hematuria appeared. A biliary fistula was then made and bile collected. In none of these experiments was albumin found in the bile.

Finally, I refer to some studies on the toxicity of bile obtained in pathologic conditions. Pouchet,[24] whose work on the subject was quoted previously, found that the bile in cholera is highly toxic for frogs. On making a chemical examination he claims to have isolated the poison which is in the nature of a pyridin base. Recently Meltzer and I[28] found, in the course of our investigations on the toxicity of bile of various animals, that the bile of the same animal is more toxic after double nephrectomy than before the kidneys were removed. We also noticed that the exciting element of the bile is the one which becomes more predominant after removal of the kidneys.[29]

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[20] Brauer: Ztschr. f. Physiolog. Chem., 1903-1904, vol. xl, p. 182.

[21] Naunyn: Arch. f. Exp. Path. u. Pharm., 1874, vol. iii, p. 167.

[22] Boisson: "De la Bile, de ses Varietes Physiologiques et ses Alterations Morbides," Montpellier, 1844.

[23] Lehmann: Centrbl. f. Med. Wiss., 1867, vol. v, p. 172.

[24] Pouchet: Compt. Rend., 1885, vol. c, p. 220.

[25] Hallauer: "Verhandlunger der Physik. med. Ges," Würzburg, 1904, p. 186.

[26] Pilzecker: Ztschr. f. Physiolog. Chem., 1904, vol. xli, p. 57.

[27] Hallauer und Gürber: Ztschr. f. Biol., 1904, vol. xiv, p. 372.

[28] Meltzer and Salant: Jour. Exp. Med., 1906, vol. viii, No. 1, p. 140.

[29] For additional literature the reader is referred to: Fauconneau-Dufresene: "La Bile et ses Maladies," Mem. de l'academie de med., 1847, vol. xiii, p 136; Gorup-Besanez: "Untersuchungen über die Galle," Hanover, 1845; Thomas: Dissertation, Strassberg, 1896; Terrier: Bull. de l'acad. de Med., 1890; Kleefeld: Ueber die Funktion, Operation und Sektions der Gallenblase, Strassburg, 1894; Affanassiew; Pflüger's Arch. f. Geol. Physiolog., 1882-3, vol. xxx, p. 424; Affanassiew; Virchow's Archiv., 1884, vol. xcviii, p. 460; Tarchanoff: Arch. f. Ges. Physiolog., 1874, vol. ix, p. 329.

Gastric Syphilis.—G. E. Armstrong, *Montreal Medical Journal*, June, reports a case of serpiginous ulcer of the stomach, probably of syphilitic origin, successfully removed by operation after the failure of medical treatment. The patient three years after the operation was in perfect health, of standard weight and free from indigestion.

TUBERCULOSIS OF AN ADENOMYOMA OF THE UTERUS.

WITH A PATHOLOGIC REPORT.*

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That tumors in general are not subject to invasion by bacteria, other than those of the pyogenic group, is well known. The simultaneous occurrence of carcinoma and tuberculosis in an organ or tissue is occasionally reported, but the invasion of other tumors by the tubercle bacillus is very unusual. This is especially true of uterine myomata which are seldom involved in even the most extensive tuberculous infections of the adjacent mucosa. The case here reported is of interest not merely on account of the rarity of the condition, but also because of the absence of tuberculosis in the mucosa of the general uterine cavity with but a slight lesion in one tube. The tuberculosis of the myoma and that of the tube were secondary to tuberculosis of the lung, but apparently independent of one another and due to infection through the blood stream. As a fairly exhaustive review of the literature fails to reveal an analogous condition our observation appears to be worthy of record. A detailed report follows:

Clinical History.—H. E., aged 20, an only child, unmarried, was admitted to the Cohoes Hospital January 10, 1906. Her family history offers several points worthy of note. Her mother presents evidence of tabes and her father died at forty-six of a valvular lesion of the heart which formed part of the plainly luetic condition. Her grandfather, on the mother's side, had syphilis, and the grandmother succumbed to general paralysis. There is no direct tuberculous heredity.

Personal History.—The patient had measles in early childhood and showed some indications of hereditary syphilis, viz.: A slowly-healing ulcer of right leg and a nose of the saddle type.

Menstruation beginning at sixteen, has always been very scanty, irregular and tardy, with occasional amenorrhea for periods of five to six months. An epistaxis, apparently vicarious, had been frequent. Menstruation, at first painless, later became more difficult. At no time had there been leucorrhea. Dec. 14, 1904, a pelvic examination showed the uterus to be very small, of the infantile type, and lying in a moderate degree of retrodeviation, with some tenderness in the region of the left ovary.

July 30, 1904, the patient had a sudden attack of hemoptysis. A careful physical examination gave evidence of a localized adhesive pleuritis of the left apex, overlying an area of tuberculosis, involving a considerable part of the apex and extending down and outward toward the axillary line. After a sojourn at the seashore and in the mountains she was considerably improved in general health, while the physical signs had manifestly retroceded and in part entirely disappeared. The following winter (1904) was passed in the mountains and she returned in April still more improved. July 15, 1905, she had a second very slight hemoptysis, but improved rapidly, gaining by November 13 twenty-nine pounds.

Present Illness.—Abruptly, about November 21, she began to complain of soreness and pain in the hypogastric region. The pain was dull in character, intermittent, returning especially in the latter part of the day, and exaggerated by fatigue and standing. The patient had not menstruated in five months. As the pain continued unabated for a week, without any appearance of the menstrual flow, she was advised to return home. On bimanual examination, the cervix was found deviated toward the pubes and the Douglas cul-de-sac occupied by the enlarged fundus of the retroverted uterus. The fundus gave the sensation of a firm mass of about the size of a mandarin and somewhat irregular in shape, being larger on the left, and very slightly movable. The left lateral cul-de-sac was also occupied by another swelling less firm and less voluminous, having neither the fibromatous woody feeling of the main tumor nor the fluctuation of a cyst; this second enlargement seemed almost contiguous with the uterine body. The condition of the right adnexa could not be defined. These conditions were not present at the previous examination, eleven months before.

At this stage, the pulmonary condition presented a marked change. While no advancement of the disease was evident in the left apex and the corresponding axillary region, two new foci had appeared; one in the left base posteriorly and the other in the right interscapular space, close to the spinal column.

December 15, menstruation occurred and lasted five days. After a few days interruption, there was again some slight bloody discharge. This discharge kept on thereafter, more or less irregularly, until the time of operation. The pains became gradually more intense, finally requiring the daily use of some sedative for their control.

January 5, the size of the pelvic mass was considered to have increased materially. On that same date, a few tubercle bacilli with a great number of diplococci and streptococci were found in the sputum. Three previous examinations of the sputum had been negative.

Much concern was naturally entertained as to the exact nature of the uterine condition. The first diagnosis was simply one of a solid tumor, probably a fibromyoma, occupying the posterior wall of the uterus. A closer study, however, of all the evidence suggested the possibility of a tuberculous lesion of the uterus, and this possibility was carefully explained to the family.

Of course, on account of their rare occurrence, the diagnosis of any of the pelvic forms of tuberculosis is seldom made until the abdomen is opened, and even then not infrequently only after the specimen is in the hands of the pathologist. Uterine tuberculosis has no well-defined symptomatology. In the present instance, if a probable diagnosis of a tuberculous condition of the uterine growth was arrived at before operation, it is willingly conceded that we expected to find as well a similar condition of the adnexa and of the peritoneum; that is, a general abdominal tuberculosis. In holding this view, we were influenced by the existing pulmonary condition and by abdominal symptoms which predominated especially during the very last weeks. When the abdomen was opened, it was a surprise, therefore, to find that, aside from numerous and extensive adhesions of an inflammatory nature, the general as well as the pelvic peritoneum was free from tuberculosis.

Surgical Report.—January 11, laparotomy; median incision nine centimeters long. A coil of small intestine was found drawn down into the pelvis and firmly adherent close to the right uterine cornu, evidently accounting for the pain in the abdomen which had been so striking a feature. Both ovaries were fibrocystic. The uterine body, enlarged to the size of an orange, lay deeply in Douglas' cul-de-sac and was so matted up in adhesions that a subtotal hysterectomy was performed. The appendix was inspected and, being healthy, was left undisturbed.

Convalescence was uneventful, and the patient reported April 16, that she had gained ten pounds in weight and was in the best of health.

PATHOLOGIC REPORT BY DR. RICHARD M. PEARCE.

Gross Description.—The specimen consists of a uterus with its appendages. The former is exceedingly firm and almost globular in shape, measuring 17.5 cm. in circumference just below the level of the attachment of the Fallopian tubes and 19.5 cm. over fundus and cervix. The cervix protrudes beyond the globular body as a short, thin, circular canal, 0.8 cm. long and 0.4 cm. thick. Its edges are smooth, rounded and grayish-white in color. The peritoneal surfaces are covered more or less uniformly by course fibrous adhesions. On section the entire length of the uterus from cervix to fundus is 6.8 cm., the greatest thickness, antero-posteriorly, 5 cm. The body itself is 6 cm. in length. The anterior wall is normal in appearance, though slightly thickened, and measures 1.4 cm. at the mid portion of the uterine cavity. The fundus is 1.7 cm. in thickness. The posterior wall is occupied by a globular mass extending from the median line of the fundus to the internal orifice of the cervix (5.2 cm.) and laterally from the peritoneum to the uterine cavity (4 cm.). This mass is composed of firm, dense, greyish-white tissue having a whorl-like appearance and resembling the structure of myoma in a general way, but riddled everywhere by cavities varying from those miliary in size to those 0.5 cm. in diameter. From these cavities escapes a thick, yellow, more or less tenacious pus. The walls of the larger cavities, after the escape of the fluid pus, are seen to be lined by a yellow, soft granular material, suggestive of caseation. These areas extend to within two millimeters of the peritoneal surface and toward the median line approach and apparently involve the mucosa. The cervix is not involved. The uterine canal is 4.7 cm. long, 1.2 cm. of which is cervical. It is greatly narrowed and 2 cm. below the fundus is almost entirely obliterated. In or beneath the mucosa covering the lower portion of the tumor are numerous closely-set, fine, yellowish miliary areas. These do not involve the mucosa of the anterior wall nor that of the cervix.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The tubes and areas are atrophied. The left tube and ovary are bound to the uterus by fibrous adhesions; the right is free and has a smooth peritoneal covering. Each ovary contains a few small cysts.

Bacteriology.—Cover glass preparations of material from the cavities in the tumor, stained by methylene blue, show pus cells which take the stain well, many poorly-staining necrotic cells, and much granular detritus but no micro-organisms. Attempts to demonstrate the tubercle bacillus and the gonococcus are negative.

Agar, blood serum and hydrocele-agar tubes are sterile after 72 hours.

HISTOLOGIC DESCRIPTION.

Sections Passing Through Uterine Wall and Tumor.—The greater portion of such show a diffuse tuberculous process in a tissue composed of smooth muscle fibers and containing widely scattered tubular glands. The uterine wall proper, measured beneath the cover glass, is 3 mm. in thickness. No tubercles are present in the slightly thickened peritoneal covering, but between it and the musculature small tubercules are occasionally seen. In the muscle itself, which contains an increase of connective tissue, are a few well-developed tubercles with caseous centers. About the blood vessels are numerous lymphoid cells. The line between the normal uterine musculature and the tumor can not readily be demonstrated. The mucosa over the tumor in the upper portion of the uterus is intact but in the submucosa are irregular accumulations of lymphoid cells. At a point where the definite arrangement of the musculature ceases there is an abrupt transition to diffuse tuberculous tissue containing numerous giant cells and characterized by extensive caseation; few typical tubercles can be seen. In the midst of this are found here and there isolated areas of smooth muscle, containing tubular glands. These latter are lined for the most part by several layers of cylindrical cells, of the type found in the uterine glands, but are tortuous and show more or less irregular dilations. They are not infrequently arranged in clusters and have branching prolongations with but a single layer of epithelium. In the masses of muscle a moderate amount of connective tissue is present and also a slight infiltration of lymphoid cells. The glands are found throughout the new tissue, even at a distance of 2 cm. from the uterine wall and have no relation to those of the mucosa. There is no evidence that the channel of the tuberculous infection was along these glands.

Sections taken at three levels and passing through entire wall of apparently normal portions of uterus opposite tumor show no evidence of tuberculosis. The mucosa in each is normal. A section through the cervix shows no lesions.

A section across the entire uterine canal at a point of greatest constriction shows partial obliteration, but no tuberculosis of the mucosa. The lumen at this point contains a small plug composed of mucus, leucocytes and desquamated epithelial cells.

Right Fallopian Tube.—The mucosa is entirely destroyed. The surface is a chronic granulation tissue within its deeper layers more or less newly formed fibrous tissue. Epithelioid cells are not abundant and are very diffusely arranged. But one definite tubercle with typical giant cell is seen. An occasional oval fibrous and hyaline area is suggestive of healed tubercle, as are also a few small foci of lime salts. In the deeper layers of the muscle coat are accumulations of lymphoid cells and old blood pigment, but no tubercles.

The left Fallopian tube is atrophied, but otherwise not noteworthy. The ovaries are fibrous and contain a few small cysts but show no evidence of tuberculosis.

Careful examination of the peritoneal surfaces of the uterus, tubes and ovaries fails to reveal lesions of tuberculosis.

PATHOLOGIC DIAGNOSIS.

Tuberculosis of an adenomyoma of the uterus. Tuberculosis of right Fallopian tube. Atrophy of ovaries and Fallopian tubes. Chronic perimetritis and perisalpingitis.

REMARKS.

As already stated, we have made a search, although not exhaustive, of the medical literature for analogous cases, but have failed to find such.

Closely resembling the case here reported, however, is one observed at the gynecologic clinic of Zurich by C. Bole (du Locle).[1] A summary of this case reads as follows:

History.—Woman, aged 50; heredo-tuberculosis; menstruation at thirteen; leucorrhea. Patient married twice, no children. Dysmenorrhea and loss of strength.

Present State.—Uterus anteflexed, movable, slightly tender on pressure and about the size of a child's head in volume.
Diagnosis.—Uterine myoma.

Laparotomy.—Total hysterectomy after Freund's method. The tumor, when extirpated, is twice as large as one's fist. The macroscopic and microscopic examination showed that it was a rare case of myoma associated with an ascending uterotubal tuberculosis. The vaginal mucosa was not involved, and the etiology could not be determined.

This case, however, is not identical with the one here reported. The tumor is intramural, but the tuberculosis is spoken of as an ascending uterotubal infection, and the myoma as associated with it. From this it may be inferred that the mucosa alone was involved in the tuberculous process. This inference also finds support in the statement that the histologic researches bore only on "the superficial portions, in a state of necrosis." Thus, it would appear from these comparisons that our case might, indeed, deserve to be considered as unique.

Kelly[2] states that "tuberculosis of the endometrium is exceedingly rare as complication in the large myomatous uterus." He has met but one case and in this the disease had extended out into both tubes.

A last point not to be overlooked is the mode of infection or of transmission to the uterine parenchyma.

As regards the pathogenesis of the local lesions in our case, it seems very plausible that the adenomyoma constituted the primary lesion and that the tuberculous infection occurred secondarily. But how did this infection take place? How in this particular case was it transmitted from the lungs?

From the clinical history and from the findings at the time of the operation it seems fair to believe that the propagation of the lesions to the uterine tissue took place through the blood current, and in a similar manner to the only tube involved.

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1. Gynækologia Helvetica, 1903, p. 99.
2. "Operative Gynecology," vol. II. p. 381.

Infection by means of the blood stream seems to be well supported by the conclusions of M. Schakoff,[3] which may be given as follows:

Genital tuberculosis in women is generally secondary to a florid or latent tuberculosis of the lungs or of the peribronchial lymph nodes, less frequently to an intestinal tuberculosis. The genital tuberculosis is generally propagated by the blood stream, except in the case of vaginal tuberculosis, which may proceed from inoculation by contact.

Tuberculous peritonitis occurs frequently during the evolution of a genital tuberculosis, especially after a tuberculous salpingitis. Any portion of the genital tract may be affected; the tube is involved more frequently, the vagina less often. These inoculations take place by the blood stream; therefrom the uterus or the ovary may become infected by contiguity. Generally the uterus is infected by descending contagion; it may, however, be involved in the first place. A pre-existing disease and the puerperal state may act as predisposing causes. The uterine cervix is rarely the seat of tuberculosis. The tuberculosis of the ovary is almost always consecutive to a tuberculosis of the Fallopian tube, of the peritoneum, or of the rectum; the propagation occurs by contiguity or by way of adhesions. Independent foci may, however, be found in the ovary without any lesions of the surrounding structures; in such cases these foci have been set up by the blood stream.

In the above conclusions, the two points of practical bearing on our case are: 1. Genital tuberculosis in women is generally secondary to pulmonary tuberculosis. 2. In tuberculosis of the uterus or of the ovary, when the tuberculous lesions are found as independent foci without lesions of the surrounding structures, the inoculation has taken place by the blood current. That the latter would appear to be the case is indicated by the absence of tuberculosis in the mucosa, not only of the uterine cavity generally, but also in that covering the tumor itself. It is possible that alterations in the blood supply of the tumor caused a condition of degeneration or necrosis constituting a *locus minoris resistentiæ* and a point of selection for tubercle bacilli reaching these areas through the blood stream.

DISCUSSION.

Dr. Henry A. Christian, Boston, thought that in a case of this kind without close study two interpretations might be given of such a tumor mass. First, that the mass is a proliferative form of tuberculosis, such as frequently occurs in the lymphoid tissues; the other is that it is a definite tumor infiltrated by tubercle bacilli. The presence of glands in this tumor gives weight to the latter interpretation. It seems almost impossible to have these glands in the mass without its being a true tumor formation; moreover, their presence may have been necessary for the development of the tubercle bacillus. Ordinarily, in a fibromyoma there are not the conditions in its dense structure for the good growth of the organisms. In this case there is a loose cellular tissue about the glands which is more favorable for the growth of bacilli. The presence of the glands is of importance in simplifying a diagnosis and determining the character of growth.

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[3] "Contributions to the Knowledge of Tuberculosis of the Female Genital Organs," Gynäk. Helvet., 1904, p. 139.

Is Boric Acid Ointment Sterile?—On the basis of 125 examinations of boric acid ointment Nyman (*Farmaceutiskt Notisblad*, abst. in *Apotheker-Zeitung*, No. 59, 1906), comes to the conclusion that boric acid ointment with a minimum content of 10 per cent. of boric acid is sterile, but that the sterility of ointments containing less of the acid can not be assumed.

OCULAR INJURIES FROM FOREIGN BODIES,

WITH REPORT OF 420 CASES.*

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In the following paper are recorded the results of a study of 318 cases of ocular injury from foreign bodies in which Roentgen ray examination was made, the report supplementing a previous study made in 1901 of 102 similar cases. A tabulated statement of the 420 cases is given below.

For purposes of study the vitreous chamber is divided into three sections, the region of the equator including that portion 3mm. in front of, and 3mm. back of, the equatorial diameter; the ciliary region that portion in front of, and the posterior region, that portion back of, the outlined zone of the equator.

Position of body.	First series.	Present series.
In the eyelid	1	2
In the lens	3	14
In iris, or posterior chamber	1	4
In the ciliary region	24	27
Near the equator	21	69
Posterior part of eyeball	12	46
In the orbit	3	11
No body found by x-rays	37	145
Total	102	318

Of the total number of injuries, 356 were caused by particles of iron and steel, 23 by copper, 25 by bullets or small shot, and 16 by glass, stone or coal. In 17 cases the body was situated in the eyelid or orbit, in none of which did the eyeball on the corresponding side escape injury. In one the injury to the lid was complicated by an incised wound of the cornea, prolapse of the iris, and traumatic cataract, all of which must have been made by a second body which did not lodge in the eyeball, or by a blow from one of the workman's tools.

The right eye was injured in 178 cases and the left eye in 242 cases. The relatively greater frequency of injury of the left eye is probably due to the position taken by right-handed workmen in handling their tools and in chipping or hammering metal.

The majority of patients were referred to me for x-ray localization from the Wills Hospital, the Jefferson Hospital, the University Hospital and the Pennsylvania Hospital, and I am under obligations to the surgeons connected with these institutions who operated on the cases for assistance in recording the ultimate result in each case. Many of the patients have remained under observation since operation. Some have returned periodically for examination, others have been visited at their place of business or at their homes, so that the present condition of their eyes has been determined. In others it has been impossible to learn the late result because of removal from their previous homes, and adoption of other methods of livelihood.

In the first series of cases, which includes injuries seen from 1897 to 1901, there were 65 cases in which a foreign body was located in the eyeball or surrounding tissues. Since this published report, three eyeballs were removed, two for iridocyclitis a few months later, and one because of recurring hemorrhage into the interior of the eyeball four years after extraction of the steel. The ultimate result in these 65 cases, so far as data could be obtained, together with the results in the 318 cases of the present series, is as follows:

Eyeballs enucleated:	First series.	Present series.
Extraction not attempted or failed	14	19
Extraction successful; enucleated later.	8	26

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

	First series.	Present series.
EYEBALLS ENUCLEATED:		
No operation attempted	7	13
Bodies in the orbit or eyelid	4	9
Extraction failed	2	6
EXTRACTION SUCCESSFUL:		
Vision, between 6/6 and 6/12	7	20
Vision, between 6/15 and 6/60	4	13
Fingers or hand movements	0	7
Good light projection	9	27
Light perception	6	21
No light perception, eye normal size	0	6
Eyeball shrunken	4	6
No bodies shown by the *x*-rays	37	145
Total	102	318

The first series of cases covers a period during which the small Hirschberg magnet, operated by fluid batteries, was practically the only instrument available, and insertion of the magnet point into the vitreous was necessary in nearly every case. Notwithstanding the added traumatism of the magnet, the visual acuity in these cases has been retained up to the present time.

In the present series of cases, magnets with greater attractive power have been used, and, although a few of the surgeons have adhered to the method of introducing an elongated tip into the vitreous, most of the operators apply the large, short tip of the magnet at the wound of entrance or at an incision made in the sclera, only entering the smaller point when the magnet at the scleral opening fails to withdraw the body.

In a few instances the metal was removed by the Haab magnet, but in the majority of cases the Sweet magnet operated on the 110-volt lightning circuit was used. Bodies situated in the lens or in the posterior chamber were extracted by way of the anterior chamber, and this plan was followed in four of the bodies located in the vitreous chamber, but the operation of choice has been to withdraw the body through the wound of entrance when still open, or through a meridional incision in the sclera made close to the indicated position of the body, the point of selection being between the external and inferior recti muscles.

In most cases of recent injury the larger magnets have sufficient power to attract the metal without entering the point into the vitreous, and it is only when the body is embedded into the choroid or sclera that insertion of the magnet becomes necessary. It is true that good vision has resulted in spite of the entrance of the magnet point deeply into the vitreous, but experience has demonstrated that this procedure increases the traumatism and contributes to ultimate shrinking of the ball or to iridocyclitis.

Cases not seen until weeks or months after injury must be dealt with according to the site of the metal and the symptoms from which the patient suffers. The *x*-ray localization will often assist the operator in judging of the possible difficulty in removing the metal. Bodies situated above the horizontal plane of the globe or posteriorly in the vitreous chamber are usually caught in the coats of the eye, and in a few days or weeks become firmly bound by inflammatory exudation which resists extraction even with the magnet point brought close to the indicated location. Bodies at the bottom of the vitreous, in the neighborhood of the ciliary body or equator, usually drop into this region after penetrating the anterior segment of the globe, and, not having penetrated the retina or choroid, are more readily secured, even after remaining in the eyeball for a considerable period.

In old cases that will presumably offer difficulties in the extraction of the metal, operative interference may be postponed so long as the eye is quiet. The patient, however, must understand the necessity of promptly seeking advice should inflammatory symptoms arise. If the injured eyeball is irritable, or sympathetic irritation exists, an attempt should be made at once to extract the metal, and in the event of failure the ball should be enucleated without delay.

EYEBALLS SAVED.

In the first series of cases, extraction was successful and the eyeballs were saved in 30 cases, 7 with vision better than 6/12, 4 between 6/15 and 6/60; 9 with good light projection; 6 with light perception, and 4 with slightly shrunken eyeballs. In the present series, extraction was successful in 100 cases, with vision better than 6/12 in 20, between 6/15 and 6/60 in 13, counting fingers or hand movements in 7, good light projection in 27, light perception in 21, no light perception in 6, and eyeballs shrunken in 6. In the total 63 cases with light projection or light perception removal of the cataract would ensure serviceable vision in many of the patients.

A summary of the 106 cases of the present series is given in Table 1. The details of the first series of cases studied have been previously published,* and are therefore not given here.

TABLE 1.—EYEBALLS SAVED.

Case.	Surgeon.	Period Between Injury and Operation.	Period Between Operation and Last Examination.	Vision.	Remarks.
111	Love	1 day.	1 mo..	Good proj.	Cataract.
118	Schwenk	7 days	4 yr...	6/9	“
162	Ziegler	3 days	1 “ ..	No l. p.	Ball shrunken.
182	de Schweinitz	8 mo..	2 mo..	6/6	Aphakia.
260	Zentmayer	7 wk..	2 “	6/9	“
337	Sweet	15 yr...	1 yr...	Good proj.	Cataract.
368	Sweet	1 day.	2 mo..	“ “	Cap. cataract.
386	Hansell	1 day	4 “ ..	6/60	“ “
388	Posey	1 day.	1 “ ..	Good proj.	Cataract.
POSTERIOR CHAMBER:					
159	Risley	4 wk..	3 mo..	6/9	
166	Posey	3 “ ..	3 “	5/25	
227	Van Pelt	2 “ ..	2 yr...	Good proj	Cataract.
195	Harlan	4 days	3 “ ..	6/9	
CILIARY REGION:					
119	Risley	2 days	4 yr...	Good proj.	Cap. cataract.
125	Oliver	35 “	2 mo..	5/10	
126	McClure	3 “	4 yr...	No l. p.	Eye slightly shrunk'n.
135	Thomson	7 yr...	3 mo..	No l. p.	“ “ “
151	Radcliffe	2 “ ..	4 yr...	No l. p.	Eye normal size.
167	de Schweinitz	2 mo..	4 mo..	6/5	
217	Thomson	10 days	5 “ ..	Good proj.	Cataract.
223	McClure	3 “	1 “ ..	L. p.	“
248	Oliver	5 “	2 yr...	Fingers 9'..	“
255	Sweet	1 day.	2 “ ..	6/9	Aphakia.
257	Hansell	15 mo..	2 “ .	No l. p.	Eye normal size.
261	Ziegler	3 days	2 “ ..	Fingers 3'..	Cataract
268	Ziegler	5 mo..	18 mo..	Good proj.	“
285	Sweet	3 hr ..	2 yr...	6/6	
300	McClure	2 days	5 mo..	6/22	
326	Posey	2 “	1 “ ..	6/9	
334	Ziegler	8 yr...	....	....	Opt. ciliary neurect. Extraction failed
365	Oliver	6 mo.	6 mo..	Imp. l. p...	Eye shrunken bef. ex.
369	McClure	18 “ ..	4 “ ..	No l. p.	Eye slightly shrunk'n.
370	Risley	3 wk..	3 “ ..	Good proj.	Capsular cataract.
398	Oliver	8 days	1 “ ..	6/9	
EQUATOR:					
107	Schwenk	13 days	5 yr...	No l. p.	Eye slightly shrunk'n
117	Oliver	13 “	....	5/20	Extraction failed
120	Ellegood	7 “	7 wk..	6/60	
139	Sweet	7 “	2 yr...	Fingers 5'..	Part. ret. detach.
141	Ellegood	4 “	1 mo.	Fingers 3'..	Cap. cataract.
145	Posey	1 “	6 “ ..	6/22	Part. ret. detach.
152	McClure	7 “	3 “ ..	Good proj	Aphakia.
155	Murdock	3 “	1 “	“ “	Cataract.
157	de Schweinitz	2 hr ..	1 “ ..	6/6	“
163	Sweet	9 mo..	3 yr...	6/6	
165	de Schweinitz	5 wk..	1 mo..	Fingers	Body loose in vit.
168	Oliver	6 days	3 yr...	6/30	Large ret. det. bef. ex.
171	McClure	1 wk..	6 wk..	L. p.	Cap. opacities.
176	de Schweinitz	6 mo..	3 yr..	Fingers 2'..	
178	Fisher	2 days	2 “ ..	L. p.	Chor. degeneration.
179	Randolph	2 wk..	3 “ ..	Good proj.	
183	Harlan	4 days	3 “ ..	6/6 partly..	

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* Transactions American Oph. Society, 1901.

TABLE 1.—EYEBALLS SAVED (Continued).

Case.	Surgeon.	Period Between Injury and Operation.	Period Between Operation and Last Examination.	Vision.	Remarks.
185	Harlan	1 “	6 mo..	L. p.	Pupil occluded.
193	Harlan	3 “	1 wk..	Good proj.	Cataract.
198	Parker	2 “	3 yr...	5/9	Isol opac. of lens.
205	Radcliffe	1 mo..	1 “ ..	Good proj.	Cataract.
210	McClure	1 “ ..	....	....	Extraction failed
215	de Schweinitz	3 “ ..	2 days	L. p.	Cataract.
228	Risley	5 days	1 mo..	H'nd move	
229	Sweet	2 “	4 “ ..	L. p.	
232	McClure	3 “	3 yr...	6/60	Cap. opacities.
241	Fisher	3 “	2 “ ..	Good proj.	Cataract.
244	McClure	2 “	2 “ ..	“ “	“
251	Hansell	3 mo.	3 mo..	“ “	“
258	Oliver	2 days	2 yr...	No l. p.	Eye slightly shrunk'n.
265	Oliver	2 wk..	2 mo..	5/20	
267	Risley	3 “ ..	....	....	Extraction failed
270	Risley	6 “ ..	1 mo..	L. p.	Eye slightly shrunk'n.
278	Sweet	6 “ ..	1 yr...	5/20	Cap. opacity.
302	Schwenk	3 days	1 “ ..	Good proj.	Cataract.
304	Ziegler	7 mo..	18 mo..	L. p.	Ret. dt. bef. oper.
306	Schwenk	2 days	1 yr...	6/15	“ “ “ “
309	Sweet	1 mo..	3 mo..	Imp. l. p...	
319	Radcliffe	4 days	14 “ ..	6/6	Aphakia.
339	Fisher	12 “	1 yr...	6/30	“
348	Fisher	1 “	1 mo..	6/9	
351	Risley	6 “	1 “ ..	Good proj.	Cataract.
361	Sweet	4 “	1 yr...	“ “	“
382	McClure	4 “	4 mo..	6/15	Cap. opacity.
385	Sweet	21 yr...	6 “ ..	No l. p.	Eye normal size.
387	Ziegler	4 days	....	....	Extraction failed
394	Fisher	2 “	3 “ ..	L. p.	Eyeball irritable.
391	Ziegler	9 yr...	3 mo..	No l. p.	Eye normal size.
414	Sweet	2 days	1 “	Imp. l. p...	Vitreous opac.
	POSTERIOR PART OF GLOBE:				
116	Zentmayer	3 days	1 mo..	Good proj.	Cataract.
121	Risley	7 “	2 “ ..	“ “	Part. cataract.
122	Thomson	2 “	4 yr...	6/6	
128	Schwenk	3 mo..	4 “ ..	Imp. l. p...	Part. ret. detach.
134	McClure	15 days	2 mo..	L p.	Vitreous opacities.
233	Zentmayer	1 “	3 yr...	L. p.	Cataract.
237	Risley	2 wk..	3 “	6/12	
239	Oliver	4 days	....	....	Extraction failed.
245	McClure	4 “	3 mo..	L. p.	Cataract.
252	Posey	2 “	1 “ ..	L p.	
254	Posey	2 wk..	2 “ ..	L. p.	
295	Risley	1 “ ..	2 “ ..	Good proj.	Cataract.
305	Harlan	1 mo..	3 “ ..	No l. p.	Normal size eye.
310	Sweet	6 days	2 “ ..	Imp. l. p...	Cataract.
317	Ziegler	2 mo..	2 “		“
318	Sweet	13 days	1 yr...	Good proj.	“
336	Schwenk	12 “	1 mo..	“ “	
375	McClure	2 “	2 “ ..	6/60	Vitreous opacities.
348	Fisher	1 “	1 “ ..	5/9	
351	Risley	6 “	3 “ ..	L. p.	Cataract.
379	Posey	10 mo..	5 “ ..	Good proj.	“
393	Van Pelt	2 “ ..	3 “ ..	“ “	“
407	Oliver	5 “	1 “ ..	No l. p.	Degener. vitreous.

An analysis of the visual results in the patients that have been under observation for a period of years, in which a scleral incision was made in the extraction of the metal, indicates that retinal detachment following this method of procedure must be of rare occurrence. In not one of the cases in the tabular statement in which the media permit a study of the region of the incision made in the ocular structures has detachment of the retina occurred, although in many of the patients a sufficient period has elapsed to exclude further retinal or choroidal changes. The continued irritation and exudative inflammation of a long retained foreign body in the coats of the eye is probably a more potent factor in causing detachment of the retina than a small, clean cut of the sclera and the adjacent retina and choroid.

In several of the tabulated cases retinal detachment was present prior to extraction of the metal, and in many eyeballs with only light perception the retina is likewise detached, but it is difficult to say whether the presence of the foreign body or the insertion of the magnet point in the removal of the body was the primary cause of the detachment.

EYEBALLS LOST.

In the first series of cases, 22 eyeballs were lost, in 7 of which the injury was by non-magnetic bodies. In 9 cases extraction was not attempted; 3 cases were injuries from steel, and 6 from copper or small shot. In 5 cases extraction failed, and on enucleation, the metal in the eyeball was found firmly embedded in new fibrous tissue. In 8 cases the body was successfully removed, but enucleation was required in 5 cases because of iridocyclitis, in 2 cases from recurring hemorrhages into the vitreous, and one from panophthalmitis.

In the present series, 45 eyeballs were lost, in 35 of which the injury was from iron or steel, 6 from shot and 4 from copper. In 12 cases no attempt was made to extract the metal; in 7 cases extraction failed, while in 26 the body was successfully removed. In 8, evidences of panophthalmitis was present at the time of examination, and in 2 the ball was immediately removed, in 5 on the following day, and in 1 on the ninth day; in the other 18, the magnet point was inserted into the vitreous in nearly every instance, increasing thereby the traumatism, and probably in a large measure contributing to the iridocyclitis that compelled ultimate enucleation. In a number of these cases the body had remained in the eyeball a sufficient time to render the saving of the globe problematical, even in the event of successful extraction. The period between injury and operation in the 18 cases was three days in 3 cases; four days in 1; five days in 2; seven days in 1; fourteen days in 1; sixteen days in 1; twenty-four days in 1; four weeks in 2; five weeks in 2; and the remaining 4 cases, six months, eight months, eighteen months and thirteen years, respectively.

TABLE 2.—EYEBALLS LOST.

Case.	Time Between Injury and Operation.	Time Between Extraction and Enucleation.	Cause of Loss of Eye.	Size of Body in mm.
	LENS:			
115	1 day	1 day	Panophthalmitis.	3 x 1
	CILIARY REGION:			
146	3 days	5 months	Iridocyclitis	1.5 x 1
153	7 “	1 month	“ “	8 x 5
235	6 months	3 months	Rec. hem. ant. chamb.	4 x 2
312*	2 days	Ext. failed	Sympathet. irritation	7 x 2
313	16 “	1 month	Iridocyclitis	10 x 7
	EQUATOR:			
130	2 weeks	23 days	Iridocyclitis	6 x 4
154	5 “	1 month	Shrunken and tender.	12 x 6
160	5 days	4 months	Iridocyclitis	3 x 1
173	4 weeks	6 weeks	“ “	4 x 1
184	8 months	1 month	“ “	3 x 2
186†	3 “	Ext. not tried	Shrunken and tender.	
187†	1 month	“ “ “	Sympathet. irritation	
234	10 days	Same day	Panophthalmitis.	5 x 1
240	1 day	“ “	“ “	3 x 4
272	13 years	3 weeks	Iridocyclitis	3 x 1
298	1 week	Ext not tried	“ “	7 x 3
315	1 week	“ “ “	“ “	4 x 2
333	1 day	1 day	Panophthalmitis.	3 x 2
402	1 “	Ext. not tried	“ “	1 x 0.5
415†	9 days	“ “ “	Iridocyclitis	
	POSTERIOR:			
109	2 months	Ext. failed	Iridocyclitis	1 x ¼
113	3 weeks	“ “	“ “ 4 yr. later	5 x 4
131	3 days	Same day	Panophthalmitis.	4 x 2
158	2 weeks	Ext. failed	Iridocyclitis	2 x 1
161	5 “	1 month	Shrunken and tender.	13 x 6
185	3 days	6 months	Iridocyclitis	6 x 2
197†	2 “	Ext. not tried	“ “	
200	4 “	2 months	“ “	4 x 2
207	3 “	1 day	Panophthalmitis.	14 x 1
211	4 weeks	1 year	Iridocyclitis	3 x 2
230*	3 “	Ext. not tried	“ “	4 x 2
277	6 months	Ext. failed	“ “	3 x 2
279	18 “	6 months	Shrunken and tender.	3 x 1
296	3 days	Same day	Panophthalmitis.	4 x 1
331	5 “	21 days	Iridocyclitis	4 x 2
322	4 “	3 “	Panophthalmitis.	5 x 1
396†	5 weeks	Ext. not tried.	Severe migraine	
401	2 months	“ “ “	Iridocyclitis	3 x 1
406	3 days	9 days	“ “	12 x 9
364	24 days	4 weeks	“ “	9 x 2
	ORBIT:			
288*	2 days	Ext. failed	Iridocyclitis	4 x 2
297	7 “	“ “	“ “	2 x 1
308†	2 “	Ext. not tried.	Sympathet. irritation	
352*	8 “	“ “ “	Iridocyclitis	1 x 0.5

*Copper. †Shot.

A further cause contributing to the loss of the eyeball in a number of the cases was the severe traumatism at the time of injury, the large size of the metal almost immediately destroying the usefulness of the eye. The dimensions of the body in nine cases were as follows: Case 113, 5x4 mm.; case 153, 8x5 mm.; case 154, 12x6 mm.; case 207, 14x1 mm.; case 298, 7x3 mm.; case 313, 10x7 mm.; case 364, 9x2 mm.; and case 406, 12x9 mm.

The summary of the 45 cases in which enucleation was required is given in Table 2.

The comparatively few cases of panophthalmitis, indicate the resisting power of the vitreous to infection. To some extent disinfection of the body may occur as it passes through the coats of the eye into the interior. Even if the instances of late iridocyclitis are considered as types of infection, the percentage of loss from this cause is small in comparison with the large number of cases of injury. Two causes act to produce loss of the ball from iridocyclitis, the formation of a fibrinous exudate about the foreign body that complicates the extraction by the insertion of the point of the magnet once or more into the vitreous, or the original traumatism is so severe that the eye can not recover.

NO BODIES IN THE EYEBALL.

An unusual large proportion of the total number of injuries was shown by the radiographs to have no foreign body in the eyeball or orbit. In each, the diagnosis of the presence of a foreign substance within the ball was probable from the character of the work on which the individual was engaged, the nature of the injury, and the condition of the eyeball or the reduction in vision.

Of the 145 cases embraced in the present series, 30 were seen within 24 hours of injury, 32 between the second and fourth days, 42 between the fifth day and the end of the second week, 27 between one month and nine months, and 14 over one year. In 49 cases cataract existed, 28 in patients examined during the first week after the injury and 21 after this period; in 5 cases hemorrhage into the anterior chamber was associated with a wound of the cornea or limbus; in 8 cases extensive posterior synechia was present, with opacities on the anterior lens capsule; in 13 recent injuries there was hemorrhage or opacities in the vitreous; while in 20 cases of old injury vitreous opacities prevented a view of the eyeground.

Of the total number of injured eyes showing no foreign body, 124 were caused by iron and steel, 10 by copper from premature mining explosions, 7 by glass or stone, and 4 by small shot.

ORBITAL CASES AND CASES UPON WHICH NO OPERATION WAS MADE.

In 20 cases of ocular injury in which the radiographs showed the presence of a foreign body in the eyeball or surrounding structures, no operation on the eyeball was performed, and so far as could be learned, none of these eyes has been removed. Cases in which no operation was performed, but the eyeball enucleated, are included in another part of this report. Of the 20 cases, 4 were foreign bodies in the lens, two of steel and one of copper; 8 were in the vitreous, six of steel and two of small shot; and 8 were in the orbit, three bullets or small shot, four steel, and one stone. In three patients the eyeballs were shrunken and enucleation was advised, but refused.

There is a more general recognition on the part of the attending physicians who are usually first consulted in these ocular injuries from foreign bodies, of the importance of an early diagnosis. A higher percentage of successful extraction, with preservation of vision, would be secured if every case of ocular injury with reduction of visual acuity was subjected to the *x*-ray examination within a few hours after injury, and the foreign body immediately extracted, should one be shown to have penetrated into the eyeball. Such a course would most largely contribute to the saving of the eyeball and the preservation of some sight, although with the same methods of operation, the same precautions in surgical technic and the same promptness in diagnosis and in extraction, the result in one case may be a shrunken, tender eyeball, that must ultimately be removed, while in another case full acuity of vision will be secured.

SUMMARY.

Total number of injuries from foreign bodies, 420; foreign bodies located in the eyeball, 221; in the orbit, 14; in the eyelid, 3; no bodies shown by the Roentgen rays, 182. Injuries by iron and steel numbered 356; copper, 23; bullets or small shot, 25; and glass, stone, or coal, 16.

In the 221 cases in which the foreign body was located in the eyeball, extraction was successful in 164 cases, with subsequent enucleation in 34; extraction failed in 18 cases, with enucleation in 10, and no attempt was made to remove the body in 39 cases, with enucleation in 19. Although 34 eyes were enucleated after successful extraction of the metal, the majority of these eyes were lost as a result of the original injury and not from the operation. Thus, in 9, evidence of panophthalmitis was present at the time the case was first seen, and in 9 others the large size of the metal inflicting the injury left little hope of saving the eye, while many of the others were old injuries, in which the body was only secured after numerous insertions of the magnet into the vitreous.

The results of operation on the eyeballs containing foreign bodies were: Vision better than 6/12 in 27; between 6/15 and 6/60 in 17; counting fingers or recognition of hand movements, 7; light projection, 36, and light perception 27, with a certainty of increased vision in many of these cases on the removal of the cataract; no light perception, but eyeball of normal size, 6; shrunken eyeball, 10.

CONCLUSIONS.

1. Radiographic examination should be made in every case of ocular injury from a foreign body in which lowered visual acuity is a result of the accident.

2. Extraction of a foreign body through a small meridional incision in the sclera, the magnet point not introduced into the vitreous, causes no greater traumatism than follows drawing the metal through the vitreous into the anterior chamber.

3. Retinal detachment is not a logical result of a scleral incision for the extraction of a body from the vitreous chamber. The exudation associated with a long-retained foreign body is probably a more frequent cause of detachment.

4. Introduction of the magnet point into the vitreous increases the traumatism to the eyeball, encourages retinal detachment and often leads to shrinking of the eyeball and to iridocyclitis.

5. Bodies located above the horizontal plane of the globe or at the posterior part of the vitreous chamber usually present greater difficulties in extraction, owing to the early formation of a fibrous exudate around the imbedded metal, than bodies at the bottom of the vitreous near the equator, to which position they fall after penetration.

DISCUSSION.

Dr. Howard F. Hansell, Philadelphia, declared that the literature of more than 10 years ago, or before the utilization of the *x*-rays and the elaboration of the methods of diagnosis and treatment that have developed since that time, is of historical interest only. The recent extensive literature discusses the subject variously and brings into prominence two opposed opinions—first, that localization is superfluous and second, that localization is essential for scientific therapeutics. The believers in non-localization proceed without delay to the extraction with the Haab or other large magnet, usually through the anterior section of the eye, with consummate skill, drawing the metal around the crystalline lens through the pupil. Those who favor the median-sized magnets prefer localization and subsequent extraction through the cornea of bodies situated in the lens or anterior to it and through an opening in the sclera for those posterior to the lens. Dr. Hansell believes in the latter method for the majority of cases, but he believes also that localization is not indispensable to the successful management of the minority, even when the body can not be seen. For example, a linear wound in the cornea, an opacification in a hitherto clear lens and a blot in the field of vision will indicate that the body is in the vitreous, in the coats of the eye or in the orbit. The precise location in the vitreous is of little moment, for, if it is possible of extraction, the body may be drawn through an opening in the sclera made at any convenient place, usually between the external and inferior rectus. Again, *x*-ray localization presents two drawbacks. Our success in localization, thanks to Dr. Sweet's labors, has made us dependent on the diagnosis of the radiograph and too little stress has been laid on the chances of error. A statement only of the possible inaccuracies may be sufficient to avoid mischief. Dr. Hansell has previously called attention, he said, to the chance of error due to a swollen lens or to a grossly myopic or hyperopic eye, in calculating the exact position of a foreign body. In other words, the comparison of a healthy emmetropic eye with one in which the lens is wounded or which is appreciably larger or smaller, is not accurate. He also said that the foreign body may be so small that the shadow on the radiograph escapes the closest scrutiny. This also is exceptional, having occurred but once in my experience. Dr. Hansell said that it is quite within the limits of good practice to omit the radiographic examination in some cases of ocular injury from a foreign body in which lowered acuity of vision is a result of the accident. The apparatus may not be available and valuable time is lost and danger to the eye incurred by a railroad journey of some hours. The immediate application of the magnet to the unclosed wound will avoid the delay and danger, and will determine both the diagnosis and the cure. He said that it would seem to be a simple matter for a patient to know that the wounded eye needs treatment or that the sound eye is suffering from some of the symptoms of sympathetic inflammation, and yet experience does not prove the assumption. A few weeks ago he removed an eye that had been injured 14 years before and had been blind for almost all that time. There was an uncertain history of the entrance of a foreign body but the retention of that foreign body had not been suspected. The sound eye was beginning to be sympathetically affected. After enucleation a minute fragment of steel was found in the ciliary region, too small to cast a shadow on a skilfully taken radiograph. Dr. Hansell believes that incurably blind eyes, particularly those blinded through injury, should be removed. They are and ever will be useless and are always a menace to the sound eye. Patients who lose their eyes from injury are not as a rule well informed and are not to be trusted to know when treatment is required. This opinion is applicable whether the injury be caused by a substance too large to be retained in the ball or one which may or may not be capable of attraction by the magnet. In cases of recent injuries he agrees with Haab that it is safer to allow non-magnetizable particles to remain in the eye unless they are known to be easily accessible, than to probe the vitreous with forceps or other instruments. He called attention to the excellent results of the operation of extraction as recorded by Sweet, and said that it must be remembered that in comparing these statistics with those of injuries and operation in other parts of the body, recovery is often hopeless from the moment of the accident. Of the 420 cases, the total of both series, the radiograph showed the absence of any foreign body in 182, leaving 232 only to be considered. Of these, 51 recovered vision ranging from 6/6 to counting fingers, 22 per cent. Without extraction of the body it is probable that 99 per cent. would have been lost. Statistics such as these of methods of diagnosis and operation in a comparatively new procedure and concerning which there is a diversity of opinion, are of the greatest value in stimulating other workers to renewed efforts for the saving of the eyes which, without scientific experimentation, would be given up as lost.

Dr. J. Ranly, Cincinnati, said that having been impressed with the occasional failures in the attempts to remove foreign bodies he constructed a stronger magnet, hoping to overcome this difficulty. It is so built that the blunt-pointed pole pieces can be brought within one and one-half inches and turned at any angle desired so that a slanting direction of the magnetic influence can be obtained. By removing the anterior portion of the Haab tip and attaching a flexible extension arm which can be moved with ease in any direction all the advantages of the hand magnet are obtained plus more power. After the foreign body is brought into the anterior chamber he makes a corneal incision at the most favorable place so as to avoid prolapse of the iris, then applies the magnet tip above the foreign body over the cornea and moves it in the direction of the incision. The incision he considers of great importance and thinks that a place should be selected not near the foreign body as we are compelled to do with the weak magnet, but it should be situated at the most distant part, since the foreign body can be moved anywhere in the anterior chamber without causing any injury. The danger of a small corneal incision being much less than that of a scleral incision is a sufficient reason for removing the foreign body in that way, first bringing it into the anterior chamber by means of the giant magnet.

Dr. W. F. Coleman, Chicago, mentioned one point in regard to the magnet that served him excellently and demonstrated his remarks with a diagram on the blackboard. The ordinary Haab magnet has such a large point that in a case some years ago he could not enter it and devised an arrangement with a ball and socket joint, which permits of movement of separate tips in any direction. In removing the foreign body he can not see the reasons for Haab's directions to remove it through the anterior chamber, thus running the risk of producing cataract. In a former statement Dr. Kipp referred to a case in which he had been able to extract a foreign body by reversing the poles. Dr. Coleman does not believe that will practically occur. If one takes a short piece of steel, lays it on a paper and takes a hand magnet and puts one pole toward it and then reverses quickly, either pole will attract the particle and neither pole will repel it.

Dr. Frank C. Todd, Minneapolis, said that the slight improvement in results which Dr. Sweet's statistics show over those of Haab, seem to him to result from more careful localization of the foreign body by radiographs, which he understands Dr. Haab has not employed. Since hearing Dr. Haab's paper on his work in the extraction of foreign bodies, Dr. Todd has practiced the method and has been surprised at the ease and success with which it could be carried out. It seems to him to have certain advantages, in many cases, over removal through the sclera, particularly when the body can not be observed. By Haab's method, it is brought to the edge of the lens, back of the iris (after which, the entire process can be observed), then coaxed to the pupil and out into the anterior chamber, to be removed at the corneal margin through an incision. Dr. Todd has secured the effect brought about by Dr. Coleman's attachment by using a steel instrument, one end touching the magnet, the other entering the lips of the wound. It may thus be moved about readily, and the foreign body will become attracted to it.

Dr. S. D. Risley, Philadelphia, stated that he is at one with Dr. Sweet in his conclusions. So far as injuries which result from foreign bodies are concerned Dr. Risley thinks we should distinctly differentiate between those caused by the entrance of the foreign body itself, by its presence in the vitreous chamber, and those which may be caused by efforts for its extraction. In the first place it should be borne in mind that the foreign body is not always clean and to extract it by a method which makes a new path through the vitreous increases the liability of infection, and is not, therefore, a scientific procedure. It should be extracted by the shortest possible path, and after localization we know just which path to choose. The incision should be made with a sharp knife and the conical tip of the magnet should be placed against the lip of the wound and patiently held there until the foreign body presents itself. He regards this as the ideal method since it causes a minimum of traumatism at the hands of the surgeon. We should hold as an aphorism that it is bad surgery to introduce instruments of any kind into the vitreous when it can be avoided. To insert the long strip of magnet deeply into the vitreous is, to his mind, an illogical and certainly a most dangerous procedure, and one which in his experience in the majority of instances has been unnecessary. He mentioned a case seen in consultation in which the foreign body had been located by Dr. Sweet. The surgeon asked Dr. Risley's advice as to the locality for incision and he suggested a point nearest the foreign body as shown by the localization chart, but he disagreed and made the incision on the opposite side of the globe and inserted a long tip so that the foreign body was pulled entirely across the vitreous chamber. As to the question of polarity, Dr. Risley has seen a foreign body, a sliver of bright metal 8 mm. in length, reverse itself, end for end, and then approach the magnet, emerging at the original wound of entrance. It was in the anterior segment of the eye and could be readily seen through the widely dilated pupil.

Dr. Wm. H. Wilder, Chicago, emphasized the matter of radiographs in these cases. He thinks that many of us are prone, as soon as we suspect the presence of a foreign body in the eye, to apply the magnet at once, and it may be in some cases with disastrous results. It is often used in this way to make a diagnosis. He feels sure from experience that this should not be done, and he has seen one or two striking instances in which he was unable to demonstrate the presence of a foreign body. In one case there was a piece of steel as large as the end of a lead pencil. It had penetrated with a remarkably small wound and had pierced the posterior coat of the eye and lodged against the optic nerve. The patient experienced no sensation whatever when the most powerful current was applied. The eye subsequently had to be enucleated. He thinks that in many cases if the surgeons were more careful to obtain a radiograph, and especially by means of some apparatus for localizing the foreign body, there would be less injury to the eye than by at once applying the magnet. He agreed with Dr. Risley that the shortest course that we can have the foreign body pass through is preferable to the method of removing it through the anterior chamber.

Dr. Edward Jackson, Denver, recently saw a case with Dr. Stevens, in which a splinter of steel was seen hanging back of the lens, with a wound of entrance showing in the cornea, anterior capsule and posterior capsule. We extracted the splinter with the Johnson magnet through the sclera and the lens has cleared up completely.

Dr. T. J. McCoy, Los Angeles, stated that during the last ten years he has had charge of five different roads and has had to do with a great many foreign body cases. Because of unprincipled attorneys they have to be extremely careful in the location of foreign bodies and have instituted a system; first the *x*-ray is used; second, the written consent of the patient for removing the body is obtained, because disastrous results may sometimes occur. Without that they will not have anything to do with it. Experience points to the fact that the best results are obtained by making the incision nearest to the location of the foreign body. In one case the accident was due to the explosion of a cartridge at twenty feet distant and the patient was struck in the eye. It was impossible to tell whether the foreign body was there because of the hemorrhage. It was located with the *x*-ray and was removed. In another case in the last three weeks a miner was struck with a stone; it was located with the *x*-ray and removed. In dealing with these cases among these miners, mostly foreigners, the physician must be very careful to secure consent first before operating.

Dr. William M. Sweet, Philadelphia, believes that there is a class of old injuries in which the metal may be allowed to remain so long as it is not causing any symptoms, and the patient understands the importance of prompt treatment in the event of trouble. Patients frequently seek advice for the removal of a traumatic cataract, and are surprised to learn after *x*-ray examination that a foreign body is in the eyeball. An attempt may be made to remove the body with the magnet point placed at the lips of a small incision in the sclera, and in the event of failure the body may be allowed to remain if all reaction following the operation subsides. Numerous insertions of the magnet point into the vitreous in the hope of securing the body from the firm exudate in which it is possibly imbedded may ultimately succeed in removing the metal. Dr. Sweet would rather leave a piece of steel in the eyeball than a piece of copper. He thinks that the tabular statement of the eyeballs least worthy of study, as it indicates in each instance the cause of failure to preserve the globe. A certain number of eyes had to be removed because of the severe traumatism from a large-sized foreign body, but the larger proportion were lost from delay on the part of the attending physician in recognizing the possibility of a foreign body having lodged in the ball. If these cases were seen earlier the results of operation would be more favorable. In compiling the summary of the tabular statements no figures were presented of the results achieved by other operators, since it is practically impossible to draw satisfactory conclusions in comparing groups of cases which involve so many factors that affect the ultimate saving of the eyeball or the preservation of sight. Apart from the fact that the cases summarized cover the experience of many different operators, some of whom adhere to the plan of inserting the magnet point into the vitreous in recent cases, the ultimate results of operation are further influenced by the size of the foreign body, its position in the eye, and time elapsing between the injury and extraction. If we compare the 182 cases in this report in which extraction was attempted with the 165 cases reported by Haab, Dr. Sweet said, we have the following: Extraction successful, Haab, 141 cases, or 85.5 per cent.; this report, 164 cases, or 90.1 per cent. Extraction failed, Haab, 24 cases, or 14.5 per cent.; this report, 18 cases, or 9.9 per cent. Eyeballs requiring enucleation, including only cases in which extraction was attempted, and was successful or failed, Haab, 39 eyes, or 23.5 per cent.; this report, 44 eyes, or 24.2 per cent. Good sight, Haab, 51 cases, or 30.9 per cent.; this report, 44 cases, or 24.2 per cent. Light perception or projection, which could probably be improved to serviceable vision in a large proportion of the cases by the removal of the existing cataract, Haab, 20 cases, or 12.1 per cent.; this report, 70 cases, or 38.4 per cent. Sightless eyeballs, Haab, 19, or 11.5 per cent.; this report, 16 cases, or 8.8 per cent. Extraction failed, but eyeballs not removed, Haab, 12 cases, or 7.5 per cent.; this report, 8 cases, or 4.4 per cent. In de Schweinitz's report of 26 cases, the results were as follows: Good sight, 10 cases, or 38 per cent.; eyeballs lost, 8, or 39.8 per cent.; eyeballs saved, which probably could have been improved by subsequent operation, 6, or 23 per cent.; eyeballs saved, but ball somewhat shrunken, 2 cases, or 7.7 per cent.

Clinical Notes, New Instruments, Etc.

A NEW SHIELD FOR USE IN NOSE AND THROAT EXAMINATIONS.

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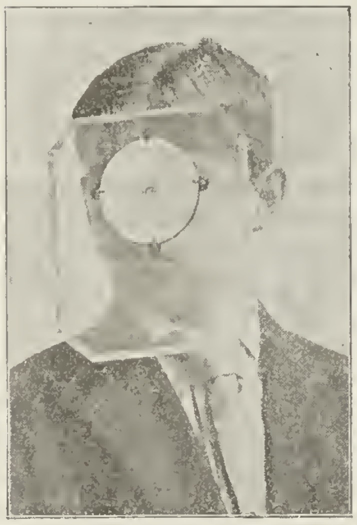
One of the greatest dangers to the physician handling patients suffering from tuberculosis lies in having masses of muco-pus thrown into his face by the patient sneezing or coughing while the nose, pharynx or larynx is being examined. The greatest danger exists in the public clinics where the patients are not over-particular to restrain a desire to cough while being examined. These patients are also apt to have very irritable throats which render them more liable to cough while the tongue depressor or the laryngoscope is being used.

So far as I know, a glass in metal frame suspended on a movable arm between the face of the patient and the face of the physician is the only device which has been used to protect the physician up to this time. This is certainly a great protection, but it has many obvious disadvantages, among which are the clouding of the glass by the breath of the patient and physician, and its size and position.

During a recent visit to the New York Municipal Clinic for Tuberculosis, Dr. Waters, chief of the clinic, showed me a celluloid shield which had been made for him, but which was not satisfactory and did not seem to me practical. It was simply a sheet of celluloid, with temples similar to those used on spectacles, fastened to the sides, the idea being to wear this shield under the head mirror.

DESCRIPTION OF SHIELD.

I have thought out and had made for me the following device which seems to me satisfactory in most particulars:



It is of celluloid, which, of course, is inflammable if held too close to a flame or very hot surface. I have protected it partly from this by binding its surface with thin strips of aluminum. In this form if it is not held within four inches of the top of the gas or oil lamp, directly over the flame, the danger is very slight, as I have proved by tests. Even if the shield is brought directly in contact with the metal condenser on the lamp after it has been burning for some time it does not ignite. If by chance it does ignite it does not burn rapidly enough to expose the wearer to great danger.

I have considered the possibility of making a shield of mica, but in sheets large enough to make such a shield it would be very expensive. Then, too, it is very easily cracked or splintered, so that it would not be durable. If expense were no object this shield could be made of mica in the same way I have my celluloid shield.

The shield is 7x9 inches and is attached to the posterior surface of the head mirror by four clamps fastened to its surface. A hole is made in the shield in the proper place for the shank of the mirror, and this can be at either side of the center line, according to which side of the light the patient is placed. If the examiner wears glasses a hole may be cut in the shield corresponding to the aperture of the head mirror. The shield may be easily detached from the mirror to be cleaned or disinfected in formalin, or in case the mirror is to be used without the shield.

With good sharp illumination I have no trouble in being able to make the ordinary nose and throat examination while using this shield.

Keenan Building.

A CASE OF POISONING FROM OPIUM OR MORPHIN IN A 7-WEEKS-OLD BABY.

EDWIN OLANDER, M.D.
ST. PAUL, MINN.

On July 6, 1906, I was hastily summoned to see a seven-weeks-old baby whom the mother said was getting blue in the face at times, as if in the last throes of death.

When looking at the child I observed that when it became cyanosed the cyanosis was not caused by a typical convulsion, but rather by embarrassment of respiration. I immediately examined the eyes and found typical pin-point pupils, not reacting to the light. I questioned the mother as to any medicine which had been given, and she brought me a bottle of Jadaway's Elixir for Infants, manufactured by the C. W. Wilson company. The directions read:

A child less than 2 weeks	5- 8 M.
A child 2 to 4 weeks	8-12 M.
A child 4 to 8 weeks	12-18 M.
A child 2 to 4 months	20-30 M.

The mother stated that she had purchased the bottle at a neighboring drugstore, and on the evening of July 5 had given the child five drops for colic. I believe that she had really given this small dose. I knew that I was dealing with a case of opium or morphin poisoning, and told the mother so.

Emetics, high enemas, massage and stimulants were administered, and on the morning of July 7 the child was fully recovered.

The pure food bill which has passed Congress, from a physician's point of view, is many years behind time. We must now see that it is strictly enforced, as it will aid in the prevention of such cases of poisoning as this.

Here a child had been give one-third the dose which the bottle stated could be given and yet suffered severe poisoning from this dangerous preparation.

A CASE OF INTESTINAL OBSTRUCTION.*

FRANK S. HOUGH, M.D.
SIBLEY, IOWA.

I have made no extensive examination of the literature of intestinal obstruction, but from the nature of this case I believe that it is a rare one.

History.—Mrs. A., aged 30, married one year, was operated on by me two years ago for destructive disease of the appendages. Nine years ago she suffered from pus tubes and general pelvic inflammation. Both ovaries were mere sacs filled with soft necrotic material, and all the other evidences of long-continued inflammations were present. She was a physical wreck. For about a year she suffered severely from the artificially-induced menopause; after that she commenced to put on flesh and became, apparently, the picture of health.

Present Illness.—On the evening of May 9, she partook liberally of sauerkraut. Se returned home and retired with a feeling of well being. Some hours later, after midnight, her husband saw that she seemed ill, as she was groaning and rolling about though still asleep. He aroused her and she said that she had great abdominal pain; the abdomen was found to be swollen. Soon she commenced to vomit and the pain increased in severity. I was summoned some time later and was loth to diagnose obstruction because one classical symptom, the element of shock (as registered by pulse, temperature and skin) was wanting. The patient vomited incessantly for sixteen hours.

Treatment.—I made many unsuccessful attempts to pass a long colon tube, but at last my efforts were rewarded by such an immense discharge of gas and feces that I thought, and told the family, that things were now all right. The pain and vomiting stopped for an hour and then the same symptoms returned and I found that I had only emptied the colon and that the small intestine was still enormously distended. I suspected volvulus near the lower end of the cecum.

Operation.—An eight-inch incision was made through the right rectus and was followed by evisceration of practically all the ileum, which was greatly distended and cyanotic. Not having a Paul's tube or other similar contrivance, multiple incisions were made in the bowel which allowed of evacuation of contents. The emptied bowel was sutured and returned. The cecum was located and an effort was made to elevate it and the adjacent ileum but it could not be done. The constriction could be felt, however, and a distended black loop of bowel was fished up. A white glistening cord was apparently tied around it. This cord was round, about three inches in length and the size of one's little finger, resembling somewhat a thick fibrous appendix. The herniated loop could not be extricated until the cord was exsected. By the application of hot wet compresses the strangulated bowel changed in color from black to rosy red, and no portion of the bowel was removed as its mesentery seemed all right and it had resumed a contracted natural appearance.

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* Abbreviated from a paper read before the Upper Des Moines Medical Association, Spirit Lake, Iowa, July 11, 1906.

Result.—The patient did not vomit after the operation and on the second day she commenced to pass large quantities of liquid feces. The abdomen flattened and became normally tympanitic. Her recovery was rapid. She required cascara and epsom salts almost daily for two or three weeks before the bowels regained a normal condition.

The condition was of the nature of an intra-abdominal strangulated hernia. This cord was attached at one end to the bowel wall furthest from the mesenteric attachment, and to the adjoining mesentery near the bowel, so that a ring existed whose circumference was cord, bowel and mesentery. The diameter of this ring was one and one-half inches. This old adhesion was about six inches proximal to ileocecal valve, and on inspection another one almost identical in appearance was found a few inches proximal to that which was exsected to prevent subsequent trouble. These bands were undoubtedly the vestiges of her peritoneal inflammations years ago, and were there when I operated on her pelvic organs two years ago, but no search was made in this region at that time. She might have carried them around with her for years without suffering any inconvenience had not an unaccustomed dinner, and perhaps more especially the sauerkraut, excited violent peristalsis, and the ileum being thrown into violent action became strangulated by this band.

Strangulated herniæ through the omentum, diaphragm and mesentery are not very rare. Adhesions often bind the bowels together and cause obstruction, and adhesions do the same by crossing the intestine. Such a case as this seems to me to be very rare. Had operation been delayed longer her chances would have been small, and my delay was due to the fact that I was unable to reconcile an unaffected pulse of 75, warm extremities, natural skin and no apparent depreciation of strength with volvulus or other form of obstruction, in spite of the distension, pain and vomiting.

A NEW ADENATOME.

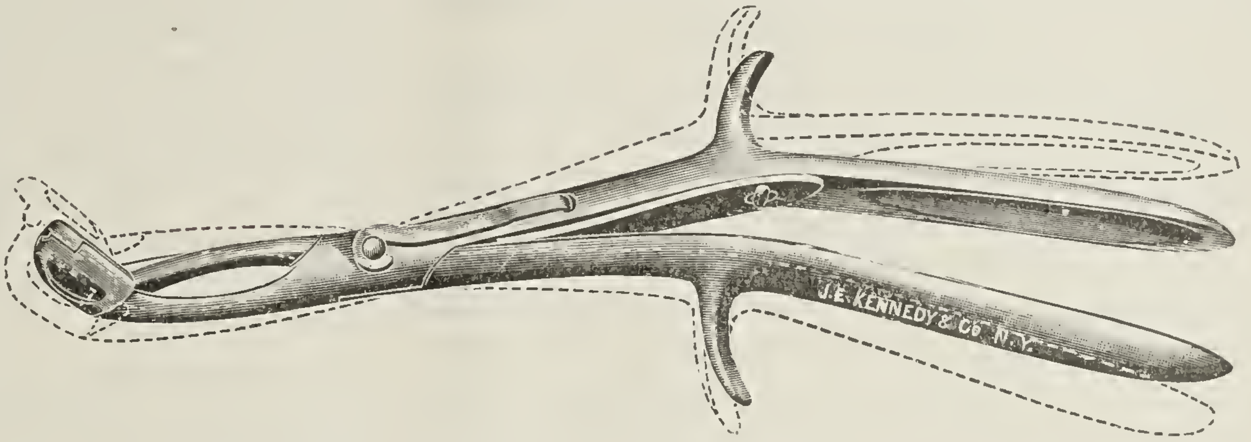
GEORGE B. McAULIFFE, M.D.

Chief of Clinic and Clinical Instructor, Department of Otology, Cornell University Medical College, Chief of Clinic, Aural Department, New York Polyclinic Hospital.

NEW YORK.

While many surgeons maintain that forceps are unnecessary in adenoidectomy, experience has proved to others that a radical operation is much better accomplished by the use of the forceps, followed by the curette. The majority of forceps are modifications of the Lowenberg model, two spoons, grasping the mass between them. No instrument has hitherto been designed (except ConCannon's) that prevents the wounding of the anterior boundaries of the pharynx and of the uvula. While the majority of operators are expert enough to avoid these accidents, nevertheless these mishaps are reported often enough to merit attention to this defect in the design of the instruments. Some operators, like Myles, use the finger to prevent the inclusion of the uvula. That the probability of accident hampers the freedom and quickness of the adenoidectomy is without doubt.

The instrument shown here meets the difficulty by hinging the cutting blades where they come in contact with the anterior boundaries of the epipharynx. The uvula can not get in the way and the attention of the operator can be centered on the adenoids, which fall easily in the jaws of the instrument. Besides, the economy of motion in the opening of the blades to their full sweep makes the manipulation of the instrument very easy. The addition of the obstetric prongs enables forward pressure to be made against the adenoids. Despite the multiplicity of parts the instrument is sterilizable; and the separability of the cutting blades from the handles permits of the use of different sizes of cutting blades on the same handles. I am indebted to Mr. J. Kennedy for many practical suggestions.

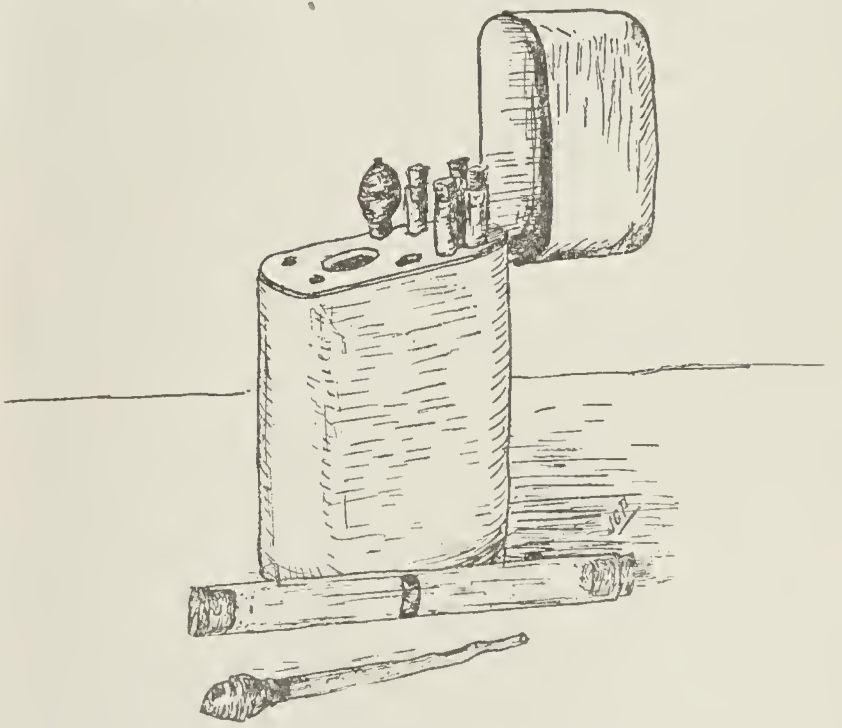


AN IMPROVISED POCKET CASE FOR EYE DROPPERS.

J. G. PARSONS, M.D.

BROOKINGS, S. D.

Feeling the inconvenience of carrying a bag to hold dropper bottles when making a visit to eye patients, I have improvised a pocket case which will, in a measure, serve the oculist as the tablet case does the general practician. As may be seen in the picture, the case is an aluminum hypodermic case. Four of the tablet vials are used to hold solutions. Two droppers, one amber for atropin, are made by drawing out tablet vials in an alcohol flame. In the mouths of the droppers are fitted rubber bulbs from vaccine tubes, the perforations being closed with bits of rubber. The syringe hole carries a tube which may be used for another solution, or, as shown in the cut, an open tube, plugged in the middle with a cork, may be used to hold two kinds of powder.



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[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 8, 1906.

THE AMERICAN MEDICAL ASSOCIATION: ITS FRIENDS AND ITS ENEMIES.

During the first fifty-five years of its existence, lack of effective organization and of sufficient funds prevented the American Medical Association from undertaking to carry out certain objects that from time to time have been emphasized as advisable for the good of the profession. During this time the work of the Association along these lines was limited to the occasional adoption of resolutions, or to the appointment of committees which could do little but make recommendations. In 1902 the feeling which had been growing that a closer and more effective organization was required resulted in the adjustment of the principles of medical organization to present-day conditions, and in a most remarkable organization movement on the part of an awakening profession. At the same time, careful, conservative management on the part of the Board of Trustees, combined with the application of modern business methods to the conduct of the affairs of the Association, finally resulted in the accumulation of a surplus.

Thus with the necessary means and a compact organization the Association, for the first time in its history, was in a position to take up work that heretofore had been out of the question. For instance, the House of Delegates in the last three years has established the Council on Pharmacy and Chemistry and the Council on Medical Education, and has ordered the compilation and publication of a national medical directory. The objects of these three movements are the same: the accumulation of facts and the publication of the truth regarding matters of direct interest and importance to the medical profession. The Council on Pharmacy and Chemistry was created to investigate proprietary preparations and to inform the profession regarding them; the Council on Medical Education was established to coöperate with licensing boards and with medical colleges for the purpose of improving medical education and of bringing about practical methods of reciprocity in licensure, in other words, to advance the cause of a higher standard of medical education; the directory was established with the object of presenting to the profession the official facts regarding every practicing physician.

These objects are altruistic in every sense of the word and are for the betterment of conditions affecting both the medical profession and the public at large. In this work the Association should receive the support of every honest man, whether layman or physician. And yet opposition has arisen! Who are the men and what are the interests that are seeking by indirect methods, by misrepresentation and personal attack, to obstruct and to nullify the work of the Association? In the answer to this question will be found the key to the entire matter.

This opposition, apparently widespread and diverse, will, when analyzed, be found to come from four different sources. These are: 1. The Proprietary Association of America, which, it will be remembered, circulated most malicious and libelous attacks on the American Medical Association, sending these to the newspapers all over the country, and which in other ways did all it could to create a public sentiment against the Association. This was because the American Medical Association lent its influence and support to the efforts that were being made to enlighten the public regarding the frauds that were being perpetrated on it by the "patent medicine" men. 2. The so-called "ethical" proprietary medicine men, whose products or methods would not bear investigation. 3. Those privately-owned medical journals which were more or less dependent on the income received from the above. 4. The firm owning and publishing a medical directory.

It was foreseen from the beginning that the most bitter and persistent opposition would come from those who would least relish a comparison of the claims they made in their advertising and the goods they sold; whose stock in trade consisted of alluring advertisements rather than of meritorious products. These expectations have been realized.

It is in some respects an amusing matter to note the marked change that has taken place in the views of certain commercial interests regarding the Association. So long as it was without capital, so long as its activities were necessarily limited to the passing of resolutions, so long as the Association did nothing—so long was it lauded and praised as a great and beneficent body. But mark the sudden change. No sooner were active measures inaugurated for the betterment of existing conditions and for the correction of evils long known and recognized than the Association was assailed, its officers were attacked and their motives impugned for doing exactly what they had been instructed to do by those representing the profession. Caricature, ridicule, invective, misrepresentation, half statements and distortions of the truth have all been utilized to check the work of the Association.

Failing in these attacks from without, however, and finding the Association at Boston more harmonious and more united than ever before, an attempt is now being made to disrupt the Association and to nullify its work by creating dissensions and suspicion in the Association itself. In this attempt to create discord have been engaged not only the elements and influences noted above, but also, to their shame be it said, medical journals which for years have claimed a place in the very van of medical progress, and whose standing was such as to warrant the belief that they would not stoop to print deliberate and malicious falsehoods. One of these journals, whose columns in the past have been kept filled by contributions from the most prominent members of the body which is now being attacked, whose publishers for years have derived large revenues from our profession, has seen fit to follow the lead of the weak, subsidized journals in this attempt to disrupt an organization of those who have contributed to the success of the publication and who have made the fortunes of its owners possible. Incidentally it may be noted that among all the slurs and attacks made on the Association and its officers there have been no definite, tangible accusations, no specific statements, but, on the contrary, insinuations, vague generalizations and indefinite hints of alleged or assumed mismanagement.

To these attacks so far no reply has been made, because the officers have continually been assured by the friends of the organization that the source and the animus of these assaults were fully apparent to all, and because they deemed the work in which the Association was engaged of too great importance to waste time or effort in defense. Possibly no explanations are needed now, but when members of the Association of years' standing, men like Dr. Carstens, whose sincerity, honesty and loyalty to the Association are beyond suspicion, write letters and ask questions which show plainly that they have been misled and have accepted as facts the vague statements and indefinite insinuations made by those who are interested in creating dissatisfaction and suspicion, and when falsehoods and malicious misrepresentations are being circulated by journals hitherto of good repute and standing, then it is evident that the time has come to state some plain truths in order that the members of the profession may know the facts. Neither the Association nor any of its officers have anything to fear from full and complete publicity of all facts relating to the work that is being done or to any of the affairs of the Association. As a matter of fact, full and complete publicity has always been made regarding everything concerning the Association. No board of directors has ever presented to its stockholders a more complete or detailed account of affairs than has the Board of Trustees to the members of the American Medical Association relative to the affairs of the Association. There has been nothing to conceal in the past; there is nothing to conceal now. The more the profession and the public know of the work of the Association the more heartily will they support it.

We propose, therefore, to discuss in the immediate future the various phases of the work of the Association and the reasons for the opposition to it. Part of this matter we shall discuss editorially, but the greater portion, however, will be found under the head of "Pharmacology," a department of The Journal which has contained the matter that has stirred up nine-tenths of the opposition, as our readers well know.

HEART BLOCK.

One of the most interesting discussions during the recent meeting of the British Medical Association at Toronto was that on heart block in the Section on Medicine. The term is probably not familiar to most ordinary practitioners of medicine, and the idea which it conveys has really only been introduced into medical science in the last few years. The idea intended by the term is that heart impulses which begin in the auricle do not succeed in passing over into the ventricle because they are blocked in their progress. This "heart block" is due to the fact that a particular bundle of muscle fibers through which the heart impulses are conducted has its function interfered with by some pathologic or traumatic condition and thus prevents the passage of these impulses. The result, as expressed in the picturesque language of Professor Gibson, of Edinburgh, is a divorce between the auricles and the ventricles. Instead of following the auricular beat immediately, the ventricular beat is distinctly delayed or is even suppressed entirely for one or more impulses, the consequence being a distinct irregularity in the heart rhythm.

The ideas which underlie this new theory, for it must not be forgotten that it is not as yet beyond the theoretic stage in spite of the gradual accumulation of considerable pathologic evidence in its favor, began to be evolved about a decade ago. Professor His, the distinguished German anatomist, described a special bundle of muscle fibers which, having their origin in the auricle, pass through the auriculoventricular junction to be distributed in the ventricular septum and in the walls of the ventricles. This bundle of muscle is quite distinct from the neighboring muscular fibers. It has an enveloping connective tissue sheath of its own and is surrounded by a network of nerve fibrils. Its color is even a little different from that of the adjoining tissues, being somewhat paler, and, indeed, this pallor has sometimes been considered to indicate a pathologic condition in the heart muscle and has been pointed out as an evidence of degeneration.

As stated by Professor Aschoff, of Berne, the old idea that heart weakness is the result of a general inflammatory disturbance of the heart muscle, a myocarditis, consequent on the presence of infectious elements in the circulation, has not been sustained by the more careful investigations of recent years. Certain infectious diseases always produce inflammatory changes in the myocardium. These are the exception, however, rather than the rule. Diphtheria nearly always produces such changes. Rheumatism, meaning, of course, acute rheumatic arthritis, has a specific effect on the heart muscle and gives rise to certain small pathologic lesions situated just below the endocardium which resemble miliary tubercles in many respects. Beyond these two infections, however, none of this class of diseases has a serious effect on the heart. The old idea of a generalized inflammatory disturbance of the heart muscle is not substantiated. The examination of over 100 hearts with all the modern staining methods and careful microscopical technic has failed to show it. It has been found, however, that in cases where heart failure threatened or actually occurred the essential affection is limited to this bundle of muscle fibers which, because of its discoverer, has been called the bundle of His. In a word, according to Professor Aschoff, an entirely new chapter in cardiac pathology is about to be opened up in the study of this structure and its lesions.

Not a little of the experimental work which demonstrates the truth of these pathologic ideas has been done here in America. Professor Erlanger, of Johns Hopkins, has shown that compression of the bundle of His can, in varying degrees, produce all forms of disturbance of the heart rhythm, even the most serious, and can eventually lead to a fatal termination. The pathologic ideas are also confirmed from the clinical standpoint by a number of English and American observers. Many of the puzzling forms of arrhythmia of the heart, which have so often proved insoluble problems to clinical observers, find a comparatively ready explanation by this new theory. Even the curious set of phenomena known as the Stokes-Adams syndrome, in which there is extreme irregularity of the pulse with stoppage of the heart sometimes that lasts for half a minute or even longer and then gradual resumption of the slow rhythm, and which the hearts of patients suffering from this disorder so frequently exhibit, can be rather readily explained on the score of inflammatory conditions seriously interfering with the conduction of impulses which originate regularly in the auricle, but fail to reach the ventricle because of the heart block that exists.

Sir James Barr emphasized the fact that this as yet remains only a theory, and brought out especially that the question of the conduction of impulses through a muscle band which itself does not contract is a new idea in medicine. There seems to be no doubt that the enthusiasm over recent discoveries has led some of the pathologists and clinicians to minimize the objections to the theory. It is probable that nervous impulses will yet be found to play a rôle coördinate with those which are supposed to be stopped in the bundle of His. In the meantime it is of more than passing interest to realize that something new has arisen in the old field of heart pathology and that the novel theory contains some most suggestive elements which can not fail to help in the understanding of certain cardiac problems, even though eventually it should prove not entirely worthy of acceptance in all the breadth of its present apparent significance.

THE RELATION OF THE MEDICAL EXAMINER TO THE MEDICAL DIRECTOR.

Last week we discussed the relation of the medical examiner to the agent and referred to the fact that many other points remained which it would perhaps be interesting and profitable to take up later.

The relation of the examiner to the home office should be as direct and intimate as possible; the reports should go direct to the home office without passing through the hands of the agent, and any correspondence in reference to cases should be addressed directly to the examiner. Should he be negligent in his duties in any way, the proper remedy lies not in any means of coercion by the agent or the general agent, but in complaint to the medical director, who alone has power of discipline in his department. In a word, it can not be too strongly emphasized that in a properly conducted company the examiner is an officer of the medical department and amenable solely to the medical director for the conduct of his work.

A more frequent personal contact of the medical directors and examiners would conduce to more cordial relations and greater efficiency. We are aware that the position of medical director of a large company is an exacting one, but the chief person concerned in the selection of risks is the examiner, and the mortality experience of the company must depend almost wholly on the care, the wisdom and the honesty with which he does his work. It seems obvious, therefore, that the personnel of the local examiners is the most vital factor in determining the death rates. The chief duty of the director is his selection of the local examiners and the keeping in touch with them, in so far as possible, by personal contact. The state and county societies furnish a convenient place for such contact, and it seems strange that the medical directors are so seldom seen at these societies, whose members, with few exceptions, constitute the most progressive and capable members of the profession. These meetings also afford an opportunity for conferences of the local examiners of an insurance company, which ought to be held at least annually, preferably at the meetings of the state medical societies, either at some unoccupied hour during the session or on the day preceding or following the regular meeting. If an annual meeting of the agents is of sufficient importance to warrant the payment of their traveling and other expenses and the offering of prizes to the most successful, surely similar meetings of the examiners would conduce to better and more effective work, the results of which would ultimately appear in the mortality experience of the company. At such conferences the scientific aspects of life insurance examining should be discussed and the interest of the examiners aroused and stimulated to work for something beyond the mere fee. Under present conditions it may be safely asserted that the great majority of physicians, even among those who are keenly interested in the scientific side of their clinical work, have little or no interest in life insurance examining beyond the compensation derived from it. This is inevitable so long as they have no means of following their insurance cases and of knowing their ultimate outcome. If each examiner were to keep a careful record, preferably a carbon copy, of every examination, as he keeps a history of his clinical patients, and if then the home office were to inform him of every death among the cases he has recommended, and, when possible, of those whom he has declined, it would be possible for him to develop much the same interest in his insurance as in his clinical work. Only in this way can the best work of the examiner be obtained. The most effective service from a professional or scientific man can never be secured on a purely mercenary basis.

There has been a tendency among the medical directors, especially of the American companies, to exaggerate the importance of what might be called the "clerical" as contrasted with the "judicial" function of the local examiner. In the instructions to examiners great emphasis is laid on the importance of recording all the facts, with the intimation that the medical director will do the rest—will determine, from the mere catalogue of facts as to the family and personal history and physical condition of the applicant, whether or not he is a good risk. The effect of this is to lead the examiner to feel that he has done his full duty when he has perfunctorily recorded the facts called for in the application blank, and that there is little call for the exercise of his judgment as to the rating of the risk. Of course, the actual recording of all the facts is important, but a good-sized book full of such could not enable the medical director, who has never seen the applicant, to judge as accurately of his insurability as a careful examination of the applicant face to face.

QUACK DOCTORS AND QUACKERY.

No articles have appeared that have proved so effective in accomplishing their purpose as have those on "patent medicines" by Samuel Hopkins Adams in *Collier's Weekly*. They set the people to thinking, and that was all that was necessary. The sale of "patent medicines" immediately dropped off, and, in some instances, almost to the vanishing point. This is especially true of such over-advertised frauds as Peruna and Liquozone—the latter, it is stated, being almost wiped out.

Another series of the "Great American Fraud" articles by Adams is now appearing in *Collier's*, this time on "Quacks and Quackery." The first of this series was on "The Miracle Workers;" the second on "The Scavengers," and the third, which has just appeared (September 1), is on "The Specialist Humbug." In this article Adams shows up that prince of humbugs, Oren Oneal, in a way that will open the eyes of the gullible public much more satisfactorily than Oneal himself was ever able to do with his "dissolvent method." Coffee of Des Moines, Powell, Madison and other "eminent" eye and ear quacks are placed in the lime light of publicity and their rascally humbugging methods exposed. Undoubtedly the public will begin to think about the advertising quack and his methods which will result in at least checking his inhumane course. In fact, something has already stirred up the officials of Chicago—where quackery is probably more rampant than in any other city in the world—for the corporation counsel has commenced a crusade against the quacks and fake medical institutions in that city.

Adams points out how to tell whether or not the doctor is a quack: "The advertising doctor who, having a 'cure' to sell, is 'editorially endorsed' by any publication, particularly in the religious field, is a quack. The doctor who advertises secret powers, or newly discovered scientific methods, or vaunts a special 'system' or 'method,' is a quack. The doctor who offers to sell, at a price, a cure for any ailment is a quack, and if he professes a 'special interest' in your case and promises reduced rates, he's throwing in a little extra lying for good measure. Finally, the form-letter is a sure sign. You can tell it because it begins 'Dear Friend,' or 'Dear Mr. So-and-So,' or 'My dear Correspondent,' and contains promises that will fit any case. If, however, you are determined to give a trial to one of these 'specialists,' suggest these terms: that, since he *promises* to cure you, you will deposit to his account the full price of the treatment, to be paid him as soon as you are cured, or substantially benefited, and not before. Then and there negotiations will cease. The promising quack will never stand behind his promises. Through this simple expedient one may guard himself against the whole army of medical scamps, for this is the final test of quackery which none of the ilk can abide."

A feature brought out is that one of the quacks, after expulsion from the American Medical Association, still continued to display in his office his certificate of membership as an index of his good standing. It is certainly gratifying to know that the organization has come to mean so much that even the quack and charlatan strives to take advantage of its prestige for his own purpose. In the meantime it must not be forgotten that these articles in *Collier's* supply an inexhaustible amount of material for the warfare with quackery that will be useful any time during the present generation, not alone against the men who are actually exposed, but also against others whose methods will partake of those which have been so mercilessly shown up on the present occasion.

THE LOURDES PILGRIMAGE.

We have not heard that the annual pilgrimage to Lourdes has been discontinued or materially diminished by the almost unanimous protest of the French physicians. It is a difficult matter to handle, and such religio-medical resorts will probably always be in favor with certain classes, notwithstanding the perils they involve. If faith were the power to control man's physical ailments that some claim it to be, such excursions ought to be conducive to the public health, but it is a simple matter of observation and statistics to prove that they are just the opposite. A few cases may be benefited from the psychologic effect, but a much larger number are likely to be made worse, and the aggregation of disease in such places and in such pilgrimages is a special opportunity for the spread of contagion and infection. One need not accept all that Zola has described to admit this; unless the conditions are controlled absolutely by skilled sanitarians with a free hand, evils are inevitable and the difficulties of correct sanitation are specially aggravated when the conditions are all dominated by an implicit religious faith in a miraculous shrine to which necessary sanitary measures would seem almost necessarily sacrilegious. We have examples enough in this country in the way of Eddyism, Dowieism, etc., of the conflict between unenlightened credulity and necessary health measures. The fact that a large number of Roman Catholic physicians, presumably devout Catholics, in France, have indorsed the protest against the Lourdes pilgrimage shows that an enlightened religious sentiment is not blind to the evils supported by too credulous fellow religionists. It is to be hoped that if this pilgrimage is to continue year after year it will soon come under the control of those who can deprive it as far as possible of its dangers to public health.

RAGWEED EXTERMINATION.

Now that the hay-fever season is well on, it is a little remarkable that more has not been said about the abolition, near human dwellings at least, of the plants that are popularly supposed to be its cause. The proposition is perhaps too large a one, but there are a few plants that are said to be especially responsible and have not the excuse of being redeemably esthetic or otherwise useful. Among these is the ragweed, ridiculously called by the botanists ambrosia or food of the gods, which grows in almost every suburban vacant lot, and the pollen of which reddens the trouser legs of every man who traverses them at this season. If it deserves its popular reputation, it is the chief offender. We would not like to see the golden-rod exterminated, and it has at least the merit of not infesting the closer built up regions of human habitation, but the ragweed is pretty nearly everywhere and thrives in the crowded haunts of man as well as in the truly rural districts. In Ohio it seems they have a law against it as a public nuisance, but, like the edicts against Canada thistles and poison ivy, it probably is very little enforced. It may be impossible to exterminate the weed, but it has as little apparent excuse for its existence as far as usefulness or innocuousness to humanity is concerned as any other species of our flora, whether it is really the cause of hay fever, as it is supposed to be, or not.

TUMORS OF THE BRAIN.

The study of tumors of the brain is of especial importance by reason of the brilliant therapeutic results at times attained by means of both surgical and medicinal measures. Non-malignant intracranial neoplasms are not at all uncommon, and careful scrutiny will often lead to accurate diagnosis at a time sufficiently early to justify hope of recovery as a result of appropriate treatment. Even in cases in which recovery can not be brought about, marked relief, particularly from distressing headache can be afforded. The timely institution of treatment will avert, also, such serious dangers as blindness from optic neuritis. The results of an interesting analysis of seventy cases of brain tumor are presented by Dr. Arthur Conklin Brush[1] in a communication read before a recent meeting of the Medical Association of Greater New York. The patients varied from 6 months to 72 years of age; 60 per cent. of the cases occurred in persons between the ages of 20 and 50 years, and this distribution is attributed to the greater frequency of syphilitic tumors during this period. Almost 60 per cent. of the cases occurred in males. In 75 per cent. no etiologic factor could be ascertained. Five of the growths were tuberculous; six occurred during the presence of active syphilis, recovery taking place under specific treatment; two others were found to be syphilitic at autopsy. In two cases heredity appeared to be an etiologic factor. Unfortunately, the symptoms of cerebral tumor are not prompt in appearance and regular in development. In three cases they covered a period of four, five and ten years, respectively. In only eight was the duration from two to eight weeks, and in four of these the lesion was undoubtedly syphilitic. Convulsive seizures were among the most prominent early symptoms. These were general or local or of the nature of petit mal. Defective vision occurred next in frequency as an early symptom. Other common clinical phenomena were headache, with nausea, vomiting and vertigo, ataxic gait, hemiplegia, dementia. Eighteen of the growths were subcortical; 17 were situated in the motor cortical region, 7 in the basilar ganglia, 6 were basilar, 6 cerebellar, 5 in and about the pons. In 14 cases the new growth was found to be a sarcoma, in 11 syphilitic, in 9 a glioma, in 7 tuberculous, in 4 cystic, in 1 an angioma and in 1 a psammoma. Fourteen patients recovered under medicinal treatment; 19 were improved by surgical means, and 13 died. The only drugs that are known to influence favorably the growth of cerebral tumors are mercury, iodin and arsenic. The fact that improvement follows treatment with mercury and iodids is not conclusive evidence that the growth is syphilitic. When medicinal treatment is not succeeded in a few weeks by definite improvement and the new growth can be localized in an accessible situation, surgical intervention should be resorted to. Even then irremediable damage may already have been done and the operation itself may result in paralytic phenomena. For this reason the importance of early diagnosis and prompt and vigorous treatment must be obvious.

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[1] Medical Record, Aug. 11, 1906, p. 215; The Journal A. M. A., Aug. 25, p. 639.

THE MINNESOTA HEALTH REGULATIONS.

The laws of Minnesota put the formulation of health rules for the state in the hands of the State Board of Health, and this board has recently published a very complete and elaborate set of regulations, covering nearly all the points of public sanitation. Naturally this has stirred up a little opposition. There are always those who see a restriction of their liberties in salutary regulations. So far as we can see from the copy before us, the rules are reasonable and enforcible, and the fact that their making and interpretation is in the hands of the Board of Health makes it the more easy to abolish or to modify such as experience may show to be impracticable or to work undue hardship to any one. In fact, we believe that the details of such measures should be left as far as possible to an intelligent health board rather than to have them embodied in legislative enactments and only changeable by additional legislation. The rules cover the ground very completely, though we should infer that there are no distilleries in Minnesota, as the possibilities of swill milk seem to have been overlooked. We mention this simply as a suggestion to the Minnesota Board of Health. The State of Minnesota is certainly well off in its health officials.

THE VARIABILITY OF SUPRARENAL PREPARATIONS.

The contribution by Dr. Reid Hunt and the reports of Drs. Sollmann and Brown, appearing in our Pharmacology department this week, represent entirely independent investigations, executed on different animals and by somewhat different methods. They are, however, in striking agreement by showing that the various solutions of suprarenal alkaloids on the market are far from uniform. Hunt's examination demonstrated that to produce equal effects it required of one brand five times as much as of another. Specimens obtained from one manufacturer were of uniformly good quality; one specimen obtained from another manufacturer was good, another from the same firm was inferior, while the products of one of the firms, obtained directly from the company, were uniformly bad. The report of Sollmann and Brown shows that the activity varies commonly from 65 to 100, and one sample was inactive. As pointed out by Sollmann and Brown, these results have a purely negative value; they should not be interpreted as determining the relative value of the various brands, but merely as demonstrating the variability of the products. We feel assured that this is a fault which need only be pointed out to be remedied, and that future examinations will reveal a greater degree of uniformity. It might be regretted that the reports do not mention the names of the preparations, but, under the circumstances, it has been thought best to omit these. The object of the investigation and the publication of the results is not to condemn any firm or any preparation, but to call attention to actual conditions regarding these important remedies. It is believed, too, that the publication of these reports will encourage manufacturers to test and standarize their products more conscientiously so that they may be sure that the claims on the label will be borne out. It is to be hoped that the U. S. Public Health and Marine-Hospital Service may consider it wise to repeat the experiments occasionally and in the future to mention the names of the preparations examined. Similar experimental work has recently been done abroad. Cameron, of Edinburgh, has examined a number of suprarenal preparations on the English market and has found several of the preparations uncertain and variable—the American preparations, however, standing well in the investigation. American firms have taken the lead in the manufacture of preparations of suprarenal active principle, and it is hoped they will strive to keep up the standard and so maintain the lead.

Medical News

ALABAMA.

New Sanitarium.—The new sanitarium of Dr. Miles A. Copeland, near Birmingham, is now open, with accommodations for 12 patients.

Fined for Omission to Report.—Twenty-four warrants against physicians of Birmingham were issued August 16, for failure to submit obstetric reports to the city physician, and several of these physicians were fined $1.00 and warned that in case of future offense a heavier fine would be assessed.

Commends State Authorities.—In a public statement issued August 4, State Health Officer Dr. William H. Sanders, Montgomery, commends the health authorities of New Orleans and Louisiana for the care they are exercising to keep yellow fever out of the country. He states that the candor and honesty of the New Orleans physicians has done much toward allaying public fear in this regard.

Ill and Injured.—Dr. James E. Seay, Pratt City, is recovering from the injuries sustained in an accident on the Frisco railroad in July.——Dr. Wilson L. Heflin, Roanoke, was seized with an attack of vertigo August 2, but is now reported to be improving.——Dr. J. Ross Snyder, Birmingham, who has been suffering from typhoid fever at Hillman Hospital, is convalescent, and has been removed to his home.——Dr. Thomas E. Callan, Scottsboro, has been ill for several days in a hotel at Gadsden.

ARKANSAS.

Personal.—Dr. Arthur G. Harrison, Warren, has been selected by the State Board of Health to succeed John M. Young, Little Rock, as physician to the Arkansas Deaf Mute Institute.——Dr. Jefferson D. Southard, Fort Smith, has been appointed physician of Sebastian County, vice Dr. James W. Breedlove, deceased.——Dr. Arthur C. Jordan, Pine Bluff, fractured a rib and sustained serious contusions in a runaway accident, August 19.

CALIFORNIA.

Smallpox.—The Secretary of the State Board of Health reports isolated cases of smallpox at Red Bluff and Dunsmuir.

Funds for Fever Fight.—The executive committee of the San Francisco Relief Corporation has appropriated $28,000 for the use of the health board in its war against typhoid fever.

College Notes.—The Oakland College of Medicine and Surgery opened for its fifth annual session August 21.——The College of Physicians and Surgeons, San Francisco, is to be rebuilt on Fourteenth street, between Woodward avenue and Jessie street, at a cost of about $50,000.

Tuberculosis Clinic Opened.—A free dispensary for the treatment of tuberculosis, connected with the Medical Department of the University of Southern California, Los Angeles, was opened August 6. The dispensary is under the direction and supervision of Dr. Frances M. Pottenger, medical advisor of the Anti-Tuberculosis League, assisted by Drs. W. Jarvis Barlow, George H. Kress and Sleeper.

Typhoid Fever.—The mysterious disease reported among the Japanese laborers in Pasadena has been pronounced to be "typho-malarial" fever. Two deaths have been reported.——On August 8 three patients with typhoid fever were removed to the hospital from the relief camp, Mariposa. The camp was located next to a pond of stagnant water and had no kitchen.

Personal.—Dr. Fred P. Clark has been elected superintendent of the Stockton State Hospital, vice his father, Dr. Asa Clark, resigned. Dr. Asa Clark will take charge of the sanitarium which has been under the direction of his son at South and Center streets, Stockton.——Dr. Charles C. Falk has been appointed federal quarantine officer for the port of Eureka, vice Dr. Clarence V. Thompson, resigned.

Sanitation Committee Report.—The sanitation committee of the San Francisco grand jury reported that general health conditions throughout the city are good and that the Board of Health has been active and conscientious in its work. The grand jury expresses to the 400 physicians who worked voluntarily in coöperation with the committee during the weeks following the earthquake and fire, the gratitude of the people of San Francisco.

Additional Sanitary Inspectors.—The San Francisco Board of Health, on the recommendation of the county medical society, has appointed the following medical sanitary inspectors: Drs. Herbert Wallen, Paul Castelhun, Philip Collischon, G. O. Culver, Morton R. Gibbons, A. B. McConnell, Harry R. Oliver, Clarence Quinlan, Walter J. Williams, Harry P. Roberts, E. W. Alexander, Frederick G. Canney, Roland E. Hartley, Charles Clark, Chester Harris, and M. McCauney.

Lane Lectures.—The annual course of Lane Medical Lectures was given in Cooper Medical College, San Francisco, by Dr. John McVail, Glasgow, Scotland, on August 20 and the five following days. The general subject of the lectures was "The Prevention of Infectious Diseases," and dealt with the progress of modern sanitary administration with a description of public health organizations of towns and counties, the abolition of typhus fever by sanitation, the results of modern house conditions, and the importance of building regulations. Then were considered in order, plague, typhoid fever, measles, scarlet fever, smallpox, tuberculosis, and finally the general question of the ethics of disease prevention, showing that the result of the advance in sanitation, vaccination, isolation and health effort has been to improve the race physically and morally, and the outcome is most encouraging for the future.

Hospital News.—The president of the University of California has approved the plan of Dr. Arnold A. D'Ancona, dean of the medical department of the institution, and his confrères, of converting the middle building of the affiliated college grounds south of Golden Gate Park, into a modern hospital, having a free clinic. It is estimated that $50,000 will be required to make the necessary changes, and of this amount $20,000 is available at the present time.——Mrs. Sylvester is erecting a large sanitarium on Wyandotte ranch, near Chico.——Dr. Thomas J. Randall, Los Angeles, turned the first spadeful of earth for the foundation excavation of the new Sunset Hospital, August 13.

COLORADO.

July Deaths.—During July 799 deaths were reported in the state, equivalent to an annual mortality of 14.16 per 1,000. Of the deaths 19 were caused by typhoid fever, 5 by diphtheria and 4 by scarlet fever, and 33 stillbirths were reported.

Dr. Keith Convalescent.—Dr. John G. Keith, Leadville, who has been suffering from complete paralysis as the result of a lightning stroke last May and has been under treatment at St. Luke's Hospital, Denver, has returned to his home convalescent.

Communicable Diseases.—During July 173 cases of typhoid fever were reported in the state, 105 cases of scarlet fever, 31 cases of diphtheria, and 30 of smallpox. As compared with the previous month, there was a decrease of 5 cases of diphtheria, 3 of scarlet fever, 35 cases of smallpox, and an increase of 110 cases of typhoid fever.

DISTRICT OF COLUMBIA.

Communicable Diseases.—A slight increase occurred during the week in diphtheria; scarlet fever showed a decrease of four cases; typhoid fever continued to increase, there being 74 new cases reported and only 35 discharges, 4 of which were by death, leaving 296 under treatment at the close of the week, as compared with 257 at the close of the preceding week.

Mortality for the Week.—The mortality of the week ended August 18, when compared with the record of the previous week of 1905, shows a gratifying improvement, there being only 103 deaths as compared with 136 during the week ended August 11, and 107 during the same week of 1905. Of the decedent 63 were white and 40 colored, which represents the following death rates per 1,000, per annum: White, 14.1; colored, 21.9; and, total population, 16.4. The principal causes of death were diarrheal diseases, 14; consumption, 13; disease of the heart and cancer, each 5; typhoid fever, 4; and cerebral hemorrhage, bronchitis and meningitis, each 2.

ILLINOIS.

Personal.—Dr. Albert S. Wall, Champaign, has returned after four months in Europe.——Dr. Lewis H. Skaggs, Ellsworth, was overcome by the heat, August 23, but is improving.

Training School at State Hospital.—Dr. Vaclav H. Podstata, superintendent of the Illinois Northern Hospital for the Insane, Elgin, announces the opening of a training school for attendants and nurses on October 1. The school will have a three-years' course and the attendants will be given more time off duty and the hours in various quarters will be shortened.

Advocate Septic Tank.—As the result of a conference held between the Secretary and Assistant Secretary of the State Board of Health and the directors of the State Board of Water Survey, Urbana will probably have in a short time a modern septic tank for the purpose of demonstrating to the officials of the various municipalities the advantages of this method of sewage disposal.

Consumption Camp Started.—The members of the Chicago Tuberculosis Institute have perfected plans for the erection at Dunning of portable houses for patients suffering from tuberculosis, who will be given treatment at the new camp which is now being established. The houses consist of dormitories, 26 by 44 feet, and include two porches, a kitchen and a dining-room. Three of the cottages are now ready and the camp, with accommodations for 20 to 30 patients, will probably be opened this week.

Communicable Diseases.—Typhoid fever is reported to be prevalent in Alton and the necessity of boiling all drinking water is urged.——Joliet reports four cases of scarlet fever.——Diphtheria has been prevalent in Brereton, and the situation is being investigated by an official of the State Board of Health, who recommended that every house in which there had been a case of diphtheria should be properly disinfected and fumigated, and that all clothes and wearing apparel should be disinfected. He ordered the two families at present under quarantine to be released and the houses fumigated.

Chicago.

College Commencement.—The twelfth annual commencement exercises of Illinois Medical College were held August 23, when degrees were conferred on a class of fifty by Dr. Heman H. Brown, president of the college.

Offers School for Deaf.—Comptroller McGann has received an offer from a woman philanthropist to erect a school for the blind on the Gage farm. The donor proposes to make the school sectarian and expects to put up a building to cost about $50,000.

Typhoid Fever in Rogers Park.—The Health Department has discovered 6 cases of typhoid fever, one of which was fatal, between Morton street and Tuohy avenue, Rogers Park. In this location the residents have no city water service, and are obliged to depend on well water or purchased water for drinking or household purposes.

INDIANA.

To Teach the People.—Dr. William J. Scott, Kokomo, health officer of Howard County, has been authorized by the Board of County Commissioners to have printed for distribution 2,000 pamphlets treating of consumption and typhoid fever, and the best methods of prevention and treatment of these diseases.

Personal.—Dr. and Mrs. Albert E. Bulson, Fort Wayne, have returned from a three months' trip abroad.——Dr. Charles E. Grayston, Huntington, has been appointed district optician and oculist for the Erie railroad.——Dr. Anna M. Lemon Griffin, formerly a practitioner of Muncie, has been sent to the State Hospital at Logansport by the authorities of Kokomo. She is believed to be temporarily deranged.——Dr. Charles H. Eckert, Marion, was operated on at Fort Wayne, August 22.——Dr. J. Robert Norrel, Richmond, has been elected secretary of the local board of health to fill the unexpired term of Dr. T. Henry Davis, formerly secretary, and at present president of the State Board of Health, resigned.

Communicable Diseases.—The Secretary of the Kendallville Board of Health reports that only two cases of smallpox have developed in that place this summer and anticipates no further trouble. The quarantine has been lifted.——There are about fifteen cases of smallpox in Peru, two of which are in South Peru, and quarantine is in force.——At Hoagland there is reported to be six cases of diphtheria with one death, and the county health officer has quarantined the homes in which the cases were found.——Columbia City has a number of cases of typhoid fever and the city water is being analyzed.——An epidemic of typhoid fever is said to be existing at Russiaville, where 20 cases have already developed. The health authorities have decided the disease was due to the use of inferior and polluted drinking water.

Slaughter-House Regulations.—The State Board of Health has drawn up an ordinance for the control of slaughter-houses, butcher shops, meat and fish markets, and public eating-houses, providing that the animals butchered shall be absolutely sound; that the slaughter-houses shall be made and kept sanitary, and that the offal shall be tanked, cremated, or buried; that cold storage facilities must be provided; that employés must be clean as to personal habits and clothing; that the slaughter-houses shall be provided with ample lavatory facilities; that swine must not be fed on offal; and that meats shipped from other states shall be accepted if the place of preparation is inspected. The regulations for butcher shops, meat and fish markets provide that they shall be screened from May 1 to November 1, and that plants and tools shall be kept clean. The regulations for the public eating houses provide that they shall be kept clean, well lighted and sanitary; that the tables, linen, dishes, utensils, etc., shall be kept thoroughly cleansed; that all employés shall be personally clean and shall wear clean clothing; that all waste water shall be removed and placed in proper receptacles; that all cellars and storage places for vegetables and meats shall be thoroughly disinfected whenever required, and shall be kept clean and free from all decaying matter. Rats, mice, and other vermin shall be excluded from all storage places. All hotels, inns, taverns, boarding-houses and eating-houses shall be subject to public inspection at any and all times.

IOWA.

Personal.—Dr. Frank D. Ayres, Sabula, suffered some severe burns on the face and eyes by the explosion of a gas generator at his residence, August 6.——Dr. Peter H. Schroeder, Traer, sailed for Europe August 25, on the *Philadelphia*.——Dr. Howard E. Campbell, Anita, is seriously ill with heat exhaustion.

Medical Society Meeting.—Botna Valley Medical Society held its annual meeting in Atlantic August 13 and decided to meet in 1907 at Avoca. The following officers were elected: Dr. George A. Spalding, Avoca, president; Dr. Thomas B. Morris, Atlantic, vice-president; Dr. Augustine Grant, Minden, secretary (re-elected); Dr. Harry D. Spencer, Oakland, treasurer; and Drs. William F. Graham, Athens, George A. Cassidy, Shelby, and Harry D. Spencer, Oakland, censors.

State Board Elected.—At the annual meeting of the State Board of Health, July 23, Dr. Fred W. Powers, was elected president and Dr. Josiah F. Kennedy re-elected secretary. Prof. Henry Albert, Iowa City, was elected director of the state laboratory of bacteriology and bacteriologist of Iowa, and Prof. C. W. Kinney, Des Moines, was elected chemist of the board. On the re-election of the secretary, he tendered his resignation, to take effect Jan. 31, 1907. His resignation was accepted and Dr. Louis A. Thomas, Red Oak, was elected to the position and authorized to assume his duties Feb. 1, 1907.

KANSAS.

Infectious Diseases.—The city sanitary department of Topeka reports under quarantine 7 cases of typhoid fever and one case of scarlet fever.

Epidemic of Dysentery.—It is reported that an epidemic of dysentery is afflicting the country north and west of De Soto. Seven deaths have occurred in the last ten days.

Contract Let for Medical Building.—The administration building of the Eleanor Taylor Bell Memorial, the Rosedale adjunct to the Kansas University Medical School, for which the contract has been let, it is said, will cost $100,000, with equipment, and is to be ready for occupancy this fall. The general hospital, the first of the series, is practically completed at a cost of $30,000.

Sanitary Laws Must Be Enforced.—Dr. S. J. Crumbine, secretary of the State Board of Health, is endeavoring to enforce the laws concerning sanitary conditions of the state. He recently issued orders for the fumigation of every schoolhouse in the state during the vacation period. In reply to a letter from a county attorney as to what he should do about it if the order were disobeyed, Dr. Crumbine gave the following citation from the general statutes: "The health officers of the several local boards throughout the state shall perform such duties as this act, the local board of health, or the State Board of Health, shall require. For any failure or neglect of said officer to perform any of the duties prescribed in this act, he shall, on conviction thereof, be fined $10 for each and every offense."

KENTUCKY.

Tuberculosis Hospital to be Built.—The Louisville city council has agreed that immediate steps must be taken to provide temporary quarters at the present city hospital, Louisville, to accommodate the tuberculosis patients. It is proposed to put up a building to cost about $3,000.

Typhoid Fever.—An epidemic of "typho-malarial" fever is said to be raging at Farmer; 25 cases are said to exist and 3 deaths are reported.——The State Board of Health has issued circulars containing directions for the prevention and care of typhoid fever.——An epidemic of typhoid fever is reported at Midland City in the eastern part of Bath County; 30 cases have been reported and several deaths have occurred.

Personal.—Dr. Florence Meder, third assistant physician at the Western Kentucky Hospital for the Insane, Hopkinsville, has accepted a similar position at the Eastern Kentucky Hospital for the Insane, Lexington, and will assume her new duties September 1.——Dr. Malcolm H. Yeaman, Lakeland, has, it is reported, decided to resign as superintendent of the Central Kentucky Hospital for the Insane.——Dr. Meverell K. Allen, health officer of Louisville, who has been in Europe since June, returned August 16.——Dr. Llewellyn P. Spears has succeeded Dr. James W. Guest as physician for the eastern district of Louisville.——Dr. A. D. Park, Lakeport, who has been seriously ill with typhoid fever, is convalescent.

LOUISIANA.

Consolidations.—Arrangements for the consolidation of the Tulane University of Louisiana Medical Department and the New Orleans Polyclinic were consummated, August 30, at the meeting of the Board of Administrators of the Tulane Fund. The Polyclinic will thus become the postgraduate department of the college.

The New Iberia Case of Yellow Fever.—The one case of yellow fever at New Iberia, 125 miles from New Orleans, is still a mystery. The patient, a mulatto boy 12 years of age, has apparently recovered from the disease. The physicians agree that the case was unmistakably one of yellow fever, but thus far they have been unable to determine the source of the infection. Thorough fumigation and disinfection of the town has been carried out by the State Board of Health, and no other cases are expected to occur.

MASSACHUSETTS.

Outdoor Treatment for Tuberculosis.—The State Tuberculosis Commission will, it is reported, recommend to the legislature a campaign in every slum and tenement district of the state, to apply the home cure and outdoor sleeping for the treatment of tuberculosis.

Personal.—Dr. Charles S. Millet, Brockton, has been appointed secretary of the State Tuberculosis Commission.——Dr. J. F. A. Adams has been appointed chairman and Dr. John P. Rand, Monson, secretary of the trustees of the Massachusetts State Sanatorium for the Treatment of Tuberculosis, Rutland.——Under the new state law, which came into operation September 1, Dr. John H. Bannon has been appointed school physician for Lawrence.

Dedication of the New Harvard Medical School.—The dedicatory exercises of the new Harvard medical buildings will occur September 25-26. On Tuesday afternoon the dedicatory exercises will be held at the new buildings, followed by an afternoon tea. In the evening a reception will be given by the alumni and the officers of the Harvard Alumni Association at the Boston Medical Library. On Wednesday morning there will be literary exercises and the conferring of honorary degrees at Sanders' Theater, Cambridge, followed by informal reunions of the medical classes. In the afternoon the triennial banquet of the Harvard Medical Alumni Association and invited guests will be held at Memorial Hall.

MICHIGAN.

Capital Stock Increased.—The Grand Rapids Medical College Equipment Company, owners of the Grand Rapids Medical College, have increased their capital stock from $5,000 to $15,000.

Carstens for Mayor.—Dr. J. Henry Carstens has announced himself as a candidate for mayor of Detroit on the Republican ticket. His platform he announces to be opposition to the eighteen-year franchises proposed for the Detroit Union Railway and reduction in street-car fares. He believes that the people are entitled to a lower rate than six tickets for a quarter.

Personal.—Drs. G. E. Stripp and Henry B. Carey of the attending staff of the Michigan State Hospital for the Insane, Kalamazoo, have resigned, Dr. Stripp to practice medicine in the state and Dr. Carey to accept a chair in a California college.——Dr. George R. Pray, Jackson, physician to the State Prison, was brutally assaulted August 14.——Dr. Henry M. Leach, Saginaw, while returning from Bridgeport, was thrown from his buggy in a collision and was rendered unconscious. He is now reported to be improving.

July Mortality.—During July, 2.779 deaths were reported to the department of state, an increase of 29 over the preceding month and 279 over the corresponding month of 1905. This mortality is equivalent to an annual death rate of 12.7 per 1,000. Of the decedents, 627 were infants under 1 year of age and 678 individuals aged 65 years and over. Diarrheal diseases of infants caused 259 deaths; accidents and violence 222, of which 50 were from drowning; tuberculosis, 220; cancer, 147; pneumonia, 84; whooping cough, 43; typhoid fever, 33; meningitis, 27; measles, 23; diphtheria, 22, and scarlet fever, 14. During the month 3 deaths occurred from lightning. Tetanus was given as the cause of 10 deaths, in 2 of which the fatal result was due to the careless handling of explosives.

Wayne County in Line.—The secretary of the Wayne County Medical Society has issued a pamphlet to call the attention of the physicians of Wayne County who are not members of the local organization to the advantages now offered to its members by the society, and to secure the interest and support of all practitioners of medicine in the completion and perfection of the organization of the profession and of the county. For the annual dues of $4 the following advantages are now offered: 1. Membership in the Wayne County Medical Society. 2. Membership in the Michigan State Medical Socity. 3. The Journal of the Michigan State Medical Society. 4. Privileges of medical defense. 5. Eligibility to membership in the American Medical Association. 6. The advantages to be derived from the completion of medical societies in Wayne County.

Communicable Diseases.—The health officer of Cadillac says that he has 80 lumbermen quarantined in a lumber camp in Henderson County on account of diphtheria. Several cases have been found and one camp has been converted into an isolation hospital.——Typhoid fever is epidemic in Three Oaks, 21 cases have been reported, with 1 death, and 3 patients are reported to be in critical condition. On examination of the standpipe which supplies the town with water, the decomposing bodies of hundreds of young sparrows were found in the water. The standpipe was emptied and is to be cleaned.——Traverse City reports 15 cases of typhoid fever.——Mass City and Greenland, Ontonagon County, are suffering from an epidemic of typhoid fever. There have been 35 cases reported, with 5 deaths.——Several cases of typhoid fever, traceable directly to the milk supply, are reported from Allegan.

MINNESOTA.

Buried with Full Military Honors.—All the officers of the First Infantry N. G., Minnesota, and the Minneapolis companies of the regiment met at the armory August 21 and marched to Lakewood Cemetery, headed by the First Regiment band, and there buried Dr. Reynaldo Juan Fitzgerald, with full military honors. The active pallbearers were officers of the regiment.

Sanatoria in Rochester.—Patients for St. Mary's Hospital are coming in such numbers as to overtax its capacity. To relieve the congestion, two sanatoria are now in process of construction, the first under the charge of Dr. John E. Crewe, who has purchased the E. A. Knowlton residence, and is fitting it up at an expense of about $40,000, and the second is being built by Mrs. Charles E. Chute, which will contain about 35 rooms, involving an outlay of about $10,000.

License Revoked.—The State Board of Medical Examiners has revoked the license of Dr. Van Damme, Minneapolis, convicted of illegal practice.——Dr. Theron H. Bly, who is serving a sentence in the state prison at Stillwater, has been notified that his case is pending, and that the revocation of his license will be voted on at the next meeting of the board to be held about October 1. The board is unanimously in favor of revoking the license of every practitioner against whom a case can be proved.

MISSOURI.

Busy Year for Ambulances.—The ambulances of the health department of St. Louis during the last fiscal year made 10,759 calls, covering a distance of 54,749 miles.

May or May Not be Vaccinated.—In Kansas City this year for the first time the schools will admit pupils whose arms do not show the marks of successful vaccination. Six months ago the council passed an ordinance leaving it optional whether or not the residents of the city shall be vaccinated.

Diseases and Deaths in St. Louis.—During the week ended August 20 there were 215 deaths in St. Louis, an increase of 31 as compared with the preceding week. Gastrointestinal diseases caused 24 deaths; consumption and circulatory diseases, each 23; accidents, including violence, 16; cancer, 13, and marasmus and inanition, each 11.

Asylum Changes to be Made.—At a meeting of the Board of Public Improvements, St. Louis, at which the health commissioner and superintendent of the insane asylum were present, plans were made for the improvement of the asylum under the appropriation recently made. It was decided that provision should be made for 1,600 or 2,000 new patients and that the patients should be housed in groups of 40 each, with one attendant allowed for every 10 patients. For the violent insane a separate building is to be erected to accommodate 160. All the buildings will be provided with offices and sleeping rooms for at least one physician and two or three attendants. A separate residence building is to be erected on the asylum grounds for the superintendent and a separate building also for the accommodation of attendants and outside help. The present asylum building, designed to accommodate 400 patients, now contains 640.

Tuberculosis by Districts.—Statistics have been compiled by the clerk of the St. Louis board of health, showing the number of cases of tuberculosis and the deaths from that disease in each of the seven sanitary districts. The third district, located east of Jefferson Avenue and between Franklin and Chouteau avenues, shows a greater aggregation of cases and deaths than any other district. In the first district, with a population of 77,075, there were 243 cases and 182 deaths; in the second, with a population of 98,336, there were 249 cases and 178 deaths; in the third, with a population of 68,159, there were 267 cases and 190 deaths; in the fourth, with a population of 119,056, there were 264 cases and 183 deaths; in the fifth, with a population of 77,522, there were 192 cases and 130 deaths; in the sixth, with a population of 130,975, there were 271 cases and 187 deaths, and in the seventh, with a population of 123,895, there were 260 cases and 162 deaths.

NEW HAMPSHIRE.

Food Adulteration.—The State Board of Health reported recently that as a result of an examination of 408 samples of prepared foods, 186 were found adulterated, misbranded or below standard.

Donation to Hospital.—Mr. J. J. Glessner of Chicago and Mrs. Garrett A. Hobart of New Jersey, widow of the late Vice-President, have each subscribed $5,000 for the new hospital at Littleton.

Polluted Well Causes Typhoid Fever.—There is an epidemic of typhoid fever in West Canaan. Thirty cases have been traced to the public well and an analysis of the water showed that it was badly polluted. The well has been closed.

NEW YORK.

Typhoid Fever from Bad Wells.—As a result of drinking from polluted wells, five cases of typhoid fever are reported from West Lyons, one of which has resulted fatally.

Did Not Discontinue Practice.—A. Arthur Huntley, Cuylerville, who was charged with illegal practice of medicine on the ground that he had not passed the state board examination, was arrested for a second time on account of his failure to discontinue practice and had his preliminary examination before the police authorities of Geneseo, was bonded for $500, and was held to the Livingston County grand jury.

New York City.

Much Trachoma.—The commissioner general of immigration reports that during the last 60 days 10 persons, on an average, afflicted with trachoma, were deported from New York City each day.

Personal.—Dr. William S. Bainbridge has been elected adjutant professor of surgery and has been assigned to one of the clinics in that department in the New York Policlinic Medical School and Hospital.——Dr. John Warren sailed on the *Lucania* for Liverpool, last week.——Dr. Louis L. Seaman has returned from his trip to East and South Africa.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended August 25, 589 cases of tuberculosis and 151 deaths; 158 cases of diphtheria and 14 deaths; 101 cases of typhoid fever and 22 deaths; 51 cases of measles and 7 deaths; 46 cases of scarlet fever and 1 death; 27 cases of whooping cough and 8 deaths; 9 cases of cerebrospinal meningitis and 10 deaths; 3 cases of smallpox and 4 cases of varicella, a total of 988 cases with 213 deaths.

Favor Removal of Isolation Hospital.—The comptroller is in sympathy with the department of health and the citizens who advocate the removal of the hospital for contagious diseases from Kingston Avenue, Brooklyn, to Barren Island or some other suitable location.——The board of health has applied for an additional appropriation of $325,000 more for a diphtheria pavilion and this will come up for consideration before the board of estimates in September.

Vital Statistics.—The department of health reports that 18,928 deaths occurred during the quarter ending June 30, or 632 more than were reported for the corresponding quarter of 1905. The respective annual death rates are 18.29 and 18.25 per 1,000. During the same period there were 25,692 births. Tuberculosis claimed 2,653; pneumonia, 1,527, and violence, 1,223, including 67 homicides and 191 suicides. Of children under 5 years of age 6,237 died. During the year 8,967 deaths occurred in tenements, 6,362 in institutions and 2,936 in dwellings.

New Officers for Health Department.—The following officers have been suggested by the acting medical officer of the department and approved and appropriations made by the board of estimates: Chief clerk, with a salary of $4,000; medical inspector, $2,100; two sanitary inspectors, $2,100 and $3,000, and inspector of food in charge of corps, $2,550. Five clerks, two chemists, a laboratory assistant and several other minor appointments were also provided for. The board has asked for an automobile, to cost not more than $3,000, for the use of the assistant sanitary superintendent of the borough of Manhattan. The board of aldermen has been requested to allow the department this automobile.

NORTH CAROLINA.

Medical Department Opens.—The medical department of Wake Forest College opened August 29, and reports an encouraging outlook for a successful year.

Hospital Completed.—The hospital connected with the Wake Forest College is almost completed and will soon be available for the use of students and private patients.

Personal.—Dr. Lewis M. Gaines has returned to Wake Forest College from his vacation.——Dr. Watson S. Rankin of the medical faculty of Wake Forest College, who has spent the summer in Boston, has returned.

OHIO.

Typhoid Fever in Toledo.—Twenty cases of typhoid fever are reported in Toledo in the territory bounded by Cherry and Grange streets.

Physicians Do Not Report Births.—As the result of the failure on the part of the Cleveland physicians to report the births, only 261 were reported for the year ended March 31, 1906. The penalty for failure to make reports has never been enforced, it is said.

Gift to Library.—It is reported by the Associated Press, Cincinnati, that General E. P. Walker, recently deceased, bequeathed to the Lloyd library, Cincinnati, his entire library and collection of manuscripts, and has in addition given a fund of $30,000 to be devoted to the securing of qualified experts to make original investigations in the practice of medicine and pharmacy and a study of the specifications of medicine. The restriction in this direction is that the researches are not to be confined to the theoretic side of medicine.

Personal.—Dr. Robert W. Purdy, Bradyville, is reported to be seriously ill with brain disease.——Dr. William Brundage has been made assistant physician to the Columbus State Hospital, vice Dr. William Richardson, resigned.——Dr. E. H. Rorick, superintendent of the State Institution for the Feeble-Minded, Columbus, sailed for Europe August 11.——Dr. Mark Millikin has been re-elected health officer of Hamilton, and Drs. Linus H. French, Clyde W. Hodges and John A. Burnett, district physicians.——Dr. Francis M. Fitton was appointed to fill the position of health officer until the return of Dr. Millikin, who is now in Colorado for his health.——Dr. Thomas C. Parks, Akron, has been appointed a member of the board of censors of Starling Medical College, Columbus.——Dr. John H. Lowman, Cleveland, who was operated on for appendicitis a few weeks ago, is convalescent and has been removed to his summer home.——Dr. Myron S. Clark, Youngstown, has been appointed pension examiner, vice Dr. Albert L. King, deceased.

Faculty Changes at Starling.—The Starling Medical College opens for the fall term September 13. The following changes in the faculty are announced: Dr. Starling Loving, dean, resigned, and Dr. Charles S. Hamilton, elected in his place; Dr. Frank Winders, registrar, vice Dr. Curtis C. Howard; Dr. D. Tod Gilliam was made emeritus professor of gynecology, and Dr. Earl M. Gilliam advanced to the chair of gynecology; Dr Isaac B. Harris, professor of physical diagnosis; Dr. Frank Winders, professor of applied therapeutics; Dr. Harry W. Whitaker, associate professor of theory and practice to succeed Dr. John H. Upham, promoted to associate professor of therapeutics and practice of medicine; Dr. Starling Loving, clinical professor of theory and practice of medicine; Dr. Joseph H. Jones, associate professor of materia medica; Prof. Clair A. Dye, lecturer on materia medica; Dr. Sylvester J. Goodman, assistant to the chair of operative and clinical surgery; Dr. Wells H. Teachnor, assistant to the chair of obstetrics, and Dr. P. D. Shriner, clinical demonstrator in obstetrics.

PENNSYLVANIA.

To Prevent Spread of Whooping Cough.—State Health Commissioner Dixon has ordered the placarding of houses in which whooping cough exists, the placards stating, "All persons are notified of the presence of this disease and are warned of the danger of visiting or coming in contact with those suffering from it."

Warning to Hotel Stewards.—A special agent sent by the state dairy and food commissioner attended the meeting of the International Association of Hotel and Club Stewards, in session at Niagara Falls this week. With the agent were sent 75 samples of adulterated foods collected by the department agents throughout the state. The object was to warn the stewards against purchasing adulterated foods for use in hotels and clubs.

Personal.—Dr. Fred E. Kress has been made physician of the Lilly, board of health.——Dr. William N. Stein has been reelected president of the Shenandoah board of health.——Dr. Gustav T. Fox and family, Bath, have sailed for Europe.——Dr. Thomas N. McKee, Kittanning, is suffering from an infected wound of the foot.——Dr. Oscar Lindenmuth, Ringtown, has been placed in charge of the *x*-ray department of the Indiana State University, Indianapolis.——Dr. Calvin H. Elliott, Harrisburg, who was operated on for appendicitis at the Medico-Chirurgical Hospital, Philadelphia, August 6, is rapidly improving.

Hospital News.—After five years of agitation and controversy, it has finally been decided that Pittsburg is to have a United States Marine Hospital on the old arsenal site at Thirty-ninth Street and Penn Avenue.——The directors of the Washington City Hospital Association have decided on the location for a new hospital at the corner of Donnan Avenue and Second Street. The new building is expected to cost about $25,000.——The Alfred O. Deshong sanitary cottage for the treatment of patients suffering from tuberculosis or other communicable diseases originating in the Chester Hospital, has been turned over to the latter institution. The cottage was built and donated by Alfred O. Deshong, Chester.——A new hospital is to be established at Siverly.

Typhoid Epidemic.—An epidemic of typhoid is said to exist in Freedom township, where three deaths have already occurred.——Five cases of typhoid fever are reported in one family at Hatboro.——Typhoid cases have greatly increased in McKeesport during the last few days.——Oakmont reports 30 cases of typhoid fever and Verona 40 cases.——Pittsfield has 7 cases of typhoid, reported to have been imported from Atlantic City, N. J.——The alarming condition of the typhoid situation in Pittsburg is evidenced by the posting of warnings against the drinking of unboiled water.——Typhoid fever has broken out at Berwyn and Devon, 18 cases of the disease existing at present. One of the largest dairies in the vicinity is quarantined, the owner being one of the victims of the disease. Milk supplied by the dairy is suspected.——At Hamburg there are an alarming number of cases, about 100 in the borough and surrounding country, new cases being reported daily.——Mount Union also is afflicted with the malady.

Pure-Food Crusade.—The state dairy and food commissioner announces that he has ordered hundreds of prosecutions against candy sellers and manufacturers in western Pennsylvania. During the last 30 days 625 samples of candies were purchased in Allegheny County, 80 per cent. of which were found to contain one or more chemicals, and some of them three chemicals. Warrants have also been issued against 27 dairymen of Allegheny County for selling milk in which formaldehyd and other preservatives were found. Many manufacturers and wholesale firms selling their products in this state have escaped prosecution because they are not within the jurisdiction of the health commissioner. Dr. Warren recommends that all manufacturers doing business in the state, but having their headquarters in other states and countries, shall be compelled to have a resident manager in this state, who shall be held responsible for adulteration of any food products sent into the state by the firm which he represents. Governor Pennypacker has sent a letter to Dr. Warren, signifying his approval of the success attained in the prosecution of the pure-food laws.

Philadelphia.

Public Baths.—As a result of the cooler weather of last week, from an average weekly attendance of 500,000, the number of bathers at the city's baths dropped to 398,209. Of this number 73,608 were men, 6,117 women, 294,674 boys and 23,810 girls.

Automobile Ambulance.—A contract has been awarded by Dr. Coplin for the construction of an automobile ambulance for the Philadelphia Hospital, to cost $3,200. The ambulance will have accommodations for 4 patients, 2 nurses, a surgeon and a chauffeur.

Fever Ship Quarantined.—The British steamer *Elswick Lodge*, from Tampico and Mexico to Philadelphia via Norfolk, was placed in quarantine at the Delaware Breakwater, August 30, on account of the illness of its second mate with what appeared to be yellow fever.

New Antitoxin Station.—The bureau of health has established an antitoxin depot for the southern part of West Philadelphia at the corner of Fiftieth Street and Baltimore Avenue, where supplies of antitoxin and culture, typhoid and sputum outfits may be obtained.

Candy Dealers Fined.—By direction of Dr. Warren, dairy and food commissioner, 20 candy dealers were fined for selling candy containing sulphites. The fines aggregated $2,070. The New York Glucose Company, will, in conformance with its previous declaration, pay all fines.

Expense for Health Protection.—The expenses for the preservation of health in this city for the year 1904 amounted to $533,510, or 38 cents per capita, as shown by the statistics just compiled by the census bureau. This outranks the expenditures for the same purpose of the four other largest cities in the United States.

Improvements at Blockley.—The contract has been awarded for alterations to buildings of the Philadelphia Hospital to provide better accommodations for the insane. The work is to be completed in 120 days, at a cost of $77,349. Next week 580 male inmates will be transferred to the annex formerly a part of the Philadelphia Museum, and the quarters thus vacated will be added to the insane department.

Personal.—Dr. William Ruoff has returned from Europe.——Dr. and Mrs. George B. McClellan will return from England this month.——Dr. Joseph S. Gibb, who is in Carlsbad, will return home October 1.——Dr. W. Marshall Hinkle sailed for Europe August 29.——Dr. C. M. Gray has been appointed outdoor physician at Station J, for the Ninth and Tenth wards.——Dr. William W. Richardson has been appointed assistant physician in the insane department of the Philadelphia Hospital.

Money for Charity.—At the convention of the Independent Order of Sons of Jacob, held in this city, a plan was formulated by the association whereby each member is to be taxed 10 cents, and the amount realized, $2,500, will be distributed among the hospitals of Philadelphia without respect to creed. Resolutions were also adopted providing for a relief fund to be devoted to the Hospital for Consumptives at Denver, Colo.——By the will of the late Alfred H. Kellogg, after the death of several beneficiaries, the Episcopal Hospital will receive $6,229 and the Bryn Mawr Hospital $1,150.

Health Report.—The total number of deaths during the week aggregated 407, a decrease of 74 from those of last week and a decrease of 44 from the corresponding period of last year. The principal causes of death were: Typhoid fever, 13; whooping cough, 7; diphtheria, 4; tuberculosis, 41; blood poisoning, 4; cancer, 14; apoplexy, 12; paralysis, 7; heart disease, 20; acute respiratory diseases, 27; diarrhea and enteritis, 66; cirrhosis of liver, 5; Bright's disease, 26; premature birth, 15; congenital debility, 10; accidents, 10; injuries, 7, and marasmus, 18. There were 184 cases of contagious diseases reported, with 17 deaths, as compared with 149 cases and 19 deaths the previous week.

GENERAL.

Erie Hospital Car.—The Erie Railroad has added to its equipment a complete hospital on wheels. This car is to be used in cases of accident, when the nearest hospital is so far away that operations on the spot become necessary. The car is remarkably complete in its entire equipment.

Yellow Fever in Honduras.—Dr. G. M. Guiteras of the Public Health and Marine-Hospital Service reports that there is yellow fever at Ceiba. This place has never before been infected with yellow fever, but Louisiana established a quarantine against it two months before the first case was reported.

Western Surgical Election.—At the annual meeting of the Western Surgical and Gynecological Association, held at Salt Lake City, August 31 and September 1, the following officers were elected: President, Dr. Charles W. Oviatt, Oshkosh, Wis.; vice-presidents, Drs. S. C. Baldwin, Salt Lake City, and Jabez N. Jackson, Kansas City, Mo.; secretary-treasurer, Dr. Arthur T. Mann, Minneapolis. St. Louis was selected as the place for holding the next annual meeting. The account of the proceedings of the meeting will be continued next week.

Cholera in Manila.—During the week ending July 7, 145 cases of cholera were reported, with 132 deaths. Dr. Victor C. Heiser, Commissioner of Health, states that the work of the Bureau of Health is greatly hampered by the propaganda which is being carried on by the Filipino and Spanish press against the isolation of the sick, the consequence being that frequently cases of cholera are not discovered till after death. Under these circumstances, he states, it is difficult to see how much relief can be expected in the local cholera situation for some time to come, the weather conditions during July and August being most favorable for its propagation and spread.

The Books Sent to California.—A member of the California relief committee writes, unofficially, stating that the committee has already received as large a supply of second-hand textbooks as it can dispose of, as there is comparatively little call for such books, unless they are standard. Files of journals, bound or unbound, if in complete volumes, are of more value. We are informed that on some of the consignments of books the freight charges amounted to more than the actual value of the books received, simply because the latter were out of date or worthless, or both. It should be borne in mind, therefore, that old books, except standard ones, should not be sent.

Report of the Health of the Philippines for 1905.—This report covers the work of the Bureau of Health for the Philippine Islands from Sept. 1, 1904, to Aug. 31, 1905. During this period Major E. C. Carter of the medical department of the United States Army was commissioner of public health until April 27, 1905, when he was succeeded by Dr. Victor C. Heiser of the United States Public Health and Marine-Hospital Service. The report reflects much credit on these officers and their assistants, reporting much important work in all the various lines of activity. Most of the important points mentioned have been noted in The Journal from time to time, as they occurred. Details are given of the manner of enforcing the sanitary ordinances. In regard to vaccination against smallpox, the report states that a law existed during the Spanish control making vaccination compulsory, but the chief good which resulted from it was that the people were accustomed to its existence on the statute books and did not object to it or strenuously resist its application at the hands of the Americans. Difficulties were encountered in a few provinces and the vaccinators were at once withdrawn and the pueblos left to themselves. Within six months the contrast between the vaccinated and the unvaccinated pueblos was so great that the chief men of the objecting municipalities requested the vaccinators to return. In regard to cholera the report states that among medical men the opinion is gaining ground that the disease is indigenous to the Philippines. It is stated that the number of lepers in the Philippines is estimated at from 10,000 to 30,000. The bureau of health at the time this report was written had a record of only 3,715, of whom 2,377 are males and 1,338 females. The leper problem is stated to be far from an unsatisfactory solution. The new colony which was opened at Culio (see The Journal, July 28, 1906, page 283), will be the beginning of a new order of things in the care of these unfortunates. A number of pictures illustrating the work of the bureau of health forms an interesting addition to the book. Among them are pictures of the board of health ambulance, the old buildings of the San Lazaro Leper Hospital at Cebu and the present leper hospital, the Sampaloc Hospital at Manila, a group of American sanitary inspectors and one of assistant inspectors and sanitary police, a board of health station in the San Nicolas district, Manila; types of the Filipino, Spanish and American houses in Manila; the Nipa district, the municipal slaughter house and St. Paul's Hospital, Manila. There are numerous illustrations of other points of interest in and around Manila and in other parts of the islands.

CANADA.

Ontario Association Election.—The annual meeting of the Ontario Medical Association was held in Toronto August 20. After a short executive session the officers were re-elected and it was decided to meet in Toronto in 1907. Dr. George A. Bingham, Toronto, was re-elected president, and Dr. Charles P. Lusk, Toronto, secretary.

McGill University to Honor British Doctors.—Sir Thomas Barlow, Bart., F.R.S.; Sir William Broadbent, Bart., F.R.S.; Sir Victor Horsley, F.R.S., and Dr. T. Clifford Allbutt, F.R.S., have been recommended by the board of governors of McGill University to receive the honorary degree of LL.D. of that institution. The degrees will probably be presented *in absentia* at the next convocation.

Montreal's Annual Medical Report.—According to the annual report of the medical health officer, Dr. L. Laberge, Montreal, for the year 1905, the average death rate of the city per 1,000 of the population was 20.6. This was 0.2 less than in 1904. The birth rate was 0.15 per 1,000 higher than in 1904. The average of births for a period of 19 years has been 37.92 per 1,000. The birth rate in Montreal is higher than in Toronto by 13.81 per 1,000. The marriages in Montreal in 1905 were 10.31 per 1,000, which is an increase of 0.10 over 1904.

Canadian Medical Protective Association.—That this society is progressing very favorably was shown by the annual report of its president, Dr. R. W. Powell, Ottawa, at the annual meeting in Toronto, August 20. He stated that it has now a membership of about 450, has never lost a case it has undertaken to defend, is sound financially and promises to do a great deal of good for the Canadian medical profession. Dr. R. W. Powell, Ottawa, was re-elected president, and Dr. Fenton Argue, Ottawa, secretary-treasurer in the place of Dr. J. A. Grant, Jr., Ottawa, resigned.

Canada Association Meeting.—The thirty-ninth annual meeting of the Canadian Medical Association, held in Toronto August 20, was only an executive session, owing to the meeting of the British Medical Association. The attendance was about 75, and the chief item of business was the reception of the report of the committee on reorganization, which was presented by the chairman, Mr. I. H. Cameron. The report took the form of a proposed new constitution and by-laws patterned somewhat after the constitutions of the American Medical Association and the British Medical Association. After some discussion it was decided that the subject should be thoroughly dealt with next year. Montreal was selected as the place of meeting in 1907. Dr. A. McPhedran, Toronto, was re-elected president; Dr. H. B. Small, Ottawa, was re-elected treasurer, and Dr. George Elliott, Toronto, was re-elected general secretary.

FOREIGN.

Pettenkofer Prize Awarded to Schaudinn.—The prize of $300 from the Pettenkofer endowment at Munich has been awarded to the recently deceased Fritz Schaudinn for his discovery of the spirochete of syphilis, and has been paid to his widow at Hamburg.

Adolf Witzel Endowment.—The recently deceased professor of dentistry at Bonn, Adolf Witzel, bequeathed about $2,500 to the *Centralverein deutscher Zahnaerzte*, the national association of dentists, to promote the study of stomatology at the German universities.

Scarcity of Psychiatrists in Germany.—Already the cry goes forth that there are not enough young psychiatrists to supply the demand in the German asylums. In order to attract young physicians to this branch of medicine the salaries and perquisites are being increased in some parts of Germany. They already range rather above the average, we understand.

Subjects of Berlin Prize Essays.—The subject announced by the medical faculty at Berlin for the essays in competition for the royal prize is: "Comparative Research on the Histogenesis of the Heart Musculature to Determine Specially Whether the Muscular Tissue Represents Syncytium or Belongs to the Cell Domain." The subject for the city prize essay is: "Research on the Normal and the Pathologic Anatomy of the Appendix."

Kahlbaum Endowment.—The mother of the late professor of chemistry at Basle, George W. A. Kahlbaum, has presented $9,500 to the national society for the study of the history of medicine (*Deutsche Ges. f. Geschichte der Med. u. Naturwissenschaften*), which was recently founded by her deceased son. She has also given the Berlin branch of the same society $5,000, the total of the Kahlbaum endowment thus amounting to nearly $15,000.

German Naturforscher Society.—The German Association of Physicians and Scientists, better known as the "Naturforscher Association" or *Gesellschaft deutscher Naturforscher und Aerzte*, was organized for the advancement of science in all its branches. It now numbers 2,800 members and has had several bequests and endowments and frequently has a surplus left from its largely attended annual meetings. Its total capital is now about $51,000. The seventy-eighth annual meeting is to be held this year at Stuttgart, September 16 to 22. The sections for medicine and surgery form an important gathering of physicians and surgeons from all over the German-speaking countries.

Prizes Offered by Brazilian Academia Nacional de Medicina.—Among the subjects for essays to be offered in competition for the prizes are "Heat Fevers in Rio de Janeiro;" "Influence of Malaria as Determining Factor in Aortic Affections;" "Normal Stature of Children Under 2 at Rio;" "Ideal Treatment of Aneurisms;" "Etiologic Rôle of Popular Diet in Rio;" "Surgical Treatment of Tuberculous Joint Affections;" "Comparative Frequency of Syphilis and Tuberculosis in Children in Rio;" "Indications and Contraindications for Obstetric Intervention;" "Study of the Mineral Waters of Brazil;" and "Study of the Native Plants that Induce Paralysis or Convulsions." The prizes consist of gold and silver medals, but the Alvarenga prize of about $60 and the Dos Santos prize of about $50 will be given respectively for the best work in any branch of medicine and the best medical study of a Brazilian plant.

Prophylaxis of Cancer and Venereal Disease.—Prof. J. Dollinger is distributing a circular warning of the danger of cancer and the benefits of early operation, giving the circular to all the inmates of his surgical service. The circular states the early signs of cancer, and urges every one to apply to a physician for examination when there is long-continued hoarseness or difficulty in swallowing, or symptoms attract attention to the stomach, or a bunch can be palpated in the abdomen, breast or elsewhere, or there is pain in defecation or the stools or urine are blood stained, or there is a discharge from the genitals at an unusual time. Professor von Bokay urges diligent collecting of statistics and of all facts bearing on cancer as a preliminary to the next international medical congress which is to be held at Budapest in 1909, as already announced. When data have been collected he hopes for a successful national cancer congress to collate and discuss the question of cancer exclusively before the international congress. A letter from Budapest in the *Med. Klinik* for August 12 adds to the above statements that the National League for the Repression of Venereal Diseases has appealed to the medical inspectors of the schools to enlighten youth in the first year or so in college in regard to the dangers of sexual intercourse. The directors of the high schools and colleges are urged to have the customary closing banquet a mid-day instead of a night function.

Non-use of Tuberculosis Sanatoriums in France and Belgium.—A large and supposedly model sanatorium for the tuberculous poor was erected in France three or four years ago and one in Belgium. Our French and Belgian exchanges are now commenting on the fact that these sanatoriums are practically empty all the time, with scarcely a dozen inmates to take advantage of the accommodations freely offered. The reason for this is stated in a Belgian exchange to be the fact that the sick wage-earner, as long as he is able to be about, continues at work to keep his family from starving. He does not give up and go to a sanatorium until he has reached the end of his forces, and then it is usually too late for chance of recovery. The public sanatoriums in France and Belgium lack the basis on which they have flourished to such an extent in Germany, that is, the compulsory insurance against sickness enforced for wage-earners. These sickness insurance companies are on the alert to detect tuberculosis in its incipiency, and those affected are obliged to take a serious course of treatment, generally in a sanatorium, while the indemnity paid insures the support of the family left at home. The article in question states that lacking this fundamental and beneficent legislation, the sanatoriums and convalescent homes in Belgium will continue to remain empty. It adds that the sickness insurance companies in Germany make large profits out of the business while the morbidity of the populace is being notably reduced, the working capacity increased, and distress from poverty due to sickness of the breadwinner has enormously diminished. A Belgian capitalist bequeathed a million dollars five years ago to erect a sanatorium for women, but the authorities are postponing its construction until signs indicate that it is needed.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 18, 1906.

Drastic Bill to Prevent Juvenile Smoking.

A select committee of the house of lords has adopted a drastic bill to prevent juvenile smoking. Its most striking provisions are as follows: "Every child under the age of 16 who shall be found in the possession of cigarettes or smoking tobacco in any form shall on conviction be liable to a penalty of not exceeding 40 shillings for each offense and shall be subject to the provisions of the Youthful Offenders' Act, 1901. Every person who knowingly sells or suffers to be sold or delivered any description of cigarettes to any child under the age of 16 years shall be liable to a penalty not exceeding 40 shillings for the first offense and not exceeding 5 pounds for every subsequent offense." The committee recommend that police constables shall be empowered to stop all youths apparently under the age of 16 seen smoking in any public place and allowed to confiscate any tobacco found on them. In making this report the committee were much impressed by the unanimous opinion of all the witnesses, including representatives of the tobacco trade, that "the habit of juvenile smoking produces indirectly a number of ills, facilitates the work of disease and leads to habits of drink. They were especially impressed by the evidence to the effect that there are no signs of physical deterioration among girls. The witnesses all said that the reason for this was that girls are, generally speaking, entirely free from this habit." It was proved conclusively that juvenile smoking has increased rapidly of recent years, and it was urged that while its present influence is bad, the effects must be worse in future generations.

The Declining Birth Rate.

The phenomenon of a declining birth rate, which has been noted several times before in THE JOURNAL, still continues. The births registered in the second quarter of 1906 were in the proportion of 27.5 annually per 1,000 of the population. This is the lowest birth rate recorded in any second quarter since civil registration was established. The mean rate in the preceding 10 quarters was 29.1. The natural increase in the population of England and Wales during the quarter by excess of births over deaths was 111,800 against 117,850 in the second quarter of 1903, 114,389 in 1904, and 113,726 in 1905. The marriage rate is also declining. During the first quarter of this year it was 10.7 against an average of 11.4 in the first quarters of the preceding 10 years. The death rate shows some improvement. During the second quarter of 1906 it was 14.6 against 15.9 an average of in the preceding 10 years. Infantile mortality was 102 deaths per 1,000 registered births against an average of 119 in the preceding years.

Dyed Meat.

The sale of unwholesome food is by no means confined to Chicago products and the methods of sophistication are endless. A butcher has been summoned for having on his premises 105 pounds of meat intended for the food of man which was unwholesome. Among the articles found were two tins of beef brawn which was the product of a diseased animal. Dr. Bousfield, public analyst, stated that on cutting the meat open he found an abscess cavity from which he took a soft pulpy substance, microscopic examination of which revealed the ordinary bacteria of suppuration. The animal must have suffered from antemortem inflammation. The meat had been colored with an analin dye, producing a salmon tint. A fine of $4 and $50 costs was imposed.

Pharmacology

THE COMPARATIVE PHYSIOLOGIC ACTIVITY OF SOME COMMERCIAL SUPRARENAL PREPARATIONS.

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WASHINGTON, D. C.

The Hygienic Laboratory has recently been requested by another office of the government to compare the physiologic activity of certain suprarenal preparations which had been offered at different prices on competitive bids. After a consideration of various methods proposed for standardizing such preparations (colorimetric methods by Abel, Batelli and others; effect on the pupil of the frog's eye as recommended by Ehrmann, etc.), it seemed that the blood-pressure method was the most suitable for my purposes, especially as the question to be answered referred more to relative than to absolute strength. By observing certain simple precautions it is possible to obtain very uniform results by the blood-pressure method. The most important of these precautions is to have the animal in such a condition that as few factors as possible are to be considered. The animal should be thoroughly anesthetized, and preferably curarized also, so as to avoid effects on the blood-pressure of any movements or disturbances in respiration resulting either directly from the drug or from changes in the blood pressure. The vagi should be cut or atropin used, so as to exclude the changes in the heart rate due to the direct action of the drug on the cardio-inhibitory apparatus or to the effect of changes of blood pressure on this apparatus. All injections should be made at a uniform rate and into veins as remote from the heart as possible. In the present experiments the injections were invariably made into the saphena veins and the duration of the injection accurately recorded on the kymograph. The various preparations to be compared were injected into the same animal and at intervals of a few minutes of each other; one preparation was injected into the right saphena vein, the other into the left, and the injections were repeated a number of times. The blood pressure was taken from the carotid artery.

FIRST SERIES.

In this series three preparations of the active principle were examined, all purporting to be solutions 1 to 1,000. The price asked for two, A and B, was about 70 cents per ounce; for the other, C, 42 cents.

Two bottles of each were purchased on the open market; no difference in strength between the two bottles of the same preparation was found.

Experiment, April 2.—Rabbit, 2,140 gm.; anesthetized with urethane and chloral hydrate; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
1:49	A, 1 to 25,000..........1 c.c.	105	157	52
1:53	B, 1 to 25,000..........1 c.c.	103	154	51
2:13	C, 1 to 25,000..........1 c.c.	103	140	37

The rise of blood pressure from equal amounts of A and B were practically equal and about 1.4 times as great as that from C.

Experiment, April 6.—Rabbit, 2,250 gm.; urethane and chloral; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
2:02	C, 1 to 25,000..........7 c.c.	90	151	61
2:05	B, 1 to 25,000..........1 c.c.	90	192	102

The rise of pressure from B was nearly 1.7 times as great as that from an equal amount of C.

Later in this experiment the following results were obtained:

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Risc
3:31	C, 1 to 25,000..........1 c.c.	78	108	30
3·34	B, 1 to 25,000..........1 c.c.	78	132	54

The rise of pressure from B was 1.8 times as great as that from C.

The following results were obtained with C and A:

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:59	C, 1 to 25,000..........1 c.c.	80	116	36
4:01	A, 1 to 25,000..........1 c.c.	78	142	64
4:03	C, 1 to 25,000..........1 c.c.	81	124	43
4:10	A, 1 to 25,000..........1 c.c.	79	146	67
4:21	C, 1 to 25,000..........1 c.c.	82	122	40

Thus the rise of blood pressure from A was about 1.6 times as great as that from C.

In the following experiments equal amounts of different dilutions were injected:

Experiment, April 9.—Rabbit, 1,850 gm.: urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:38	C, 1 to 18,000..........1 c.c.	105	135	30
3:41	A, 1 to 25,000..........1 c.c.	102	138	36
3:55	C, 1 to 11,000..........1 c.c.	73	130	57
3:59	A, 1 to 25,000..........1 c.c.	75	127	52
4:08	A, 1 to 25,000..........1 c.c.	68	123	55
4:11	C, 1 to 15,000..........1 c.c.	70	124	54
4:15	A, 1 to 25,000..........1 c.c.	68	121	53

Thus when the ratio of the strength of C to that of A was about 1.7 to 1, approximately equal rises of blood pressure were obtained from equal amounts of the preparations.

In another experiment the following results were obtained:

Experiment, April 10.—Rabbit, 1,720 gm.: urethane and chloral; curare; atropin.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:57	C, 1 to 12,500..........1 c.c.	86	145	59
4:00	A, 1 to 25,000..........1 c.c.	84	144	60
4:13	A, 1 to 100,000..........1 c.c.	82	122	40
4:15	C, 1 to 50,000..........1 c.c.	76	126	50
4:19	A, 1 to 85,000..........1 c.c.	79	127	48
4:23	C, 1 to 50,000..........1 c.c.	75	122	47

Here again in order to obtain equal rises of blood pressure it was necessary to use a solution of C about 1.7 times as concentrated as of A. The rise of pressure in the first two injections was maximal; a weaker solution of each would probably have caused as great an effect.

CONCLUSIONS.

The above experiments show that equal amounts of equal dilutions of A and B have equal effects on blood pressure; (2) that A and B cause from 1.4 to 1.8 times the rise of blood pressure as do equal amounts of C, and (3) that in order to obtain equal rises from equal amounts of C on the one hand and A and B on the other it is necessary to have the solution of the former about 1.7 times as concentrated as of the latter. Hence we may conclude that B and A were of about equal strength and that they were about 1.7 times as active as C. The apparent discrepancy under (2) is readily explained as follows: In those cases in which the rise from A (or B) was about 1.4 times as great as that from C the effect of the former was already maximal and the same effect would have been produced by solutions weaker than the one actually employed.

It is interesting to note that the prices at which these preparations were offered were in direct proportion to their strength; the price asked for A and B was about 1.7 times as great as that of C, and the strength of the former was about 1.7 times as great as that of the latter.

SECOND SERIES.

In this series we were requested to test four preparations, three of solutions of the active principle (labeled 1 to 1,000) and one of the dried and powdered gland. Two of the preparations, C and A, were from the same manufacturers as in the first series. These preparations were offered at the following prices:

D, 25 c.c.	19 cents
A, 25 c.c.	60 cents
C, 25 c.c.	60 cents
Suprarenal gland (desiccated), 1 ounce	72 cents

The samples were submitted by the competing firms.

The examination was made as in the first series. Inasmuch, however, as the most satisfactory results were obtained when equal amounts of different dilutions were compared, only these results will be reported here.

Experiment, June 15.—Rabbit, 2,770 gm.; urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:13	D, 1 to 50,000.........1 c.c.	65	89	24
4:15	A, 1 to 100,000.........1 c.c.	64	122	58
4:20	D, 1 to 25,000.........1 c.c.	65	100	35
4:23	A, 1 to 100,000.........1 c.c.	58	114	56
4:30	A, 1 to 150,000.........1 c.c.	63	107	44
4:44	A, 1 to 150,000.........1 c.c.	69	111	42
4:46	D, 1 to 20,000.........1 c.c.	74	127	53
4:54	A, 1 to 100,000.........1 c.c.	71	125	54
5:01	D, 1 to 20,000.........1 c.c.	70	119	49
5:07	C, 1 to 100,000.........1 c.c.	77	120	43
5:11	A, 1 to 100,000.........1 c.c.	82	130	48
5:37	D, 1 to 20,000.........1 c.c.	90	120	30
5·41	C, 1 to 100,000.........1 c.c.	90	117	27

An examination of the above table shows that approximately equal rises of blood pressure from A and D were obtained only when the concentration of the latter was about five times as great as that of the former. The figures are not so satisfactory for comparing the strengths of A and C, but they indicate in a general way that these preparations were of nearly equal strengths.

Experiment, June 21.—Rabbit: urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
3:25	D, 1 to 10,000.........1 c.c.	62	120	58
3:35	A, 1 to 50,000.........1 c.c.	62	121	59
3:38	D, 1 to 20,000.........1 c.c.	67	112	45
3:49	A, 1 to 100,000..........1 c.c.	56	102	46
3:51	D, 1 to 40,000.........1 c.c.	64	85	21
3:56	A, 1 to 150,000.........1 c.c.	62	96	34

These results show again that equal rises of blood pressure were obtained only when D was about five times as concentrated as A.

Similar results were obtained later in the same experiment; as shown in the following table, the effect on the blood pressure was less, but the two preparations had the same relative activity. These figures also show that C and A were of about the same strength and also give approximate results for the relative strengths of decoctions of the dried glands and the active principle.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:40	Suprarenal gland, 1 to 1,000..1 c.c.	52	97	45
4:46	Suprarenal gland, 1 to 2,000..1 c.c.	49	72	23
4:50	A...............1 to 100,000..1 c.c.	48	70	22
4:53	C...............1 to 100,000..1 c.c.	45	68	23
4:58	D...............1 to 20,000..1 c.c.	43	68	25
5:01	D...............1 to 40,000..1 c.c.	43	54	11
5·04	C...............1 to 100,000..1 c.c.	40	60	20
5:14	Suprarenal gland, 1 to 500..1 c.c.	38	80	42
5:21	A...............1 to 50,000..1 c.c.	47	91	44
5:27	D...............1 to 10,000..1 c.c.	40	83	43
5:30	D...... ....1 to 20,000..1 c.c.	43	66	23
5:33	A...............1 to 100,000..1 c.c.	42	62	20
5:36	Suprarenal gland, 1 to 250..1 c.c.	27	106	79

For some reason the results of these experiments with decoctions of the dried gland (made by warming on the water bath for one-half hour with normal saline solution) are not very concordant. Thus in the first injections (4:46 and 4:50)

1 c.c. of a decoction of the gland 1 to 2,000 caused a rise of blood pressure equal to that caused by 1 c.c. of A 1 to 100,000; this would indicate that 1 gm. of the dried gland would yield 20 c.c. of a decoction equal to A 1 to 1,000. In the later injections, however (5:14 and 5:21), 1 c.c. of a decoction of the gland 1 to 500 caused a rise of blood pressure equal to that caused by 1 c.c. of A 1 to 50,000; or, according to these results, 1 gm. of the dried gland would yield but 10 c.c. of a solution corresponding to a solution 1 to 1,000 of the active principle.

Special attention was given to the determination of the relative strengths of decoctions from the gland and A in the following:

Experiment, July 6.—Rabbit, 1,750 gm.; urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
4:27	A..............1 to 50,000..1 c.c.	56	90	34
4:35	Suprarenal gland, 1 to 750..1 c.c.	60	95	35
4:47	A..............1 to 50,000..1 c.c.	64	98	34
4.52	Suprarenal gland, 1 to 750..1 c.c.	65	96	31
5:03	A..............1 to 100,000..1 c.c.	45	70	25
5:05	Suprarenal gland, 1 to 1,125..1 c.c.	50	75	25
5:12	Suprarenal gland, 1 to 1.500..1 c.c.	38	57	19
5:15	A..............1 to 100,000..1 c.c.	36	54	18
5:35	A..............1 to 25,000..1 c.c.	45	105	60
5:39	Suprarenal gland, 1 to 750..1 c.c.	50	101	51

The results again are not entirely concordant, but they show that 1 gm. of the dried gland yielded from 11 to 15 c.c. of a solution corresponding to a 1 to 1,000 solution of the active principle (1 gm. of the gland macerated with 750 c.c. normal saline yielded a solution, 1 c.c. of which equaled, physiologically, 1 c.c. of A 1 to 50,000; or 50 c.c. of the gland decoction, 1 to 750, would equal, physiologically, 1 c.c. of a solution of A 1 to 1,000. Hence 750 c.c., the decoction prepared from 1 gm. of the gland, equaled, physiologically, 15 c.c. of A 1 to 1,000).

Three days later the same solutions were again tested; the results were similar, but indicated that the decoction from the gland had undergone greater deterioration than had the solution of the active principle.

Experiment, July 9.—Rabbit, 2,090 gm.; urethane and chloral hydrate; curare; vagi cut.

Time.	Preparation.	Blood-pressure in mm. of mercury.		
		Before.	After.	Rise.
1:43	Suprarenal gland, 1 to 1.875..1 c.c.	42	64	22
1:46	A..............1 to 125,000..1 c.c.	40	68	28
1:53	A..............1 to 100.000..1 c.c.	38	70	32
1:55	Suprarenal gland, 1 to 150,000..1 c.c.	38	64	26
1:57	A..............1 to 100.000..1 c.c.	37	65	28
2:09	A..............1 to 50.000..1 c.c.	40	100	60
2:10	Suprarenal gland, 1 to 750..1 c.c.	42	90	48
2:13	A..............1 to 50.000..1 c.c.	38	98	60
2.20	A..............1 to 75.000..1 c.c.	36	70	34
2:24	Suprarenal gland, 1 to 1.050..1 c.c.	40	76	36
2:26	A..............1 to 75,000..1 c.c.	37	74	37

CONCLUSIONS.

From these experiments we may conclude that the samples of C and A were of about equal strength and approximately five times as strong as the sample of D. Although the price at which the latter was offered was but approximately one-third of that of the former, it was in reality the most expensive of the three. These experiments also show that the physician or pharmacist could prepare from an ounce of dried suprarenal gland about 15 fluid ounces of a decoction equal in strength to that of the active principle 1 to 1,000. As the price of an ounce of the dried gland is but little higher than that of a fluid ounce of the solution 1 to 1,000, the economy of using the former, when practicable, is evident; in practice there are, however, many cases in which a solution of the active principle is much to be preferred.

It is interesting to compare the deductions based on physiologic experiments as to the amount of active principle present in the dried gland with the chemical results. Abel (*American Journal of Pharmacy*, 1903, p. 312) calculated that the fresh beeves' suprarenals contain at least 0.3 per cent. of the active principle. One part of the dried gland corresponds, according to the United States Pharmacopeia, to approximately six parts of the fresh gland; hence, according to Abel's experience, the dried gland should contain about 1.8 per cent., or 1 gm. of the dried gland would contain 0.018 gm. of the active principle. Hence 1 gm. of the dried gland should yield about 18 c.c. of a solution corresponding to 1 to 1.000 of the active principle. As a matter of fact, I found that it yielded about 15 c.c. of such a solution, and it is improbable that the gland was completely exhausted in my experiments.

It would not be fair to infer from these experiments that manufacturers are intentionally mislabeling their preparations; it is much more probable that they do not always make their solutions from pure preparations of the active principle, and that afterward the solutions are not tested physiologically with sufficient care. Only one bottle of D was examined, the one submitted by the manufacturers; this, which was so deficient in strength, was stated to have been tested physiologically. It is possible that the solution in this bottle had deteriorated, although it presented none of the ordinary indications of deterioration (turbidity, change in color, etc.). The experiments do, however, show very plainly that some manufacturers do not put out preparations of uniform strength.

THE COMPARATIVE PHYSIOLOGIC ACTIVITY OF SOME COMMERCIAL SUPRARENAL PREPARATIONS.

PHARMACOLOGIC LABORATORY OF WESTERN RESERVE UNIVERSITY,
CLEVELAND, OHIO, Aug. 2, 1906.

To the Council on Pharmacy and Chemistry of the American Medical Association:—We submit herewith the following report on the examination of a series of suprarenal preparations, undertaken at your request:

SAMPLES.

The experiments were made with two sets of freshly bought samples, one set (*a*) purchased from a jobbing druggist, the second (*b*) from a high-class prescription pharmacy.

The packages bore the following manufacturers' numbers:

	(*a*.)	(*b*.)
Preparation 1........	C. P. 60183 C. D.	C. P. 60183 C. C.
Preparation 2..........	1085641	1088731
Preparation 3..........	210072	303082
Preparation 4..........	670028	670000

The samples were of acid reaction, except preparation 4, *b*, which was distinctly alkaline and which bore an odor of thymol, absent in sample *a*.

METHODS.

The efficiency was tested by injecting a 1 to 50 dilution (in normal saline) of the 1 to 1,000 solution, usually in doses of 0.5 c.c. per kg. of body weight (equals 0.01 c.c. per kg. of the 1 to 1,000 solution) into the femoral vein of anesthetized dogs, alternating the samples in irregular sequence and taking carotid blood-pressure tracings. The vagi were intact in some, divided in other experiments. In all, seventy-one injections were made on twelve dogs.

The keeping quality was estimated by allowing the above dilutions to stand the specified time and observing the physiologic efficiency and the change of color.

To prevent any possibility of bias, the solutions were made by an assistant and provided with numbers, the identity of the products being unknown to us until the experiments were completed and the conclusions drawn.

RESULTS.

Efficiency of the Fresh Solutions.—Designating the efficiency of the solution of preparation 2, *a*, as 100, that of the other samples of the series is approximately as follows:

	Efficiency of *a*.	Efficiency of *b*
Preparation 1....................	70	70
Preparation 2....................	100	86
Preparation 3....................	86	63
Preparation 4....................	95	nil.

Suprarenalin, *b*, had no effect on blood pressure, even in doses of 0.1 c.c. per kg., i. e. in ten times the standard dose.

Keeping Qualities of the Diluted Solutions.—This may be judged from the following table:

	Efficiency of Fresh Dilution.	After Standing One Day.	After Two Days	Discoloration in One Day.	In Two Days.
Preparation 1, *a*	70	25	0	None . . .	—
Preparation 1, *b*	70	Active . .	Active . .	None .	None.
Preparation 2, *a*	100	0	—	Dark pink.	—
Preparation 2, *b*	86	0	—	Dark pink.	—
Preparation 3, *a*	86	15	0	None . . .	—
Preparation 3, *b*	63	0	—	None . . .	None.
Preparation 4, *a*	95	0	—	Light pink	—
Preparation 4, *b*	0	—	—	Light pink	—

CONCLUSIONS.

In view of the variability in the commercial samples, as revealed in our examination, definite conclusions concerning the comparative activity of the different makes of suprarenal solutions are not warranted. Theoretically, all samples of "1 to 1,000 solution of suprarenal alkaloid" should be of identical strength, just as are all 1 to 1,000 solutions of strychnin. It is evident that this is not the case in practice, and that the physician, in injecting this powerful substance, is at present unable to use a perfectly exact dosage. Our samples of preparations 1 and 2 exhibited less variation than preparations 3 and 4, but we can not be certain that a larger series of samples might not have shifted the relative position. This is also true of the average efficiency, which decreases in the first series of samples from preparation 1 (100) to preparation 4 (95), to preparation 3 (86), to preparation 1 (70); in the second series, from preparation 2 (86), to preparation 1 (70), to preparation 3 ((63), to preparation 4 (0). We repeat that we would not lay any emphasis on the comparative efficiency of the different makes on account of the variability.

The results as to the stability of the solutions are more constant. Preparation 1 is the most stable, then comes preparation 3, then preparation 4, then preparation 2. This subject of stability, however, has probably little practical importance, since the dilutions of all the samples are practically worthless after twenty-four hours.

We are unable to state whether the samples vary in strength when they leave the makers' hands, or whether the differences are due to subsequent deterioration. The former would be quite inexcusable. The latter would seem to demand a dating and returning system similar to that in vogue for antitoxic sera.

Respectfully submitted,
Torald Sollman,
Edgar D. Brown.

Correspondence

Cocain in Tucker Asthma Cure.

Shiloh, O., Aug. 28, 1906.

To the Editor:—Referring to the article of Dr. Vickery on "Cocain in Tucker Asthma Cure" in The Journal A. M. A., Aug. 4, 1906, I wish to thank the author for his report and to commend his suggestion as to what ought to be done to suppress such a "cure." I had a case here, with all the symptoms of acute cocain poisoning, as the result of using the above preparation. The patient was a child 5 years of age, and I can assure you that a "remedy" that will produce as marked symptoms of poisoning in as short a time as does the Tucker Asthma Cure, needs to be removed from the market, or at least labeled as to its contents, and not retailed to an unsuspecting public as a harmless asthma cure.

N. P. McGay.

The Teaching of Medical Jurisprudence in New York.

Jersey City, Aug. 28, 1906.

To the Editor:—In The Journal, Aug. 25, 1906, page 586, you make the editorial statement that "The New York schools, Columbia, Bellevue and Cornell, make no mention of the subject whatever. Medical jurisprudence is not among the courses required by the New York Board of Regents." I call attention to the fact that Hon. Millard Bartlett of the appellate division of the Supreme Court delivers fifteen lectures each year at the Long Island College Hospital to the third year class.

Walter T. Dannreuther, M.D.

Hay Fever and Ivy Poisoning.

Cincinnati, Aug. 28, 1906.

To the Editor:—A year ago, while suffering from hay fever, I was poisoned with ivy. Though in the midst of the season the hay fever disappeared immediately on the advent of the ivy poisoning and gave me no further trouble that year. Was this a coincidence or a consequence? If the latter, why? Have any more of your numerous readers made the same observation?

Pollantin in hay fever has given me no relief.

E. S. McKee.

Records of Graduates of Flint Medical College.

New Orleans, Aug. 27, 1906.

To the Editor:—At the May meeting of the Louisiana State Board seven of the eight 1906 graduates of Flint Medical College presented themselves for examination, and only one failed to pass. This gives a 14 2/7 per cent. of failures and should place us in Table J of your statistics instead of Table K. In justice to our school and its present administration, may I ask you to publish this statement?

A. D. Bush, Dean.

[Editor's Note.—Tables J and K, to which Dr. Bush refers, appear in the annual Educational Number of The Journal, August 25, and are a part of the detailed summaries of the results of the state board examinations in all states for the year 1905. This May examination, at which he says a better record was made, is, of course, a portion of the record for 1906, and this will be included in a summary of the year 1906 to appear early in 1907.]

Population of Los Angeles.

Los Angeles, Cal., Aug. 27, 1906.

To the Editor:—On page 613 of the Educational Number (August 25) of The Journal, under the California heading, the city of Los Angeles is given a population of 116,420.

Since clinical facilities are dependent somewhat on the amount of population, a correction is in order if a proper impression is to be given. The population of Los Angeles at the present time is over 240,000 instead of 116,420. I refer you to the enclosed article from to-day's Los Angeles *Times* showing the most recent figures. The school census last spring showed a population of 230,000. Further, the city water department has 50,977 service pipes in use and five persons to a service pipe is a conservative average. The monthly health reports are based on a population of 200,000, in order to allow a safe margin, but this estimate will shortly be increased.

Los Angeles then is not in the 100,000 but rather in the 250,000 class, and has clinical facilities commensurate with a city of that size.

George H. Kress.

[Editor's Note:—We are very glad to have this information. As stated in the Educational Number, the figures used were the estimates of the government's Census Bureau for 1903.]

Treatment of Hay Fever by Securing Normal Nostrils.

Hartford, Conn., Aug. 20, 1906.

To the Editor:—In The Journal, August 18, Dr. Dunbar Roy writes that at the session of the Association held at Atlantic City in 1904 I claimed to cure hay fever "by simply forcing patients to become absolute nose breathers." Dr. Roy is in error. I did and do claim to cure hay fever by giving my patients nostrils as nearly normal as possible, and then insisting that they breathe through the nose as Nature intended they should. The perusal of my monograph, "Mouth Breathing," should make clear to the reader what I consider necessary in a general way, not only for the relief but cure of the hay-fever patient, also what I consider harmful to that patient. I have yet to find a hay-fever patient at any period with normal nostrils, although I often find them with nothing more abnormal than a few irritable areas. I have yet to hear of a single patient whom I have discharged—and they are many—who has had a recurrence.

In my opinion a nostril is not normal if it is capable of establishing a contact area, especially below its median line; further, a nostril is not normal which contains a single irritable area. If I can find a contact area in the nostril of a hay-fever patient, at any other period than his hay-fever period, for the purpose of diagnosis, or if that patient reports to me when he has a "cold in his head," that I may observe where his areas of contact are, I obliterate them when quiescent, either surgically or through cauterization. If I examine the patient during his periodic attack for the first time I advise immediate operation when necessary. I remove what I consider necessary at any point in any nostril, and this without the slightest fear of establishing atrophic areas, since I know my patient is going to become a normal breather. I fully appreciate that indiscriminate cutting would prove disastrous, but if we use a little common sense, backed by experience and some originality, and depend less on the general run of text-books whose authors copy one from another treatment that a school boy with a rudimentary knowledge of physiology should deem absurd, oft-times treatment handed down for generations, we will prove ourselves worthy of the respect of the general public.

We will accomplish much if, instead of waiting for immunizing serums to do the work for us which we are too lazy to do ourselves, we awaken to the fact that Nature stands willing to furnish us a power to resist not only hay fever, but all other affections of the breathing tract when once the upper breathing tract is as nearly normal as possible.

Dr. Roy further states: "After a thorough trial of this method, with the hearty coöperation of my patients, I have not been able to secure the results claimed by Dr. Fitzgerald." My advice to Dr. Roy, whom I believe to be a conscientious and painstaking rhinologist, is to become more familiar with my method, and then to give it a thorough trial to prove to his own satisfaction that we have found "the light which will lead us out of the darkness and gloom" for which he writes he is waiting. W. H. Fitzgerald.

Treatment of Hay Fever by Dunbar's Remedies (Pollantin).

La Junta, Colo., Aug. 22, 1906.

To the Editor:—I have read with interest the reports made through The Journal on the use of pollantin in hay fever. My experience has been very limited; I have never used it until within the last two months. Four cases treated resulted as follows:

1. A very aggravated case, in an aged person, who every year suffers intensely. The relief from the eye symptoms was immediate. For the nasal symptoms, which were but slightly relieved, a weak solution of adrenalin was ordered (this previously had given to this patient relief for a few moments only) to be followed by the pollantin. Relief was very marked and three weeks later patient reported herself as being more comfortable than she had ever dared hope to be.

2. First attack, in a person who has resided here several years. Eye symptoms predominated. Relief was very rapid. This may not have been a true case of hay fever.

3. This man suffers severely every season with well-marked symptoms. He thought that he got a little relief.

4. Patient two years from the East, who never had an attack while here. Hay fever came in the first year of his residence here. No relief.

In these cases no attempt was made to treat any abnormal systemic conditions, nor were the proprietor's directions as to sleeping with closed windows, etc., followed. The preparation used was the powder, and the fall variety. The originators are fairly conservative in their claims as set forth in the literature, but the way in which the preparation is marketed will soon put it out of the hands of physicians and into the hands of the laity. E. Gard Edwards, M.D.

Book Notices

Eczema. A Consideration of Its Course, Diagnosis and Treatment Embracing Many Points of Practical Importance, and Containing 146 Prescriptions, illustrating Dosage in Local Applications. By Samuel H. Brown, M.D., Assistant Dermatologist, Philadelphia Hospital, etc. Cloth. Pp. 105. Price, $1.00. Philadelphia: P. Blakiston's Son & Co., 1906.

In the first 28 pages the author considers briefly the varieties, etiology, pathology, symptoms and diagnosis of this disease. The other 71 pages are devoted to treatment. Instead of generalizing, the author gives prescriptions for both local and general treatment.

Military Hygiene. By Robert Caldwell, F.R.C.S., D.P.H., Lieutenant-Colonel Royal Army Medical Corps; formerly Medical Officer in Charge District Laboratory, Meerit; Member of Committee on Field Sanitation in Connection with Surgeon-General's Report on South African Campaign; Medical Officer in Charge, District Laboratory and Isolation Hospital, First Army Corps. New York: William Wood & Co. 1905.

The object of the book, as the author states, is to give "a short account of those principles of sanitation which most nearly affect the soldier in his every-day life." Of course, it does not go so deeply into details as the encyclopedic work of Munson, but it is in the main accurate, and the advice given will prove valuable both to the junior and senior officers. The author seems to be a little too conservative in certain matters, such as that of the use of kerosene in marshes, the employment of mosquito nettings, the practicability of sterilization of water by boiling, etc.

The Ophthalmoscope and How to Use It. With Colored Illustrations. Descriptions and Treatment of the Principal Diseases of the Fundus. By J. Thorington, A.M., M.D. 13 Illustrations and 12 Colored Plates. Cloth. Pp. 298. Price, $2.50. Philadelphia: P. Blakiston's Son & Co., 1906.

This may be described as a condensed text-book. While avoiding long mathematical calculations, it leaves little to desire in the matter of clearness of text or illustration. The ten chapters treat of the ophthalmoscope, optics, anatomy and anomalies of the eye, the normal eye ground, structural changes in disease, the vision, retinal vessels, diseases of the retina, of the optic nerve, and of the choroid. Besides numerous figures in the text, it contains twelve excellent colored plates of the fundus in health and in a variety of diseases of the retina and other structures.

A Text-Book of Human Physiology, Including a Section on Physiologic Apparatus. By A. P. Brubaker, A.M., M.D. Second Edition. Revised and Enlarged, with Colored Plates and 356 Illustrations. Cloth. Pp. 715. Price, $4.00. Philadelphia: P. Blakiston's Sons & Co., 1905.

The second edition of this work is improved by thorough revision of the sections on the chemistry of the proteids, the chemistry of digestion, the movements of the intestines, the production of lymph, the nerve mechanism of the heart, and the physiology of vision. In the section on the movements of the intestines the author refers to the investigations by Cannon by means of the Roentgen rays and the fluoroscope. Of the production of lymph from the blood and its diffusion he admits that the last word has not been said. The present edition reflects fairly the present state of knowledge and commends itself to all who are interested in the subject, whether as teachers, students or practitioners.

Deaths

Charles G. Bacon, M.D. Albany (N. Y.) Medical College, 1874, who attended a course of lectures in that institution in 1840-1841 and in March, 1841, was licensed to practice in the state of New York by the New York State Medical Society; for 45 years a practitioner of Fulton, N. Y.; a member of the Oswego County Medical Society and a delegate in 1854 to the American Medical Association; for 15 years a censor of the New York State Medical Society; in 1843 hospital brigade surgeon for the Forty-eighth brigade of the Militia of the State of New York, with the rank of major; given an honorary medical degree by the regents of the State of New York in 1858; in 1887 president of the New York Central Medical Society, died at his home in Fulton, August 18, aged 92.

William Edwin Taylor, M.D. Medical College of the Valley of Virginia, Winchester, 1859; medical inspector United States Navy, retired; who was appointed to the Navy in 1859 and served 10 years and 5 months on sea duty and 12 years and 3 months on shore and other duty, until his retirement on account of ill health in 1881; for 18 years professor of surgery in the Medical Department of the University of California, and during that time president of the Medical Association of the City and County of San Francisco; since 1898 a resident of Honolulu, H. I., where he served as president of the local medical society and as a member of the Board of Medical Examiners and of the Board of Dental Examiners of the territory, died at his home in Honolulu, July 30, aged 68.

James W. Breedlove, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1849, of Fort Smith, Ark.; for 12 years surgeon in the United States Marine-Hospital Service at New Orleans; surgeon of the Third Louisiana Infantry and later medical inspector in the Confederate service during the Civil War; a charter member of the Sebastion County (Ark.) Medical Society and at one time its president, died at Belle Point Hospital, Fort Smith, August 16, from paralysis, after an illness of four months, aged 79.

George F. Brendle, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1862; a member of the American Medical Association and a veteran physician of Mahanoy City, Pa.; for many years a member and officer of the Schuylkill County Medical Society; a charter member of the borough of Mahanoy City and councilman and chairman of the sanitary committee of that borough, died at his home, August 23, from heart disease, after a prolonged illness, aged 69.

Robert L. McCurdy, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1853; said to have been the oldest practitioner of Freeport, Pa.; at various times burgess, councilman and school member of the Freeport board of health; a member of the Medical Society of the State of Pennsylvania, Armstrong County Medical Society and Allegheny Valley Medical Society, died at his home in Freeport, August 26, after a brief illness, aged 81.

William Rockwell Cheever, M.D. College of Physicians and Surgeons of Chicago, 1896; a member of the American Medical Association and Wisconsin State Medical Society; president of the Kenosha Medical Society and treasurer of the Kenosha County Medical Association; one of the most brilliant young physicians of Kenosha, was found dead in his room in that city from accidental asphyxiation by gas, August 30, aged 38.

Richard Coleman Carlisle, M.D. New York University, New York City, 1862; assistant surgeon in the Confederate service and assigned to duty at Chimborazo Hospital, Richmond, and later surgeon of the Seventh South Carolina Infantry; a prominent citizen of Newberry County, S. C., died at his home nine miles north of Newberry, August 21, from acute gastritis, after an illness of one week, aged 70.

William H. McCullough, M.D. Cincinnati College of Medicine and Surgery, 1878; of Tarentum, Pa.; formerly burgess of Tarentum and member of the legislature from the Seventh district; superintendent of the Sandusky County Home, Woodvile, Ohio, in 1900, died at the home of his sister, in Petrolia, Pa., August 25, after a prolonged illness, from injuries received in a railroad accident, aged 55.

John N. Bassett, M.D. New York University, New York City, 1882; a member of the American Medical Association; once president of Canton, N. Y., and for 12 years a member of the school board; one of the most esteemed practitioners of St. Lawrence County, died at his home in Canton, N. Y., August 16, after an illness of two days from cerebral hemorrhage, aged 56.

Jerome B. Greene (Examination, Pennsylvania, 1861); surgeon in the Army throughout the Civil War; for many years a practitioner of Providence, R. I., died suddenly, July 27, from cerebral hemorrhage, while making an address at a reunion of the Rhode Island Fifth Heavy Artillery, aged 75.

John Harris Westerfield, M.D. University of Louisville, Medical Department, 1871, a member of the Polk County (Ark.) Medical Society and of the American Medical Association, died at his home in Atkins, Ark., July 31, from gallstone disease, after an illness of four weeks.

Nathaniel Cass, M.D. Tulane University of Louisiana, Medical Department, New Orleans, 1882, several times an alderman of Cameron, Texas, died at his home in that city, August 20, from pneumonia, following an attack of appendicitis, for which operation was performed 25 days before.

Walter Ross Langdon, M.D. Jefferson Medical College, Philadelphia, 1852; of Stockton, Cal.; surgeon in the Confederate Army throughout the Civil War; physician at the Stockton State Hospital from 1871 to 1888, died from heart disease, at Santa Cruz, Cal., August 5, aged 75.

Donald A. Link, M.D. Detroit (Mich.) College of Medicine, 1895, of Volinia, Mich., a member of the Michigan State Medical Society and Cass County Medical Society, was accidentally drowned while shooting the rapids of the Moon River, near Ravenhurst, Ont., August 15, aged 40.

Sam Houston Hynds, M.D. Jefferson Medical College, Philadelphia, 1860; a Confederate veteran; for many years a practitioner of Arkansas and Tennessee, died at Parvin, Texas, July 3, from gastritis and hepatitis, after an illness of two months, aged 69.

Christopher Anton Jaeger, M.D. Western College of Homeopathic Medicine, Cleveland, 1864; a veteran of the Civil War; said to be the oldest practitioner of Elgin, Ill., died at the Sherman Hospital, Elgin, August 24, after an illness of one year, aged 79.

George W. Taylor (Years of Practice, Indiana), a surgeon in the Confederate service during the Civil War and for many years a practitioner of Crawfordsville, Ind., died at his home in that city, June 29, from paralysis, after an illness of 11 years, aged 85.

John Gregg (Years of Practice, W. Va.), a veteran of the Civil War and one of the oldest practitioners of Harrison County, W. Va., died in St. Mary's Hospital, Clarksburg, August 18, from nephritis, after an illness of several weeks, aged 68.

Jesse W. Jansen, M.D. New York University, New York City, 1886, supervisor from the Sixth Ward of Binghamton, N. Y., in 1892, died at his home in that city, August 27, from nervous prostration, after an illness of three weeks, aged 45.

Walter Tate Cody, M.D. Rush Medical College, Chicago, 1886, of Detroit, was taken ill at Cobalt, Ont., removed to Toronto General Hospital and died in that institution, August 28, a few hours after an operation for brain tumor, aged 48.

Edward D. Perkins, M.D. University of Georgetown, Medical Department, Washington, D. C., 1895, of Washington, D. C., died at Providence Hospital, in that city, August 24, from peritonitis, after an illness of five days, aged 41.

John C. Holmes, M.D. College of Physicians and Surgeons in the City of New York, 1864, a retired practitioner of Cranbury, N. J., was instantly killed by being struck by a train near Jamesburg, N. J., August 21, aged 65.

Walter C. Lohr, M.D. Milwaukee Medical College, 1905, of Denmark, Wis., died at the home of his parents, near West Bend, Wis., August 25, from sarcoma of the breast, after an illness of several months, aged 27.

J. T. H. Scott, M.D. New York Medical College, New York City, 1861; a Confederate veteran; for 40 years a practitioner of Barren Plains, Tenn., died at his home in that place, August 18, from tuberculosis.

Gilbert A. Ewing, M.D. Medical College of Ohio, Cincinnati, 1866, who served as hospital steward during the Civil War, died at his home in Jackson, Ohio, from senile debility, August 19, aged 72.

T. R. Seastrunk, M.D. Medical College of the State of South Carolina, Charleston, 1844, died at his home in Burkeville, Texas, August 20, aged 84.

Joseph E. Couper, M.D. Hahnemann Medical College, Philadelphia, 1881, died at his home in Blue Earth, Minn., August 20, from cerebral hemorrhage, after a brief illness, aged 49.

Edgar F. Bonham, M.D. New York University, New York City, 1883, died suddenly at his home in Fairmount Springs, Pa., August 24, while prescribing for a patient, aged 50.

David H. Bradley, of Mayview, Mo., a member of the Lafayette County Medical Society, died at his home, July 12, from heart disease, after an illness of two years, aged 66.

Jefferson C. Farr, M.D. St. Joseph Hospital Medical College, St. Joseph, Mo., 1878, died at his home in Alanthus, Mo., August 21, after a long illness.

H. Clint Bacon, M.D. Jefferson Medical College, Philadelphia, 1868, died at his home in Harveyville, Pa., August 15, from kidney disease, aged 64.

George W. Burns, M.D. Detroit Medical College, 1868, died at his home in Morrison, Ill., July 3, from nephritis, after an illness of six months, aged 63.

William Anson Bliss, M.D. Albany (N. Y.) Medical College, 1866, died at his home in Brooklyn, N. Y., August 19, after a lingering illness, aged 65.

Emanuel M. Donelson, M.D. Cincinnati College of Medicine and Surgery, 1877, was shot and killed at Cedarvale, Kan., August 28, aged 60.

Joseph P. Gordon (License Ohio, 1846), died at his home in Eldorado, Kan., May 31, from senile debility, aged 86.

Deaths Abroad.

A. Bogdanow, M.D., professor of pathology at Odessa and frequent contributor to medical periodicals, died at Odessa in August, aged 52.

S. Tomaselli, M.D., professor of clinical medicine at Catania, and one of the leaders in medical education in Italy, died at Catania August 9, aged nearly 80, of chronic gastritis. His name is specially connected with malaria.

Marriages

Emilie R. Maris, M.D., to William H. Cole, both of Duluth, Minn., August 22.

Frank A. Hill, M.D., to Miss Fidele A. Madison, both of Chicago, August 15.

W. H. Taylor, M.D., Irwin, Pa., to Miss Ada Menges of Pittsburg, August 22.

Henry Kendall, M.D., to Miss Anna Zanderer, both of New York City, August 26.

Isaac B. Harris, M.D., Columbus, Ohio, to Miss Anne Eliza Oliver, at McHenry, N. D.

C. W. O'Brien, M.D., Wyandotte, Mich., to Miss Florence I. Ellis of Maitland, N. S., August 23.

Paul Landry, M.D., White Castle, La., to Miss Leona Barker of New Orleans, August 22.

George Blumer, M.D., New Haven, Conn., to Miss Anne Evans of San Diego, Cal., August 20.

Alfred William Gray, M.D., Milwaukee, to Miss Ada Pratt Ferry of Chicago, September 5.

Richard H. Street, M.D., Chicago, to Miss Lillian Woodward Gunckle of New York City, August 27.

Martin Donohue Delaney, M.D., Alexandria, Va., to Miss Catharine Frances O'Donoghue of Georgetown, D. C., June 4.

Walter Sydney Johnson, M.D., Los Angeles, Cal., to Julia Ross Younglove, M.D., of Boston, Mass., at Riverside, Cal., August 15.

Association News

NEW MEMBERS.

List of New Members of the American Medical Association for August, 1906.

ALABAMA.

Caffey, H. T., Leeds.
Maples, J. H., Elkmont.
Nix, G. C., Sanford.
Wood, Isaac D., Talladega Spgs.

ARIZONA.

Pearson C. E., McCabe.

ARKANSAS.

Briant, W. A., Hope.
Parnall, H. H., Columbus.
Parks, W. P., Mena.

CALIFORNIA.

Frederick, M. W., San Francisco.
Liverman, J. R., San Bernardino.
Scroggs, G. A., Los Angeles.
Stoney, R. C., San Francisco.
Wood, E. G., Oakland.

COLORADO.

Blair, M. M., Dolores.

CONNECTICUT.

Pratt, A. M., Deep River.
Sheehan, W. J., New Haven.
Sperry, F. N., New Haven.
Tuttle, A. L., Milford.

DELAWARE.

Campbell, G. Frank, Shelbyville.

DISTRICT OF COLUMBIA.

Koones, C. K., Washington.

FLORIDA.

Alsobrook, J. W., Plant City.
Mack, Clyde C., Quincy.

GEORGIA.

Anderson, John M., Barnesville.
Benson, M. T., Atlanta.
Gurney, C. H., Rossville.
Lamar, R. V., Milledgeville.
Lindsey, R. C., Moultrie.
Ware, F. N., Thomson.
Walker, N. P., Milledgeville.

HAWAII.

McGettigan, R. J., Waipahu, Oahu.

IDAHO.

O'Connor, Burdett, Mackay.

ILLINOIS.

Baker, R. L., Peoria.
Blatt, M. L., Chicago.
Dart, Ralph, Rock Island.
Ellis, I. W., Murphysboro.
Evans, C. A., Bluffs.
Griffin, M. A., Chicago.
Hobson, E. B., Gillespie.
Hoover, W. K., Lovington.
Kilbourn, E. D., Ancona.
Koch, J. A., Quincy.
Lence, J. J., Jonesboro.
McGinnis, Edwin, Orland.
McKee, H. T., Sparta.
Morgan, J. W., Moline.
Pautler, N. B., Waterloo.
Post, W. E., Chicago.
Roe, M. C., Chana.
Rose, W. J., Columbia.
Schmidt, H. G. G., Elgin.
Schrayer, W. S., Chicago.
Smith, C. G., Red Bud.
Stewart, W. B., Joliet.
Taylor, L. S., Elgin.
Wharton, J. E., Jacksonville.
Xelowski, T. Z., Chicago.

INDIANA.

Barnett, C. E., Ft. Wayne.
Brandon, W. S., Daleville.
Clark, S. A., South Bend.
Galloway, U. G., South Bend.
Mix, C. M., Muncie.
Payne, F. M., Princeton.
Rice, S. M., Terre Haute.
Whitmer, B. F., Goshen.
Wilson, W., Newburgh.

IOWA.

Gaumer, J. S., Fairfield.
Jennings, H. B., Council Bluffs.
Lowder, Rosa E., New Providence.
Mabee, C. O., New Providence.
Maxwell, A. B., Ames.
Mulky, Carl, Knoxville.
Nims, E. A., Boone.
Ohlmacher, J. C., Independence.
Schaefer, P. H., Burlington.
Shiley, G. F., Missouri Valley.
Stewart, A. P., Rembrandt.
Wilson, M. E., Estherville.

KANSAS.

Colt, J. D., Manhattan.
Fillmore, R. S., Blue Rapids.
Garlinghouse, O. L., Iola.
Hershner, C. S., North Branch.
Hittner, H. M., Eshon.

KENTUCKY.

Bolin, J. A., Somerset.
Freeman, J. K., Louisville.
Lamar, F. C., Louisville.
Mason, W., Jr., Murray.
Menefee, A. V., Williamstown.
Owens, J. M., Somerset.
Renaker, J. G., Dry Ridge.
Townsend, G. E., Bowling Green.
Ward, J. H., Louisville.

LOUISIANA.

Hammons, W. W., Marthaville.
Morris, H. G., Kentwood.

MAINE.

Davis, P. W., Portland.

MARYLAND.

Goodell, C. F., Frederick.
Remsberg, D. E., Frederick.
Steele, Guy, Cambridge.

MASSACHUSETTS.

Burton, S. C., Pittsfield.
Daly, J. J., No. Andover.
Fabyan, Marshal, Brookline.
Mackie, W. C., Brookline.
O'Connor, J. H., Hyde Park.
Poirer, Horace, Salem.
Sayward, W. H., Jr., Wayland.
Shanahan, John, Peabody.
Soutter, Robert, Boston.
St. Denis, J. N., Medford.

MICHIGAN.

Blair, C. A., Morenci.
Felch, E. P., Alma.
Ferguson, J. E., Belding.
Kirkpatrick, Clifford, Adrian.
Morris, H. R., Sebewaing.
Smith, F. D., Coopersville.
Thomas, G. H., Holland.
Walling, J. S., Coopersville.

MINNESOTA.

Austin, W. J., Minneapolis.
Hoode, Anders G., Biwabik.
Johnson, A. E., Minneapolis.
Mauerer, E. L., Brownton.
Patterson, F. D., Lambert.
Schottler, G. J., Dexter.
Titus, W. S., Mora.
Webster, H. E., Duluth.

MISSISSIPPI.

Lehmberg, C. E., Artesia.

MISSOURI.

Amman, E. W., Holstein.
Brown, C. W., Campbell.
Byrne, J. I., St. Joseph.
Carter, Howard, Webster Grove.
Davis, G. W., Kansas City.
Irwin, C. B., Kansas City.
Graham, T. E., St. Louis.
Kuhn, W. F., Farmington.
Langley, J. W., Granby.
Lucas, H. R., Chaffee.
Parker, F. P., St. Louis.

MONTANA.

Ritchey, J. P., Townsend.
Scaman, W. L., Billings.

NEBRASKA.

Heilman, W. L., Sterling.
Mack, A. E., Omaha.
Taylor, F. L., Hastings.

NEVADA.

Franck, H. E., Reno.

NEW HAMPSHIRE.

Childs, A. H., Dublin.
Guertin, Auguste, Nashua.
Weaver, G. A., Warren.

NEW JERSEY.

Bradford, S. S., Montclair.
Gilbert, J. S., Bordentown.
Smalley, M. C., Gladstone.
Von Deester, H. T., Hoboken.
White, F. H., Hackensack.

NEW YORK.

Applegate, W. S., Brooklyn.
Atwater, D. H., Rochester.
Ayer, J. C., New York.
Barnard, T. P. C., No. Tonawanda.
Bauer, E. E., Oswego.
Beattie, W. H., Utica.
Bodkin, M. L., Brooklyn.
Brown, W. M., Rochester.
Callan, L. W., New York.
Camac, C. N. B., New York.
Carman, Albro R., New York.
Case, H. G., Syracuse.
Cheesman, W. S., Auburn.
Clark, G. E., Skaneateles.
Clemesha, J. C., Buffalo.
Close, G. H., New York.
Coggeshall, Henry, New York.
Cusack, E. J., Fulton.
De Kraft, F., New York.
Dold, W. E., New York.
Dorr, L. B., Buffalo.
Dwyer, J. T., Oswego.
Edlich, T. J., New York.
Erway, D. D., East Syracuse.
Fisk, A. L., New York.
Goldmark, Carl, New York.
Gorton, J. T., Yonkers.
Gray, E. H., Rochester.
Gutmann, Hugo, Schenectady.
Hayes, W. E., Frankfort.
Himowich, A. A., New York.
Hoag, W. B., New York.
Howk, L. W., Rochester.
Johnson, A. W., Mechanicsville.
Johnson, I. T., Rochester.
Judd, Aspinwall, New York.
Kaple, E. B., Elbridge.
Keens, W. G., Albany.
Kilmer, E. D., Rushford.
Kurth, H. A., Schenectady.
Lawrence, A. W., Brooklyn.
Lewis, C. H., New York.
Macleod, J. A., Buffalo.
McChesney, W. E., Niagara Falls.
McFarland, W. C., New York.
McKenzie, D. C., Granville.
Miller, J. L., Corning.
Muller, H. W., New York.
Mulligan, W. T., Rochester.
Neff, L. K., New York.
Nichols, C. W., Whitesboro.
Osgood, A. T., New York.
Overton, W. T., Binghamton.
Peterman, C. P., Brooklyn.
Pohl, G. A., Buffalo.
Pyburn, P. F., Brooklyn Bridge.
Quinn W. V., Utica.
Richter, Julius, Buffalo.
Schultze, E. C., New York.
Scott, J. M. W., Schenectady.
Straub, G. F., New York.
Steese, E. S., New York.
Tarbox, H. R., Brooklyn.
Virden, J. E., New York.
Williams, W. W., Hilton.
Wolbarst, A. L., New York.
Wright, G. R., Deansboro.

NORTH CAROLINA.

Black, J. C., Pioneer Mills.
Faucette, T. S., Burlington.
Manning, J. M., Durham.
Williams, J. R., Greensboro.

NORTH DAKOTA.

Lee, M. A., Edmore.
Warren, J. G., St. John.

OHIO.

Arundel, T. J., Youngstown.
Carson, J. W., Bergholz.

Clark, Wm., Cleveland.
Courtright, T. E., Columbus.
Crisler, C. G., Cincinnati.
Cushing, C. H., Elyria.
Dauer, A. J., Haskins.
Dawson, N. B., Sterling.
Englander, Simon, Cleveland.
Garmier, G. F., Massillon.
George, Edward, Van Buren.
George, O. E., Cleveland.
Harris, J. H., Clifton.
Heath, H. H., Toledo.
Hopkins, D. A., Middlefield.
Hoskins, F. C., Cleveland.
Huffman, O. V., Dayton.
Kehoe, E. J., Cincinnati.
King, C. P., Newark.
Lichliter, D. C., Dayton.
McAllister, A. L., Beaver.
Moore, E. D., New Philadelphia.
Mumaw, W. S., Kansas.
Patterson, C. U., Uhricsville.
Patrick, H. W., Elyria.
Piper, J. W., Bethesda.
Fool, Henry J., Pt. Clinton.
Ricksecker, O. C., Wilmot.
Salisbury, C. W., Dayton.
Scott, Ernest, Clintonville.
Sears, O. T., Toledo.
Selienings, O. H., Columbus.
Siegrist, C. H., Uhrichsville.
Smith, W. A., Springfield.
Tibbitts, F. E., Geneva.
Webb. A. G., Cincinnati.
Williams, W. E., Jackson.
Wolf. E. A., Dennison.
Wood, W. H., Smithfield.
Yeomans, W. L., Bucyrus.

OKLAHOMA.

Dunaway, J. E., Noble.
Glenn, J. O., Stroud.
Scott, S. F., Waukomis.
Shive, J. R., Shawnee.
Stalker, H. A., Pond Creek.

PENNSYLVANIA.

Anderson, G. C., Pittsburg.
Berk, J. K., Frackville.
Bryson, J. F., Girardville.
Buck, A. J., Mill City.
Carson, F. W., Waymart.
Ely, G. W., Pittsburg.
Enos, J. C., Charleroi.
Farquhar, R. C., Monongahela.
Gray, E. P., Wilkinsburg.
Hartzell, C. A., Fayetteville.
Jones, Mary L., Pittsburg.
Lacock, H. M., West Finley.
Macrum, R. S., Sewickley.
McComb, S. F., Tarentum.
McKay, Edward, Charleroi.
Robinson, G. C., Philadelphia.
Santee, G. O. O., Schuylkill Haven.
Sandels, C. C., Pittsburg.
Sargent, L. D., Beallsville.
Shidler, W. J., Canonsburg.
Speese, John, Philadelphia.
Waggoner, LeR. C., Brownsville.

PHILIPPINE ISLANDS.

Yeagle, C. E., Manila.

SOUTH CAROLINA.

Brawley, J. C., Greenwood.
Madden, A. A., Columbia.
Millard, J. P., St. George.
Russell, H. E., Easley.
Southard, W. O., Jonesville.

SOUTH DAKOTA.

Calkins, R. W., Custer.
Coburn, G. H., Deadwood.

TENNESSEE.

Beasley, E. M., Coal Creek.
Bowers, T. L., Rockwood.
Caldwell, Robert, Nashville.
Pye, J. S., Chattanooga.
Ellis, S. C., Chattanooga.
Sumpter, W. D., Nashville.
Walker, J. L., Wartrace.
Ziegler, T. J., Chattanooga.

TEXAS.

Farmer, T. J., Dublin.
Gray, A. N., Floyd.
Hirschfeld, Louis, Marion.
Largent, T. W., Lufkin.
Mahon, G. D., Marshall.
Reger, Howard, Ft. Worth.
Shields, F. B., Victoria.

VIRGINIA.

Gill, W. W., Petersburg.
Hains, F. W., Petersburg.
Lewis, C. T., Staunton.
McNair, R. T., Emporia.
Murrell, T. W., Richmond.
Rosser, R. A., Portsmouth.
Terrell, E. H., Richmond.
Tompkins, J. E., Fredericksburg.

WASHINGTON.

Cook, Lucie A., Seguin.
Moore, R. P., Davenport.
Williams, Angus S., Ellensburg.

WEST VIRGINIA.

Bates, C. S., Lumberport.
Cobun, L. W., Morgantown.
Denham, Cecil, Weston.
Fisher, R. W., Morgantown.
Flowers, A. O., Clarksburg.
Leahy, W. J., Mannington.
Naret, E. L., Morgantown.
Peck, D. C., Grafton.
Robinson, B. O., Parkersburg.
Suddarth, F. S., Grafton.
Wehner, E. F., Clarksburg.

WISCONSIN.

Gephart, C. H., Kenosha.
Hardy, C. F., Milwaukee.
Keeb, H. J., Milwaukee.
Horstmann, F. M., Rice Lake.
Karsten, A. C., Horicon.
Potter, J. Y., New London.
Schallert, P. O., Wrightstown.
Scheib, G. F., Fond du Lac.

Queries and Minor Notes

TREATMENT OF CONGENITAL ABSENCE OF ANUS.

——, Illinois, Aug. 21, 1906.

To the Editor:—On August 7, Mrs. B., a perfectly healthy woman, 28 years of age, after a normal pregnancy, gave birth to a fine eight-pound boy, well nourished and healthy looking, and perfect in every way except that there was no anus or any sign of any, and a small amount of meconium was being passed through the urethra of the penis. The next morning a local surgeon was called in counsel and an incision was made through the floor of the pelvis and dissected up along the coccyx, but no rectum was found or trace of a gut until the sigmoid flexure was reached in the free peritoneal cavity, about an inch from the perineum. A large opening was made in this which was followed by a discharge of feces. No attempt was made to stitch the gut to the wall or to the integument. The opening was not closed in any way, and no dressing applied except that the nurse was directed to keep the site of operation sponged with a saturated solution of boracic acid after each evacuation of the bowels. The child nursed well after the operation and has continued to do so. It sleeps nearly all of the time, but had had no elevation of temperature; the passages come free, and the urine is passed normally. Can you suggest any means of treatment that will permit the child to grow up with at least a slight control of the bowel movements, or refer me to a text-book that treats on the subject?

G. E. L.

Answer.—In anomalies like the above described case, the proper treatment, when possible, is to make an incision in the mid-line of the perineum, preserving the muscles as much as possible in separating them bluntly, finding the lowest point of the bowel and bringing it down, opening it and suturing the opening to the skin. At times the bowel is found so high up that it seems impossible to bring it down to the skin at the first operation. The bowel, however, seems to descend later so that at a secondary operation the object may be accomplished. Technic of the operation may be found in most works on rectal surgery, but is particularly well described in Tuttle's work.

CONTINUOUS WATER BATHS FOR BURNS.

Gallup, N. M., Aug. 24, 1906.

To the Editor:—Will you kindly give me composition and method of application of the Hebra bath as used in burns covering extensive surface of the body?

W. H. Burr.

Answer.—Hebra's bath for extensive burns and other conditions where there is great loss of the epidermis is simply a continuous bath in water which is not medicated. The patients are put in a bath of body temperature with only the head uncovered and are left there indefinitely. Hebra and Kaposi have shown that patients can remain in such a bath for months. The treatment is falling into disuse and we are not disposed to consider it a good method for treating burns.

TENDER HANDS—SENSITIVE TO ANTISEPTICS.

Fairbanks, Iowa, Aug. 25, 1906.

To the Editor:—A solution of mercuric chlorid (1-1,000) or of carbolic acid invariably covers my hands with pustules which itch intensely. I understand that bichlorid poisoning is for some an idiosyncrasy. Can you tell me anything to toughen my hands?

C. D. Bothwell.

Answer.—Hands may be toughened somewhat against the effects of antiseptics by bathing them in a dilute solution of subacetate of lead. If this causes too much dryness of the hands they can be softened by greasing with rose ointment.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 1, 1906:

Heard, George P., asst.-surgeon, ordered to proceed from Fort Wingate, N. M., to Camp of Instruction, near Fort D. A. Russell, Wyo., for temporary duty.

Torney, Geo. H., deputy surgeon general, left Presidio, San Francisco, with insane soldiers, en route to Government Hospital for Insane, Washington, D. C.

Edger, B. J., Jr., asst.-surgeon, reports arrival at Fort Reno, Okla., with 1st Battalion, 25th Infantry, from Fort Brown, Tex.

Scott, Geo. H., asst.-surgeon, reported for temporary duty at Fort D. A. Russell, Wyo., from Camp of Instruction, near Fort D. A. Russell, Wyo.

Pinkston, O. W., asst.-surgeon, left Camp of Instruction, Fort Riley, Kansas, with Troops B and D, 9th Cavalry, on detached duty, en route to Osawatomie, Kansas.

Steer, Samuel L., asst.-surgeon, granted leave of absence for one month and ten days, to take effect about Sept. 1, 1906.

Chamberlain, W. P., asst.-surgeon, granted leave of absence for two months, to take effect about Sept. 4, 1906.

Shellenberger, J. E., cont. surgeon, will proceed from Camp of Instruction, near Austin, Tex., to Fort Sam Houston, Tex., for medical treatment.

McAlister, J. A., Jr., dental surgeon, will proceed from Presidio of Monterey, Cal., to Fort Rosecrans, Cal., for temporary duty.

Porter, E. H., cont. surgeon, is relieved from further duty in the Philippines Division, and on expiration of present leave of absence will proceed to Fort Reno, Okla., for temporary duty.

Richardson, G. H., cont. surgeon, having completed the duties assigned him at Seattle, Wash., will proceed to Presidio of Monterey, Cal., for temporary duty.

Rhoades, Rex H., dental surgeon, will proceed from Columbus Barracks, Ohio, to Fort Sheridan, Ill., for duty.

Wing, F. F., dental surgeon, left Fort D. A. Russell, Wyo., for Camp of Instruction, near Fort D. A. Russell, Wyo.

Davis, O. F., cont. surgeon, left Camp of Instruction, near Fort D. A. Russell, Wyo., for Fort Des Moines, Iowa.

Davis, O. F., will proceed from Fort Des Moines, Iowa, to Camp of Instruction, near Fort D. A. Russell, Wyo., for duty as witness before a general court martial.

Byars, C. R., cont. surgeon, left Jefferson Barracks, Mo., on practice march with 3d Squadron, 9th Cavalry.

Trueholtz, C. A., cont. surgeon, arrived at Fort Apache, Ariz., from Fort Bayard, N. M., for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the two weeks ending Sept. 1, 1906:

Elliott, M. S., surgeon, detached from the *Florida* and ordered to the *St. Louis*.

Iden, J. H., passed asst.-surgeon to the *Florida*.

Pease, T. N., asst.-surgeon, resignation as an assistant surgeon in the Navy accepted to take effect August 21.

Jones, A. McK., acting asst.-surgeon, to the Naval Hospital, Norfolk, Va.

Beker, M. C., acting asst.-surgeon, to the Naval Hospital, Newport, R. I.

Longabaugh, R. I., acting asst.-surgeon, ordered to Naval Hospital, Mare Island, California.

E. C. Taylor, asst.-surgeon, to the *Hancock*, Navy Yard, New York, N. Y.

J. A. Randall, passed asst.-surgeon, to the Navy Recruiting Station, Denver.

H. L. Brown, asst.-surgeon, detached Navy Yard, Washington, D. C., etc., to the Navy Recruiting Station, Pittsburg, Pa., temporary duty; thence home and wait orders.

N. H. Drake, medical inspector, when discharged treatment Naval Hospital, New York, N. Y., to Washington, D. C., Oct. 1, 1906, examination for retirement, then to home and wait orders.

F. W. S. Dean, asst.-surgeon, detached Navy Recruiting Station, Denver, etc., to Washington, D. C., Sept. 6, 1906, examination for promotion, then await orders.

E. L. Jones, asst.-surgeon, detached Naval Hospital, Mare Island, Cal., Sept. 15, 1906, to duty in attendance on the course of instruction at the U. S. Naval Medical School, Washington, D. C., Sept. 29, 1906.

J. E. Gill, asst.-surgeon, to the Navy Recruiting Station, St. Louis, Sept. 1, 1906, for temporary duty, thence to the Navy Yard, Washington, D. C.

F. A. Asserson, passed asst.-surgeon, to *Columbia*, Sept. 4, 1906.

F. H. Brooks, asst.-surgeon, detached *Columbia*, to the Naval Hospital, Newport, R. I., for treatment.

B. H. Dorsey, asst.-surgeon, to the Navy Recruiting Station, Des Moines, Iowa, Sept. 5, 1906.

E. J. Grow, surgeon, detached *Mohican*, to *Ohio*.

H. E. Odell, passed asst.-surgeon, detached *Galveston*, to *Wisconsin*.

G. M. Olson, asst.-surgeon, detached *Wisconsin*, to *Galveston*.

C. P. Kindleberger, surgeon, detached Naval Station, Olongapo, P. I., to *Baltimore*.

H. G. Beyer, medical inspector, detached *Ohio*, to *Rainbow*.

F. E. Sellers, asst.-surgeon, detached *Ohio*, to *Mohican*.

G. H. Barber, surgeon, detached *Wisconsin*, to the Naval Station, Olongapo.

R. Spear, surgeon, detached *Baltimore*, to the Naval Hospital, Canacap, P. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital service for the seven days ending August 29, 1906:

Sawtelle, H. W., surgeon, relieved from duty at San Francisco.

Gassaway, J. M., surgeon, relieved from duty at St. Louis and directed to proceed to Philadelphia, assuming command of the service and relieving Surgeon Fairfax Irwin.

Godfrey, John, surgeon, granted leave of absence for seven days, from Aug. 26, 1906.

Godfrey, John, surgeon, granted an extension of leave of absence for fourteen days from Sept. 2, 1906.

Irwin, Fairfax, relieved from duty at Philadelphia, and directed to proceed to Detroit, assuming command of the service at that port, relieving Passed Asst.-Surgeon Grubbs.

Carmichael, D. A., and Wertenbaker, C. P., surgeons, and Rucker, W. C., asst.-surgeon, detailed to represent the service at the meeting of the Association of Military Surgeons, Buffalo, N. Y., September 11-14, 1906.

White, J. H., surgeon, directed to proceed to Natchez, Miss., for special temporary duty, on completion of which to rejoin his station.

Oakley, J. H., passed asst.-surgeon, granted twenty days' leave of absence, from Aug. 30, 1906.

Grubbs, S. B., passed asst.-surgeon, relieved at Detroit and directed to proceed to St. Louis, assuming command of the service and relieving Surgeon J. M. Gassaway.

Lumsden, L. L., passed asst.-surgeon, leave of absence granted for two months, from June 1, 1906, amended to read one month only.

Corput, G. M., passed asst.-surgeon, granted one month's leave of absence, from Aug. 30, 1906.

McLaughlin, A. J., passed asst.-surgeon, granted leave of absence for one month, from Aug. 15, 1906.

Ward, W. K., asst.-surgeon, granted leave of absence for five days, from Aug. 20, 1906, under paragraph 191 of the Regulations.

Hunt, Reid, chief, division of pharmacology, detailed to attend the meeting of the Council on Pharmacy and Chemistry of the American Medical Association, Indianapolis, Sept. 1, 1906.

Harkin, F. McD., acting asst.-surgeon, granted leave of absence for twelve days, from Aug. 28, 1906.

Marsh, W. H., acting asst.-surgeon, granted leave of absence for nine days from Sept. 8, 1906.

Taylor, A. S., acting asst.-surgeon, granted leave of absence for sixteen days, from Aug. 19, 1906.

Townsend, Wesley, acting asst.-surgeon, granted leave of absence for seven days.

Woods, C. H., pharmacist, granted leave of absence for seven days, under paragraph 210 of the Regulations.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Serive, during the week ended August 31, 1906:

SMALLPOX—UNITED STATES.

New York: August 11-18, 1 case.

Texas: Houston, August 11-18, 1 case.

Washington: State, July 1-31, 5 cases; Spokane, August 11-18, 1 case; imported.

China: Niuchwang, July 7, 1 case.

France: Marseilles, July 1-31, 5 deaths.

Gibraltar: August 5 12, 1 case.

Great Britain: Liverpool; August 4-11, 1 death.

India: Bombay, July 17-24, 3 deaths; Calcutta, July 7-14, 3 deaths; Karachi, July 15-22, 4 deaths; Madras, July 14-20, 3 deaths; Rangoon, July 7-14, 3 deaths.

Italy: General, July 26-August 9, 18 cases.

Nicaragua: Bluefields, August 2-9, 1 case.

Russia: Moscow, July 21-August 4, 7 cases, 4 deaths; Odessa, July 28-August 4, 2 cases.

Siberia: Vladivostock, July 5-14, 3 cases, 1 death.

Spain: Barcelona, August 1-10, 11 deaths; Cadiz, July 1-31, 1 case.

YELLOW FEVER.

Cuba: Habana, August 25, 1 case.

Mexico: Merida, August 5-11, 8 cases, 3 deaths; Tierra Blancha, August 5-11, 1 case, 1 death; Vera Cruz, August 21, 1 case.

CHOLERA—INSULAR.

Philippines: Manila, June 30-July 14, 268 cases, 243 deaths; Provinces, July 7-14, 247 cases, 177 deaths.

CHOLERA.

India: Bombay, July 17-24, 97 deaths; Calcutta, July 7-14, 8 deaths; Madras, July 14-20, 9 deaths; Rangoon, June 30-July 7, 1 death.

Straits Settlements: Singapore, May 30-June 12, 2 cases 2 deaths.

PLAGUE.

Australia: Adelaide, July 12, 1 case on steamship *Britania*; Fremantle, June 23 30, 1 case; Sydney, June 23-30, 2 cases 1 death.

Arabia: Djeddah, July 16-22, 11 cases; 11 deaths.

Brazil: Bahia, June 30-July 28, 5 cases, 3 deaths.

China: Amoy, July 24, epidemic.

Greece: Athens, July 21-26, 2 deaths.

India: Bombay, July 17-24, 34 deaths; Calcutta, July 7-14, 10 deaths; Karachi. July 15-22, 17 cases, 16 deaths; Rangoon, June 30-July 14, 319 deaths.

Peru: Lima, July 9, 3 cases; Mollendo, July 9, 4 cases; Paita, July 8, 8 cases; Trujillo ,June 9, 3 cases.

Society Proceedings

COMING MEETINGS.

Med. Soc. of the State of Pennsylvania, Bedford Springs, Sept. 11-13.
Washington State Medical Association, Spokane, Sept. 11-13.
Assn. of Military Surgeons of the U. S., Buffalo, N. Y., Sept. 11-14.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association. Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

AMERICAN ROENTGEN RAY SOCIETY.

Seventh Annual Meeting, held at Niagara Falls, N. Y., Aug. 23-30, 1906.

The President, Dr. Henry Hulst, Grand Rapids, Mich., in the Chair.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Preston M. Hickey, Detroit; vice-presidents, Dr. Percy Brown, Boston; Dr. S. Cummings, Toronto; Dr. Arthur Holding, Boston; Dr. George E. Pfahler, Philadelphia; Dr. George H. Stover, Denver; secretary, Dr. George C. Johnston, Pittsburg; treasurer, Dr. L. E. Custer, Dayton, Ohio; executive committee, Dr. Joseph F. Smith, Chicago; Dr. F. H. Baetjer, Baltimore; Dr. Kennon Dunham, Cincinnati.

The time and place of the next meeting are to be decided later by the executive committee.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 707.*)

SECTION ON PSYCHOLOGY.

The session of the Section on Psychology was presided over by Dr. William Julius Mickle of London.

Symposium on General Paresis.

Etiology.—Dr. Allen R. Diefendorf, Middletown, Conn., argued for the greater consideration of other causes in conjunction with syphilis, especially traumata of a mental sort, such as excessive strain, shock, worry, etc. He freely admitted the predisposing influences of syphilis, but said that syphilis alone is not entirely adequate as a cause. In the discussion of the paper the consensus of opinion was that general paresis, in its ultimate etiology, is a product of syphilis.

Symptoms.—Dr. William J. Mickle, London, in introducing the general discussion in the Symposium on General Paresis, read an exhaustive paper covering the symptomatology and pathology with the pathogenesis and prognosis. Acute delirium, in some obscure diseases, is often due to and is associated with general paralysis. So likewise are acute microbic infections and bromids and other intoxications behind the paretic manifestations. Sometimes there is a relationship or at least an association between paranoia and deliria and general paralysis. Four general types of general paresis may therefore be readily recognized. The first includes the degenerates with deliria, but without the physical signs; in the second are the alcoholic and toxic dements; the third represents paranoiac degenerates, while the fourth includes the degenerates that ultimately become demented. In all of these cases dementia is the cardinal manifestation. This gives a broad conception to the term dementia paralytica. Pathologically, the disease is a meningo-encephalitis. There is a double morbid process going on, the one being parenchymatous and degenerative in character, the other interstitial and inflammatory, or at least vascular. Dr. Mickle did not consider the disease so hopeless as many do. Sometimes there is a partial recovery, with only the faintest tracing left of the previous grandiosa ideas. No somatic symptoms remain at all. The individuals go about their work for years as not only harmless but as useful citizens. The author claims that there is recovery from general paresis, because the disease is terminated when there is a separation and disposal of the mental or psychic symptoms. A partial recovery of this sort has been known to continue for thirty or forty years.

The New Psychology.

Dr. Alfred G. Scofield, London, briefly explained the new psychology. He emphasized the existence of the two minds, the conscious and the subconscious or unconscious. Each has its own particular diseases. For example, hysteria, he believes, is disease of the subconscious mind, whereas many of the ordinary mental diseases are affections of the conscious mind.

Staining the Cerebral Nervous System and Relation of Epilepsy to the Central Nervous System.

Dr. John Turner, Brentwood, Essex, presented these two interesting papers, largely illustrated with stereopticon views, showing the cellular changes of the vascular alterations found postmortem in epilepsy.

Cerebral Localization.

Dr. Charles K. Mills, Philadelphia, presented in abstract his paper on "Cerebral Localization in the Study of Psychiatry." After giving a brief historical sketch of his efforts and those of others in this line, the author argued that psychic symptoms, generally in their last analysis—hallucinations, illusions, delusions—are often the result of sensory-cortical disease. Clinical experience and postmortem observations occasionally demonstrate this fact. Psychologic analysis, logic and physiologic data all go to uphold the thesis that mind is the product of brain activity. The brain is a compound, complicated organ, with the working of whose parts (cortical) we are becoming pretty accurately acquainted. The functions of these parts or localizations are easily recognized, singly or in association, as lying behind what we now denominate as psychic manifestations. If this be so, then a disturbance in these psychic manifestations may well be expected to be accounted for on the basis of some cortical brain lesion. This offers a possible physical basis for psychiatry and will remove psychiatry from the plane of a mere functional to that of an organic science. In consonance with this conception of psychiatry, the author detailed a classification of mental diseases different from any hitherto proposed, and based on teratologic and pathologic grounds.

DISCUSSION.

Dr. L. Harrison Mettler, Chicago, in discussing this paper, said that, in general, the position taken by Dr. Mills was incontrovertible. It was an advanced view of psychiatry which would ultimately lead to the abolition of psychiatry as a special department of medicine or the reduction of it to the position of being a part of neurology. The newer physiologic psychiatry has already practically reduced all psychic manifestations to a sensory-motor basis. An idea is the product of the sensory-motor reactions, and all psychoses are the outgrowths ultimately of ideas. If this be so, it follows that the functional interplay of the various sensory-motor centers of the brain, whether in conjunction with, or apart from the inhibitory influence of the prefrontal lobes, underlies the elaboration of what we now call psychic exhibitions. *Per contra*, therefore, any disease or damage of this interplay must necessarily to a greater or less extent provoke an abnormal psychic display. The cortex is not the only sensory-motor basis of mind, for mind is really a mere expression for our reaction to environment. It represents our whole relational life. Sensation and motility underlie its presentations, but sensations and motility are co-extensive with the whole nervous apparatus, and its relationship to the extra-corporeal world, the somatic world and the world of its own physical activities. Hence, mind, is a mere product, not an entity; its diseases are merely symptomatic, and not integral. On this basis, mental diseases are merely exhibitions of the functional reaction of the individual, as shown, preëminently through the nervous system, and as the essayist has shown, the cerebral cortex, particularly in its prefrontal inhibitory workings. It is somewhat along this line that Wernicke worked in his efforts to solve psychiatric phenomena on the basis of known psychologic data in connection with the cortex.

Dr. Charles H. Hughes, St. Louis, said that he had always regarded insanity as a disease, and being a disease as having as physical basis, a lesion of some part, though the nature of this lesion, is usually beyond our present powers of investigation.

Epilepsy.

A general discussion on epilepsy was participated in by Drs. W. Alden Turner, London; W. D. Spiller, Philadelphia; Sanger Brown, Chicago; Charles H. Hughes, St. Louis; William P. Spratling, Sonyea, N. Y., and Charles K. Mills, Philadelphia. There was, of course, the usual diversity of views in certain details, but in the main nothing new was advanced.

Sterilization of Undesirable Denegerates.

Dr. Robert Rentoul, Liverpool, advanced extremely radical views on this subject, and his paper provoked a great deal of discussion. The author proposed that a certain class of defectives, both men and women, should be operated on in such a manner that the sexual desire and the power of sexual intercourse should not be molested, but that the ability to procreate should be destroyed. The feasibility of such an operation is now well established, but its desirability for the purposes proposed was what raised the question. In Dr. Rentoul's opinion it was considered advisable, and in his paper he made arguments for and against the operation. He did not, however, state the exact class of persons on whom it should be performed.

Insanity of Inebriety.

Dr. Thomas D. Crothers, Hartford, Conn., read a paper which provoked considerable discussion, in which he described the various insane manifestations of the inebriate, and ultimately concluded that all alcoholics, whether heavy or moderate drinkers, should be looked on as mentally unbalanced individuals. There may be a question of the degree of mental instability in individuals, but as to the abnormality of their mental state, he said there could hardly be any question. Annually in the United States about 100,000 men die from the direct or the indirect effects of alcohol. The question of the habit is, therefore, a most serious one, both for the individual and for society. The medical profession does not take the interest in this question that it should, and probably because alcoholism and tippling are not strongly enough looked on as a disease. It is a disease, and the victim should be studied and treated as a distinctly diseased individual.

Devolutional Psychoses.

The "Types of the Devolutional Psychoses" were most interestingly elucidated with the aid of a chart by Dr. C. B. Farrar, Baltimore. The paper should be read as a whole and can not be abstracted satisfactorily.

Dementia Præcox.

Dr. Charles Clarke opened the discussion on this subject. The present status of this nosologic entity, if indeed it be such, was outlined. The author presented no definite opinion, but in a very able way gave the history of the rise and adoption of the term, the various meanings assigned to it by different alienists, and the generally unsettled views as to what is exactly meant by dementia præcox. Kraepelin himself had modified his earlier views, and many were still inclined to dissent from him in his later views. Asylum records showed entries of dementia præcox as high as 40 per cent., and yet Kraepelin had stated that of all mental diseases dementia præcox constituted about 15 per cent. Evidently there must be some explanation for this wide discrepancy. The author, however did not make any explanation.

DISCUSSION.

Dr. Adolph Meyer, New York, in the discussion, after showing that a too narrow limitation has been put on Kraepelin's conception of the disease, described, in a most vivid manner, the symptomatology of the cases usually classified under this head. He then elaborated the newer view in psychology that, after all, mental diseases are rather expressions of the individual's reaction to environment, this reaction being largely determined by the preceding heredity and disciplinary influences. In other ways the victim is not the possessor of a nosologic entity, a something added to him, as it were. He is not to be pigeon-holed into this or that mental catalogue of diseases; but, on the contrary, he is born with certain deficiencies and these are, by vicious training or habit, made worse. As a result, he reacts to his environment in a certain way, in consequence of these influences, and this reaction is his psychic exhibition of mental disease. In this sense, dementia præcox is a condition rather than a disease. It is a degenerate reaction of a defective in his surroundings. It varies in degree, from mere indifference all the way up to complete negativism and dangerous outbursts. As a condition, dementia præcox would be better looked on in perspective as a principle at work and reaching back through the individual's past and ancestry, rather than as an assemblage of present rule-of-thumb symptoms. Not its mere termination, nor even its course is of vital importance, but rather the deterioration of habits, the lowering of instincts which it reveals and which etiologically are the outcome of heredity, neuropathic and disciplinary inadequacies. There is no definite histo-pathology of the conditions. We need further data in this respect. All organs, glands and tissues of the body need to be closely studide, even then we may not reach a complete solution. The individual's own mind must be closely observed in its own workings, for the mind can demoralize and undermine itself.

Dr. F. X. Dercum, Philadelphia, said that dementia præcox was admittedly a bad term. It is merely one of expediency, and represents a condition in which the organism as a whole is defective. At first view, it appears to be a functional state leading to some hope of a better outlook, but as time goes on, this hope is usually turned into disappointment. The patient has lost his adjustment to his environment because he was originally defective. The neuropathic histology is important in the etiology of the disease, though infection, nutrition and discipline may all be influential in one way or another in the elaboration of the disease. It is a question for further solution whether the symptoms are functional or structural, inorganic, toxic or organic. It would seem that we are here dealing, at all events, with some altered nutrition or defective metabolism, and consequently with organic degenerative conditions. Kraepelin, like Lister in regard to antisepsis, has performed a stroke of genius in gathering together all of these manifestations of degeneracy of a particular type, putting them into a class, with subclasses, by themselves, and, in general, indicating their prominent characteristics.

Dr. L. Harrison Mettler, Chicago, said that confusion and discrepancies surrounding the term and the conception of Kraepelin's dementia præcox arose from the fact that an effort was being made to name and crystallize into a distinct disease a psychiatric entity which could not be so crystallized or stamped. In his opinion it was a wrong conception of a psychosis, to attempt to make fixed clinical types of certain varied mental manifestations. As Dr. Meyer had indicated, a psychosis is merely the expression of the individual's reaction to his past and present environment. Each individual has his own mode of reaction, depending on a vast complicated mass of hereditary, structural and functional factors. It is the latter we should look to and subject to the closest scrutiny in order to interpret the why and wherefore of the particular individual's psychic manifestations, study each patient *per se*, as Wernicke was wont to do, and account for his exhibitions on the basis of his own history. As had already been stated by those who uphold dementia præcox as a disease, one had to take a perspective view of the disease in every case, had to look back over its progress and not merely at its present symptomatic presentations. The latter have nothing distinctive, and therefore do not portray any distinct disease-entity. Therefore, the upholders of dementia præcox as a disease virtually admit that they diagnosed not a disease but the individual psychic reactions. Dementia præcox is this and nothing more.

Treatment of the Insane.

Dr. E. W. Ryan, Kingston, Ont., presented a very practical paper on "Public and Modern Hospital Methods and the Treatment of the Insane."

Dr. Thomas J. Mohr, Brockville, Ont., read a paper, equally practical in its illustrations, on "Occupation as a Factor in the Treatment of the Insane."

(*To be continued.*)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada. Aug. 20-22, 1906.

(*Continued from page 705.*)

Treatment of Spinal Curvature.

Dr. Frank E. Peckham, Providence, R. I., read a paper entitled "The Treatment of Rotary Lateral Curvature of the Spine. Results." For purpose of treatment, the author considers only two factors, notation and rigidity. The greater the rotation and rigidity, the worse the prognosis. All non-symmetrical exercises have been discarded, and the results have improved. The exercises given to any one patient are simple and few, but are performed with great effort at exactness and self-correction, under constant supervision. Each patient must come every day for the exercises, and no exercising is done at home. Three pound dumb-bells and occasionally the elastic exerciser are the only apparatus used. Plaster Paris jackets applied with the patient forcibly corrected by means of thrust-rods in a horizontal frame are occasionally needed in rigid cases, but must be followed by faithful gymnastic work.

Results of Posture.

Dr. Henry O. Feiss, Cleveland, read a paper entitled, "Demonstration of Models to Illustrate the Mechanical Tendencies of Posture in the Normal." Model of thorax illustrates: (1) With the segmental motion of the thorax and with the tissue resistance of the lateral walls, distortion will take place in the rib walls if there is any elasticity present; (2), lateral bend has a direct tendency to distort them, and twist has a less direct tendency to do so. Model of vertebra and ribs illustrates: (1) Whatever the tendency for motion is present in the vertebra in nature, it will, if freed, tend to move on its own axis, which is distinct from the axis of motion of the thoracic segment; (2) the vertebral axis will divert from the direction of the median line of the base toward the side on which the curve of the rib prevents the greatest convexity.

Dr. Joel E. Goldthwait, Boston, read a paper entitled, "Anterior Flexion of the Upper Angle of the Scapula as a Cause of Persistent Forward Shoulder, as Well as of Pain and Crepitation in the Scapular Region." Anatomic study of the development of the scapula shows the wide variation of the shape of the upper part. The upper part may acquire a forward bend due to muscle pull when the shoulders are held habitually forward. The crepitation is due to the forward-bent upper margin of the scapula sliding over the angles of the ribs, causing a mechanical irritation, and is not due to a bursitis, as formerly supposed. The treatment consists in excising the offending upper margin of the scapula. This stops the pain and crepitation. In women, the incision is made low and the flap dissected up so that the scar shall not show above a low-neck dress.

DISCUSSION.

Dr. Robert W. Lovett, Boston, in discussion of the foregoing papers, said that lateral curvature requires exercise in large doses. The German custom is to require four to six hours daily. Why should American orthopedic surgeons be willing to impair their results through under dosage? It is now needed to apply what we know to what we want to do.

Dr. Compton Riely, Baltimore, said that he had some time ago explained the rib distortion in scoliosis by altered tension of the parietal muscles due to a tilt of the pelvis.

Dr. Reginald H. Sayre, New York, said that lateral curvature produced by forces acting twenty-four hours a day could be overcome only by prolonged application of the correcting means used.

Dr. J. T. Watkins, San Francisco, referred to certain cases of scoliosis which had not improved under exercising until they were put to bed on curved stretchers in the periods between exercising.

Dr. Gwilym G. Davis, Philadelphia, said that, as the wound in Dr. Ryerson's case was below the point where it could have done much damage to the nerves supplying the abdominal muscles, the trouble, if due to the muscles at all, must be due to the surgeon's incision.

Dr. Ryerson said that he thought the damage to the muscles in his case was not due to the nerves but to separation of the cut ends of the muscles.

Potts' Disease.

Dr. Compton Riely, Baltimore, said that forward tilting of the pelvis is an important factor in production of the deformity, and it is important to restore it to its normal attitude in preventing and reducing pain, paralysis and deformity. Early diagnosis of Potts' disease in the adult is difficult, and is greatly aided by the *x*-ray taken in such a way as to show abscess.

DISCUSSION.

Dr. John Ridlon, Chicago, said that Potts' disease in adults is commoner than supposed. He reported two cases.

Dr. Charles F. Painter, Boston, said that the abscesses shown in the radiographs might be due to retroperitoneal glands.

Dr. S. C. Baldwin, Salt Lake City, reported a case of Potts' disease in an adult, with deeply cyanosed legs. The cyanosis was relieved by treatment of the Potts'.

Dr. James K. Young, Philadelphia, reported three cases of Potts' disease in adults, in whom the disease had not been suspected. Unilateral pain is a common symptom in adults.

Dr. Joel E. Goldthwait, Boston, said that aneurism must be considered in diagnosis of these cases.

Dr. Arthur T. Gillette, St. Paul, Minn., reported a case relieved by a jacket, in which autopsy proved the trouble to be aneurism.

Dr. Riely said that he made the diagnosis of Potts' disease on the physical signs as well as on the radiograph.

The Etiology of Juvenile Lateral Deformities of the Spine.

Dr. Max Boehm, Boston, said that anatomic study shows frequency of structural asymmetries of the spine, consisting of numerical variations, so-called, that is, the occurrence on one side of a vertebra of characteristics of one vertebral type, and on the other side characteristics of another type. These numerical variations occur usually at the cervicodorsal, dorsolumbar, and lumbosacral junctures, and result in such anomalies as atypical sacral wings and cervical ribs. Such asymmetries can readily account for scoliosis. In twenty clinical cases of scoliosis, examined with special care by the *x*-ray, numerical variations of the kind to be expected from the kind of curve were found in 85 per cent.

DISCUSSION.

Dr. Arthur H. Freiberg, Cincinnati, said that the specimens of spines with numerical variations were singularly free from curvature. Numerical variations will not account for the progressive character of scoliosis. If a short leg does not produce a progressive scoliosis, why should a slight anatomic variation?

Dr. Gwilym G. Davis, Philadelphia, said that unmercial variations would not account for the great preponderance of the right dorsal convex type of curve.

Dr. Boehm said that the anatomic specimens of spines with extensive numerical variations did show curves. The curve does not come on till puberty because up to that time all the vertebræ are of one type, and the potential variations are therefore not operative till then. This accounts also for the progressiveness of scoliosis, though due to a fixed set of variations. A short leg is less fundamentally disturbing to the spine than numerical variations. Preponderance of the right dorsal convex type is dependent on the tendency of anatomic variations to contract the left side.

Resection of Knee to Obtain a Movable Joint.

Dr. Gwilym G. Davis, Philadelphia, read a preliminary report of a case of apparently bony ankylosis, at 130 degrees, with patella adherent, of three years' standing, following acute rheumatism. Excision was done and a flap of fascia and muscle turned in between raw bone surfaces. Mobility was successfully attained.

The Cause of Straddling Gait in Bow-Legs.

Dr. P. Hoffman, St. Louis, said that children with bow-legs usually walk with the legs and feet widely separated. The common explanation is that this is to maintain equilibrium. The more logical explanation is that it is to allow the lower parts of the legs to be perpendicular to the ground. With the feet together, the weight would be on only the outer margins of the feet, or else the feet would be pronated, producing in either case foot-strain.

He also read a paper entitled "The Correct Principle in the Construction of Knock-Knee Braces." The *x*-ray has shown that the deformity in knock-knee is an inward convexity commonly located at the upper end of the tibia, sometimes at the lower end of the femur, sometimes at both places. The deformity is rarely, if ever, at the knee itself. A brace exerting outward pull or pressure on the knee expends its force mainly when the knee is flexed even only a little in rotating the femur. What directly outward pressure on the knee there is acts largely on the lateral ligaments and tends to produce an unstable joint. The correct brace should exert corrective force directly on the abnormal curve or curves and not on the knee.

Protective Immunization Against Joint Tuberculosis.

Dr. Charles F. Painter, Boston, reported work on immunization by small repeated doses of tuberculin, not more than ¼ mg. at a dose. The work thus far is only preliminary.

DISCUSSION.

Dr. Joel E. Goldthwait, Boston, said that the research conducted by Dr. Painter incidentally showed the nearly constant presence of tubercle bacilli in smears of the pus from cold abscesses. This pus should be as cautiously handled, therefore, and disposed of as tuberculous sputa.

Exceptional Rachitic Distortions of the Legs.

Dr. Wallace Blanchard, Chicago, remarked that skiagraphy shows occasional unusual types of deformities. These should be corrected according to the particular indications. The osteoclasp in all cases should be applied on the external surface of the leg.

(To be continued.)

State Boards of Registration

COMING EXAMINATIONS.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, September 11-12. Secretary, Edwin B. Harvey, Boston.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 11-13. Secretary, J. F. Kennedy, Des Moines.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Indiana May Report.—Dr. W. T. Gott, Secretary of the Indiana Board of Medical Registration and Examination of Indiana, reports the written examination held at Indianapolis, May 22-24, 1906. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 750 out of 1,000 possible points. The total number of candidates examined was 179, of whom 170 passed, including 7 osteopaths, and 9 failed, including 3 osteopaths. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Indiana Med. Coll.	(1906)	76.1, 76.1, 77.4, 77.4, 79.7, 80.5, 81, 81, 81.5, 82, 82.1, 82.1, 82.8, 83.6, 84.5, 85.1, 85.4, 85.8, 85.9 86, 86.2, 86.8, 86.9, 86.9, 87, 87.3, 87.4, 87.5, 87.6, 87.6, 87.7, 87.9, 87.9, 88, 88, 88.2, 88.2, 88.3, 88.5, 88.5, 88.6, 88.7, 88.7, 8.88, 88.9, 89, 89, 89.1, 89.1, 89.1, 89.2, 89.3, 89.4, 89.4, 89.5, 89.6, 89.8, 90, 90.1, 90.2, 90.2, 90.2, 90.4, 90.4, 90.5, 90.6, 90.6, 90.7, 90.7, 90.7, 90.7, 90.7, 91, 91.1, 91.1, 91.1, 91.2, 91.2, 91.2, 91.2, 91.3, 91.4, 91.5, 91.6, 91.6, 91.6, 91.9, 92, 92, 92.1, 92.1, 92.2, 92.4, 92.5, 92.5, 92.5, 92.6, 92.6, 92.6, 92.9, 93.2, 93.3, 93.4, 93.8, 93.9, 94.2.
Medical College of Indiana	(1904)	91.2
Physio-Med. Coll. of Indiana	(1904) (1906)	88.4; 84.7, 86.9, 88.2, 89.4, 93.3.
Eclectic Med. Coll. of Indiana	(1905) (1906)	79.7; 86.2, 87.4, 88.3, 89.8.
Ft. Wayne Coll. of Medicine	(1905)	78.9
Hahnemann Med. Coll., Chicago	(1906)	88.5, 89.6
Bennett Eclectic Med. Coll., Chicago	(1905)	90.3 91.8
Chicago Homeo. Med. Coll.	(1904)	91.2
Illinois Med. Coll.	(1905) (1906)	87.6, 89.3, 89.4, 89.5 85.7 86.4
Rush Med. Coll.	(1894) (1902)	93; 92.7
College of P. & S., Chicago	(1905)	85.8
Northwestern Univ. Med. School	(1904)	89.6
University of Louisville	(1905)	83.4, 89.1, 89.5
Kentucky School of Med.	(1905)	84.6
Kentucky University	(1905)	85.6 88.3
Louisville Med. Coll.	(1903)	91.3
Southwestern Homeo. Med. Coll.	(1905)	83.9
Johns Hopkins Med. School	(1904)	89.8
Baltimore University	(1897)	82.9
University of Michigan	(1905)	89.2
College of P. & S., St. Louis	(1891)	89.5
St. Louis Univ. (Marion Sims Beaumont Med. Coll.)	(1905)	81.7
New York University	(1891).	94.4
Toledo Med. Coll.	(1905)	86.
Eclectic Med. Inst.	(1884) (1903) (1904) (1905) (1906)	84.9; 75.5; 83; 93.2, 82.8, 86, 86.6, 91.3.
Jefferson Med. Coll.	(1905)	91.1
Med. Coll. of Ohio	(1902)	90.4
Ohio Med. University	(1906)	93.7
Wisconsin Coll. of P. & S.	(1906)	94.3
University of Toronto	(1905)	89.7
Edinburgh University, Scotland	(1901)	89.2

FAILED.

College.	Year. Grad.	Per Cent.
Indiana Med. Coll.	(1906)	63.3, 72.1, 72.2, 74.1
Med. Coll. of Indiana	(1904)	69.2
Southwestern Homeo. Med. Coll.	(1903)	73.3

The following questions were asked:

ETIOLOGY AND HYGIENE.

1. Give etiology and hygienic management of scarlatina. 2. Croupous pneumonia. 3. Pulmonary tuberculosis. 4. Typhoid fever. 5. Summer diarrheas of infancy and childhood.

LARYNGOLOGY AND RHINOLOGY.

1. Give diagnosis and treatment of nasal polypi. 2. What constitutional diseases may present local manifestations in the nose?

MEDICAL JURISPRUDENCE.

1. What organ is generally the first and which the last to undergo putrefaction? 2. How would you distinguish between an incised wound made before and after death?

NEUROLOGY.

1. Give etiology of multiple neuritis. 2. What are the diagnostic symptoms of cerebral tumor? 3. Give diagnostic symptoms of multiple sclerosis.

OPHTHALMOLOGY AND OTOLOGY.

1. Give symptoms, diagnosis, prognosis and treatment of gonorrheal conjunctivitis. 2. Give etiology and treatment of blepharitis. 3. Give tests for hearing, or how would you test hearing?

PEDIATRICS.

1. (a) When should the treatment of congenital talipes be commenced? (b) State best method for treatment. 2. Give etiology and treatment of cholera infantum.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. Give indications for an emetic and name remedies you would use to produces emesis. 2. Name two remedies classed as emmenagogues and give specific indications for each. 3. Give specific indications and dose for (a) bryonia, (b) ipecac, (c) veratrum, (d) quinin and (e) rhus tox. 4. What would you give a patient who presented symptoms as follows: Flushed face, unnaturally bright eyes and contracted pupils, with increased heat of the head? 5. What would you give a patient with symptoms as follows: Dusky redness of the surface, patient dull and inclined to sleep, eyes dull and pupils contracted? 6. Name two anthelmintics, giving dose of each. 7. Give indications for an alkali. 8. Give indications for an acid. 9. Write a prescription in which you use sodii sulphatis, and give indications for its use. 10. Name three antiseptics.

THEORY AND PRACTICE OF MEDICINE (ECLECTIC).

1. How would you distinguish the convulsions of tetanus from an overdose of strychnin? 2. Give symptoms, differential diagnosis and treatment of acute catarrhal gastritis. 3. Give etiology, symptoms, differential diagnosis and treatment of arteriosclerosis. 4. Give symptoms, complications, diagnosis, prognosis and treatment of Addison's disease. 5. Give symptoms, diagnosis and treatment of uremia. 6. Give treatment of neurasthenia. 7. How would you differentiate acute softening of the brain from hemorrhage? 8. What is your idea of constipation and how would you treat it? 9. Write a prescription for the hemorrhage that often occurs in typhoid fever. 10. Give differential diagnosis and treatment of diphtheria.

MATERIA MEDICA AND THERAPEUTICS (HOMEOPATHIC).

1. Give indications for the use of iodoform internally. 2. Give the physiologic action and therapeutic indication for hydrastis canadensis. 3. Mention indications for employing massage. 4. Give therapeutic individuality of kali iodatum. 5. Name two remedies frequently indicated in dropsical effusions. 6. What symptoms determine choice of sulphur in chronic diseases? 7. Differentiate the cough symptoms of ipecacuanha and sanguinaria. 8. Give therapeutic individuality of kali chloricum. 9. Give guiding symptoms of apis mellifica. 10. Name bowel symptoms of mercurous sol.

THEORY AND PRACTICE OF MEDICINE (HOMEOPATHIC).

1. Give diagnosis and etiology of osteomyelitis. 2. State varieties of neuritis and most common cause of each. 3. Name three remedies most frequently indicated in the treatment of chronic nephritis. 4. Give the forms of pneumonia, and differentiate from acute bronchitis. 5. Give etiology, prognosis and treatment of acute articular rheumatism. 6. Define hypnosis. Should it ever be employed in the treatment of disease? If so, when? 7. Give your idea of the merits of suggestive therapy. What class of diseases is most easily influenced by mental processes? 8. Define phlebotomy, and state when it should be employed. 9. Define (a) contagion, (b) infection, and give means for prevention of each. 10. Name two diseases affecting the glandular system, and give remedies ordinarily indicated in each.

MATERIA MEDICA (PHYSIOMEDICAL).

1. What are the therapeutic properties of caulophyllum? 2. What are the properties of cimicifuga race and what is the dose of the fl. ext.? 3. Name three remedial agents that are nervine relaxants. 4. Name agents that increase renal action. 5. Give the therapeutic properties of quinin. 6. In what condition and under what circumstances would you give hydrochlorate of quinin in preference to the sulphate? 7. Give conditions in pneumonia in which you would combine capsicum and lobelia, and when would you give lobelia alone, and why? 8. Mention five sanative agents that promote increased hepatic action. 9. In what particulars do the cactus grand, and the cerusbonplandii differ in influencing the heart's action, and why? 10. What is the dose and the therapeutic influence of fl. ext. pulsatilla?

THEORY AND PRACTICE (PHYSIOMEDICAL).

1. What are the most common causes of secondary anemia? 2. Give pathognomonic symptoms and treatment in the first stage of pneumonia. 3. A child, one year old, hitherto healthy, has sudden seizure of pain in the region of the stomach; gets cold extrem-

ities, followed by temperature of 101°. Similar attacks follow each day, fever gradually increasing after each attack, declining after each exacerbation, but not entirely disappearing. Tongue broad, pale, with white fur. Appetite variable, digestion fair. Bowels irregular, spleen slightly enlarged. After six months there is very marked anemia. Number of leucocytes unchanged, number of red corpuscles much reduced. Hemoglobin 40. Give diagnosis and treatment. 4. Differentiate between typhoid and appendicitis. 5. How would you manage a case of pulmonary tuberculosis in an ordinary family and home, with a view to the prevention of infection of others? 6. Give diagnostic symptoms of rubeola and scarlatina. 7. What are the positive evidences of anemia and what is the treatment if due to malaria, the plasmodia being present in the blood? 8. In a case with no evidence of organic lesions, the patient complains of pain referred to the stomach and esophagus with a feeling of constriction; symptoms relieved by food in the stomach, worse when stomach is empty; bowels sore and painful, with diarrhea. What would be your diagnosis and treatment and directions as to diet? 9. At what points are the lesions in each of the four cardinal types of aphasia and how is each type manifest? 10. Give differential diagnosis of apoplexy and epilepsy with mode of management of each.

GYNECOLOGY.

1. Define (a) sepsis, (b) asepsis; (c) give aseptic technic. 2. Give symptoms and diagnosis of laceration of the cervix. 3. Give (a) indications for hysterectomy (b) technic of vaginal hysterectomy. 4. Give surgical treatment of cystitis. 5. Give technic of curettage. What is its therapeutic purpose? 6. Give differential diagnosis of benign adenoma (polypoid endometritis) and malignant adenoma (carcinoma).

CHEMISTRY.

1. Give difference between methyl and ethyl alcohol and give common name for each. 2. What is muriatic acid and its formula? 3. What is specific gravity of healthy urine? 4. Give a reliable test for albumin, bile, blood and sugar in the urine. 5. Give test for free acid in the stomach contents.

ANATOMY.

1. Name and locate the colonic flexures. 2. Describe the celiac axis. 3. Give the boundaries of the normal liver. 4. Give the names and origin of the nerves that supply the tongue. 5. Describe the internal saphenous vein. 6. Give the relations of the external carotid artery. 7. Name the large blood vessels that comprise the portal system of veins. 8. Make a drawing showing the origin and communications of the spinal accessory, pneumogastric and glossopharyngeal nerves. 9. Describe the os calcis. Give its relations. 10. What bones of the tarsus are on the proximal side of the line of Chopart's amputation?

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1. Give the derivation of adrenalin and its physioligic action. 2. Name a vasoconstrictor, give its effect on blood pressure and an indication for its therapeutic application. 3. Name a vasodilator, give its effect on blood pressure and an indication for its therapeutic application. 4. Give technic of hypodermoclysis and an indication for its use. 5. What is the composition of normal salt solution? 6. What value do you attach to sunlight and fresh air as therapeutic agents? 7. Name an efficient urinary antiseptic. 8. How would you apply cold water as an antipyretic? 9. Name an antidote to arsenic. 10. Name an antidote to carbolic acid.

INTERNAL MEDICINE (REGULAR).

1. Give a predisposing cause, symptoms and treatment of cerebral hemorrhage. 2. What is the significance of diminution or abscence of the second sound of the heart during the progress of a croupous pneumonia? 3. Describe Cheyne-Stokes' respiration and give its prognostic significance. 4. On what findings would you base a diagnosis of acute Bright's disease? 5. Name some remote pathologic results of syphilis. 6. Give symptoms and diagnosis of scarlatina, and name some of the most frequent sequelæ of the disease. 7. Give symptoms and treatment of intestinal hemorrhage of typhoid fever. 8. Give common cause and treatment of diarrheas of infancy and childhood. 9. How would you treat hemoptysis? 10. Give method of positive diagnosis and treatment of diphtheria.

OBSTETRICS.

1. Does Nature ever fail to set in motion forces that commence labor at the termination of full term? If so, state causes and proper procedure. 2. Name conditions warranting Cesarean section. Give technic of operation. 3. Is the production of abortion ever legally justifiable? If so, state conditions of justification. 4. What advice would you give the *enciente* as to her manner of living during the period of gestation, in order that labor may be made easier? 5. In case positive diagnosis of prenatal death has been established, would you attempt to bring about expulsion of uterine contents? If so, why and when? 6. What foods are most suitable for artificial feeding of the newly born? Give method of modifying or preparing food for best results in artificial feeding. 7. State conditions under which the artificial feeding of infants should be undertaken. 8. Is puerperal infection preventable? If so, give methods of prevention. 9. Give management of breech presentation. 10. Differentiate the convulsions of eclampsia from hysteria.

SURGERY.

1. Give differential diagnosis of appendicitis and small ovarian cyst. 2. Name the differential clinical and pathologic points of carcinoma and sarcoma. 3. Name the fractures of the skull. 4. Give diagnosis and treatment for hemorrhoids. 5. Give diagnosis and treatment of Potts' disease. 6. What is the best known means for an end-to-end anastomosis of the intestine? 7. Give treatment for fracture of middle third of the femur. 8. What structures would be divided in an amputation through the middle of the arm? 9. Give diagnosis of gallstones and the technic for the operation. 10. Give treatment for stricture of the urethra in the male.

PATHOLOGY AND BACTERIOLOGY.

1. What pathologic conditions arise as secondary to mitral insufficiency? 2. What do you understand by the general term degeneration? Name the forms of degeneration. 3. Write in columns the names of the various forms of disease produced by bacteria. 4. What is the most common pathologic factor in inflammation? 5. Define in contrast sarcoma, fibroma and carcinoma. 6. How may the tubercle bacillus be isolated? How may it be cultivated? 7. Mention five varieties of anaërobic bacteria. 8. What conditions are necessary for sterilization by steam at low pressure and at high pressure? 9. How would you examine the blood for Fraenkel's pneumococcus? 10. How would you differentiate bacteriologically between tonsillitis and diphtheria?

PHYSICAL DIAGNOSIS.

1. Give diagnosis of cardiac hypertrophy affecting (a) the left ventricle, (b) the right ventricle. 2. Give physical signs of pericardial effusion. 3. Give diagnosis of thoracic aneurism. 4. Give respiration rate in (a) the newborn; (b) the adult. 5. How may the normal movements of the diaphragm be rendered visible (Litten's phenomenon)?

PHYSIOLOGY.

1. Explain the difference between the function of the kidney and that of a true glandular organ. 2. What organs of the body are purely excretory in their office? 3. What becomes of the gastric and pancreatic juices after they have performed their offices in the digestion of a meal? 4. What do you understand by common sensation and special sensation? 5. Give physiologic definition of the terms systole and diastole, and give the behavior of the blood current during each. 6. Define and give the significance of the dicrotic pulse. 7. Give the physiologic composition of the blood, with the functions of each ingredient.

Vermont July Report.—Dr. W. Scott Nay, Secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 10-12, 1906. The number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 33, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
University of Louisville	(1905)	75.2
Boston University	(1906)	77.4
Albany Med. Coll.	(1905)	84.
Dartmouth Med. Coll.	(1904)	79.2
University of Vermont	(1904)	77.1
	(1905)	79
	(1906)	75.1, 76.1, 76.1, 76.6, 76.7, 76.9, 77.1, 77.4, 77.6, 77.9, 78.1, 78.1, 78.1, 78.8, 79, 79.1, 79.1, 79.2, 79.2, 80.2, 80.7, 80.7, 81.2, 81.6, 81.7, 81.8, 84.3.

The following questions were asked:

PRACTICE OF MEDICINE.

1. Give the differential diagnosis between chronic bronchitis, tuberculosis of the lungs, pneumonia and pleurisy. 2. Give the etiology, symptoms and proper treatment of measles. 3. Describe urticaria. What are its most common causes and what treatment would you recommend for it? 4. What are the symptoms and general course of aneurism of the aorta and how would you treat a case? 5. Describe the life history of *Tœnia solium*, the symptoms which it causes and its proper treatment. 6. Describe the etiology and pathology of cirrhosis of the liver. 7. Describe the pathology and symptoms of Addison's disease. 8. How would you distinguish pyelitis from cystitis? Give treatment for each. 9. Give causes, symptoms and proper treatment for malarial fever. 10. Give etiology, symptoms and prophylaxis of yellow fever.

SURGERY.

1. Name the principal bacteria and the surgical diseases produced by each. 2. Name the varieties of wounds and seven methods of stopping hemorrhage. 3. Name the usual methods of healing in wounds, and describe how it is accomplished. 4. Describe thrombosis and embolism, how caused, symptoms and treatment. 5. Give cause, symptoms and treatment of caries and necrosis. 6. Give causes and treatment of ununited fracture. 7. Describe in detail the method of ligating arteries. 8. Differentiate between coma from injury and apoplexy, uremia, epilepsy, diabetes, opium poisoning and alcoholic intoxication. 9. Diagnose a case of hip joint disease. 10. Describe in detail removal of the breast.

LEGAL MEDICINE.

1. Define syncope, asphyxia and coma. Give examples. 2. What is the difference between a medicine and a poison? 3. Explain the terms mania, monomania, dementia and idiocy. 4. On what would you base your opinion that a child had been born alive at term? 5. Give causes of death during the birth of a child.

THERAPEUTICS.

1. For what particular symptoms would you prescribe the following? Grindelia robusta, hyoscyamus hydrastis, gelsemium, cactus, arom. sulph. ae., veratrum viride, croton oil. 2. Write a prescription for each of the following conditions: Hematuria, cystitis, impetigo, herpes zoster, capillary bronchitis, acute rheumatism. 3. What drugs would be indicated in the treatment of erysipelas? 4. How would you manage a case of belladonna poisoning? 5. Give the external and internal uses of (a) silver nitrate, (b) carbolic acid.

CHEMISTRY.

1. (a) What is meant by the term molecule? (b) What is believed in regard to movements of molecules in gases, liquids, solids? 2. In case of defective drainage causing sickness, how would you detect such in water? State your tests. 3. How would you test a suspected mixture for arsenic? State the test you would use and the reactions. What other substances might be mistaken for arsenic and how can they be distinguished? 4. (a) What is the difference between a ferrous and a ferric salt? (b) Illustrate the difference between symbol, formula, equation. What information does each convey? 5. (a) Name the organic and inorganic constituents of urine. (b) Name the abnormal constituents of urine and give tests for same.

OBSTETRICS.

1. Give symptoms of pregnancy. 2. Give treatment of abortion. 3. Describe a normal labor. 4. Give mechanism of face presentation. 5. How and for what reasons would you perform version? 6. What complications may result from infection after delivery?

7. What is eclampsia? 8. What is inertia and cause of same? 9. Describe application of forceps to a head presentation. 10 What is treatment of postpartum hemorrhage?

GYNECOLOGY.

1. Give symptoms indicative of pelvic disease. 2. Treatment of ovaritis. 3. Differentiate uterine fibroid and ovarian cyst. 4. Give treatment of vaginal catarrh. 5. What is amenorrhea and when does it occur?

PHYSIOLOGY.

1. Give the classifications of efferent nerves. 2. Give the properties and functions of the medulla oblongata. 3. State the physiologic properties of nerve cells 4. Give the action of the salivary secretion on starch. 5. Give the products of intestinal digestion and state the disposition made of these products. 6. Describe the plasma of the blood and give its constituents. 7. Describe the changes of the blood during coagulation. 8. Name the most frequent abnormal constituents of urine and way of detection in three of them. 9. Describe the lymphatic system, giving its functions. 10. How is the temperature of the body kept at the standard?

HYGIENE.

1. Name the contagious diseases for which you would quarantine. 2. Give the rules and time for which you would quarantine four of them. 3. State the duties and obligations of the family physician in regard to the hygiene of school children. 4. Tell how you would build and furnish a school house, observing hygienic rules. 5. How would you manage a case of phthisis pulmonalis to avoid danger to other members of the family?

THEORY AND PATHOLOGY.

1. Name five self-limited diseases. 2. Why does not every person exposed to an infectious disease take it? 3. Explain the more recent theories of immunity. 4. What are phagocytes and what is their rôle in the prevention of disease? 5. What are the symptoms and what are the pathologic changes in progressive bulbar paralysis?

ANATOMY.

1. Name and describe four classes of tissue which enter into the formation of the human body. 2. Describe the bony pelvis and state what bounds the cavity of the pelvis above. 3. Give three general classifications of joints. Describe the elbow joint. 4. Name the muscles of the abdomen and give the origin, insertion, nerve supply and action of any one of them. 5. Name the cavities, openings and valves of the heart. 6. Give the collateral circulation when the brachial artery has been ligated just below its profunda branches. 7. Describe Scarpa's triangle and name its contents. 8. Name the organs and parts of organs located in the left hypochondriac region. 9. Give the columns, fissures and blood supply of the spinal cord. 10. What abdominal viscera and parts of viscera have no peritoneal investment?

BACTERIOLOGY.

1. What are the general requisites for a nutrient media? 2. Name and describe the most common pyogenic organism. 3. How would you prove a certain specific micro-organism to be the cause of a certain specific disease? 4. What is there peculiar in the behavior of the tubercle bacillus toward staining solutions? 5. What micro-organisms would you expect to find in the pus from a psoas abscess?

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Cystitis.

In the treatment of cystitis, Yeo in *Clin. Ther.* recommends the following combinations:

℞. Terebinthinæ (pure)
Ext. gentianæ, āā ....gr. xlv 3|
M. Ft. pil No. xxx. Sig.: One pill three times a day, followed by two tablespoonfuls of lime water in milk.

Or,

℞. Acidi benzoici ....gr. lxxv 5|
Syr. aurantii ....ʒv 20|
Aquæ dest., q. s. ad..................f. ℥x 300|
M. Ft. mistura. Sig.: One tablespoonful every two hours in water.

Or,

℞. Sodii bicarb. ....gr. lxxv 5|
Decoctio uvæ ursi ....℥vi 180|
M. Ft. mistura. Sig.: One tablespoonful every two hours.

If there is a marked catarrhal condition and the urine is of foul odor the following combination is advised:

℞. Resorcini ....gr. xlv-lxx 3-4|65
Aquæ dest. ....f. ℥iii 90|
M. Sig.: To be mixed with an equal quantity of warm water and used as a solution for washing out the bladder in chronic cystitis.

Or,

℞. Acidi borici ....℥ss 15|
Glycerini ....℥i 30|
Aquæ dest., q. s. ad..................f. ℥v 150|
M. Sig.: To be mixed with an equal quantity of warm water and used as an irrigation.

Or,

℞. Aluminis
Zinci sulph.
Acidi carbolici, āā.......................℥ss 15|
Aquæ dest., q. s. ad ....f. ℥x 300|
M. Ft. lotio. Sig.: To be diluted ten times with sterilized water and about one pint of the mixture to be injected daily into the bladder.

Internally the following combinations are recommended:

℞. Buchu fol. ....ʒii 8|
Uvæ ursi fol.....................................ʒii 8|
Aquæ ferventis ....f. ℥vi 180|
Macerate for two hours, strain, and add:
Liquoris potassæ ....f. ʒi 4|
Tinct. cinnamomii,
Tinct. hyoscyami, āā................f. ʒiii 12|
M. Ft. mistura. Sig.: Two tablespoonfuls three times a day.

In case of phosphatic deposits in the urine the following combination is recommended:

℞. Acidi hydrochlor. fort..............m. iii |20
Aquæ dest. ....f. ℥vi 180|
M. Sig.: To be used as a wash for the bladder.

Psoriasis.

According to Hyde, arsenic ranks first in the treatment of psoriasis and he further emphasizes that whatever failures are experienced with this preparation in the treatment of other diseases its value must not be ignored in this one. It is unsuited, however, for all cases of psoriasis occurring with acute symtoms, such as subjective sensations and unusually vivid redness of the patches. The preparation usually employed is Fowler's solution, beginning with small doses and gradually increasing the dose to the proper proportions, at the same time keeping the patient under constant observation during its administration.

The arsenate of sodium or the arsenate of iron are sometimes recommended.

In the gouty cases Hyde advises the following combination:

℞. Potassii acetatis ....℥i 30|
Spts. etheris nitrosi ....f.℥ss 15|
Vini colchici ....f. ʒii 8|
Syr. aurantii ....f. ℥iss 45|
M. Sig.: One dessertspoonful after meals in water.

Locally for the eruption, green soap in combination with tar and alcohol serves a good purpose combined as follows:

℞. Tinct. saponis viridis ....℥ii 60|
Olei picis ....f. ℥i 30|
Alcoholis ....f. ℥ii 60|
M. Sig.: Apply locally.

Or,

℞. Saponis viridis ....℥iv 120|
Olei rusci
Glycerini, āā..............................f. ℥i 30|
Olei rosmarini ....ʒiss 6|
Spts. vini rectif. ....f. Oss 250|
M. Ft. linimentum. Sig.: Apply locally.

Or,

℞. Sulphuris sublim.
Olei rusci, āā..................................℥ss 15|
Saponis viridis
Adipis, āā.......................................℥i 30|
Cretæ prep. ....gr. l 3|20
M. Ft. unguentum. Sig.: To be applied locally.

Or,

℞. Olei picis ....ʒi 4|
Vel
Olei rusci
Olei amygdali ....℥i 30|
M. Sig.: Apply locally.

The local treatment of the scalp or the face with some of the foregoing combinations can not be carried out because of their disagreeable odor, but as a substitute he recommends the following:

℞. Hydrarg. chloridi mitis ....gr. xxx 2|
Lanolini ....℥i 30|

M. Ft. unguentum. Sig.: Apply locally.

Or,

R.	Tinct. benzoini	3ss	2	
	Lanolini	℥i	30	

M. Ft. unguentum. Sig.: Apply locally.

Pyelitis.

In cases of chronic pyelitis the following is recommended internally:

R.	Quininæ tannatis	gr. xv	1	
	Sacchari albi	gr. xxx	2	

M. Ft. cap. No. vi. Sig.: One capsule three times a day.

In calculous pyelitis due to lime or uric acid deposits the following may be used:

R.	Sodii phos.	℥i	30	
	Sodii bicarb	℥ii	60	
	Lithii carb.	3iiss	10	

M. Ft. pulvis. Sig.: One teaspoonful in a pint of water three times a day.

In the treatment of uric acid calculi Yeo states that excellent results have been obtained by the administration of large doses of glycerin by the mouth, the good effects being due to changes produced in the urine.

The amount given is one to four ounces dissolved in an equal quantity of water taken between meals every two or three days for a period of several days. Some authors state that it renders the specific gravity such as to produce a change in the position of the calculi in the pelvis of the kidney.

Malaria.

In the administration of quinin hypodermically, quinin hydrochlorate is to be preferred, according to J. C. Wilson in his "Text-Book of Applied Therapeutics," as follows:

R.	Quin. hydrochlor.	gr. lxxv	5	
	Aquæ dest.	f. 3iiss	10	

M. Sig.: Fifteen drops at one injection.

Or the following solution after Kobner's formula:

R.	Quin. hydrochlor.	gr. viii-xv		56-1
	Glycerini			
	Aquæ dest., āā	3ss	2	

M. Sig.: To be injected at one time, luke warm.

By some authorities the following combination is recommended:

R.	Antipyrini	gr. vi		30
	Quin. hydrochlor.	gr. xv	1	
	Aquæ dest.	f. 3ss	2	

M. Sig.: To be injected at one dose.

Wilson recommends the chlorhydrosulphate as follows:

R.	Quin. chlorhydrosulphatis	gr. lxxv	5	
	Aquæ dest.	f. 3iiss	10	

M. Sig.: Fifteen drops at one injection.

Quinin sulphate may be given hypodermically when combined with tartaric acid, as follows:

R.	Quin. sulphatis	gr. xv.	1	
	Acidi tartarici	gr. viii		50
	Aquæ dest.	f. 3iiss	10	

M. Sig.: To be given hypodermically.

By the mouth the following combinations are recommended in the *Pract. Med. Series:*

R.	Quin. sulph. vel hydrochlor			
	Salol, āā	gr. xl	2	65
	Phenacetini	gr. xxx	2	

M. Ft. cap. No. xii. Sig.: One capsule every three hours.

Or,

R.	Quin. sulphatis	gr. lxxx	5	
	Acidi hydrochlor. dil.			
	Tinct. zingiberis			
	Tinct. opii camphor. āā	f. 3ii	8	
	Syr. limonis	f. ℥ii	60	
	Aquæ, q. s. ad	f. ℥iii	90	

M. Sig.: One tablespoonful every four hours in water.

To correct the anemia following an attack of malaria the following is advised:

R.	Quin. sulphatis	3iss	6	
	Ferri reducti	3i	4	
	Ext. nucis vomicæ	gr. viii		50
	Acidi arsenosi	gr. i		06
	Ext. colocynth. co.	gr. x		65
	Podophyllini	gr. ii		12

M. Ft. cap. No. lx. Sig.: One pill after each meal.

Medicolegal

Aggravation of Effect of Injury By Use of Opiates.

The Supreme Court of North Dakota holds, in the case of Pyke vs. City of Jamestown, that the aggravation of the consequences of a personal injury by the use of opiates, taken under the direction of a reputable physician to alleviate the pain resulting from the injury, is not a defensive fact in an action to recover damages for the injury. The necessity for the use of opiates arises in such case from the negligent act causing the injury, and not from any negligence of the person injured. And this, the court suggests, would be true even if the physician erred in his treatment.

Liability of Board of Health Members From Smallpox Hospital.

The Supreme Judicial Court of Massachusetts says, in Barry vs. Smith and others, an action against the members of a city board of health for damages from a smallpox hospital located adjoining property of the plaintiff's, that if a rope was put around his driveway and that brought within the hospital grounds by the defendants, or by persons in their presence and under their direction, the defendants were liable. As members of the board of health they had no right to take the plaintiff's land without action under the statute. It is not true that a public officer is exempt from liability for all acts done in his official capacity. However, the court assumes that, if a case of smallpox had broken out in the plaintiff's house, his driveway could have been roped off in regulating the disease on his premises as a menace to the public. Moreover, in fixing on the location of the hospital the defendants were exercising a discretion which the Legislature had required them to exercise as public officers, and their decision on the question, being quasi judicial or quasi legislative, was final, and it was not competent to make them liable for a mistake or for negligence in the exercise of it, that is, in the location of the hospital. Where a plaintiff suffers a loss of rents from the location of a smallpox hospital in the neighborhood on land leased for the purpose, but where the hospital is not improperly conducted, he has no remedy. But if the defendants were personally negligent in the maintenance of the hospital, and in consequence of that negligence the hospital became a nuisance to the plaintiff's adjoining houses and land, the defendants were liable, provided their negligence was a misfeasance, as distinguished from a nonfeasance. If they were guilty of a nonfeasance only, no action would lie against them. It followed that the plaintiff did not make out a case against the board of health by showing that the hospital was a nuisance and that at the time it was under their control. The plaintiff must go one step further to charge the defendants with the nuisance, and prove that it was caused by acts of misfeasance on the part of the defendants, or by an act or acts done by another in the personal presence which would thus be the acts of the defendants.

What Constitutes "Sunstroke."

The Supreme Court of Kansas says, in Continental Co. vs. Johnson, that the latter party, by whom the action was brought, was a fluewelder, and while engaged in that occupation was overcome by heat from the forge or furnace near which he worked, and, in consequence thereof, became ill and suffered the loss of nearly a year's time. He alleged that his loss was due to sunstroke within the provision of an accident policy that loss of time due to sunstroke should be deemed to be due to external, violent, and purely accidental causes, and should entitle the insured to full benefits according to the terms of the policy. The company, on the other hand, insisted that the word "sunstroke" as used in the policy referred only to an effect produced by the heat rays of the sun.

After reviewing the definitions and statements of a number of dictionaries and encyclopedias, medical dictionaries and works, the court says that it seems clear from them not merely that it is permissible to apply the word "sunstroke" to a condition produced by artificial heat, but that it accords with the best usage to do so; that such condition is comprehended within the ordinary meaning of the word wherever it is used with care and precision, whether in technical scientific treatises or in works designed for the general reader. Where the word is used carelessly or ignorantly it may well be supposed that reference is had to any temporary discomfort resulting from exposure to the direct action of the sun. So in Insurance Co. vs. Trefz, 104 U. S. 197, it was held that the statement of a witness that he had had an attack of sunstroke was not necessarily to be taken as an admission that his ailment was in fact a real case of sunstroke, properly so called. But in the drawing of an instrument of the character and importance of an insurance policy the presumption should be that language is selected to express with entire accuracy and correctness the agreements of the contracting parties. And in the present case the word "sunstroke" might be deemed to describe, or at least to be inclusive of, the condition properly called by that name, whether occasioned by solar or artificial heat, unless some special reason existed for giving it a different meaning.

There may be an apparent incongruity in calling that "sunstroke" which has no relation to any effect produced by the sun, but this is only to say that the word is not happily formed to suggest the idea it is employed to express. Etymology is not always a safe guide to the meaning of a term. It is no more imperative that "sunstroke" shall always mean a disorder caused by the sun than that "lunacy shall denote only an aberration due to the influence of the moon. The history of the word "sunstroke" seems to be that it was coined to describe any suddenly perceived ill-effects of sun heat; as observation disclosed that a definite morbid condition ordinarily accompanied or followed such an incident the word was applied to that condition in the belief that it was peculiar to cases having that origin; as advancing medical science revealed that such condition was a distinct disease and might and often did result from artificial as well as from solar heat, the physicians, instead of at once inventing a new and more appropriate name, broadened the application of the old one and their example was naturally and properly followed by others until the usage became general. Later, as a visible mark of the advanced learning on the subject, a more suitable term was originated to describe the disorder—"heat stroke," the growing employment of which may in time restore "sunstroke" to its primitive meaning.

It was argued, not without plausibility, that the language of the policy pointed to a conception of sunstroke as something of sudden and unexpected occurrence, more or less in the nature of an accident, and that this conception was only appropriate to an attack brought on by exposure to the sun's rays. But prostration resulting from heat emanating from a furnace may be as swift in its development and as startling in its effects as though it was occasioned by hot and humid weather. In each case there would be present some of the features of an accidental injury but neither would justify a recovery on an ordinary accident policy. In the only reported cases bearing on the subject (Dozier vs. Fidelity & Casualty Co. [U. S. Circuit Court], 46 Fed. Rep. 446, and Sinclair vs. Maritime Pass. Assur. Co. [English], 3 El. & El. 478), in disposing of the contention that the holder of an ordinary policy insuring him against accidental injuries is entitled to recover for disability due to sunstroke, it is held that sunstroke is not an accident but a disease. These cases are frequently referred to by the medical and legal writers and seem to be regarded as definitely settling the proposition to which they are directed. The discussion in the case first named tends to support the view that sunstroke may be caused by artificial heat, and the decision is cited as having that effect in Peterson & Haines' Text-Book of Legal Medicine and Toxicology, p. 491.

Wherefore, the court holds that the word "sunstroke," when used in an insurance policy in describing one of the risks covered, should not be interpreted as applying only to an effect produced by the heat of the sun, unless the context or other special considerations require it. The term explained denotes a condition produced by any heat, solar or artificial. Nor does the court think that the fact that in this case there was overexertion affected the liability of the company.

Current Medical Literature

Medical Record, New York.

August 25.

1 *Functional Derangement of the Ears and Upper Air Tract in the Insane. W. S. Bryant, New York.
2 *Therapeutic Value of Artificial Localized Hyperemia in the Treatment of Ambulatory or Dispensary Cases. E. Beer, New York.
3 Surgical Diagnosis in Emergency Work. W. E. Hartshorn, New Haven, Conn.
4 Pneumothorax. J. N. Hall, Denver.
5 Urethral Diverticula and Cul-de-Sacs. N. E. Aronstam, Detroit.
6 *New Management of Occipito-posterior Positions of the Fetal Head. M. C. O'Brien, New York.

1. **Ears and Upper Air Tract in Sane.**—Bryant shows the relation between insanity and functional derangement of the ear and upper air tract. Only three individuals out of 161 examined had perfectly normal hearing. Although the number of cases is not large enough to prove any point conclusively, they suggest that nasopharyngeal or aural diseases are far more prevalent among the insane than among normal individuals; and that sometimes hallucinations of hearing appear to be excited by subjective sensations of hearing; and that aprosectic psychosis is sometimes aggravated, if not excited by intranasal pressure. The prognosis for psychical improvement from treatment of the nasopharynx when nasal complications are a disturbing factor; and of the ear, when active aural disease is a disturbing factor, is good. The prognosis is bad when there are chronic inactive aural conditions.

2. **Artificial Localized Hyperemia in Treatment of Ambulatory or Dispensary Cases.**—Beer treated 90 odd cases in this way, including the following conditions and diseases: Prevention of infection, infected wounds and cellulitis of fingers or hand, abscesses, furuncles, carbuncles, acute suppurative adenitis, acute bursitis, contusions and more chronic conditions. Many of the cases in which constriction hyperemia was used were chronic.

6. **Management of Occipito-Posterior Positions of Fetal Head.**—O'Brien introduces either hand under the occiput, with or without anesthesia, grasps it firmly, having separated the middle and ring fingers to steady the neck, and makes counterpressure on the fundus, thus bringing the fetal body and head into one solid mass. With assistance he slowly rotates the mother to the genupectoral posture. This manipulation brings the occiput to the anterior position without traumatism to mother or child. Labor proceeds as when the patient is placed in the genupectoral position for prolapsed cord, or in the lateral obstetrical posture of the English school. O'Brien calls attention to the awkward movement which occurs when the patient's knee passes over the accoucheur, for the crux of the manipulation is to keep the head fixed steadily with the body curled on it.

New York Medical Journal.

August 25.

7 *Stereoskiagraphy. G. H. Stover, Denver, Colo.
8 Unusual Success from Iridotomy in Eyes Practically Blind from Iridocyclitis and Complicated Cataract. W. C. Posey, Philadelphia.
9 Résumé of Recent Work in Clinical Pathology of the Blood. T. W. Hastings, New York.
10 *Sternomastoid Breathing R. H. Chase, Philadelphia.
11 *Contribution to the Study of the Spanemic Heart. C. R. Jackson, New York.
12 *Strychnin as a Remedy in Pulmonary Tuberculosis. W. F. Milroy, Omaha, Neb.
13 A Model for a New Ophthalmotrope; The Gonioscope. Some Phases of Ocular Mortality. D. K. Shute, Washington, D. C.
14 *Improved Method of Ring Tests in Uranalysis. V. C. Pedersen, New York.

7. **Stereoskiagraphy.**—Stover describes stereoskiagraphy as consisting in making a pair of skiagrams of the part under examination, in such a way that by means of a special stereoscope the observer obtains from this pair of stereograms a view conveying perfect perspective. He considers the stereoskiagram to be a most useful means of Roentgen diagnosis.

10. **Sternomastoid Breathing.**—Chase presents a study of the dying state. Sternomastoid breathing consists of an up-and-down rocking movement of the head due to the breathing. He claims that sternomastoid breathing is a reliable sign of approaching death, and one which may serve the purpose of the physician in forming an estimate of the length of time the patient may live, without depending on signs of less

value; its onset indicates that death is probably very close at hand, generally within half an hour; it is a definite symptom on which the physician may predicate his instructions or advice; it is a sign to mark the time when the family may be summoned to the bedside, or one which may regulate the other details of the death chamber.

11. **Spanemic Heart.**—Jackson defines the spanemic heart as one which, by reason of deficient nutrition of muscle, is dilated or dilatable. He believes it to be of three varieties: First, the heart, which is insufficiently nourished on account of general anemia. Second, the heart insufficiently nourished indirectly because of more or less persistent vasomotor failure, the blood being normal. Third, the insufficiently nourished heart from a combination of blood disease and vasomotor instability. He cites four cases in point.

12. **Strychnin in Pulmonary Tuberculosis.**—Milroy is of the opinion that strychnin should be used in pulmonary tuberculosis whenever the fresh-air treatment is not available, and that it may be used to advantage in conjunction with the fresh-air treatment.

14. **Improved Method of Ring Tests in Uranalysis.**—Pedersen's method is an improvement on the Boston method. The only required implement is a medicine tube about six inches long, three-eighths of an inch in diameter, tapered gradually to a rather small opening, and provided with a rubber bulb at the head, which it is well to secure at the neck of the tube with a rubber band or a tape, firmly in place to insure airtightness. The technic is very simple, and comprises the following steps: While the air is forced and kept back from the tube by compressing the bulb the tip of the tube is immersed in the urine, which is sucked into the tube to its full capacity by allowing the bulb to expand. About half the capacity of the tube is now evacuated by again squeezing the bulb, which is maintained in a semiflat state after the drop of urine on the surface of the tube is wiped off against the neck of the urine bottle, the tip of the tube is dipped into the nitric acid. The bulb is then allowed to expand, thus sucking the acid into the tube, replacing the amount of urine evacuated by the foregoing step and thereby giving the two layers of fluid in the tube ready for the reaction—the upper, urine and the lower, acid. The tube is now stood aside in any convenient receptacle. At the juncture of the fluids the ring forms, which may be negative, doubtful, faint or positive. When the reaction is negative or positive no other step is necessary. When the ring is doubtful or faint the following detail proves the condition instantly: The tube is held over the acid bottle and the bulb slowly and uniformly compressed so that the faint ring or the supposed ring is made to descend unbroken into the taper of the tube. As the ring thus descends it does not change its thickness if the doubtful reaction is really negative, but if only faint, though really positive, the thickness of the ring at once is reduplicated and the observation of the reaction made certain.

The Boston Medical and Surgical Journal.

August 23.

15 Relations of the Gastrointestinal Tract to Nervous and Mental Diseases. R. C. Kemp, New York.
16 *Gastric Ulcer and Cancer. C. Graham, Rochester, Minn.
17 Advantages of Separate Organizations for Training Schools and Hospitals. A. Worcester, Waltham, Mass.
18 Case of Primary Erysipelas of Pharynx. H. G. Langworthy, Dubuque, Iowa.

16. **Gastric Ulcer and Cancer.**—Graham distinguishes about four stages in gastric ulcer development and would expect cancer when it did develop to appear in the third or fourth stage or often to be the fourth stage. In the first stage of ulcer there is unusually good appetite with nutrition at par or even excessive; pain occurs from two to five hours after meals, when the stomach is empty or emptying itself. The second stage may be established some months later, following several intermissions with recurrences, each increasing more or less in severity; appetite is good, though perhaps not above normal; less satisfaction follows the hearty meal; pain is severe and comes sooner after food; distress or discomfort may be present even when so-called pain is absent. In the third stage, desire for food may remain, it may be fair or decreasing, but the patient is afraid to eat because of distress, pain, gas, vomiting, sour eructations, bloating or sour, burning stomach; there is but short food relief, if any; perhaps there are obstructive symptoms; loss of flesh is usual, and even cachexia may be present. Graham says that in the undoubted fourth stage (cancerous) the whole picture intensifies, "and he who runs may read." In Graham's series of cases the males and females ran in proportion of 4 to 1 and ranged in age from 29 to 75 years, the average being a little over 50. About three-fourths of the whole number presented themselves for amelioration of symptoms that had been pressing for one year or less. Twenty-three of the number who presented long histories complained of malignant symptoms only a year or less, the average in this number being a trifle more than five months. Pain was rather constant. In 8 the histories did not state either way, one patient said no pain, the remainder (73) openly declared for pain, most of them complaining rather bitterly. Vomiting was not recorded in 11 histories, 3 patients stated no vomiting, while the great number (68) complained more or less severely. In 42 the lesion was situated at the pylorus or lesser curvature, in 3 at the cardia. The location was not recorded in many of the inoperable cases, but the symptoms, for which the operation was undertaken, most often spoke for pyloric end or lesser curvature location.

Of the whole number operated on 67 patients had test meals and other routine stomach examinations, chemical and physical. Tumor was present 27 times and doubtful in 3 more. Dilation was present 54 and obstruction 36 times. In 32, free hydrochloric acid was present ranging from 1 to 50 acidity; combined in 32; lactic, 42; fatty, 19; both hydrochloric and lactic acids were found 13 times. Blood was found often. There were 39 cases in which a portion of the stomach was removed and examined. In 21 cases, 54 per cent., the pathologic evidence was good that cancer had developed on an old ulcer base; in 10 cases, 25.60 per cent., the evidence was fair that the same was true, while 8 gave no evidence of preceding ulcer irritation. Then in over three-fourths of the cases, 79.5 per cent., the pathologic evidence was good or fair that ulcer was first as a cause. Twenty-one of the 39 had long histories, 14 of which have good pathologic evidence, 6 patients whose histories were long, gave evidence considered only fair, 7 patients whose histories ranged from two months to two years gave good pathologic evidence, and 4, whose histories covered from one and one-half months to two years, offered fair proof. Histories and pathologic findings ran together both positive in over half the cases, 54 per cent.

St. Louis Medical Review.

August 18.

19 Inspection of Public School Children. H. J. Scherck, St. Louis.
20 Origin and Heredity of Matter (to be continued). J. Wright, New York.

American Journal of Medical Sciences, Philadelphia.

August.

21 *Vascular Tension in Chronic Illness. H. A. Hare, Philadelphia
22 *Therapeutic Use of Tuberculin Combined with Sanitarium Treatment of Tuberculosis. E. L. Trudean, Saranac Lake, N. Y.
23 The Opsonic Index (Wright and Douglas) in Tuberculosis. N. B. Potter, N. E. Ditman, and E. B. Bradley, New York.
24 *Technic of the Tuberculo-Opsonic Test. H. M. Kinghorn and D. C. Twitchell, Saranac Lake, N. Y.
25 A Suggestion in the Treatment of Hemoptysis. L. Brown, Saranac Lake, N. Y.
26 *A New Intestinal Parasite of Man; Parameba Hominis. C. F. Craig, U. S. Army.
27 Acetone Bodies; Their Occurrence and Significance in Diabetes and Other Conditions. T. S. Hart, New York.
28 Relations of Chronic Villous Polyarthritis to the Dumb-Bell Shaped Bacilli. M. Schueller, Berlin.
29 *Peptic Ulcer of the Esophagus. W. Tileston, Boston.
30 *Primary Sarcoma of the Adrenal Gland. I. W. Blackburn, Washington, D. C.
31 *Case of Narcolepsy, from a Specific Infection Transmitted Through Five Generations. A. N. Blodgett, Boston.
32 *An Unusual Case of Antitoxin Rash. R. L. Wilbur, Stanford University, Cal.

21. **Vascular Tension in Chronic Illness.**—Hare emphasizes the importance of studying the vascular state and the degree of the blood pressure in respect to the diagnosis, prognosis and treatment in several states of disease because many medical men are still impressed with the idea that a tired heart should be stimulated to greater effort when in reality it should be given as much rest as possible by diminishing its burden

He says that it is quite remarkable how competent the heart is to attend to its functions if the physician is able to overcome vascular relaxation. In his experience there are only three drugs that are useful for this purpose, atropin, adrenalin and digitalis. If the physician will direct his treatment to the vessels, the heart will often be able to care for itself. The heart should be stimulated to increased effort when the real object is to decrease its burden and to diminish the toxemia which is destroying its function. If the high tension is due chiefly to spasm, nitroglycerin will do good but it will fail to a great extent if the condition is due to fibrosis. The combined effect of rest, massage and iodids, even when fibrosis is well developed, not only will often produce excellent results in that the state of a tired heart has been proved, but also results in a marked diminution of arterial tension, partly by a cardiac and partly by a vascular influence.

22 and 24. See abstracts in The Journal, June 23, 1906, page 1964.

26. **New Intestinal Parasite of Man.**—The organism described by Craig was observed in the feces of 6 natives who were patients in the hospital at the time. In 5 of the cases, the only symptom of importance was diarrhea, the stools being of watery consistency, and containing in three instances a small amount of blood and mucus. In none of these cases was *Entamœba dysenteriæ* present. The 6 patients were suffering from a very severe attack of acute amebic dysentery, and the new ameba was found in small numbers in conjunction with immense numbers of *Entamœbæ dysenteriæ*. In 1 case *Trichomonas intestinalis* was present. Craig has only observed the organism in natives of the Philippine Islands, although he has looked very carefully for it in Americans, some of whom lived in the tropics for some time. The parasite described passes through an amebic and a flagellate stage of development. Craig suggests for it the name *Paramœba eilhardia*.

29. **Peptic Ulcer of the Esophagus.**—Tileston reports three cases, all of them terminating fatally. In the first case, that of a woman, aged 58, the ulcer was situated 3 cm. above the cardiac opening of the stomach. The ulcer did not manifest itself until it perforated. In the second case, a man, aged 59, the lower end of the esophagus for a distance of 11 cm. was denuded of mucous membrane, except for a few small islands. The ulceration was very shallow, not involving the muscularity. In the third case, a woman, aged 37, there were several ulcers in the esophagus, and also a chronic ulcer of the stomach which perforated, causing the fatal peritonitis.

30. **Primary Sarcoma of Adrenal Gland.**—Blackburn reports another case of primary sarcoma of the adrenal gland which did not produce any symptoms of Addison's disease. The existence of the tumor was not suspected until after the death of the patient. The symptoms present suggested carcinoma of the stomach though the more characteristic symptoms were absent. Both adrenal glands were sarcomatous.

31. **Narcolepsy.**—In the case reported by Blodgett the causative action of a specific infected agent is believed to have been the source of the disorder. The grandfather of the patient was supposed to have had syphilis. Each member of the next generation bore some inherited constitutional taint, but in each individual the particular form of stigma varied from that of another. The patient who forms the subject of Blodgett's communication is of the third generation, a woman, 65 years of age. She began to notice her infirmity at about 22 years when the attacks appeared in the form of an irresistible inclination to fall asleep at all times of the day without cause or apparent provocation by surrounding circumstances; otherwise she seemed to be in her usual health. She falls into a perfectly natural slumber, wakens readily, and is apparently unaware that she has fallen asleep. There is no history of acute rheumatism or endocarditis, nor of any other infective or constitutional disease. The thyroid is neither hypertrophied nor absent.

32. **Unusual Antitoxin Rash.**—The patient, whose case is reported by Wilbur, gave a history of occasional urticaria following the ingestion of strawberries or shell-fish following the administration of a prophylactic injection of 1,000 units of diphtheria antitoxin; she complained of a feeling of fullness of the head. The face was flushed; there came total hyperemia of the skin with itching and the development of immense white weals. The lips, tongue and eyelids began to swell; there was dyspnea; the pulse at first rapid, became imperceptible at the wrist, although the apex beat was vigorous. These symptoms gradually became worse, but eventually, under stimulating treatment, they subsided.

American Journal of Obstetrics, New York.

August, 1906.

33 Processes of Reproduction. F. R. Oastler, New York.
34 *Causes of Sterility. G. G. Ward, Jr., New York.
35 Sterility and its Surgical Treatment. D. Bissell, New York.
36 Functions of the Uterosacral and Round Ligaments. J. W. Bovée, Washington, D. C.
37 *Case of Meningocele of Unusual Size. G. M. Boyd, Philadelphia.
38 Adenocarcinoma of the Abdominal Wall, Developing Subsequent to the Removal of Benign Ovarian Neoplasms. E. A. Schumann, Germantown, Pa.
39 Life and Work of Dr. J. Marion-Sims. W. D. Ward, Rochester, N. Y.
40 *Symphyseotomy with the Report of Five Operations and a Brief Consideration of its Advantages and its Disadvantages. L. M. Allen, Baltimore.
41 *Review of Fourteen Cesarean Sections Successfully Performed. G. M. Boyd, Philadelphia.
42 Surgical Treatment of Puerperal Infection. R. W. Stewart, Cincinnati, Ohio.
43 *Typhoid Fever Occurring During Pregnancy. C. Foulkrod, Philadelphia.
44 Significance of Uterine Hemorrhages of the Menopause. G. P. Murray, New York.

34. **Causes of Sterility.**—Ward concludes that as conception is dependent on the four essential factors of healthy spermatozoa, normal ova, the union of the same, and the proper implantation of the fertilized egg, sterility is most frequently dependent on acquired pathologic lesions, and congenital defects, which defects and lesions produce sterility by interfering with one or more of the above-mentioned essentials. A large number of cases of acquired sterility are due to pathologic lesions producing such destructive changes in the tubes and ovaries as mechanically to prevent the union of the spermatozoa with the ova. Gonorrhea is the most frequent cause of such destructive lesions. Acquired sterility in a large number of instances, is due to chronic endometritis, which produces such pathologic changes in the endometrium as to prevent the proper implantation of the impregnated ovum. The cases of sterility associated with flexions, displacements, subinvolution, fibroids and other neoplasms, are due not to these conditions per se, but to the associated chronic endometritis which prevents proper implantation. A fruitful cause of an unhealthy endometrium and of tubal disease, which either singly or together tend to prevent union of the male and female elements and proper implantation, is the chronic inflammation and congestion of the uterus and adnexa incident to subinvolution or sepsis which so frequently follows abortion, especially if treated by the expectant plan. We must be impressed by the great importance of gonorrhea in its relation to sterility, when we appreciate the fact that it not only renders the woman sterile, but is responsible nearly always for sterility in the male, gonorrhea thus being an etiologic factor in about 70 per cent. of the cases. As in nearly all instances of sterility in the woman due to gonorrhea, the infection has been innocently acquired by the wife, from her husband, the fault lies with the man in more than two-thirds of all cases.

37. **Meningocele of Unusual Size.**—In the case cited by Boyd the tumor occupied the occipital region, just below the posterior fontanelle; it measured 6 inches in its long diameter, and about 5 inches in the transverse diameter. The diameter of the opening in the occipital bone measured about 1 inch. The radical cure by amputation of the sac was performed without anesthesia. An incision through the skin at the neck of the tumor was made, and the sac exposed. The intracranial fluid was then slowly withdrawn. The infant showed marked evidences of shock, became pale, and for a time ceased to breathe. These symptoms, however, soon disappeared. The hernial sac was then dissected away, and closed in with a continuous suture of catgut. The skin was sutured with the same material. The infant made a rapid recovery from the operation. It gained in weight, and seemed to be well for three months, when it began to develop acute hydrocephalus. As the head increased in size, the body lost in weight.

The infant is now six months old, is poorly nourished, and has the characteristic separation of the sutures and the large bulging fontanelles.

40. **Symphyseotomy.**—In certain cases in which Cesarean section is contraindicated or for certain reasons might not be considered safe, Allen believes that symphyseotomy might be the means of saving the life of the child. Such an example would occur in the case of a pelvis contracted at the outlet (funnel-shaped pelvis), where the head had been forced into and fixed tightly in the brim, but could not be forced through. In such a case Cesarean section would be contraindicated, as a dead child would usually be the result, whereas symphyseotomy would usually give a good result to both mother and child. Also in the case of an impacted mentoposterior variety of face presentation, where flexion of the head or podalic version was impossible, symphyseotomy might be performed. In case of limited assistants and facilities and unfavorable surroundings, symphyseotomy will undoubtedly give better results than Cesarean section. If it has been definitely decided that a living child can not be delivered *per vias naturales*, Cesarean section should be the operation of election, believing that in the long run the best results to both mother and child can be obtained from that operation.

41. **Successful Cesarean Sections.**—Boyd reports two cases and reviews 12 cases reported previously. The indications for operation were the following: Flat, rachitic pelvis, with uterine myomata; scolio-rachitic pelvis; coxalgic pelvis; general contracted pelvis; obliquely contracted pelvis; rachitic pelvis; general contracted pelvis with exostosis over promontory sacrum; labor obstructed by anterior fixation of the uterus.

43. **Typhoid Fever Complicating Pregnancy.**—Foulkrod reports four cases of pregnancy complicated by typhoid and 1 case of pregnancy occurring during convalescence from a severe attack of typhoid fever. Foulkrod asks whether there is something generative by the pregnant woman which in a certain measure protects her from the more virulent attack of the toxins of typhoid fever, and that the course of the typhoid during pregnancy is undoubtedly modifying should it occur at such a time when the serum or cells have been charged with immunizing bodies.

Annals of Surgery, Philadelphia.

August.

45 The Use of the Masland Saw for Opening the Cranial Vault. H. C. Masland, Philadelphia.
46 *Use of the Temporal Fascia to Cover in Cranial Defects. C. Beck, New York.
47 Acute Septic Infection of the Throat and Neck; Ludwig's Angina. G. G. Davis, Philadelphia.
48 *Total Laryngectomy for Carcinoma. A. H. Bogart, Brooklyn. N. Y.
49 *Treatment of Diffuse Suppurative Peritonitis, following Appendicitis. L. W. Hotchkiss, New York.
50 *Review of Fifteen Hundred Operations on the Gall Bladder and Bile Passages with Especial Reference to the Mortality. W. J. Mayo, Rochester, Minn.
51 Solitary Abscess of the Liver. C. A. Elsberg, New York.
52 *Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of the Pylorus. A. Maclaren, St. Paul, Minn.
53 *Volvulus of the Small Intestine in Typhoid Fever, Simulating Perforation. J. B. Roberts, Philadelphia.
54 *Myofibroma of the Large Intestine. W. L. Estes, South Bethlehem, Pa.
55 Operative Treatment of Cancer of the Large Intestine, Causing Dangerous Intestinal Obstruction. H. W. Cushing, Boston.
56 Individual Excision and Suture in Operating for the Removal of Hemorrhoids. L. S. Pilcher, Brooklyn, N. Y.
57 Treatment of Ectopia Vesicæ. F. Trendelenburg, Leipzig, Germany.
58 *Congenital Protrusion of Heart, Stomach and Spleen. C. H. Wintsch, Newark, N. J.
59 Chewing-Gum Nucleus of Vesical Calculus. E. B. Kenner, Galveston, Texas.
60 Dislocation of the Metatarsal Bones. L. W. Ely, New York.

46. **Temporal Fascia to Cover Cranial Defects.**—Beck refers to another possible method of covering over defects of the cranium which meets indications not met by other methods in use. He makes use of the strong fibrous sheaf of the temporal fascia inasmuch as this shows no marked tendency toward the formation of adhesions. In the case reported, the defect in the skull was about 3 inches long and 1 inch wide at its greatest diameter. There was a total absence of bone substance. This was 9 months after the original injury. Operation was undertaken mainly for the relief of pressure symptoms caused by extensive scar formation. An incision was carried around the temporal muscle down to the bone. Then this flap and its periosteum was loosened, care being taken not to tear the connecting link of periosteum which was kept as close to the bone suture as possible. Beck then folded over the entire flap at the lower edge of the defect and covered the gap with it. At the opposite end he chiseled off enough bone to enable him to make use of a small amount of dura to which he attached the aponeurotic end with thin catgut sutures. This aponeurosis was in direct contact with the brain, while the periosteum was on top. The skin surfaces were united. Up to the present time, six months after the operation, everything has gone well.

48. **Total Laryngectomy for Cancer.**—Bogart reports the case of a man, aged 46, who had an extensive carcinoma of the right vocal cord. The larynx was totally removed, four months ago, adopting the method advocated by Keen. The patient made a complete operative recovery.

49. **Treatment of Suppurative Peritonitis Following Appendicitis.**—That the peritoneal drain can be eliminated as a factor of importance in the treatment of diffuse suppurative peritonitis Hotchkiss believes has been shown by the outcome in 28 patients operated on since 1903. The McBurney muscle splint with or without the Weir extension to the posterior sheet of the rectus has generally been found sufficient for the necessary manipulations. As little ether as possible was administered, and every effort was made to complete all peritoneal work with as much speed and as little traumatism as possible. The appendix was systematically searched for and removed with as little disturbance to the intestines as need be. After its removal and the cleansing of the appendiceal site, the pelvis and lower abdomen were rapidly washed out with the Blake tube or the jacketted glass return-flow canula. In many cases the peritoneum was closed without attempting to remove the saline solution which had not run out. Drainage of the external wound down to the peritoneum was generally employed, from the fact that the wound was usually infected and needed it. Gastric lavage was given before the patient left the table, and, as a rule, an ounce or two of saturated solution of Epsom salts was introduced through the tube and left in the stomach. Morphin, as far as possible. was not given and the rectal tube with saline irrigation of the lower bowel was used generally at intervals of from six to eight hours for the first two days. If vomiting occurred the stomach was washed. The use of saline irrigations to the peritoneum through the small lateral incision, does not consume much time, and seems by diluting the remaining fluids to hasten their absorption, besides acting generally as any intravenous infusion would to hasten the removal of toxins by dilution besides stimulating the heart and circulation. Moreover, the actual ability of the peritoneum to cope with the inflammation seems to be increased and not hindered. In those cases in which the inflamed appendix is the cause of the peritonitis, the problem resolves itself into the rapid removal of the offending organ without evisceration, in all cases. The peritoneum has proven itself abundantly able to take care of the resulting inflammation, and drainage in the absence of local necrosis is often ill-advised and not based on sound physiology or mechanics. Gauze packing is not only unnecessary but frequently harmful, being probably responsible for increased mortality, not to speak of the incident damage to the endothelium, with the resulting adhesions.

50 and 52. See abstracts in The Journal, July 14, 1906, pages 146 and 147.

53. **Volvulus of Typhoid Intestine Simulating Perforation.**—In the case reported by Roberts the general symptoms of perforation were not present, but the pain, tenderness and rigidity seem to indicate some intra-abdominal lesion. On opening the abdomen neither serum nor pus were found. There was great difficulty in drawing up the cecal portion of the ileum, which seemed to be imprisoned in the pelvis and was collapsed. The ileum above this portion was moderately distended and freely movable. The appendix was short and bound firmly to the cecum by a web-like attachment. It was not swollen or

inflamed, and no concretion could be felt within it. Examination of about 2 feet of the ileum did not reveal any perforation or discoloration of the serosa to indicate the presence of internal ulceration. The pain and rigidity of the abdomen disappeared after the operation and the patient went through the remainder of the typhoid without abdominal symptoms other than such occasional pain that might be seen in ordinary cases. Consideration of this case seems to show that there was either a volvulus causing constriction of the lower portion of the ileum, or a mild appendicitis due probably to a typhoid inflammation of the mucous membrane. Because of the critical condition of the patient from typhoid fever, the absence of definite symptoms of appendicitis and the possibility of the condition of the appendix being congenital, the appendix was not removed. Roberts concludes that the symptoms were due to a sudden twist of the ileum, which was finally disentangled, when he turned the coils over and over in his endeavor to bring the cecal end of the small intestine up from the pelvis, in which it was imprisoned.

54. See abstract in The Journal, June 30, 1906, page 2016.

58. **Congenital Protrusion of Heart, Stomach and Spleen.**—Wintsch reports the case of full-term living celosomus. He has not found a similar case reported. There was complete protrusion of the heart, stomach and spleen. Labor seemed perfectly normal. The child weighed 7 pounds. It defecated and urinated normally. It became very cyanotic at times and the cyanosis was aggravated when pressing on the heart with the hand. The baby lived 2 days and 3 hours. It was fed by mouth with water and milk from the breast of the mother, which it retained. Just before death the child vomited a greenish fluid and bled from the mouth.

Southern California Practitioner, Los Angeles.

August.

61 The Early Diagnosis and the Prognosis of Pulmonary Tuberculosis. S. A. Knopf, New York.
62 Stricture of the Urethra. G. Macgowan, Los Angeles.
63 Albuminuria in Pregnancy. F. W. Thomas, Claremont.
64 Climate of Hawaii. E. S. Goodhue, Holualoa, Hawaii.
65 Obesity. P. H. Sunde, Los Angeles.
66 Mastoiditis—Some Practical Points. H. Hastings, Los Angeles.
67 Massage—A Change Needed in Our Attitude Toward Its Practice. J. T. Rankin, Los Angeles.

Iowa Medical Journal, Des Moines.

August 15.

68 Report of Chairman of Section of State Medicine. C. T. Lesan, Mt. Ayr.
69 Sanitary and Hygienic Inspection of Schools. L. A. Thomas, Red Oak.
70 How Shall the Laity be Educated on Venereal Diseases? G. N. Ryan, Des Moines.
71 Pure Milk. G. H. Sumner, Waterloo.
72 Value of the Glandular Extracts. M. M. Jones, Ames.
73 Treatment of Acute Middle-Ear Suppuration. P. R. Wood, Marshalltown.
74 Medical and Surgical Progress. G. Cullen, Des Moines.
75 Case of Tetanus. W. R. Brock, Sheldon.

Journal of the Arkansas Medical Society, Little Rock.

August 15.

76 Degeneracy and Social Disease. T. J. Garner, Washington, Ark.
77 Some Severe Complications of Influenza. B. G. Wood, Cominto.
78 The Race Question from a Medical Standpoint. H. T. Scott.
79 Tuberculosis. G. E. Penn, Hot Springs.
80 Medical Legislation. O. L. Williamson, Marianna.
81 Modern Views of Neurasthenia and Its Treatment. J. Punton, Kansas City, Mo.
82 When to Begin to Treat Syphilis. J. C. Minor, Hot Springs.

Colorado Medicine, Denver.

August.

83 The X-Ray as a Means of Thoracic Diagnosis. D. P. Mayhew, Colorado Springs.
84 Use of the X-Ray in the Diagnosis of Pulmonary Diseases. S. E. Solly, Colorado Springs.
85 Four Cases of Spotted Fever Occurring in Colorado. J. M. Braden, Carbondale.
86 Fresh Air and Rest in the Treatment of Tuberculosis. G. R. Pogue. Greeley.
87 Pelvic Girdle vs. Abdominal Bandage. C. D. Spivak, Denver.

Denver Medical Times.

August.

88 Treatment of Constipation. G. Law, Greeley.
89 Treatment of Chronic Constipation. M. J. Krohn, Denver.
90 Id. J. D. Crisp, Denver.
91. Id. F. G. Byles, Denver.
92 Id. F. E. Prewitt, Denver.
93 Id. W. C. K. Berlin, Denver.
94 Acute Tonsillitis. D. S. Neuman, Denver.

Utah Medical Journal.

August.

95 Active Principle Therapy, or the Need of a Revival of Therapeutics . R. J. Smith, Smithfield, Utah.
96 Should the Physician be Interested in Politics? J. E. Scallon, Salt Lake City.

New York State Journal of Medicine.

August.

97 Conditions within the Appendix Causative of its Inflammation. A. E. Isaacs, New York.
98 Value of Education and Treatment as Safeguards in Venereal Infection Through Marriage. J. A. Fordyce, New York.
99 Should Not Safeguards from Venereal Disease be Thrown Around Marriage? J. A. Wyeth, New York.
100 Legal Measures to Prevent Venereal Diseases. A. N. Taylor, New York.
101 Rôle of Pure Cow's Milk in Infant Feeding. A Jacobi, New York.
102 Echinococcus Cyst of the Liver. R. S. Fowler, Brooklyn, N. Y.
103 History of the Medical Society of the State of New York (continued). J. J. Walsh, New York.

Cleveland Medical Journal.

August.

104 Native Doctors of Burmah. J. B. Stewart, Cleveland.
105 Vesical Hyperesthesia. C. G. Foote, Cleveland.
106 Examination of 538 School Children of the East Cleveland Schools. L. K. Baker, Cleveland.
107 History and Value of Massage and Exercise. B. Anderson.

Western Medical Review, Lincoln, Neb.

August.

108 Strychnin as a Remedy in Pulmonary Tuberculosis. W. F. Milroy, Omaha.
109 Lymphatic Glands of the Neck. A. C. Stokes, Omaha.
110 Treatment of Epilepsy. F. E. Osborne, Beatrice.
111 Is Internal Medicine a Failure? W. H. Wilson, Table Rock.

Bulletin of the Johns Hopkins Hospital, Baltimore.

August.

112 Address at the Formal Opening of the Laboratories of the Rockefeller Institute for Medical Research on May 11, 1906. W. H. Welch, Baltimore.
113 Teaching of Pathologic Physiology. W. G. McCallum, Baltimore
114 Phlegmonous Enteritis. W. G. MacCallum, Baltimore.
115 Multiple Cavernous Hemangiomata of the Intestine. W. G. MacCallum, Baltimore.
116 Mechanical Effects of Experimental Mitral Stenosis and Insufficiency. W. G. MacCallum and R. D. McClure, Baltimore.
117 Acute Hemorrhagic Pancreatitis Following Obstruction of the Bile Papilla. C. H. Bunting, Baltimore.
118 So-called Spontaneous Focal Myocarditis and the Occurrence of Calcification of the Degenerate Muscle Fibers. E. K. Cullen, Baltimore.
119 Disseminated Tuberculosis in Relation to the Thoracic Duct and Vascular Tubercles. G. H. Whipple, Baltimore.
120 Necrosis of Epithelium in the Kidney in Infections and Intoxications. J. H. Hewitt, Baltimore.
121 The Growth of Lymphatics in Granulation Tissue. T. H. Coffin, Baltimore.
122 Growth of Carcinoma Cells Within the Muscle Fibers in Carcinomatous Metastases to Voluntary Muscle. G. H. White, Philadelphia.
123 Typhoid Nodular Colitis. G. H. Whipple, Baltimore.

Medical Sentinel, Portland, Ore.

August.

124 Value of Roentgen Rays in Therapeutics. L. H. Hamilton, Portland .
125 Drainage. J. D. Sternberg, Portland.
126 *Rocky Mountain or Spotted Fever. H. N. Mayo, Salt Lake City, Utah.
127 Necessity of State and National Control of Tuberculosis. J. P. Tamiesie, Hillsboro, Ore.

126. This article appeared in The Journal, July 7, 1906, page 36.

The Therapeutic Gazette, Detroit, Mich.

August 15.

128 Overtreatment of Syphilis. G. H. Fox, New York.
129 Treatment of Syphilis. M. H. Hartzell, Philadelphia.
130 Id. W. A. Hardaway, St. Louis, Mo.
131 Id. E. Martin, Philadelphia.
132 Id. G. MacGowan, Los Angeles.
133 Diarrhea in Infancy and Early Life. I. H. Hance, Lakewood, N. J.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 11.

1 Relations of Medical Men to Their Patients. R. Maclaren.
2 *Present Position of Prostatic Surgery. J. H. Nicoll.
3 *Series of Cases in which Collections of Stones Formed in the Prostatic Urethra. C. A. Morton.
4 *The Vesical Sphincter and the Mechanism of the Closure of the Bladder. C. Leedham-Green.
5 The Modern Mastoid Operation. A. Bronner.
6 Microscopic Changes in the Nervous System in a Case of Chronic Dourine. F. W. Mott.
7 Case of Obscure Intracranial Tumor; Meningeal Sarcoma with Extension to Fourth Ventricle. G. H. G. Davie.

2. **Position of Prostatic Surgery.**—Extended experience has confirmed Nicoll's opinion that the first step in prostatectomy should be the opening of the bladder by the suprapubic route. This permits the completion of the diagnosis and the complete bi-manual examination of the prostate, and also a decision whether the urethra and mucous floor of the bladder are to be preserved intact or not. By whichever method of operating, vesicle or submucous, the surgeon, once the prostatic capsule has been opened, requires no other instrument than his finger, provided he is prepared to bring away, in whole or in part, the mucous urethra. Nicoll claims that in operating by the submucous method it is possible in 70 per cent. of the cases to enucleate the prostate by the finger alone without damage to the urethra or vesicle wall. He has never seen fatal hemorrhage following prostatectomy by any method. He claims that prostatectomy by enucleation constitutes the cure for senile hypertrophy of the organ and its effects. The cases in which he has performed enucleation are according to three series: The first series comprise 48 cases, with 4 deaths, a little over 8 per cent. The second series comprise 25 cases, with 5 deaths, or 20 per cent. Two of the 5 deaths occurred in cases in which Nicoll had previously, on account of the patient's feeble and unsound condition, discouraged the idea of operation. The third series showed 38 cases, with 2 deaths, or about 5.5 per cent.

3. **Calculi in Prostatic Urethra.**—Morton reports three cases in all of which the presence of the stone was associated with a stricture of the urethra. In none of the cases, however, was the stricture in front of the prostatectomy urethra. In one case it was scrotal, in another at the junction of scrotum and penis, and in the third near the meatus. Neither were the strictures very tight. In the first case 7 stones were removed, the largest weighing 208 grains. Only 1 stone was found in the second case, and a number of fragments, weighing 95 grains, in the third case.

4. **Mechanism of Vesical Sphincter.**—Green injected the bladder of certain men and youths with a suspension of bismuth, and then radiographed the pelvis. In every case he found that whether the bladder was fully distended or not, the outline of the organ was oval and not pear-shaped, and the urethra was sharply cut off from the bladder without a suggestion of a bladder neck. He concludes, as a result of his experiment, that there are reasons for believing that the sphincter of the bladder (the internal prostatic sphincter) plays a far more important part than Finger and Guyon credit it with, and that under ordinary circumstances it is by this muscle that the bladder is closed whether distended or not. There is evidence, he thinks, that when the internal sphincter does yield, it does so, not because it is overcome by the mechanical pressure of the urine in the bladder, but because its muscular fibers relax as a vital act in response to a nerve impulse preliminary to the evacuation of the urine. The normal act of micturition would appear to be as follows: As the bladder becomes distended with urine the vesical nerves are stimulated and evoke stronger and stronger contractions of the detrusor muscles, giving rise to the desire for micturition. To withstand the increased pressure of the urine the tone of the internal unstriped muscular sphincter is increased, and, if necessary, even the accessory voluntary urethral muscles are called into play. When a favorable opportunity for micturition occurs the internal sphincter is voluntarily relaxed, together with the rest of the unstriped muscular tissue of the posterior urethra, and the urine is expelled by the contraction of the detrusors.

The Lancet, London.

August 11.

8 The Hands of Surgeons and Assistants in Operations. A. E. J. Barker.
9 Internal Secretion and the Ductless Glands. S. Vincent.
10 Cure of Chronic Suppuration of the Middle Ear without Removal of the Drum or Ossicles or the Loss of Hearing. C. J. Heath.
11 A Form of Amblyopia in Young Children Consequent on Inherited Syphilis. S. Stephenson.
12 Auriculoventricular Bundle of the Human Heart. A. Keith and M. W. Flack.
13 *Successful Case of Splenectomy for Rupture of the Spleen. G. S. Simpson.
14 *Unusual Forms of Anemia in Childhood. T. R. C. Whipham and A. N. Leathem.
15 *Plastic Surgery of the Renal Pelvis. J. W. T. Walker.

13. **Rupture of Spleen.**—In addition to reporting one case of rupture of the spleen, Simpson discusses 70 cases recorded in the literature since 1891. He advises immediate operation in all cases as soon as the diagnosis is made, even though there may not be much hope of saving the patient's life. In the 70 cases referred to, 42 patients were operated on; of these, 27 lived and 15 died, a mortality of 36 per cent. All those not operated on died. The causes of failure after operation were peritonitis, rupture of other viscera, especially the left kidney; injuries of the left pleura, other injuries, such as fracture of the base of the skull, and operation performed too late. The majority of patients show no abnormal effect except a transient anemia and leucocytosis, which swings back to normal in about a month, and an enlargement of the lymph glands, most often the left axillary and inguinal.

14. **Unusual Forms of Anemia in Childhood.**—Whipham and Leathem report three cases. The first 2 support their views as to the existence of that acute lymphemia without marked leucocytosis. The third case is an anomalous one and no diagnosis was made. The patient presented many points suggestive of pernicious anemia, but it was impossible to confirm this diagnosis.

15. **Plastic Surgery of Renal Pelvis.**—Walker reports the case of a young woman who had a movable tumor on the left side of the abdomen. It had existed about 7 months and followed the sudden attack of pain in that region, the result of carrying a heavy box downstairs. Four similar attacks of pain occurred later, some the result of exertion, others not. There were no urinary symptoms. The mass seemed to swing around a pedicle fixed above the umbilicus. Examination proved absolutely negative as to determining the nature of the tumor. A diagnosis of movable kidney without hydronephrosis was made. On cutting down on the kidney it was found to be attached to a large bladder-like cyst which was recognized as an enormously distended pelvis. The ureter below the mass showed no signs of dilatation. Walker excised a large triangular portion of the kidney pelvis in order to reduce its capacity and fix the kidney by a combination of decortication with non-decortication. The operation employed is described in full.

The Practitioner, London.

August.

16 Postpartum Hemorrhage. E. S. Bishop.
17 *Seven Cases of Hernia Treated by the Implantation of a Prepared Filigree of Silver Wire. L. McGavin.
18 *Intestinal Obstruction in Children. A. Edmunds.
19 Chorea Gravidarum. H. French and H. T. Hicks.
20 *Surgical Aspects of Colitis. P. L. Mummery.
21 *Syncytioma Malignum. J. T. Hewetson.
22 Two Cases of Branchial Fistula. W. Downie.

17. **Silver Filigree in Hernia.**—McGavin has employed the method described by Bartlett in 7 cases. One of these was a postoperative ventral hernia, 1 a case of extensive separation of the recti muscles and enteroptosis, 1 an umbilical hernia, and 4 were inguinal hernia. The outcome in all the cases was a successful one. McGavin calls attention to certain points which he believes are essential, such as the size of the filigree and its situation; the most suitable spacing of the loops, the removal of a filigree, and the filigree as a time saver.

18. **Intestinal Obstruction in Children.**—Edmunds reports a case of intestinal obstruction in a female child, aged 3 years and 4 months. The abdomen was opened through the right rectus muscle. On turning up the omentum a tag was found adherent to the tip of a short lateral protest of the small intestine. On one side of this the bowel was slightly distended and an obstruction could be demonstrated at the base of the process. The projecting portion of bowel was excised and showed that there was an acute kink of the intestine combined with great narrowing of the wound, forming a valve which presented a formidable obstacle to the passage of intestinal contents. The cut ends of the bowel were sutured together and the patient made a complete recovery.

20. **Surgical Aspects of Colitis.**—Mummery concludes that colitis should be looked on as a symptom rather than as a disease. A careful examination should be made, if possible, with the sigmoidoscope, and the cause of the colitis should be carefully determined before any treatment is adopted. If the

colitis is due to disease in some neighboring organ, such as the appendix, kidney, or gall bladder, this condition should be treated by operation. If the colitis is secondary to malignant disease in the bowel, operation at the earliest possible moment affords the only chance of cure, and an early diagnosis is here of the utmost importance. If it is due to some local lesion, such as tuberculosis or actinomycosis, it must be treated locally; if necessary, by operative means, such as colotomy or enteroanastomosis. True mucous colitis is best treated by von Noorden's method of dietary, combined, if necessary, with irrigation of the colon. In some very obstinate cases, and especially in cases of ulcerative colitis, a temporary cecotomy, or colotomy, or enteroanastomosis seems to be the only method of cure, but should not be adopted until a careful trial has been made of palliative treatment.

21. **Syncytioma Malignum.**—As the result of an instructive case which occurred in his practice, Hewetson concludes as follows: 1. Metrorrhagia, following abortion or labor, should call for more prompt investigation, especially in women under thirty. 2. Dilatation and curetting, in such circumstances, is an operation of considerable responsibility, in view of the possibility of malignant disease. 3. Sharp curettes are contraindicated in the parturient uterus, and when septic infections exist. 4. All such curettings should be submitted to an expert pathologist for microscopic examination. 5. Continued metrorrhagia, after such treatment, should be regarded as of serious import, and should call for fresh investigation and prompt radical measures.

Journal of Tropical Medicine, London.

August 1.

23 Studies in Plague. C. Terni.
24 Anatomy of the Biting Flies of the Genera Stomoxys and Glossina. G. M. Giles.

Glasgow Medical Journal.

August.

25 Certain Clinical Aspects of Arterial Disease. J. L. Steven.
26 Influence of the Acute Infections on the Arteries. J. M. Cowan.
27 Physiologic and Therapeutic Actions of High-Frequency Currents, with Illustrative Cases. J. R. Riddell.
28 Choroido-Retinitis of Obscure Etiology. E. Thomson.
29 Case of Otitic Extradural Abscess, Associated with Paralysis of Sixth Cranial Nerve and Double Optic Neuritis. J. S Barr.

Bulletin de l'Académie de Médecine, Paris.

30 (Year LXX, No. 27.) Hypertrophie compensatrice du péroné dans une luxation ancienne du tibia. Couteaud and Chauvel.
31 Luxation récidivante de l'épaule. Arthrotomie. Guerison. Id.
32 *Sur la typhlite muco-membraneuse ou sableuse et l'appendicite.
33 (No. 23.) Organisation du service de la vaccination en Algérie. Kelsch.
34 *Traitement des opacités cornéennes par les agents physiques par M. le Dr. E. Sulzer. Chauvel.
35. Le paludisme à Madagascar. R. Blanchard.
36 (No. 30.) *Tumeurs cancéreuses et helminthes. E. Roux and A. Borrel.
37 L'assistance médicale en Indo-Chine. Kermorgant.
38 *Moustiquaire électrique. Chaulin and Blanchard.
39 Emigration et santé publique (public health). Chautemesse and Borrel.

32. **Discussion on Appendicitis.**—The rather sensational discussion of appendicitis and muco-membranous typhlitis which had continued through several meetings of the Académie was closed July 3. Among the latest speakers Blanchard announced his conviction that intestinal worms are frequently responsible for these morbid conditions. They induce minute lesions in the mucosa of the intestine, and especially in the appendix, and bacteria soon ensconce themselves in the nests thus provided for them. In case signs of the presence of helminths are discovered, treatment should aim to expel them, both as a preventive of appendicitis and as a cure of existing intestinal trouble above or below. He related a number of instances in which symptoms indicated appendicitis, but after evacuation of a number of worms all symptoms subsided. He considers it the physician's duty to examine the stools for traces of worms, and if eggs of the trichocephalus, ascaris or oxyuris are discovered he advises giving three 1 gm. doses of thymol at one hour intervals on three successive days. These doses are as effectual as larger ones, and are useful for the ascaris and the oxyuris, as well as the trichocephalus. It is of the utmost importance that the patient should refrain from ingestion of alcohol, oil or other substances capable of dissolving the thymol and freeing its toxic properties. Vegetables fertilized with human excreta are liable to prove a prolific source for infecting man with helminths, and Blanchard urged the absolute prohibition of manuring with human excrements.

34. **Treatment of Opacity of the Cornea by Physical Agents.**—Sulzer is connected with the de Rothschild Ophthalmic Foundation and has been much pleased with the results of treatment of opacity of the cornea with electrolysis, with or without phototherapy, or the latter alone and radiotherapy. His experience includes 34 cases. Benefit was derived in all but 6, vision increasing considerably. The cases of interstitial sclerosis were improved as well as the more superficial cicatrices. Applied directly on a superficial cicatrix the negative electrode, with a current of from 4 to 7 milliamperes, leads to the formation of gaseous bullæ which lift up the opaque patch from the underlying tissues. The consequence is the formation of a more translucent cicatrix, less white, less opaque, although the sclerosis may still persist. A much more intense reaction follows exposure of the eye to a bright light, rich in actinic rays, the application lasting from 20 to 90 seconds, repeated in eight or ten days. The results, Sulzer states, were particularly good in pronounced sclerosis, reducing the intraocular tension and favoring the absorption of effusion in the papilla. The only contraindication is a tendency to glaucoma. He has thus treated 24 patients, all but 4 under 20, with a single exposure for 6 eyes, 2 for 11, 3 for 17, and 4 or 5 for 2. In 14 cases the reaction to the light was very striking.

36. **Cancerous Tumors and Helminths.**—Borrel states that among the rats and mice kept at the Paris Institut Pasteur those inhabiting certain cages presented a very much larger proportion of spontaneous cancers than other animals, showing that there may be "cancer cages" as well as "cancer houses." The locality of the cancer also seemed to be decided by the special cage in which the animals were kept. One of these cages has already furnished more than 30 cases of spontaneous cancer. In the lungs of animals which had succumbed to these cancers, secondary tumors were found in the lungs with helminths in the adjoining lung tissue. One rat, succumbing to an epithelial cancerous tumor in the right kidney, was found to have cysts in the other kidney and the liver containing embryos of the *Tenia crassicola* of the cat. In another rat a large sarcoma of the liver was found surrounded by cysts exhibiting the same parasite. The sarcoma from this rat has been inoculated through three passages, suggesting that the cysticercus carries with it some virus yet unknown. This virus inoculated with the cells, in its passage from rat to rat, is capable, without any further intervention on the part of the helminth of propagating indefinitely the elements of the tumor. It is interesting further to note that in the two cases the cancer was of a different variety.

38. **Electric Mosquito Trap.**—Chaulin's apparatus is a sort of cylindrical lantern made of two large horizontal rings connected by vertical, parallel chains, rather close together, with a light inside. The electric current passes through the chains. Insects, especially mosquitoes, attracted by the light, can not pass between the chains without touching them in more than one place, thus closing the circuit and killing the insects by the charge of electricity that passes through them. Very little electricity is needed, a small storage battery taken temporarily from an automobile is ample for the purpose.

Presse Médicale, Paris.

40 (XIV, No. 56.) Organisation médicale et pathologie du Siam. E. Jeanselme.
41 Extraction des corps étrangers des bronches par la bronchoscopie (foreign bodies). Guisez.
42 L'indican et le scatol urinaires. G. Daremberg and T. Perroy.
43 (No. 57.) Certificats d'études médicales supérieures. F. de Lapersonne. See editorial, page 587.
44 *L'aphasie motrice. Sa localisation et sa physiologie pathologique. J. Dejerine.
45 (No. 59.) Purpura hémorragique et tuberculose. R. Bensaude and L. Rivet.
46 (No. 60.) Traitement des otites chroniques par la vaporisation tubo-tymphanique aux eaux sulfurées-sodiques thermales.. E. Escat.
47 (No. 61.) Les 3 instituts Pasteur de l'Indo-Chine. C. Nicolle.
48 De la senilité (the senile brain). A. Létienne.
49 *Composition de la glace et congélation de l'eau (of water). P. Sacerdote.

44. **Marie's New Views of Motor Aphasia.**—Marie's views were reviewed in an editorial in The Journal, Aug. 11, 1906, page 436. Dejerine energetically combats them and presents arguments to show the fallacy which has misled Marie. Dejerine's experience with hundreds of cases during the last 25 years makes him take an opposite view, which he here presents in detail.

49. **Composition of Ice.**—Sacerdote has found that as water freezes slowly all the impurities are pushed away from the part first freezing. The center of a cake of artificial ice is generally opaque, while the part first frozen—the outside—is generally clear. Whatever the character of the water used, the water obtained by melting the outer, clear parts, is almost perfectly pure, while that from the central, opaque part contains the impurities. The bacteria do not escape this law, he adds, but will be found congregated in the central part of the cake.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

50 (XXXII, No. 28.) Ueber die Behandlung der Nieren-Tuberculose (of kidneys). O. Zuckerkandl. Clinical lecture.
51. *Weitere Erfahrungen mit der Rückenmarks-Narkose (spinal anesthesia). R. Freund.
52 Automobile Fracture.—Ueber eine typische Verletzung der Chauffeure. R. Muhsam. See The Journal, xlii, p. 1054.
53 Mechanism of Fracture of Metatarsal Bone.—Welches ist der gefährliche Moment für die Entstehung eines Mittelfussknochenbruches beim Gehen. A. Kirchner.
54 Ueber Befunde von Spirochæte pallida in den Nerven des Präputiums bei syphilitischer Initialsklerose. S. Ehrmann.
55 Bemerkungen zu dem Aufsatz von A. Kowarski in No. 25: Eine vereinfachte Methode zur quantitativen Bestimmung der Harn-Säure im Harn (test for uric acid). J. Ruhemann.
56 Ueber den Wert plastisch wirkender Röntgenbilder. M. Cohn.

51. **Spinal Anesthesia.**—Freund reports experiences with 209 cases in which operations were performed under spinal anesthesia at Veit's clinic. This method of anesthesia has been proved to possess so many advantages and so few drawbacks that he thinks it has already won an assured position and possibly may take first rank among all methods of anesthesia, even for major operations. He used rather more of the anesthetic than others advise, and was particular to refrain from testing the patient's sensibility, believing that complete quiet is the best preliminary to an operation. If the analgesia is defective this is never due to the lack of receptivity on the part of the patient, he says, but to mechanical and anatomic conditions. The preferred point for the injection is as high as possible, at least between the second and third lumbar vertebræ, and exactly in the median line. The pelvis was always elevated immediately after the injection to an angle of 20 or 25 degrees from the horizontal, and kept in this position during the 20 minutes required for the local disinfection. When the laparotomy is commenced the pelvis is raised still higher. The anesthesia does not extend unnecessarily high with this technic. The extent of the anesthetized area can be further controlled by allowing more or less of the cerebrospinal fluid to escape. Four c.c. is the rule, and this is generally enough for gynecologic operations. There were 104 laparotomies and the spinal anesthesia was successful in 93; 30 Alexander-Adams operations, with success in 26; 16 vaginal operations, with successful anesthesia in 10; 48 vaginal operations, with anesthesia in 43—a total of successful spinal anesthesias in 181, that is, in 86.6 per cent. of 209 major gynecologic operations on women between the ages of 18 and 73. The remaining 13.4 per cent. required a little chloroform before the operation could be completed. One patient, an asthmatic woman of 73, with myoma of the uterus, 8 minutes after the injection, while the parts were being disinfected, the pelvis raised a little, rapidly died after vomiting and sudden arrest of the respiration. This fatality occurred in the early experience at the clinic, before the present technic was adopted, which ensures that the cannula does not enter too far. The guide is left in the cannula only until the skin and the first layer of the soft parts are passed. Then the guide is withdrawn and the cannula is cautiously pushed in until the cerebrospinal fluid flows out freely, and no farther. This ensures that the tip of the cannula does not go beyond the arachnoid space where are the sensory roots. These precautions had not been dreamed of at the time of the fatality reported, and it is highly probable that the cannula had been inserted too far, bringing the anesthetic to the motor roots, and paralyzing the higher vital centers when the pelvis was elevated. The few slight by-effects noted are growing constantly less with improved technic. Vomiting was observed in about a fourth of all the cases, but it is less and more transient than that liable to follow chloroform. More disagreeable is the brief paralysis of the anal sphincter with sudden passage of stools occasionally occurring after a vaginal operation. This he learned to obviate by the preliminary insertion of an opium suppository. He concludes with the statement that spinal anesthesia in its present form is eminently practicable.

Hospitalstidende, Copenhagen.

Last indexed page 727.

57 (XLIX, No. 21.) Et Tilfælde af diffust kavernøst Angiom paa venstre Under-Extremitet, i venstre Reggio glutæa, perinælis og pudendalis. H. Heide.
58 (Nos. 22-25.) Studier over den saakaldte typiske Radius-Fraktur. K. Poulsen. (Continued.)
59 *Undersøgelser over primær Tuberkulose i Fordøjelseskanalen (in digestive tract). J. Ipsen.
60 *Bemærkninger om Forfrysning af det subkutane Fedtvaev. P. Koefoed.

59. **Primary Tuberculosis of Digestive Tract.**—This communication from the Copenhagen Institute of Pathologic Anatomy continues Fibiger's research on primary tuberculosis in the digestive tract. He found tuberculous lesions in 116 out of 213 cadavers, and in 13 they were primary in the digestive tract or connected glands. Among the 79 children, 25 were tuberculous, and in 4 of these the lesions were primary in the digestive tract. Ipsen has continued this research, the total material now comprising 600 autopsies. Tuberculous lesions were found in 311, and they were evidently primary in the digestive tract in 5.17 per cent. of the total cadavers, and in 10 per cent. of the tuberculous, that is, in 31 cadavers. Out of the 187 children's cadavers, 58 proved to be tuberculous, and the lesions were primary in the digestive tract in 10, that is, in 17 per cent. These figures are manifestly too low, as they do not include those in which the tubercle bacilli passed through the intestinal walls without leaving any traces. The circumstances indicated infection from cow's milk in some of the cases, and from association with consumptives in others.

60. **Freezing of Subcutaneous Adipose Tissue.**—Koefoed describes a case in which the excessive use of an ice bag for threatened appendicitis froze the subcutaneous fat. The patient was an extremely nervous young woman, and when first seen in consultation she was somewhat feverish and agitated. She complained of pains in the ileocecal region, where there were indications of the erythem that follows freezing. The deep subcutaneous fat was infiltrated and hard as from a typical phlegmon. An incision failed to reveal any pus, but the subcutaneous tissue was hard and grayish in color, and it did not bleed. The skin bled normally during the incision. Only the lowest vascularized stratum presented a normal aspect. In the course of 2 weeks everything had returned to normal, without any suppuration or sloughing. Koefoed had a similar experience with another patient, whose family physician had likewise applied the traditional ice bag. The changes in the subcutaneous tissue persisted for 2 and 3 weeks in these cases after the fat had been so thoroughly frozen. This possibly occurs oftener than is generally supposed, and may be the unrecognized cause of certain complications.

Hygiea, Stockholm.

Last indexed XLVI, page 511.

61 (LXVIII, No. 9.) *Om difteridöden (death in diphtheria). T. Fischer.
62 *When to Operate in Case of Uterine Myoma.—När bör ett uterusmyom opereras? E. Essen-Möller.
63 (No. 10.) *Om peritoneal-dränage. F. Westermark.
64 383 bråckoperationer (herniotomies). O. Lundblad.
65 *Gastrointestinala rubbningar beroende på arterioskleros. E. E. Rodhe.
66 (No. 11.) *Operationer för nefrit. G. Ekehorn.
67 Ett anmärkningsvärdt fall af otogen pyemi. G. Nilson.
68 Letal gallgångsblödning framkallad af sten (fatal gallstone hemorrhagic affection). H. Allard.
69 Traumatisk Jacksons epilepsi. N. Bellander.
70 Tvenne fall af prolapsus mucosæ urethræ. K. Widerström.
71 Saw and Sinus Opener for Intranasal Operations.—Tvenne instrument för inre näsbehandling. S. Lindström.
72 Den tropiska splenomegaliens parasit. A. Prag.

73 (No. 12.) *Hygieniska inrättningars inverkan på halsotillståndet i städerna (influence of hygienic measures in cities). C. Lindman.
74 *Om Koch's gamla tuberkulin som terapeutiskt medel vid lungtuberkulos. J. Tillman.
75 Till operations-tekniken för anus præternaturalis. A. Reuterskiöld.
76 Boarding Out the Insane Under Administrative Control.—Om organiserad och under regelbunden sakkunnig kontroll stående familjevård för sinnessjuka och sinnesslöa. A Petren.

61. **Death in Diphtheria.**—Fischer has been studying the causes of death in 287 cases of fatal diphtheria. Only about 25 per cent. of the patients succumbed to general diphtheric intoxication, and a little less than 25 per cent. to tardy paralysis. All the others—more than 50 per cent.—died in consequence of pulmonary lesions. The latter was the cause of death in all the infants and in 83 of the 139 cases in children between 1 and 3, and in 16 of the 85 cases in children from 4 to 10, which included also 33 cases of fatal tardy paralysis. The 17 fatal cases of diphtheria in patients over 10 included 9 deaths from early general intoxication, 3 from tardy paralysis, and 3 from tardy sepsis. He remarks that far too little attention has been paid hitherto to secondary infection in diphtheria, and yet its importance as a factor in the fatal termination is emphasized by the above figures. Diphtheria antitoxin had been administered in every case. He is convinced that the only way to bring the diphtheria mortality actually under control is to supplement the diphtheria antitoxin with an effectual antistreptococcus and antistaphylococcus serum.

62. **When to Operate for Uterine Myoma.**—Essen-Möller's practice is never to operate so long as the myoma does not cause symptoms. But he keeps the patient under observation, and examines from time to time, ready to operate at the first indication of hemorrhage, rapid growth, or the like. He has applied these principles in 111 cases, with highly satisfactory results, as he describes in detail.

63. **Drainage After Laparotomies.**—Westermark relates his experiences with drainage as he applied it in 6 out of 272 abdominal operations. None of the rest had any drainage. He follows Mikulicz' technic for peritoneal drainage, and restricts its application exclusively to cases in which pus in the small pelvis has contaminated the field of operation, or when the virulence of the pus is unknown. Also when the intestines or bladder have been injured and pus is found, and also in all cases of lesions of the large intestine, even when there is no suppuration. He thinks that his results indicate the advantage of restricting drainage to these conditions.

65. **Gastrointestinal Disturbances Due to Arteriosclerosis.**—Rodhe describes a case of arteriosclerosis in a man of 65 in whom severe pains developed in the epigastric region, accompanied by palpitation of the heart and difficulty in breathing. A common cause for the heart and stomach troubles was suggested by the lack of any other symptoms from the digestive tract, and the absence of any signs of nervous or hysteric tendencies, but chiefly by the promptly successful result of treatment. No gastralgia of any other origin yields at once to heart tonics. Digitalis and potassium iodid were ordered in small doses, with a suitable diet. In another case a man of 65 with generalized arteriosclerosis complained of attacks of pain in the abdomen at times during the last few years. As in the first case the absence of signs of neurasthenia or hysteria and of digestive disturbances, and the prompt benefit from heart tonics, are presumptive evidence in favor of the theory that the painful attacks are due to the existing arteriosclerosis. The cases in which the attacks of pain occur alone, that is, unaccompanied by angina pectoris, are the most important from the differential standpoint. If the true cause is not recognized, the patient loses the benefit of appropriate treatment. The most characteristic feature is the strict localization of the pain in the epigastrium, appearing in persons of 40 or over. The pain is a sharp, stabbing or burning sensation, lasting generally only for a few minutes. It radiates sometimes to the liver, shoulder or arms, and ptyalism may be observed with a cold sweat and semi-unconsciousness. Between the attacks there is no pain, at least in the milder cases; in others there may be a dull, continuous ache. There are generally no other disturbances from the digestive tract, although sometimes constipation, diarrhea, meteorism, etc., may be observed. Other morbid processes are liable to occur in the digestive organs aside from those due to the arteriosclerosis, of course, and the latter may induce thrombosis, or even actual ulcer formation. The attacks in Rodhe's cases followed unusual physical exertion. Buch has reported a case in which the attacks were liable to come on when the patient lay down. Emotions and excesses are also liable to bring on an attack. On the other hand, the kind of food has no influence. The shortness of the painful attack, the radiation of the pains, and the occasional alternation with angina pectoris confirm the diagnosis. The same causes that elicit angina pectoris are noted in the history of these attacks. Pressure on the epigastrium sometimes induces pain similar to that of the typical attack. The pure arteriosclerotic gastralgia subsides or vanishes altogether under diuretics, digitalis or strophanthus. The syndrome may simulate ulcer, nervous dyspepsia or even cholelithiasis, until death in syncope occurs, and autopsy reveals the unsuspected sclerosis of the coronary, stomach, or intestinal arteries. Jaworsky has published reports of 4 such cases in which the patients suddenly succumbed to this form of arteriosclerosis while under treatment at Carlsbad for nervous dyspepsia.

66. **Operations for Nephritis.**—Ekehorn gives the details of 2 cases of acute infectious nephritis and of 4 of renal hematuria in chronic nephritis. He also analyzes an extensive list of articles on this subject. His conclusions are that hemorrhage from the kidney is not the prerogative of any special form of nephritis. It is much more likely to be the work of the toxic influences causing the nephritis rather than of the nephritis itself. He operated in all his cases and the operation always put an end to the hemorrhage. He discusses the question of why excessive pressure in the kidney induces hemorrhage, while nothing analogous occurs in other organs, and why an incision, relieving the pressure, arrests the hemorrhage. The purely mechanical influence of the altered position, adhesion to adjacent organs, pressure, etc., must not be underestimated, he remarks. Rovsing seems to be the only one who has given due consideration to the mechanical factor in renal hematuria.

73. **Influence of Modern Hygiene on Cities.**—Lindman gives a number of diagrams showing and comparing the amount and nature of the sickness and the mortality in 10 cities in Sweden during the last 30 years. The general mortality has dropped from 250 to 152 per 10,000 inhabitants. The decline has been most pronounced in the acute infectious diseases and diarrhea, also in nervous and pulmonary affections, while on the other hand the number of deaths from affections of the heart and vascular systems have increased, and the number of fatal puerperal affections averages nearly the same.

74. **Old Tuberculin as a Therapeutic Measure.**—Tillman relates his experience with 7 cases of phthisis in which he used Koch's old tuberculin. It was given in a subcutaneous, infrascapular injection, twice a week, and the patients afterward lay down for a time. They had all had a preceding course of sanatorium treatment and the disease was of 2 years' standing at least. Some were in an advanced stage, but improvement was manifest in all, especially after suspension for a time.

Gazzetta degli Ospedali, Milan.

Last indexed page 644.

77 (XXVII, No. 51.) *Aspergillosi polmonare acuta primitiva. U. Baccarani.
78 Sindrome labio-glosso-faringea per lesione del solo emisfero sinistro. A. D'Ormea.
79 *Postoperative Icterus.—Sull' ittero postop. G. Campora.
80. *Ricerca del glicogene nel fegato col metodo microchimico (glycogen in liver). G. Massari.
81 New Trephine.—Di un nuovo trapano per la formazione di un lembo osteo-periosteo-cutaneo. O. Cantelli.
82 (No. 54.) *Studio della patogenesi nervosa dell'asma. G. Gualdrini.
83 *La fonesi plessica meso-sternale nelle cardiomegalie (percussion findings in case of enlargement of the heart). G. Pollacci.
84 *Considerazioni statistiche sull'epitelioma del labbro (of lips). G. Serafini.
85 *Processo semplice e rapido ad uso del medico per scoprire l'arsenico, il fosforo e l'antimonio (simple test for phosphorus, etc.). F. Pedrazzini.
86 (No. 57.) *Parassitismo cellulare nella sifilide. I. Bandi.
87 *Contributo sperimentale alla leucoterapia nelle infezioni peritoneali. S. Diez and G. Campera.

88 Contributo alla patologia delle adenite cervicali suppurative acute della prima Infanzia. G. Comforti and T. Bordoni.
89 (No. 60.) *Contributo alla chirurgia del polmone. E. Skultecki.
90 *Sul valore hypotensivo del veratrum viride. E. Pesci.
91 *Di un nuovo sensibilissimo reattivo dell' albumina nelle orine (test for albumin in urine). A. Tognetti.
92 (No. 63.) *Intorno all'azione del radio sul virus rabido (action of radium in rabies). G. Tizzoni and A. Bongiovanni.
93 Studio della polmonite traumatica fibrinosa. A Galluzzi.
94 *Un nuovo modo di riparare le perdite di sostanza ossea (bone repair). P. C. Morelli.
95 *Production of Toxins Destructive to Larvæ.—Studii sull' origine e condizioni di produzione delle tossine larvicide. A. Bongiovanni.
96 (No. 66.) *La diagnosi e la prognosi della affezioni cerebrali acute. Riva-Rocci.
97 Caso di amaurosi manifestatasi in seguito all'estrazione di un dente (after extraction of tooth). A. Santa Maria.
98 (No. 72.) *Gastric Functions After Splenectomy.—Funzioni gastriche in uno smilzato. T. Silvestri.
99 Sulla malattia di Stokes Adams. A. Perez.
100 (No. 75.) Ricerche sull'amilasi nel siero di sangue e nelle urine. G. Migliacci.
101 *La reazione di Weber-Rossel in rapporto dell'azione catalitica dei metalli pesanti (test for "occult blood" in feces after ingestion of mercury, etc.). G. Guyot.
102 Sulla pseudoparalisi eredo-sifilitica o malattia del Parrot. G. Setti.
103 (No. 78.) *Intorno alla cura della rabbia col radio (radium in rabies). A. Calabrese.
104 Trypanosomiasi sperimentale e gravidanza. A. Massaglia.
105 Emorragia del piede del peduncolo cerebrale destro (sindrome di Weber). F. Mariani.
106 Sopra 5 casi di pleurite reumatica a forma epidemica. G. De Polini.

77. Primary Aspergillosis of the Lungs.—Baccarani describes 3 cases, all occurring in one family, the patients ranging in age from 9 to 19 years. There were no known predisposing factors in these cases, 2 of which terminated fatally. The course of the affection was extremely rapid, suggesting fulminating typhoid in some respects. One patient, a girl, died of hemoptysis a month after the first symptoms, and another girl succumbed to progressive marasmus in 40 days. The youngest child, a boy, was treated with arsenic and iodid at the first symptoms, two weeks after the death of his second sister; at the same time the house was thoroughly disinfected. In 2 weeks the boy had completely recovered. The rapid emaciation in the fatal cases was more striking than Baccarani has ever witnessed in any other affection.

79. Postoperative Icterus.—Four typical cases are described by Campora. The operation was fixation of a wandering kidney in one and bilateral inguinal herniotomy in the others. There was no appreciable hemorrhage in any case. The icterus was probably of toxic origin, due to the action of the chloroform on a predisposed liver. Three of the the patients were alcoholics and one of these succumbed with intense icterus, edema, subdelirium, and coma. The others recovered.

80. Glycogen in the Liver.—Massari mounts in paraffin the sections of the liver to be examined, and treats them with a mucilaginous solution of iodin for examination under the microscope. The granules of glycogen show plainly with this technic at an enlargement of 47 diameters, and their distribution can be instructively studied at 297 diameters. The findings by this microchemical technic amply confirm the importance of the presence of glycogen in differentiating slow from sudden death. Also the important effect of putrefaction in causing the glycogen to vanish. In case of death from intoxication with illuminating gas, the proportion of glycogen in the liver cell is enormous in comparison with that found in other cases of deaths from violence or accident. No glycogen is found in case of acute and chronic phosphorus poisoning. In acute arsenic poisoning traces of glycogen are apparent, but not in the chronic cases. It is abundant in acute poisoning from corrosive sublimate, and traces are apparent in the chronic cases. The glycogen vanishes exceptionally slowly in case of putrefaction after poisoning with illuminating gas. Control chemical tests confirmed the accuracy of the microchemical findings.

82. Pathogenesis of Asthma.—Gualdrini thinks that nervous factors play a large part in the origin of asthma in some cases, and here relates 3 typical examples. The asthma came on each time without any appreciable cause aside from emotional stress on neuropathic antecedents.

83. Percussion Findings with Enlargement of the Heart.—Pollaci says that dulness over the body of the sternum is frequently an important sign of enlargement of the right heart. It is especially valuable when the breasts are so well developed that it is hard to trace the right outline of the relative cardiac dulness. He describes the mechanism and reasons for the changes in the percussion findings over the sternum under these conditions.

84. Epithelioma of the Lip.—Serafini's experience with 100 cases of epithelioma of the lip has shown that the glands become involved in two or three months, but that radical resection of tumor and glands is followed by a complete cure in 73 per cent. of the cases. Recurrence is generally observed within six months. Eight years elapsed in one of his cases, and he is inclined to regard this as rather a new growth than a recurrence after such a long interval. In 24 cases the recurrence was on the lip, and in 17 in the submaxillary region. Advanced age does not affect the results of operative treatment unfavorably. Even in case of repeated recurrence, the results may finally be a complete cure. All but 14 of his patients were men. They succumbed generally at last to some respiratory affection after the successful removal of the cancer.

85. Test for Arsenic, Phosphorus and Antimony.—Pedrazzini has modified slightly the Gutzeit test so that it can serve to differentiate intoxication from arsenic, phosphorus and antimony. A little of the substance to be examined is placed in a test tube with some sulphuric acid and a scrap of zinc (free from arsenic). A crystal of silver nitrate is placed on top of a disc of filtering paper laid over the mouth of the test tube. In case of the presence of arsenic, a gas is generated which turns the silver nitrate yellow or black. The same reaction occurs also with phosphorus and with antimony. These substances can be excluded and the findings limited to arsenic by using a solution of silver nitrate instead of the crystals. A bent tube conducts the gas from the first test tube into a second test tube containing the silver solution. When the gas generation is finished, the silver solution is filtered and the Gutzeit test is then applied to the filtrate with the solid silver nitrate as above. Phosphorus can be detected with the same technic, estimating the phosphoric acid with uranium, or potassium acetate. Antimony is revealed by washing the filtrate with a solution of tartaric acid treated with dilute hydrochloric acid. Trichlorid of antimony results, and, treated with hydrogen sulphid, an orange precipitate is thrown down.

86. Spirochetes Inside the Cells in Syphilis.—Bandi calls attention anew to the importance of the accumulations of spirochetes inside the cells. It is not a phagocytic process, as the spirochetes seem to be intact while the cell seems to have suffered. He believes that the condition indicates actual vital parasitism of the cell.

87. Artificial Production of Leucocytosis in Peritoneal Infection.—Diez has been experimenting with nucleic acid as a means of enhancing the vital resistance of the peritoneum to infection. The results were all extremely favorable, both in his experimental and clinical research. He advocates, therefore, injection of a 2 per cent. solution of nucleic acid as a preliminary to abdominal operations and also a few hours after perforation of the stomach or intestine.

89. Surgery of the Lungs.—Skultecki sutured the lung after a serious stab wound, and the patient suffered long from various mishaps resulting from infection of the deep lung tissue. This case and others in his experience have convinced him of the inadvisability of attempting to suture a stab wound of the lung. Immediate aseptic occlusion is the best technic, he believes.

90. Veratrum Viride in Case of Increased Arterial Tension.—Pesci tabulates the details of 19 cases to show the value of veratrum viride in reducing exaggerated arterial tension. He believes that it acts by soothing the heart and dilating the arteries. The indications as he formulates them are: 1, Chronic nephritis, in which it serves to prevent and to combat uremia and to postpone asystolia; 2. lead poisoning, in which it acts on the colics probably due to spasm of the splanchnic arteries; and, 3, the early stages of arteriosclerosis, in which it reduces the pressure and retards the progress of the affection. His dosage is .25 c.c. subcutaneously in uremic attacks, repeating the dose at half-hour intervals. In case of nephritic hypertension with dyspnea or in lead colic, he gives from 20 to 30 and 50 drops in the 24 hours, keeping the drug up for 5 or 6 days. In hypertension from any cause he gives from 15 to 30 drops a day for nearly a week. He believes in suspending the drug for a few days and then resuming it. The above dosage refers to the fluidextract; he doubles the doses for the tincture. Of course the best results follow when the walls of the arteries are still capable of enlarging. In case they have lost their elasticity, then drugs are preferable which act on the blood, rendering it more fluid, or on the kidneys, promoting diuresis, or promoting the metabolism, like iodin. An appropriate diet is all-important, and should be maintained for months.

91. **Sensitive Test for Albumin in Urine.**—Tognetti describes the research which resulted in what he calls the "tanno-hydrochloric" test, which reveals albumin even in a proportion of 1 to 200,000. The advantages of tannic acid as a reagent for albumin have long been known, but it could not be used in urine as other ingredients of the urine also give a positive response. He has removed this difficulty by adopting the following technic, which, he says, renders the test reliable, instructive and extremely sensitive. He adds to the urine an equal amount of an alcoholic solution of tannin (1.5 gm. of tannin in 100 c.c. of 90 per cent. alcohol). The whole is then heated and an equal quantity of a 33 per cent. aqueous solution of hydrochloric acid is added—equal to the quantity of urine. In the presence of albumin the fluid becomes opaque and the albumin is gradually thrown down in a yellowish-white precipitate. In case of icterus, the bile pigments must first be removed by the Grocco technic, that is, by adding glacial acetic acid in the proportion of one-thirtieth or one-fiftieth of the amount of the urine. With the exception of this precaution, which is necessary with other tests for albumin, the tanno-hydrochloric test, he declares, can be regarded as free from causes of error. The combination of tannic acid, hydrochloric acid, alcohol and heat eliminates the usual drawbacks of tests for albumin.

92. **Action of Radium in Rabies.**—Tizzoni here mentions that he has been successful in saving 50 animals (rabbits) by means of radium after inoculation with rabies, which otherwise would have been fatal. Some of the rabbits have been under observation for more than a year. The curative and preventive effects of the radium were constant and directly proportional to the extent of the exposures. There is a remarkable lack of proportion, however, between the number of radioactive units in the specimen of radium and the curative effects observed, the smaller specimens being nearly as powerful as those five times larger. This shows that small amounts can be used in the clinic, free from the least dangerous tendency. This article is a reply to those who have contradicted his assertions. His latest researches, he says, only confirm his first announcements.

94. **Implantation of a Muscle to Repair a Defect in a Long Bone.**—Morelli describes a case in which he aided the healing of a rebellious osteomyelitic process and large defect by implanting part of a muscle. The cavity was in the humerus and after curetting he implanted part of the deltoid muscle, holding it in place with a few sutures. Healing was remarkably prompt and complete, and he recommends general adoption of this method of repairing a defect. Part of the belly of the muscle can be easily utilized and the procedure does not affect the functions of the muscle in the least. He is now conducting experimental research to learn the mechanism of repair afterward.

95. **Toxins Destructive of Larvæ.**—Bongiovanni has been studying the sudden destruction of the larvæ of the malaria mosquitoes which is sometimes observed in certain pools of standing water. He announces that it is the result of the action of toxins generated by a bacillus and streptobacillus, which he found constantly in such waters. These larvicidal toxins are not produced unless the water reaches a temperature of from 30 to 34 C.

96. **Diagnosis and Prognosis of Acute Cerebral Affections.**—Riva-Rocci analyzes 31 cases observed during the last 5 years and discusses the various differential points. He remarks in regard to the prognosis that in case of concussion of the brain the immediate prognosis is rather favorable, while the later should be guarded. In cerebral embolism, the prognosis depends on the heart and condition of the arteries and on the nature of the lesion. Syphilitic lesions are easily influenced by treatment, but the ultimate outcome has been worse in his experience than with lesions of other origin. The prognosis in encephalitis depends on the nature of the disease germ and the operability of the lesions.

98. **Stomach Functions After Splenectomy.**—In the case described the stomach functioning had not been specially examined before the removal of the spleen, but afterward it was found exceptionally perfect. The digestive functions were performed with rare perfection.

101. **Mercury, Etc., in Relation to Tests for "Occult Blood."**—Guyot applied the guaiac or aloin test for "occult blood" in the feces after administration of mercury, iron or other metallic drug. When large doses of mercury had been given the findings were occasionally positive. He ascribes this to the bile secreted in exceptional amounts under the influence of the cholagogue. The same results were obtained when cholagogues other than mercury were given (podophyllin or rhubarb).

103. **Action of Radium in Rabies.**—Calabrese's control research, he states, has entirely failed to sustain Tizzoni's announcements in regard to the curative or preventive action of radium in rabies. Calabrese's results were invariably negative.

NEW PATENTS.

Recent patents of interest to physicians:

827066	Therapeutic match. Augustus P. Hafner, New York.
826659	Apparatus for automatically signaling the presence of deleterious gases in the atmosphere. Henri Hauger, Paris, France.
826949	Combination carton and gauze cap. Charles R. Lindsay, Jr., Chicago.
826685	Medical irrigator. John A. Noble, San Francisco.
827030	Sanitary house. Edward J. Noblett, Chicago.
826881	Catamenial sack. David A. Powdermaker, Philadelphia.
826805	Invalids' folding table. John Scheibner, Beaver Falls, Pa.
826614	Making hydrochloric acid and calcium carbid. William H. Seamon, El Paso, Texas.
826699	Diastatic substance and making same. Jokichi Takamine, New York.
826978	Combined invalid and surgical couch. Virginia Whittington, Valdosta, Ga.
826813	Artificial leg. Chester B. Winn, Buffalo, N. Y.
826815	Suspensory bandage. Henry J. Wortz, Philadelphia.
827207	Suspensory bandage and dressing retainer. Joseph L. Boehm, St. Louis.
827610	Washing and disinfecting apparatus. Joseph G. Branch, St. Louis.
827420	Making hydrosulfite solutions. Philip S. Clarkson, Beverly, N. J.
827092	Sanitary disinfecting and deodorizing block. Joseph T. Freestone, Rock Ferry, England.
827099	Medical device. Frederick Hofmann, New York.
827693	Hypodermic syringe. Frederick W. Korb, Cleveland, Ohio.
827162	Sanitary device for closets. Albert F. Lesler, New York.
827645	Ear-trumpet. Christopher W. Levalley, Milwaukee, Wis.
827383	Aseptic syringe. Patrick J. McElroy, Cambridge, and W. A. Randall, Swampscott, Mass.
827387	Apparatus for mounting and cooling statical ozonizers. Marius Otto, Paris, France.
827396	Sterilizer and pasteurizer. Sam G. Scanlan, Madison, Wis.
827399 and 827400	Apparatus for purifying and softening water. S. L. Sheuerman and J. F. Hand, Des Moines, Iowa.
827193	Surgical instrument. George Thrash, Hominy, N. C.
827133	Massage instrument. Irving A. Weston, Syracuse, N. Y.
828178	Bed-pan. Adele E. Betts, Kensington, Md.
828268	Making sulfur trioxid. Henry S. Blackmore, Mount Vernon, N. Y.
828022	Truss. Samuel A. Donnelly, Chicago.
827720	Artificial leg. Wm. E. Irwin, Yorkville, S. C.
827721	Producing salts of oxyacids of chlorin. Arthur E. Gibbs, Niagara Falls, N. Y.
827910	Apparatus for administering liquid anesthetics. John A. Hollenberger, Hagerstown, Md.
828221	Exercising apparatus for correcting deformities. Franz Langel, Cologne, Germany.
828292	Pocket audiphone. Eugene W. Schneider, New York.
828146	Forceps. James Somers, San Juan, Cal.
827896	Micrographic microscope. Otto H. F. Vollbehr, Halensee, near Berlin, Germany.
828007	Operating table. John D. Williams, Lewisville, N. C.
828809	Belt attachment for sanitary supports. Jennie L. Bornstein, Dayton, Ohio.
828722	Atomizer and like instrument. Frank C. Dorment, Kalamazoo, Mich.
828733	Cabinent for treating diseases by light. B. F. Fuller, El Reno, Okla.
828311	Vaccine shield. Christian Heidemann, St. Louis.
828651	Suspensory. Max B. Hirsch, Chicago.
828611	Capsule filling machine. Jasper F. Kobler, Niagara Falls, N. Y.
828754	Bed-pan. John Lopitsch and F. Naumann, Green Bay, Wis.
828758	Valve or stopper. Christian W. Meinecke, Jersey City Heights, N. J.

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Address

THE ART OF MEDICINE.*

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Almost all the phases of medical thought are so thoroughly discussed in the books of specialists and in the periodical press that the general practitioner who has neither time nor opportunity to pursue new lines of investigation finds difficulty in selecting a theme which will not be already familiar to the members of this learned society. I have, therefore, chosen a subject which may invite criticism and which shall be suggestive, even if not instructive. Is the art of medicine improving? This question would be answered affirmatively, at first thought, by the majority of physicians. Yet there are many thoughtful men who, while admitting that scientific medicine has made wonderful progress during the last half century, are still constrained to believe that the Art as distinguished from the Science has deteriorated.

SCIENTIFIC RESEARCH AND MEDICAL PROGRESS.

Until recently the path of medical investigation might be compared to a plateau without obstructions, where the wheels of progress were unimpeded and where progression, though rapid, was often in a circle, ending where it began, or so near it that actual advancement was scarcely discernible. It is obvious that in the cycles of the ages substantial gains have been secured. In recent years the growth of the sciences has been so luxuriant that achievement has been slow, sometimes impeded and always laborious.

Isolated facts in biology, histology, chemistry and bacteriology have been collected with such industry and rapidity that an attempt to classify them and to draw practical conclusions causes discouragement and leaves the mind in doubt and uncertainty.

The medical journals teem with discussions of scientific subjects and devote little space to matters pertaining to the treatment and cure of disease. One who would venture to say that he did not believe in the germ theory of disease would be considered as an archaist, and yet none of us believe that a germ is the etiologic factor in all diseases. There are comparatively few maladies in which the specific germ has been isolated, and, therefore, our boasted scientific progress has only shed light on a few of the problems which daily claim our attention. Most of our useful knowledge has been gained from the accumulated experience of our ancestors and contemporaries and not from modern research.

What is disease? The Century Dictionary gives this definition: "A marked, painful or otherwise distressing physical condition, acute or chronic, which may result either in death or in a more or less complete return to health; deviation from the healthy or normal condition of any of the functions or tissues of the body."

What we know about disease of the nervous system has been chiefly acquired by close observation of the clinical symptoms, aided by scientific methods of investigation. Disorders of the chylopoietic viscera manifest themselves by their syndrome, and do not readily yield their secrets to microscopic, bacteriologic or *x*-ray investigation. The pathologic conditions resulting from disorders of the ductless glands may be studied scientifically, but such study has hitherto shed little light on their etiology or treatment. Skin diseases come in the same category, except the few of parasitic origin. Functional derangements elude instruments of precision and often baffle the experienced physician.

For preventive medicine scientific reasearch has done much; for the art of medicine the triumphs of modern investigation are limited. Eliminate diphtheria antitoxin and perhaps antitetanic serum and the other remedial agents which have been used on account of the discovery of specific germs are of questionable utility. When germs are known to be the etiologic factor, science and common sense have suggested methods more or less successful for preventing their entrance and for neutralizing the effects of the toxins which they produce. So far as we are enabled successfully to accomplish these objects, we acknowledge that science has blazed the way for our guidance, but she has contributed nothing which has shortened the duration or lessened the morbidity of scarlet fever, measles, whooping cough, influenza, typhoid fever, etc. What vaccination has done for smallpox is the result of observation and experience, not the result of the discovery of scientific facts or their application to the prevention or cure of disease.

Therefore, I question the wisdom of so framing the curricula of medical colleges that a large part of the time which might profitably be spent in the study of the symptomatology of diseases and perverted functions is devoted to a study of the multiform and varied appearance of germs, which as yet have been proved to be the cause of but few of the maladies which affect humanity.

For the treatment of these distempers accumulated experience is our only reliable guide; and the time which should be given to appropriating this experience is devoted to bacillus hunting or to that which yields infinitesimal results in enabling the student to battle with the many problems which will engage his attention in practice. What use can be made of the physician's knowledge of *Staphylococci, Streptococci* or *B. pyocyaneus* in his diagnosis or treatment of neurasthenia, hysteria or neuritis? What benefit will the various theories of immunity be to him or his patient in making a differential diagnosis between gastric ulceration and cholelithiasis? How can he apply his theories of phagocytosis in differentiating mitral insufficiency from aortic regurgitation?

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* Oration on Medicine before the Iowa State Medical Society.

The study of the side chains of immunity is interesting, but it affords no assistance in distinguishing one from another the numerous family of skin diseases. Scientific research has done little to elucidate the disorders of the special senses, and less to enable us to understand the pathologic changes which affect mentality. How mental states affect bodily functions and how physical conditions react on mental processes seems to be beyond the pale of science, and yet how perplexing are the problems which they present for our consideration. Until we understand the force evolved in procreation, science will grope in the dark when grappling with cellular or nervous dyscrasiæ. Until we know something of the mind, or until it can be shown that it has a material organism discernible by the physical senses, science will avail nothing in elucidating the influence of mind over matter.

No analyst or synthetist has yet succeeded in bringing within our purview the nature of the force generated by impregnating the female germ or discovered the potentiality thus inaugurated which starts the cellular multiplication necessary to produce the perfect plant or animal. No instrument of precision, however great its power, and no form of light, electrical or chemical, has enabled us to observe or detect the elements of which thought is composed. We can observe the phenomena which both life and mind exhibit, but we do not understand what they are. The physical effects which life and mind produce may be learned by observation and experience, not by test tube, crucible, x-ray or microscope.

The conclusion is, therefore, inevitable that much of the progress in the art of medicine must come from close observation as well as from the meritorious and painstaking work of the pure scientist.

PROVINCE OF SCIENTIFIC RESEARCH.

Let me be not misunderstood. I do not disparage the aid which the collateral sciences have contributed to medical advancement. Research has done much to explain the reasons for the effect of the means which had been used empirically in the treatment of disease. Science has shed light on problems which were unsolvable before modern methods of investigation were introduced; but she has not supplanted the knowledge gained through centuries of experience.

In my opinion, her province is to aid, elucidate and explain, but not to set aside what has already been established. For example, the beneficent effects of vaccination were proven before any theory of immunity was exploited. Quinin had long been employed and its uses well understood before the *Plasmodium malariæ* was discovered. Iodin was used to arrest suppuration before the pus-producing cocci or bacilli had been thought of and before the words toxemia and intoxication found a place in medical nomenclature.

My contention is not that the sciences should be studied less, but that symptomatology and therapeutics should be studied more, so that instead of waiting for the proofs and demonstrations of science our art may be promptly used for the arrest and cure of even the diseases in which the microbe has been proven to be the etiologic factor.

> "Science still stops to reason and explain,
> Art claps the finger on the bleeding vein."

Our diagnosis is made from subjective and objective symptoms in 95 per cent. of our cases, and when scientific methods are invoked they generally confirm the conclusions reached by the old, reliable methods. To delay action until our opinions are confirmed by the scientists often causes us to lose the golden opportunity for combating and arresting disease. The symptoms of diphtheria are so pronounced that deferring treatment and not enforcing quarantine until a return can be obtained from the state bacteriologist is so fraught with danger that it might be characterized as criminal negligence. If in typhoid fever the proper dietetic and hygienic methods are not enforced until proof is afforded by the agglutination test or finding the bacillus, the mortality of the disease will be greatly increased.

The best results in the treatment of pulmonary tuberculosis are obtained when treatment is instituted before the bacillus has made its appearance, and this treatment should not be abandoned or relaxed even when the microscope negatives the diagnosis based on subjective symptoms and the knowledge gained by percussion and auscultation. During the last six months I succeeded in restoring a patient to health in whom a learned physician denied the existence of consumption, because he could find no bacilli. I have seen a patient die of tuberculosis within the last year when frequent examinations by the state bacteriologists gave negative results. I experienced the greatest sorrow of my life because two competent bacteriologists gave negative reports in my daughter's illness. I had diagnosed consumption; but, accepting the dictum of the time, "No bacilli, no tuberculosis," my efforts were relaxed and mourning and sorrow followed.

From these facts and hundreds of others which could be adduced it is obvious, I think, that it is better for the physician and safer for the patient to rely on the evidence gained by close observation, trained special senses and accurate knowledge of the symptoms of disease than to pin his faith solely to the revelations of the test tube, the x-ray or the microscope. These last have their uses in confirming opinions already formed or in causing us to reject opinions based on insufficient evidence, but they should not supplant the old and long-tried methods of investigation.

The tendency of the age is to extol the new and decry the old. A new fad or fancy propounded in a modern postgraduate school is seized with avidity, and too often influences practice to the detriment of the patient and the injury of the profession. As proof of this I might instance the indiscriminate use of the coal-tar preparations in recent times. I have seen them used with fatal effects in pneumonia, typhoid fever, smallpox, measles, diphtheria and septicemia.

IS THE ART OF MEDICINE DECLINING?

The practice of medicine is but the exercise of common sense, educated by acquisition of the learning and experience of our predecessors, fostered and strengthened, but not displaced, by modern methods. A knowledge of the functions of all the organs of the body is the first requisite. A knowledge of their derangements is the second, and a knowledge of the best methods of restoring them to their normal condition is the third and last, but not the least, in importance. Is our art improving or declining in that last most important particular?

I am saved from the necessity of answering this question by the timely publication of an address by Dr.

Billings[1] and the symposium on the proprietary medicine and the nostrum evil before the Chicago Medical Society.[2] To these articles I would direct the attention of all who are practicing medicine and prescribing remedies not in accordance with the teachings of the standard works on therapeutics and the directions of the Pharmacopeia, but in accordance with the literature supplied by the manufacturing chemists and the wise (?) and confident instructions of their traveling salesmen. Wisdom and experience which has not been gathered within the last decade is seldom accredited. Unless the views of the great authorities, like Watson, Austen Flint, Sr., Sir Astley Cooper or Valentine Mott, are reinforced by the teachings of some postgraduate professor or other evanescent luminary, their great names would soon pass into oblivion. The commercial instinct of some manufacturer might save them from such a fate by attaching their names to the recommendation of a nostrum or to a "patent medicine" advertisement. This growing disposition to ignore experience, together with the modern craze for bacillus hunting, and the manifest ambition of so many young practitioners to become great surgeons, even when they could not differentiate a dermatitis from smallpox, or measles from chickenpox, are, I think, among the causes which lead so good an authority as Sir Dyce Duckworth to say: "The art of medicine is fast declining."

The Incompetent Diagnostician.—This opinion is incidentally confirmed by Dr. Frank Billings,[1] of Chicago, who says:

> A large number of the medical profession do not practice medicine rationally. They have no clear conception of disease process. They do not study and examine the patients. No diagnosis is made at all or only from subjective conditions. Symptoms are treated. Headache, backache, indigestion, albuminuria, cough, constipation, dysmenorrhea, insomnia, nausea, dyspnea, etc., all call for drugs with no attempt to get at underlying causes.

This unscientific, not to say irrational, tendency is fostered, if not engendered, by the vast number of nostrums "strictly ethical" advertised extensively in medical journals and forced on the attention of the profession daily by those who make their living and the fortunes of their employers out of our credulity. Thus, we have headache tablets, cystitis tablets, gonorrhea tablets, dyspepsia tablets, heart tonics, liver tonics, etc., etc., besides medicines with the many uses of Frelich's tonic, for instance, which is advertised to cure "paralysis, vertigo, epilepsy, Bright's disease (early stages), neurasthenia, debility, debilitating losses, mental failure, spinal weakness, nervous dyspepsia, all trouble affecting the brain nerve centers and spinal cord, and as a safe and powerful aphrodisiac." These specifics or antidotes to so many diseases are, I fear, becoming antidotes to thought and reasoning and observation, which are the essential qualifications of the medical practitioner.

LOSS OF LOVE AND ESTEEM OF PATIENTS.

The art of medicine is, I think, declining also in the very essential element of winning and holding the love and esteem of our patients. Without this love and esteem we can not exert the psychical influence so essential in sustaining the hopefulness and fortitude of the suffering and afflicted. An important function of the family physician is to amuse and support the spirits and hopefulness of the patient, so as to give Nature the best opportunity for curing the disease.

It is unlikely, I think, that the waning affection of the people for their family physician is caused by the want of assiduity or the lack of interest of the medical attendant. No one except the patient and his family is so deeply interested as the physician. No one gives the thought and endures the anxiety which he does; and yet it can not be denied that the gratitude and affection which he once received is not given with the ungrudging generosity with which it is given to the trained nurse. The payment of the fee, or the refusal to pay, discharges the obligation to the physician, and gratitude, if any is bestowed, assumes the form of a "lively sense of benefits to come."

The best years of his life may be given in the most self-sacrificing manner to the service of the people of any community and his departure will bring no manifestations of appreciation. His skill and motives may be questioned by those he has benefited, without their being told, in the words of Whitcomb Riley, that they are "the most ungratefull'est of men." The oldest and most painstaking physician may die and there will be no general manifestations of sorrow to equal that described by Will Carleton:

There's a gathering in the village, that has never been outdone
Since the soldiers took their muskets to the war of '61;
And a lot of lumber wagons near the church up on the hill,
And a lot of country people, Sunday-dressed and very still.

. . . .

But perhaps it still is better that his busy life is done;
He has seen old views and patients disappearing, one by one;
He has learned that death is master both of Science and of Art;
He has done his duty fairly, and has acted out his part.
    And the strong old country doctor,
    And the weak old country doctor,
    Is entitled to a furlough for his brain and for his heart.

What are the causes for this waning affection? Is it that we fail to bring the philanthropic aspect of our labors before the notice of the public? We do not parade our philanthropy, but let a great calamity, like the San Francisco horror or even the Pomeroy cyclone, come on us and the services of the whole profession will be given gratuitously. Is it not possible that the personal services which we once rendered and which are now relegated to the trained nurse had much to do with cementing the bonds of friendship between ourselves and our patients?

Perhaps our devotion to science and our desire to ascertain the cause of suffering lead the friends to surmise that our interest is greater after the death of their loved ones than it was before. It may be that our delay in reaching conclusions and not applying remedies until we have exhausted the resources of science in discovering the cause of the symptoms leads them to think that we are more interested in the scientific aspect of the case than we are in the welfare of the patient.

However this may be, let us remember that our mission is to save life when possible, prolong it when we can, and, if we can not cure, to alleviate pain and suffering, to "soothe the pillow of the dying and smooth the pathway to the grave."

"This be our task; Henceforth our path is straight,
Wherever anguish is, or grief, or pain
There be our places; Then let us do our part.
Striving to antidote death's deadly bane
By our divine and ever-blessed Art."

Treatment of Obesity.—P. H. Sunde, Los Angeles, in the *Southern California Practitioner*, declares that to give medicines in obesity and to disregard the diet and other modes of living, is simply ridiculous. Medicines at best, he states, must only be regarded as secondary measures.

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[1] "The Medical Profession and the Medical Journals in Relation to Nostrums," published in The Journal A. M. A., March 10, 1906, pp. 715-719.

[2] The Journal A. M. A., May 5, 1906, pp. 1333-1345.

Original Articles

THE DIETETICS OF OBESITY.*

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The reduction of obesity is an important therapeutic task, not so much when considered in the light of a tribute to the vanity of the afflicted, but when regarded as a necessary step toward removing adipose tissue that is producing disagreeable or dangerous complications about important organs, notably the heart and arteries, the bronchi, the digestive apparatus and the nervous system. It will often be found that these complications only disappear when the fat is reduced. We see here similar conditions as in diabetes, where, too, many of the complications rapidly disappear when the sugar is reduced; whereas in diabetes, however, the causes that determine these complications are chemical, in obesity they are mechanical in character.

The methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for with a decrease of the intake of fat-forming pabulum and an increase of its destruction by exercise the fat content of the body must needs dwindle. These measures may, to advantage, be enforced by certain hydrotherapeutic and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity.

One can conveniently distinguish three degrees of obesity that have been aptly characterized by a German writer as the enviable, the comical and the pitiable stage, the first presenting itself as a pleasing rotundity, the second as a jovial embonpoint of the Falstaff type, the third as a sad, unwieldy and, to our Caucasian tastes, disgusting deformity. Each of these three forms requires particular treatment. In the first form no attempt need be made to reduce the amount of fat, but every effort should be put forward to prevent its further development, particularly if premonitory signs of complications about the thoracic or abdominal organs begin to make their appearance. In the second and third forms, however, it becomes necessary to institute more or less energetic restrictions with the object in view of causing a loss of fat.

The laity and many physicians to this day direct their attention chiefly to the quality or the preparation of the food in reducing obesity. Certain articles are said to form fat and others not. This idea is erroneous. Broadly speaking, carbohydrates and fat foods should be reduced, and not the albumins. This rule is to be observed not because albumin forms less fat than carbohydrates or fats, but because the reduction of the albumin below certain normal average requirements, as will be explained below, is a dangerous and precarious procedure, whereas the fats and carbohydrates can be much reduced without much detriment to the individual.

One may say broadly and with certain reservations that will be presently discussed that any article of food can form fat, according to its calorie value; that the introduction of more calories either in the form of albumins or fats or of carbohydrates than are required to maintain normal nutritive equilibrium may lead to the deposit of fat in the tissues, whereas the introduction of less calories leads the organism to promptly attack chiefly its fat reserve to make up the calorie deficit.

THE SCIENCE OF REDUCTION CURES.

The first step, then, in instituting a reduction cure should be to determine the normal calorie requirement of the individual, assuming that he were not obese. This can be done by consulting the following table on which will be found the normal average weight for individuals of a certain height, both men and women:

Age (Years)	Men		Women	
	Height (In Meters)[1]	Weight (Kilogrammes)[1]	Height (in Meters)	Weight (Kilogrammes)
0	0.5	3.2	0.49	2.91
1	0.7	9.45	0.69	8.79
2	0.77	11.34	0.78	10.67
3	0.86	12.47	0.85	11.79
4	0.92	14.23	0.92	13.00
5	0.99	15.77	0.98	14.36
6	1.05	17,24	1.10	16.01
7	1.11	19.10	1.15	17.54
8	1.16	20.76	1.18	19.08
9	1.22	22.65	1.19	21.36
10	1.28	24.52	1.25	23.52
11	1.33	27.1	1.30	25.7
12	1.39	29.8	1.35	29.8
13	1.44	34.4	1.40	32.9
14	1.49	38.8	1.45	36.7
15	1.55	43.6	1.49	40.4
16	1.59	49.7	1.54	43.6
17	1.63.	52.9	1.56	47.3
18	1.66	57.9	1.56	51.0
20	1.67	60.1	1.57	52.3
25	1.68	62.9	1.58	53.3
30	1.68	63.7	1.58	54.3
40	1.68	63.7	1.58	55.2
50	1.67	63.5	1.53	56.2
60	1.63	62.9	1.52	54.3
70	1.62	59.5	1.52	51.3

By multiplying this weight by 30 to 35[2] the approximate caloric requirement can be obtained.

Assuming that the patient were 1.7 meters tall, then, according to the table he should weigh about 61 kilos and would normally require about 61 × 35 = 2,135 calories a day.

The diet should now be arranged in such a way, with the aid of tables giving the caloric value of different articles of food, that this number of calories is furnished, and not more nor less. This constitutes the mildest form of underfeeding, the caloric intake being insufficient only relatively, i. e., as compared to the abnormal bulk of the patient. If the patient does not lose weight on such a diet containing the full normal caloric requirement, then it is necessary to reduce the caloric intake still further.

THE THREE DEGREES OF REDUCTION CURE.

It is convenient in obesity, as in diabetes, to arrange three degrees of reduction cures. In the first degree the caloric requirements are reduced to 4/5 of the normal, in the second to 3/5, and in the third to 2/5. Calculating this for an individual, e. g., requiring 2,500 calories as the normal, the first degree calls for the administration of foods possessing a caloric value of about 4/5 of 2,500 or 2,000, the second 3/5 of 2,500, or 1,500, and the third.

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* Read before the Section on Medicine of the Illinois State Medical Society, Springfield, 1906.

[1] One meter = 39.37 inches or 1 yard 3 1/3 inches (English). One Kilogramme = 2 lb. 3 oz. 2 dr. (avoirdupois).

[2] For measuring the nutritive value of the different classes of foods, the term "calorie" has been imported from the realm of physics. A calorie is that amount of heat that is needed to raise the temperature of 1 kilo of water 1 degree (Celsius). Each article of food, it has been found, in process of metabolism (i. e., of assimilation, oxidative disassimilation and elimination) in the body generates a definite quantity of heat, or the mechanical equivalent of this heat in labor. Expressed in calories:

1 gr. of proteid furnishes....................4.1 cal.
1 gr. of carbohydrate furnishes...............4.1 cal.
1 gr. of fat furnishes ....9.3 cal.

It has further been determined that a normal adult requires from 30 to 35 calories a day per kilo of body weight, and that these calories can be furnished by any one or all of the three classes of food vicariously. (Croftan: Clinical Urinology, page 73.)

of about 2/5 of 2,500, or about 1,000. The popular cures of Banting, Oertel, Epstein, Hirschfeldt and others possess a calorie value lying between 1,100 and 1,600 only; they are consequently reduction cures of the third degree and, as will be presently shown, usually far more severe than is safe or necessary.

The rapidity with which fat is lost in these three degrees of reduction cures varies.

In the first degree the loss is usually very slow, the patients rarely losing more than two or three pounds a month, and even this slight reduction can only be accomplished if they indulge at the same time in considerable physical exercise. This four-fifths diet is useful chiefly in preventing the further increase of fat in subjects who are showing a tendency to obesity. It is eminently suitable for continued use and does not require any great sacrifice on the part of the patient. It is hardly ever necessary to calculate the caloric value carefully in this light form, for all one has to do is to allow meat only once a day, to reduce the amount of fat and starchy and sweet foods somewhat, to restrict or forbid alcoholic beverages, to give "filling" foods of small caloric value (see below) in abundance, to restrict the liquid intake to 1 to 1¼ liters of fluid a day, and to order abundant physical exercise.

The second degree is also particularly useful for continued use. It should be adopted (1) for very strong and very fat subjects who want to get rid of surplus fat and can safely indulge in very active physical exercise; (2) for individuals who are not only fat, but in whom complicating disorders about the heart, arteries, bronchi or digestive apparatus render it impossible to "work off" fat by exercise, so that the necessary reduction of the fat must be brought about in the beginning, i. e., until the complications improve or disappear, by dietetic restrictions alone; (3) for strong fat individuals who can not at once tolerate a third degree reduction cure without developing alarming symptoms of weakness, particularly about the circulatory and muscular apparatus; in the latter class of cases the three-fifths reduction cure is used as a transition diet to the third degree and is intended to gradually accustom the patients to restrictions of a more severe order. This second degree, too, leads only to relatively slight and slow losses of fat, more than six to ten pounds rarely being sacrificed a month.

The third degree, finally, is a rapid reduction cure. It must be carefully supervised and would best be carried out in an institution. Here we frequently find that the loss of fat is rapid in proportion to the obesity of the individual, showing that it is the surplus adipose tissue that is being sacrificed and not the albumins of the body. Combined with systematic exercise and drink restriction (see below) as much as thirty pounds a month can be lost with safety. A reduction cure of the third degree should never be carried out for indefinite periods, and six weeks is the longest time during which this serious restriction of the patient's nourishment should be allowed. In many cases the intermittent plan will have to be adopted, i. e., the patients are placed for four to six weeks on the rigid plan, then for a month or two on the second degree, and then back again to the rigid diet until the desired loss of flesh has been produced. It will be seen that here very similar principles are adopted as in the reduction of diabetic glycosuria.

While it is true that energetic starvation often rapidly leads to a loss of weight greater than that which can be accomplished by more gradual and more moderate means, such rapid reduction cures, as typified, for instance, by the Banting system, which is so popular among the laity, are rarely without serious danger to the various organs that are commonly involved in advanced degrees of obesity, nor are the results, broadly speaking, permanent. In very young people and in very old people rapid reduction cures should be altogether eschewed; for in children and in adolescent subjects irreparable damage is often done, growth stunted and serious complications engendered, whereas in old people the results are usually very unsatisfactory and never without danger, while the effects at best are exceedingly transitory.

THE ART OF REDUCTION CURES.

The question in regard to the kind of food that should be allowed in instituting any reduction cure and its mode of preparation has been the subject of much controversy for many years. The greatest care should be exercised, as mentioned above, not to attack the albumin content of the body; hence it is important to give the known minimum necessary to maintain adequate nutrition—and not less—to all cases in order that the patients may not be forced to consume the albumins of their proper tissues. This minimum lies somewhere between 60 and 80 grams a day, so that this amount, which corresponds approximately to 400 to 600 grams of lean meat, at least should be invariably supplied. No difficulty should ever be experienced in meeting this requirement. Notwithstanding the claim of some doctrinaires, excessive meat feeding is not only unnecessary, but may be directly harmful in instituting reduction cures. A great deal will depend on the tastes and the previous habits of the patients. If they have not been excessive meat eaters, there is no reason why they should be forced to eat much meat. If they have been abundant meat eaters, they may safely continue meat eating, provided the intake is not so large that the total caloric value of the food is increased above the prescribed and calculated limit.

The next question to decide is whether the carbohydrates or the fats are to be chiefly restricted. Here, again, a very virulent controversy has been going on for many decades. This is not the place to enter into a discussion of the merits or demerits of the different theories advanced. From a practical standpoint it is best to reduce the fats and to give relatively large quantities of such carbohydrate foods as possess bulk; for the latter, as a rule, incorporate a small caloric value, while, at the same time, fully satisfying the patient. The idea that fat forms fat in the body more than carbohydrate has been shown to be erroneous; carbohydrates, in fact, seem to be more readily deposited as reserve fat in the tissues than the fat that is eaten.

To summarize, therefore, the diet in reduction cures should be arranged in such a way that the individual receives an amount of albuminous food, incorporating at least 60 to 80 grams of albumin. This is necessary in order to maintain nitrogen equilibrium and to protect the tissue albumins. The remaining number of calories that are to be supplied may be vicariously furnished either in the form of fats or carbohydrates. Of the two the carbohydrates, however, especially if they are voluminous, should be given the preference.

The distribution of the meals is sometimes of importance. The best plan is to give three meals during the day and, in addition, two or three small meals between, the latter preferably consisting of articles like bouillon, coffee or a little fruit, that all possess a small caloric value. They serve the purpose of keeping the patient comfortable, avoiding disagreeable sensations of weakness and gastric emptiness and at the same time preventing the patient from becoming too ravenously hungry at meal times and consequently overeating.

THE RESTRICTION OF LIQUIDS.

One other important principle must be observed in feeding diabetics, viz.: the liquid intake should be restricted. Nothing is easier than to rapidly reduce the weight of an obese subject by restricting the liquid intake to a minimum. This loss of weight becomes particularly apparent during the first four or five days of the cure. It is due, in the first place, to a direct loss of water from the tissues; in the second place, to the fact that an individual drinking very little water does not eat as much as one taking a normal amount of liquid. The restriction, therefore, in the beginning is a useful procedure more for physic that for physiologic reasons; for the patients, when they notice how rapidly they are losing flesh, acquire that confidence in the method that is so important if they are to carry out the more or less disagreeable and stringent orders that must be enforced. No permanent effects, however, are obtained from this restriction of liquids, and the patients regain the lost weight as quickly as they lost it so soon as they begin to increase water drinking. Nevertheless, even in cases in which the restrictions are to be continued for a long time, a reduction of the total liquid intake to about 1 to 1½ liters in the 24 hours is a useful adjuvant. It renders it easier for the patients to live up to their restrictions and it is also beneficial in advanced cases of obesity with complications, because it spares the heart and the kidneys. In cases, finally, that suffer from excessive sweating, the restriction of liquids is a very useful procedure to remove this disagreeable symptom.

SPECIAL ARTICLES OF FOOD.

Alcohol may be administered to obese subjects, provided the caloric value of each gram of alcohol is carefully included in the calculation. It should be allowed particularly in cases that have been accustomed to a little alcohol all their lives; for here withdrawal of alcohol is not only an unnecessary hardship, but may even constitute a source of danger, especially if a weakened heart is suddenly robbed of its accustomed stimulus.

In selecting meats for obese subjects, lean varieties should be given the preference. Lean meat contains about 20 per cent. of albumin and 1.5 to 2.0 per cent. of fat, so that 100 grams of lean meat, weighed raw, furnish about 100 calories. It is necessary, of course, that the meat should be prepared in a very simple way, i. e., it should be either stewed, roasted or broiled. All meats that are prepared by frying or served as ragouts or with bread crumbs, sauces and gravies contain incalculable amounts of fat, so that their caloric value may assume very large proportions. It is always best, therefore, to forbid the use of any but lean meats, plainly prepared.

Among the animal foods that an obese subject can eat with impunity are a number of delicacies that are taken only in small quantities and, on account of their flavor, are very agreeable additions to the diet; thus, according to a table published by von Noorden, 100 calories are contained in:

45 grams of caviar.
40 grams of sardines.
100 grams of boiled lobster.
160 grams of crab meat.
120 grams of oysters (equal to about 14 to 18 oysters of medium size).
25 grams of paté de foie gras.

Cheese also serves a useful purpose, for, taken even in very small quantities, it is very filling. Thus Swiss cheese. American cheese, Cheddar and Chester cheese contain about 28 per cent. of albumin, 30 per cent. of fat and 2 per cent. of carbohydrate, and 25 grams of these cheeses furnish about 100 calories.

Milk is a very useful addition to the bill of fare of obese subjects, provided its caloric value and the water it contains are included in the calculation. One hundred c.c. of milk furnish about 60 calories. This amount can safely be allowed with tea and coffee. Buttermilk is still more useful, for 100 c.c. of this only contain from 40 to 45 calories and a whole quart about 250 calories.

Thin soups and bouillon and beef tea are exceedingly useful articles, for their caloric value is practically 0. They are filling, they taste well, and the patient eating a large plate of bouillon imagines that he is getting something of value to eat.

Rich sauces, as stated above, should be absolutely forbidden, because they are made of large quantities of fat, flour, eggs, so that their caloric value can hardly be calculated. Articles made of flour or rice, like noodles and macaroni, puddings, etc., should not be allowed in the strict reduction cures. In the second and third degrees, however, small quantities may be permitted as a relish. If they are given, each tablespoonful of these articles should be figured as representing about 30 calories.

Potatoes are also permitted, provided they are given in small quantities and are either baked, boiled or mashed. One hundred grams of potatoes contain about 1.5 per cent. of albumin and 18½ per cent. of carbohydrate and possess a nutritive value of 80 calories.

Among the vegetables, those varieties that grow underground as well as those that grow in pods should be forbidden or restricted, because they contain very large and varying amounts of carbohydrates. If they are permitted at all in the lighter reduction cures, their caloric value should be carefully determined. All the other vegetables are exceedingly useful articles of diet in obesity, for they possess a very small caloric value in proportion to their bulk and consequently fill the stomach and rapidly produce a sense of satiety; incidentally they act favorably on the function of the bowel. They should be served only boiled in salt water, without the addition of cream, butter, flour, etc. If flour or fats are used in preparing vegetable dishes, the amounts should be carefully weighed and their caloric value considered.

Fruits of all kinds, with the exception of bananas, sweet grapes, figs, dates, raisins, are permitted without reserve; they, too, are very filling and act well on the digestive apparatus and constitute a great relish without, at the same time, possessing a high caloric value. About 100 calories are contained in 220 to 250 grams of fruit.

The use of bread is permitted in obesity, only, however, if the bread is carefully weighed and its caloric value considered. Here the same rules obtain as in the feeding of bread to diabetics, i. e., those varieties that are made of vegetable albumin (gluten breads, aleuronat bread, etc.) are particularly useful if they are baked so as to become fluffy and voluminous, for they satisfy the eye and the mind and are filling without possessing a very large caloric value.[3]

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[3] Most so-called diabetic breads contain approximately 50 per cent. of carbohydrate. The vegetable albumins (aleuronat, roborat, plasmon, gluten) all contain about 5 per cent. of carbohydrate. These breads are made from such flours plus a certain amount (one to four parts) of ordinary flour. They should, hence, only be used as an equivalent for white bread in the proportion of about 4 to 1. Their indiscriminate use, which is so popular among the laity, who imagine that these breads can safely be taken ad libitum, is, therefore, to be condemned as dangerous. They fulfill a useful purpose, however, owing to the fact that much more of the various diabetic breads can be eaten as of ordinary white or rye bread and still no greater amount of carbohydrate be administered.

A great many mineral waters enjoy deserved popularity in the treatment of obesity, notably the waters of Kissingen, Vichy, Homburg, Carlsbad and Mariensbad. It is a futile task, however, to attempt the reduction of obesity by the use of these waters alone. It is possible, of course, by producing profuse watery diarrhea with the aid of these waters to cause a considerable loss of water from the tissues and hence a reduction in the weight of the patient. This practice is of some use for psychologic reasons, because the rapid loss of weight in the beginning of the treatment makes a great impression upon the patient and renders him more willing to follow directions later on. The indiscriminate use of mineral waters is, however, to be condemned; for if the diarrhea is allowed to persist too long the effect is without doubt weakening, and this practice, moreover, especially in obesity, reacts unfavorably upon the blood pressure and the heart.

These patients, it is true, do very well, as a rule, in resorts in which these waters are taken, but the effects are to be attributed only in a very small part to the drinking of the particular water (witness the indifferent effects obtained from the use of these waters of salts at home) and in much greater part of the careful and strict regulations in regard to exercise,[4] general mode of life and diet that the patients undergo much more willingly and conscientiously at a watering place than at home. Fully as useful, probably safer, and by all means cheaper is the treatment of obesity in an institution where a like control can be exercised over the patient's diet and habits.

100 State Street.

TREATMENT OF PROGRESSIVE ATROPHY OF THE OPTIC NERVE DUE TO ACQUIRED SYPHILIS.

BY SUBCONJUNCTIVAL AND INTRAVAGINAL INJECTIONS OF SUBLIMATE OF MERCURY.*

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The treatment of syphilitic atrophy of the optic nerve is a subject which taxes all our patience and ingenuity. So universally unfavorable is the prognosis that the ophthalmic surgeon is ready to grasp almost any means which promises a solution of the problem. All surgical interference with the optic nerve itself, such as incision of the nerve sheath in several places, or elongation of the nerve by stretching, has yielded such imperfect and inconstant results that it can not any longer be recommended and has been abandoned. The same may be said of sympathectomy, which has so recently been vaunted as a remedy for atrophy. The constant current, and even static electricity, have been faithfully tried and have usually proved unavailing. Much has been claimed for the treatment by vibratory massage, but I have never personally known of a case of atrophy which has been permanently, or even temporarily, benefited by this method.

In advanced cases of syphilitic atrophy of the nerve I believe mercury administered internally to be useless, and it may do real injury. Roborant treatment, directed to the general health, in these cases sometimes aids in retarding the degenerative process.

As we all know, there are clinically several forms of atrophy of the optic nerve: the partial, the total, the stationary and the progressive. The cases of partial atrophy are generally stationary. The instances of progressive atrophy met with in syphilitic patients are the most unfavorable. These cases are always bilateral, and the pupillary disturbance, or loss of reflex action of the iris, is often observed within the first year after infection has occurred, and may, therefore, be regarded as a warning of impending atrophy. It may accompany beginning optic atrophy before the loss of sight is sufficient to explain it. The evolution of an optic atrophy is very irregular, and total blindness is often complete in one or two years, though occurring usually sooner in one eye than the other; and some central fibers may remain intact during the remainder of the patient's life. It is in this small minority of cases that we are prone to attribute the arrest to whatever method of treatment we are at the time employing. It is impossible to say how many of these cases of arrest of the degenerative process are due to the treatment adopted, and a therapeutic effect can only be expected when the optic nerve fibers have been merely compressed by the hypertrophy of the connective tissue framework of the nerve.

USE OF SUBLIMATE INJECTIONS.

Subconjunctival sublimate injections have been employed in the treatment of optic nerve atrophy by various authorities, but hitherto with but little success.

Darier is probably correct in saying that they are contraindicated for the time being whenever the absorption of the fluid by obstructed lymph-channels is rendered difficult or impossible by a circulatory stasis, for in such cases they are irritating and more harmful that useful. It is going too far, however, to say that as an anti-syphilitic method subconjunctival sublimate injections have a rapid and intense action on specific ocular manifestations at all stages, for in most of the chronic cases of deep-seated eye trouble, notably of the optic nerve, this does not hold true. The statement that the chief contraindication to subconjunctival injections lies in an engorgement of the circumcorneal circle of vessels is true only of the lesions of the anterior parts of the eye, and does not apply to optic nerve atrophy.

The subconjunctival injection of the various salts of mercury is more or less painful, the cyanid being the most so. In endeavoring to prevent or diminish the pain of mercurial injections do not add a solution of cocain to the sublimate solution, for the cocain is decomposed at once. Akoin lessens the pain, but is precipitated by the least alkalinity of the solution. It is better to inject a few drops of a 5 per cent. solution of cocain under the conjunctiva five or ten minutes before the sublimate injection is made. If akoin is used a 1 per cent. solution is of sufficient strength.

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[4] The element of muscular exercise is second in importance only to the regulation of the diet in obesity. It can readily be calculated that a certain amount of muscular exercise causes a loss of a certain amount of fat. Oertel, who has studied, more than anybody else, the effect of graduated exercise, especially graduated hill climbing, on obesity and the action of the heart, based his original recommendations on definite calculations as follows: Assuming that a man weighing 60 kilograms ascends an elevation each day of 100 meters, then the labor performed is equal to 60 × 100 = 6,000 kilogrammeters; as a matter of fact, much more energy is expended, for the external labor produced represents only about 30 per cent. of the total energy developed; thus such an individual in a day develops fully 20,000 kilogrammeters of energy. As 425 kilogrammeters of muscle work require 1 calorie, 20,000 kilogrammeters require 47.06, and this amount of caloric value is furnished by $\frac{47.06}{9.3}=5.06$ of fat. It will be seen, therefore, that such an individual must consume 5.06 of body fat to raise his body 100 meters. It is immaterial, of course, according to the laws of the conservation of energy, whether or not this elevation is reached within a short time or within a long time, by a vertical path or by a long series of inclined paths.

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Zossenheim[1] has used injections of sublimate in many cases of optic nerve atrophy, but reports not a single case of encouraging results.

Dufour prefers sublimate to cyanid of mercury, of the strength of 1 to 3,000, and never injects more than half a syringeful. He keeps his patient in bed for two days with both eyes bandaged. If there is no improvement after the eighth injection he gives up the treatment.

Senn[2] prefers the cyanid of mercury to the sublimate in cases of optic atrophy, but reports no favorable results.

METHOD OF TREATMENT.

The principles of subconjunctival injection laid down by Darier would apparently apply only to the anterior segment of the eye, and their effect on the aqueous humor through Schlemm's canal and Fontana's space. If, however, the efficacy of subconjunctival injections depends on the absorption of the injected substances, the moment an isotonic equilibrium is established. there is no reason why this condition may not be induced in the posterior channels of filtration by subconjunctival injections far back of the equator of the eye, and thus an effect be produced theoretically on the optic nerve. These posterior injections must not be made near the limbus, nor too deep under the conjunctiva, where the capsule of Tenon is intimately attached to the sclera. In making the injections it is better first to incise the conjunctiva and separate it for some distance from the sclera by a strabismus hook and then introduce the needle far back, hugging the sclera, and inject slowly. There is less pain from the injection if the episcleral tissue is not injured.

I use a Pravaz syringe with a fine needle of iridised platinum, which can be sterilized by passing it through a gas flame. The liquid to be injected must be sterilized by boiling and allowed to cool to blood temperature and is then injected. The injection is made in the superotemporal region, tangentially to the sclera, and the liquid must not be allowed to extend toward the limbus. Hence the value of dissecting the conjunctiva from the sclera in the direction backward toward the optic nerve entrance before the injection is made.

This method of treatment was carried out on twenty-five cases of progressive atrophy of the optic nerve, due to constitutional syphilis. They were cases of simple atrophy and were not preceded by any intraocular signs of papillitis or neuritis. They were all private patients under my own care until the treatment was abandoned as useless. They had all been subjected to one or more full courses of thorough anti-syphilitic treatment by skilled syphilologists, which had been carried out for a varying period from one to two years, or until no constitutional symptoms had appeared for some time.

The presence of tabes or disseminated sclerosis was so far as possible excluded.

Before the treatment by subconjunctival injections was begun the patients were subjected to a course of strychnia by hypodermic injections, pushing the dose of the drug to the extreme of toleration. In every case the observations, the testing of the vision and the visual field were made by myself. Some of the cases had been previously treated by the interrupted current and by static electricity by other physicians, and two of them had undergone a prolonged treatment by vibratory massage without any benefit.

The shortest interval between the occurrence of the initial lesion and the first failure of vision was two years, and the longest interval was twenty-three years. From investigations made by Januskiewicz, covering many cases, it has been found that the shortest interval in any reported case between the contraction of the disease and the failure of vision was six months, and the longest was twenty-nine years. The failure of vision occurred most frequently from five to ten years after the appearance of the chancre.

RESULTS OF TREATMENT.

In none of the cases was there any permanent improvement of the vision by the treatment noted, and in only three was there any temporary improvement. In no case did the injections cause any acceleration of the loss of sight.

In three cases, besides the subconjunctival injections, an intravaginal injection was made directly into the sheath of the optic nerve. For this purpose the tendon of the external rectus muscle was divided, sutures were introduced through the tendon so as to allow of its reattachment to the eyeball, and the muscle was then drawn upward and outward away from the wound. The conjunctiva was then carefully separated from the sclera as far as the apex of the orbit by strabismus hooks, and the optic nerve was drawn forward by a blunt hook. The sheath of the nerve was then grasped by a pair of fine forceps and lifted up, and the needle was pushed through the sheath parallel to the nerve, and the injection was made. The tendon of the muscle was then stitched to its former line of attachment to the sclera, the conjunctival wound was closed by a suture, and both eyes were bandaged for two days.

The vision existing in the two eyes of the several cases at the time the treatment was begun varied from light perception in both eyes as the lowest to 15/200 in both eyes as the highest. The injections were made at intervals varying from one week to every second day, and in the cases in which both eyes were seriously affected the injection was made in one eye, and at the next visit in the fellow eye. If there was no improvement after the tenth injection the treatment was abandoned. The drug used in every case was a solution of sublimate, beginning with 1 to 5,000 and increasing the strength of the solution to 1 to 2,000. The first injection consisted of 10 minims, and the dose was gradually increased until 20 minims were injected, and this dose was never exceeded. Each injection of the sublimate was preceded by an injection of 5 minims of a 5 per cent. solution of cocain, and in this way the pain was reduced to a minimum, and never lasted more than 5 or 6 minutes, and was characterized by the patient as a burning sensation. After the injection the eye was not bandaged, but cold applications were made to the eye until the burning sensation subsided. In no case was the injection followed by any marked signs of irritation, and the swelling of the subconjunctival space rapidly subsided under the influence of the cold applications.

The temporary improvement in the vision in three of the cases lasted but a short time. In one case, a man, aged 46, the left eye was entirely blind, while the right eye V.=5/200. After the sixth subconjunctival injection and one intravaginal injection the vision rose to 15/70 and remained so for five weeks. It then slowly grew worse, and in three months from the date of the last injection it was reduced again to 5/200. In the second case of improvement, V.=15/200 in each eye. After the sixth subconjunctival injection and one intravaginal injection in the right eye the vision of the right eye rose to 15/50—the left eye remaining unchanged; but the improvement lasted only four weeks and then rapidly sunk to 15/200. In the third case of improved vision the right eye was entirely blind and the left eye could count fingers at three feet. After ten subconjunctival injections and one intravaginal injection in the left eye the vision of the left eye rose within a few hours from counting fingers to 15/70 and the field was perceptibly widened. This patient lived in Texas and returned home two weeks after the last injection. He reported that the improvement of vision lasted four months and then rapidly subsided, so that three weeks later it was reduced to perception of light.

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[1] Deutschmann's Beiträge, vol. xv, p. 41.

[2] Arch. f. Aug., 1904, p. 232.

CONCLUSIONS.

1. Posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocain.

2. The conjunctiva should be incised and carefully separated from the episcleral tissue, and the injection made far back toward the apex of the orbit.

3. The eye need not be bandaged after the injection, but cold applications should be made for half an hour.

4. This method of treatment of cases of atrophy of the optic nerve has, in my hands, proved of no more value than the usual routine treatment by mercury, potassium iodid and strychnia, and offers no encouragement for its continued use.

DISCUSSION.

Dr. S. D. Risley, Philadelphia, said that the result of Dr. Bull's persistent experiments are negative and congratulated Dr. Bull on having the courage to announce such a result. He said that this is commendable and that he wished other experimenters had the courage to do the same in the case of similar results. Viewed from the standpoint of physiology and from what we know of the physiologic methods by which subconjunctival salt injections act, the result, Dr. Risley said, was an *a priori* conclusion. He is an advocate of subconjunctival salt injections; he has seen them do a great deal of good in diseases of the anterior segment of the globe and has many times seen the entire uveal tract clear up under the action of repeated, prudently made, subconjunctival salt injections. He said that by that he did not mean solution of mercury, but the so-called physiologic saline solution. He has never, however, seen any good effect from the deep injection of this or any other solution. He called attention to a point made by Dr. Bull, that in making these deeper injections we must go outside the capsule of Tenon and not into it. When we consider the peculiar anatomic arrangement of the optic nerve, how Nature by means of the dural sheath of the nerve, the curious complex arrangement between it and the pial sheath, the intricate arrangement of the blood vessels and the peculiar arrangement of the lymph spaces of the eye, we see how little is to be expected from deep injections. Dr. Risley does not know how salt injections do good. He does not believe, for example, that the law of osmosis and endosmosis has very much to do with it. He first supposed that that was the way in which it did good. He stated in a paper presented before this Section last year that it was simply the dilatation of the lymph spaces, with a fluid of proper specific gravity, thus permitting a freer current, as it were, and emptying the corneal lymph spaces, which were again filled by normal processes. He believes that all the good we can ever hope to accomplish from these salt injections must be by this method through the anterior lymph spaces of the eye, and that deeper injections are simply useless or harmful. He used them at first very extensively in his endeavor to cure that hopeless condition, detachment of the retina, but without results. How many of us, he asked, have not witnessed, day by day, this chamber of darkness gradually close around these patients with optic nerve disease while we sat sad and helpless, and who of us will not commend any procedure that brings a ray of hope? It is like casting one's fly into a quiet, currentless and fishless pool, where, however skillfully done, there must be disappointment, but we must conclude to accept many clinical disappointments in our efforts.

Dr. A. A. Hubbell, Buffalo, stated that he had had some experience along this line, though not so systematically persisted in as by Dr. Bull. These lamentable cases, he said, deserve all the attention we can give and if there is the slightest hope held out by anyone we are all disposed to grasp it. Some years ago he began the use of the subconjunctival injections and among others he experimented with this disease. His experience, like that of Dr. Bull's, has been entirely negative. Dr. Hubbell rather expected such results from the fact that he believes that we must look further than the eye itself for the cause of the disease. He has not felt that it is necessary to adopt the surgical measures that Dr. Bull has done in giving the injections. Dr. Hubbell has endeavored to place the sublimate solution beneath the capsule of Tenon by grasping the episcleral tissues with the forceps and then passing the needle underneath the tissues held up. In that way he has succeeded in putting the solution well back. He thinks that these negative results are as valuable to the profession as results which are more favorable.

Dr. George de Schweinitz, Philadelphia, said that our judgment of the value of any therapeutic measure is always greatly enhanced when we have a carefully diagnosticated series of cases to deal with. He has had no experience in the treatment of these cases with this method and asked Dr. Bull whether he believes this method persisted in in the manner and according to the technic he has described is more efficient than the ordinary method of giving subconjunctival injections in other conditions. Dr. de Schweinitz has given many hundreds of subconjunctival injections with all suitable substances, and with most satisfactory results in various diseases of the uveal tract, the cornea and the sclera, but he is willing to follow Dr. Bull's technic if it is more efficient.

Dr. Charles S. Bull, New York, in reply to Dr. de Schweinitz, said that if any effects are to result from this method of treatment on the condition of the optic nerve, the injections must be made, not anteriorly, but posteriorly. He had made a great many injections as he supposed posteriorly by simply grasping the conjunctiva and thrusting the needle through as far back as he could. Whether he is less skillful than others he does not know, but in every one of those cases he caused a great deal of pain to begin with, and the tendency of those injections was for the fluid injected to drift toward the anterior segment of the eye, in the circumcorneal spaces. When he first thought of opening the conjunctiva with scissors and separating it carefully as far back sometimes as the entrance of the optic nerve he found that the injection showed no tendency to come toward the anterior segment, but remained posteriorly where he wanted it. He has not found that these injections posteriorly had any more efficiency in producing favorable results on these conditions than those made in the anterior portion of the conjunctiva.

NEOPLASMS OF THE COLON.

REPORT OF SIXTEEN CASES.*

A. F. JONAS, M.D.
OMAHA.

Neoplasms of the colon, when compared with abdominal growths in general, are not common, still they are of sufficient frequency that they can not be left out of consideration when the surgeon is confronted by tumors of moderate size in any region of the abdominal cavity. When we take into consideration the wide range of mobility possessed by the colon, we at once must recognize the fact that position or location can be no determining factor in the diagnosis. These growths may be fixed in a given locality, which may or may not be at the point of their origin and the normal locality of the organ bearing them. They may be very movable and occupy a position at a considerable distance from their initial stage by displacing the organ that harbors them. While these neoplasms are usually palpable, they may be concealed and can not be felt even after they have attained a considerable size and have brought about a complete intestinal occlusion.

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While they usually begin as primary growths of the colon, they are not infrequently secondary and may have originated in the mesenterium or the appendix vermiformis of the uterus or its adnexa as will be seen from two cases detailed in this report. The primary growths may have developed so insiduously and pursued such a symptomless course as to be entirely unsuspected until by a hyperplastic inflammatory process they cause adhesions to the colon, having formed a vascular pseudomembrane between it and the neoplasm, the colonie wall rapidly becomes involved, gradually creating a narrowing of its lumen, with the frequent occurrence of sudden torsions and angulations, and occasionally when carcinomatous ulcerations extend into the outer intestinal tunic, the production of perforation ushering in a fatal peritonitis.

We must confess that physical signs alone are not sufficient to warrant a diagnosis. The history is of first importance and particularly a knowledge regarding certain functions.

PATHOLOGY.

Neoplasms of the colon present several varieties and in a general way we may designate, from a pathologic standpoint, two groups, viz., benign and malignant. In the first group we naturally place such connective tissue tumors as intestinal fibroma, lipoma, myxoma, and polypoids which appear as small nodular growths or as pendulous polyps. The latter occasionally produce intestinal obstruction and sometimes invagination. Myoma and multiple cysts have been met with.

Sarcoma of the intestine is extremely rare. Occasionally the solitary follicles of Peyer's patches may be at the seat of lymphadenoma or lymphosarcomatous enlargement, especially associated with leukemia or pseudoleukemia.

As an independent primary affection, round-celled sarcoma may spring from the submucosa and the deeper layers of the mucosa, sometimes extending to the mesentery. The mucosa and submucosa sometimes contains secondary sarcomatous nodules in considerable numbers and the peritoneal covering may be thickly infiltrated with miliary sarcoma points.

The malignant tumors of the intestine are chiefly of epithelial origin and under this caption must be counted not only carcinoma in all its varieties, but adenoma and inflammatory papilloma.

Chronic inflammations of the large intestine that result in inflammatory hyperplasia of the mucous membrane, sometimes terminate in papillomatous and polypoid formation of considerable extent.

While we can draw no sharp line between adenoma proper and inflammatory proliferations, the former, more strictly speaking, are tumors.

Adenomata may occur in the form of papillomatous cauliflower-like formations; or they may be found in the form of flat elevations of uneven surface and are prone to ulceration and hemorrhage.

Adenomata sometimes arise in the crypts of Lieberkühn in the duodenum of Müller's glands by an hyperplasia and in their makeup present typical glandular acini, a basement membrane containing cylindrical epithelium lining the tubules.

Adenomata are found sometimes in the colon, but more frequently in the rectum and rarely in the duodenum. Carcinoma is the tumor found most frequently in the intestine. It is observed most often in the colon and at the ileocecal juncture, at the flexures of the colon and least frequently in its descending portion. It is found sometimes in the duodenum, especially at the papilla of the common duct. More frequent than in all other parts of the intestine carcinoma is met with in the rectum.

Sutton collected 100 cases of carcinoma of the intestine. Of these 75 were located in the rectum, 23 in the colon and only 2 in the small intestine.

The collective reports of tables of autopsies published by Azeman, Maydl, Müller and Nothnagel, show an aggregate of 69,083 autopsies, of these 5,796 deaths were from carcinoma in general, about 84 per cent. Of the 5,796 deaths from carcinoma, 1,296 were in the intestinal canal, making 22.35 per cent. of all carcinomata. Thirty-five of these occurred in the duodenum and small intestine (2.7 per cent); 35 were in the cecum (2.7 per cent.); 131 in different parts of the colon (10.11 per cent.); three in the vermiform appendix (23 per cent.); 83 in the sigmoid (6.405 per cent.); 262 in the rectum (20.25 per cent.) (Hemmeter). It will thus be seen that 19.422 per cent. of all intestinal cancer occur in the large intestine if we include the sigmoid, nearly 80 per cent. of these occurring in the rectum.

Carcinoma of the colon presents an irregularly formed mass, containing hard and soft areas, often ulcerated especially within the intestinal lumen, which bleeds easily and projects into the gut, reducing its diameter and interfering with the fecal passage, or when the growth is girdle-shaped and surrounds the gut, which is its most characteristic form, its lumen is narrowed, interfering with fecal circulation. As the intestinal constriction becomes greater the colon above the point of stricture becomes greatly distended by the accumulating gases and fecal masses. The bowel below the obstruction becomes thinner and its lumen contracted. The distension may become so great as to produce rupture.

Carcinomata of the colon are, chiefly, cylindrical epitheliomata of glandular cancers, being made up of atypical acini and tubules, epithelial cells in masses which have irregularly proliferated and infiltrated the neighboring tissues. Occasionally these neoplasms have been found a clear transition of adenoma into carcinoma (adenocarcinoma). Thus transformation is not uncommon in tumors of the bowel.

Cancer of the large intestine is usually of primary origin, but rarely is it secondary, and when so it has spread to the intestine by contiguity from the omentum, stomach, uterus, ovary, bladder, prostate glands, vermiform appendix and lymphatic glands, or cellular elements may be transferred from other distant organs wherein a primary carcinoma may be undergoing disintegration.

Carcinoma of the intestine and particularly of the colon, occurs chiefly between the ages of 40 and 60 years, although these growths are sometimes observed earlier. Nothnagel records a case of carcinoma of the cecum in a boy 12 years of age; Schönig two cases of rectal carcinoma in girls of 17 years of age; and Clar reported a case of medullary carcinoma in a boy three years old (Hemmeter). Maydl has shown by material of the

Allgemeines Krankenhaus, in Vienna, that one-sixth of all intestinal cancers occur between the ages of 30 and 40 years and one-seventh occur before the thirtieth year, consequently it is not safe to exclude cases from a diagnosis of intestinal cancer on account of age.

Adhesions between the neoplasm and all organs may give rise to great misplacement of viscera creating great operative difficulties. Sometimes many loops of intestine have become adherent to each other as well as to the neoplasm and all of these to the bladder, uterus, ovaries, and omentum, creating an entanglement that is impossible to disentagle. Adhesions may create fistulæ between colon and intestine or bladder, occasionally perforations externally through the skin have been observed. A primary neoplasm may become so large as to occlude the intestine; in many instances such a growth may disintegrate, a portion of it slough away and the obstruction is relieved, to be followed by a constriction due to connective tissue formed in the place of the disintegrated portions. During a partial disintegration of such a growth, blood vessels become eroded and severe loss of blood may ensue. If the disintegration process extends to and through the peritoneum before agglutinative adhesions with adjacent parts have taken place, a fatal peritonitis follows.

SYMPTOMATOLOGY.

There is no disease of the intestine that in its early stages is usually so free from symptoms. It develops so slowly that its presence is unsuspected until more or less grave complications are manifest. Every practitioner can detail cases that have progressed to a point where a fatal termination was imminent from sudden bowel obstruction and yet no tumor was palpable because of its concealment under the left costal arch as in one of our cases. Others have been recorded and observed many times, where gradual emaciation, a cachexia and a gradually increasing constipation was the only warning. Again others with an unimpaired appetite and digestion, no loss in weight and the only manifestation the obstinate and aggravated bowel inactivity that gave cause for alarm.

The common early subjective indications are frequently recurring colic-like pains with circumscribed tenderness, unpleasant abdominal fullness due to accummulation of gas, with bowel inactivity alternated sometimes with diarrhea. These symptoms were present in nearly all of our cases. Particularly, the cramp-like pains that increased in severity and frequency until either a tumor could be palpated or bowel obstruction was complete. These colicky pains were more or less associated with abdominal fullness, tension and a point of tenderness.

The digestive functions were unimpaired, as one would expect in growths situated so low down in the intestinal tract, as the colon plays no important part in digestion or assimilation. These symptoms are not pathognomonic of malignancy nor do they indicate the presence of a tumor in any form. They seem to indicate that a more or less localized lesion exists which may be inflammatory or neoplastic. There is no justification for an absolute diagnosis of neoplasms of the colon, whether with or without the above symptoms, unless we can feel a tumor that seems to have no connection with other organs. The evidence becomes strong when gurgling of gas through the tumor is heard. The diagnosis becomes more certain when an obstinate and increasing constipation exists and it is usually quite certain when in the presence of a hard irregularly-shaped tender tumor, a bowel obstruction exists. The author has found in several of his cases a strong confirming evidence to the use of the stethoscope, frequently on auscultation a gurgling of air through that portion of the intestine in which the growth was located, could be heard. Another valuable aid consisted in air being pumped into the rectum through a long tube. The little jets of air could be heard through the stethoscope up to the point of partial or complete obstruction but not beyond.

In several of the cases when the bowel had become partially obstructed, the fecal column was flattened, compressed, stringly and spirally molded, sometimes the stool was dry and globular. But these signs can not be considered of much importance because a constricted sphincter ani might, in a measure. cause unusual forms of the feces. The stool, however, is often very offensive, owing to the disintegration of the neoplasm. The evacuations then may contain pus, mucous and blood in varying quantity, the hemorrhage being sometimes dangerously profuse. Care should, however, be exercised to ascertain if hemorrhoids in any form are existent. Occasionally particles of the growth are found in the evacuations, but usually escape detection. It is well, however, to examine the stools critically for such broken-off particles.

It is remarkable how long some of these cases can exist even after obstruction is complete. One of our cases was seen three weeks after the last evacuation. Th colon is susceptible of great enlargement, sometimes being so large that on first inspection after opening the abdomen, one is uncertain whether or not he is dealing with the stomach. The enormously dilated colon can accommodate an immense quantity of firm, stool, the fluids having been reabsorbed.

DIAGNOSIS.

It is very important that frequently repeated palpation of the abdomen in suspected intestinal neoplasms be done in various positions, sometimes under an anesthetic. Rectal and vaginal explorations are important because the neoplasm may of its own weight have sunk into the pelvis or have been drawn out of place by adhesions. It must be remembered that neoplasms of the colon, in their early development, are apt to be round or oval, smooth and not very large, not large enough to cause the abdominal wall to project. Later they become uneven and irregular in shape and sensitive. If located in the transverse colon a distinct aortic impulse is present. Growths of the ascending transverse and descending colon, if palpable at all, are usually freely movable and are located below the umbilical line. Owing to the varying amount of intestinal gas from day to day the tumor may be felt at one examination and elude detection in subsequent examinations, hence the necessity of frequent investigations. Percussion is not of much value. Fecal impactions not uncommon, may be so confusing as to make a diagnosis difficult and sometimes impossible.

The peristaltic wave is important; in some of our cases it was so distinct that the distended intestinal coils could be plainly seen and in two instances we obtained most excellent photographs. So frequently was this condition observed, that when present, it was regarded an important sign of probable bowel obstruction and taken together with several of the aforesaid symptoms was regarded as a reliable diagnostic factor.

Case 1.—*Primary. Endocarcinoma. Located in Sigmond. Removed. Ends closed-lateral anastomosis. Needle and Thread. Recurrence in five months.*

History.—Mrs. S. P., aged 42, had four children. Menses were always regular until last six months when they became more profuse but not excessive. No leucorrhea. She always enjoyed good health, bowels always regular until six months ago, when an occasional cathartic became necessary. Constipation increased so that repeated daily efforts with cathartics and enemata would after three to four days produce an evacuation and finally all efforts were unavailing.

Examination.—On admission uterus was only moderately movable, very tender and to it seemed to adhere a soft doughy mass whose outlines were difficult to fix in an upward direction. Its lower border seemed fairly well circumscribed. It seemed to fill the iliac fossa. There was much very severe abdominal pain. No discernible peristaltic wave but much gurgling of gas.

Operation.—The upper end of the sigmoid was found adherent to the uterus and that portion of the gut above the point of adhesion filled with a large mass of feces and gas. This proved to be the tumor that was palpable before the operation. The gut was separated but the adhesion surface was suspicious of malignancy. The gut above and below the point of constriction was clamped and the mass removed. The distal and proximal gut ends differed so greatly in diameter, owing to the distended central end, that an end-to-end anastomosis was deemed inadvisable, consequently both ends were closed by purse string suture, and a lateral approximation done with needle and thread. The growth proved to be an adenocarcinoma.

CASE 2.—*Secondary. Papillomatous ovarian. Descending colon. Removed end-to-end. Czerny-Halstead Suture. Double suspension suture from recurrence. Free after one year. Lost from sight.*

History.—Mrs. M. M. A., age 44, has always been constipated since girlhood. Has taken all forms of cathartic and in large doses. Has had three children, menstruates regularly with little pain. Since four months she has had severe griping pains of more or less intensity sometimes requiring anodynes. She complained of frequent and annoying rumbling in her bowels, especially during attacks of pain. She has lost no flesh, appetite and digestion normal. It became more difficult to procure bowel evacuation until finally all efforts failed.

Examination.—On admission I find her in good condition. Abdomen moderately tympanitic, slightly tender over every portion except in left iliac fossa where pain is severe on pressure. Bimanual examination discloses an enlarged slightly tender uterus, in left parametrium a movable, tender, orange-sized mass. It is believed that there may be a bowel adhesion to this mass. Operation advised and accepted.

Operation.—Median incision. Mass in left side proved to be an ovarian papilloma to which is adherent the lower end of the descending colon, in fact, the colon seemed to be incorporated into the papillomatous mass. The growth is ligated at its base and separated from its uterine attachment. The gut is doubly clamped above and below the neoplasm and removed. The bowel is joined by an end-to-end anastomosis by a continuous Czerny suture and two rows of Halstead sutures. Nature of growth, secondary papilloma.

CASE 3.—*Primary. Adenocarcinoma. Located in upper end descending colon. 1. Short circuit, Murphy button. 2. Growth removed, ileo-colostomy. End to side. Recurrence in twelve months. Death in eighteen months.*

History.—Mr. L. S., age 60, mechanic, American, complains of much abdominal pain of a cramp-like character often vomits and has obstinate constipation. He states that his illness began four weeks ago with severe griping pain and more or less constant desire to move the bowels but he was usually unsuccessful. Purgatives sometimes produced evacuations but always associated with severe pain. These symptoms have become progressively worse until the date of our first examination.

Examination.—Temperature normal. Pulse, 120. Respiration, 40. General abdominal tenderness most severe near the left costal margin, but no tumor could be made out, chiefly on account of the tenderness. An operation was advised chiefly on account of the apparent bowel obstruction.

Operation.—Through a median incision extending above the navel a mass could be felt in the upper portion of the descending colon. It was hard and firm, moderately movable. The condition of the patient was so unfavorable that an immediate removal of the growth was deemed advisable; consequently a lateral anastomosis was established between the transverse and the descending colon with a large Murphy button. The button holding perfectly, the abdominal wound was closed. The patient recovered quickly from the anesthesia and in an hour passed a large amount of flatus, and on the second day with the aid of a small enema a large bowel movement occurred. The button passed on the twelfth day. The general strength returned rapidly so that on the twentieth day after the first operation a second one was done for the purpose of removing the neoplasm. Through a high incision in the left semilunar line the growth was exposed. It was first detached from its mesenterial attachments. Two long hemostatic clamps above and below the tumor were applied and the gut between the two clamps resected. The intestinal ends were inverted and closed. The anastomosis opening from the first operation seemed perfect. The abdomen was closed without drainage. Nature of growth adenocarcinoma.

CASE 4. — *Primary. Adenocarcinoma (ileocolostomy). Located in ileocecum. 1. Artificial anus from ileum. 2. Lateral approx. Needle and thread. Well six months later, not heard from since.*

History.—Mrs. T. R., aged 50, had good health until 18 months ago, when she experienced colicky abdominal pains, particularly in the right hypochondrium, sometimes associated with vomiting. Bowels fairly regular. No blood in the stools. Her weight gradually diminished. The abdominal pains became more frequent and more severe.

Examination.—Present state. Abdomen moderately distended. Manipulation caused visible peristaltic waves, especially in the right iliac fossa. In this region could be felt a fist-sized elastic tumor. Gas could be heard to pass through it, probably through the ileocecal valve. Bowel passages were obtained only by artificial aid.

The diagnosis was bowel obstruction in all probability due to a malignant neoplasm. The loss of flesh and cachexia associated with a palpable neoplasm seemed to warrant this conclusion. The pain and vomiting increased, the obstructive symptoms and the great prostration seemed to indicate an immediate interference. An operation was accordingly advised and promptly accepted.

Operation.—Chloroform. A section in the median line revealed a mass of distended intestines. Exploration was unsatisfactory. The neoplasm in the right iliac fossa could be felt but not accurately outlined. The patient appeared extremely exhausted, haste seemed imperative, consequently a loop of ileum was drawn out of the wound and carefully surrounded by gauze swabs, an incision into the ileum was made, permitting the escape of a large amount of flatus and fecal matter. The intestinal opening was closed and the loop of ileum was fastened to the abdominal wall for the purpose of making an artificial anus according to Maydl. The loop of ileum opened 36 hours later and a large amount of flatus and fecal matter was evacuated. The abdomen became flat in twenty-four hours. The general condition of the patient improved very rapidly and she gained in weight and strength rapidly. In two weeks the patient was up and about her home. Three weeks from the date of her operation a second operation was made to restore the continuity of the intestinal canal.

Second Operation.—Incision through the linea semilunaris revealed an orange-sized growth involving the ileocecal junction almost closing the ileocecal valve. The loop of ileum, which was attached to the abdominal wall, proved to be afferent iliac limb of the loop making the artificial anus. This loop together with the cecal tumor was removed, and the afferent limb of the artificial anus was closed. The closed end of the ileum was placed against the closed colon and a lateral anastomosis made with needle and thread. Further exploration of the abdominal cavity revealed no other pathology, consequently the abdomen was sutured. The opening that had been occupied by the artificial anus was then closed. Recovery was uneventful. Nature of growth of adenocarcinoma.

Case 5.—*Primary. Adenocarcinoma. Located in ascending colon. Hepatic flexure. Excision, ends closed, lateral approx. Murphy button. Well two years later.*

History.—Mr. H. A., laborer, aged 38. There was vomiting of especial moment in the early history. The present illness began nearly two years ago with occasional griping pains in the abdomen. These were believed to be due to gastric disturbances. After an unusual exertion some six months ago, followed by an unusual amount of pain in the abdomen, he observed for the first time a lump in the right side. He had for a considerable period been very much constipated. There had been a gradual loss in weight and he became gradually pale and weak.

Examination.—Status Præsens. Patient of medium height, well built, very pale. The abdomen symmetrical, shows a distinct fullness in the right flank. A distinct irregularly rounded mass can be palpated in the right hypochondriac and right lumbar regions, which can be moved upward and downward and laterally almost to the median line. The lower border is three fingers breadth below the transverse navel line. It appears to have no connections with the liver. The mass can be pushed almost into the renal fossa. It is only slightly tender. No tender points in any other part of the abdomen. Leucocyte count, 20,000, Hemoglobin, 45 per cent., red corpuscles, 4,000,000, urine clear, sp. gr. 1,020, alb., 0, sugar, 0. No renal elements microscopically. Temperature and pulse normal. The mobility, size and location of the tumor suggested a renal origin. The absence of all microscopic elements in the urine indicated an extra renal origin. A constantly increasing and stubborn constipation seemed to indicate an intestinal origin. The opinion is strengthened by the statement of the patient that he can feel a bubbling of gas toward and away from the tumor. He states that he can distinctly feel gas moving toward the mass where it seems to be arrested for a few seconds and then it passes beyond and away from it. The passage of gas can sometimes be felt with the palpating hand. The stenoscopic examination plainly indicated the passing of gas through the growth. Percussion gave a flat tympany.

Examination of stomach contents one hour after an Ewald's test breakfast, gave the following. Acid reaction, odor sour, distinct red color with phloro-glucin-ranillin solution. Inflation indicated normal position and size of the stomach; the growth was in no way affected. Tapping the abdominal walls with the finger tips started peristaltic waves which could be plainly seen passing across the upper part of the abdomen from left to right, at the same time bubbles of gas could be felt with the hand and heard through the stethoscope, passing through the tumor.

From the above findings it was believed that tumor of renal origin could be excluded. The test-meal investigation was negative as to stomach or pyloric involvement. There appeared to be no origin in the liver on account of tumor movements independent of the liver. Clearly we had to do with an intestinal neoplasm; its mobility, the passage of gas through it, the arrest of the peristaltic wave by it, together with the obstinate and increasing constipation indicated its presence. Its location suggested the hepatic flexure and transverse colon as its seat. An operation was advised and eagerly agreed to by the patient.

Operation.—Incision through right linea semilunaris reveals a mass involving one-half of the ascending and hepatic colonic flexure, which can be lifted into the wound. Mass is excised between clamps, two above and two below the growth. The ends of the colon are closed and a lateral approximation with a Murphy button is made. The abdomen is closed without drainage. Recovery uneventful. Nature of growth adenocarcinoma.

Case 6.—*Secondary. Cicatricial mass. Located in descending colon from uterus and tube. Removed end-to-end suture. Double supporting loop. Lost sight of after two months.*

History.—Mrs. J. A. S., aged 42, American, has had three children, last one five years old. One year ago began having colicky pains at intervals. Bowels had always been regular, began to be irregular requiring an occasional cathartic until three months ago, constipation began to get progressively worse, requiring cathartics in increasing doses and frequency until within the week preceding admission large doses of cathartics and enemata were only slightly successful. She had observed a profuse menstrual flow and occasional uterine hemorrhage in excretion.

Present State.—Apparently in good health, quite fleshy. Has lost no noticeable weight. Examination discloses an enlarged and tender uterus in normal position. Palpation produces slight uterine hemorrhage. In the left parametrium can be felt a moderately movable hen's-egg-sized swelling which was believed to originate in the left ovary or tube and probably had become adherent to the rectum causing the constipation.

Operation.—Abdominal section disclosed an enlarged uterus irregular, slightly nodular fundus. The descending colon was prolapsed and its lower end firmly adherent to the posterior and left side of the uterus, together with an old pyosalpinx. The sigmoid was crowded down into the cul-de-sac forming several reverse coils. The adherent coil was separated with the scissors and packed with gauze swabs and pushed aside. The uterus and adnexa were removed in toto. Then the adherent portion of the bowel, which was a cicatricial mass was excised and an end-to-end enterostomy was done using the double loop supporting ligature. Nature of constriction cicatricial.

Case 7.—*Primary. Adenocarcinoma. Located in ileocecal region. Ileum planted into the side of colon. Murphy button. Lost sight of four months later.*

History.—Mrs. H. S., age 51, housewife. Her present illness began six months ago with constipation, which had increased so that her bowels moved only every three to five days and then only after repeated artificial aid, usually evacuating hard and lumpy feces. These periods of obstinate constipation have several times yielded to looseness, the stools being yellow and slimy, but containing no blood, nor did she complain of teneseness. Several weeks ago, she vomited a sour material, but no blood. She has lost much in weight. Exertion causes shortness of breath; recently her feet became swollen. Constipation was present but could be relieved.

Examination.—Although the patient appears somewhat pale, she is well nourished; normal temperature, slightly coated tongue. Abdomen somewhat distended. In the ileocecal region is a distinct elevation that is not affected by the respiratory movements nor by position. On palpation can be felt a goose-egg sized rounded nodular mass about midway between the anterior superior spinous process and the umbilicus. It can be felt immediately beneath the abdominal wall, not tender, very hard. It is freely movable and can easily be crowded under the navel. With a stethoscope occasional bubbles of gas can be heard to pass toward it, which are arrested for an instant and then pass on. A flat tympany can be elicited on light percussion. No peristaltic waves. The tumor could be pushed upward almost to the liver but not to it nor into the renal fossa, neither could it be made to descend into the pelvis. Test meal was negative as to stomach disease. Urinary analysis revealed no pathologic conditions.

The clinical evidence indicated an intestinal growth, probably ileocecal, but that was not certain.

Operation.—An incision through the linea semilunaris revealed a tumor involving the entire head and circumference of the cecum and the lower wall of the ileum. The mass was easily removed together with about three inches of the ascending colon and about two inches of the ileum. The open end of the colon was closed with a Czerny-Lembert suture. The end of the ileum was implanted into the inner side of and about one and one-half inches above the closed end of the ascending colon, by means of a Murphy button. Patient died on fourth day from perforation at site of anastomosis. The growth proved to be an adenocarcinoma.

Case 8.—*Primary. Neoplasm located in lower end of descending colon. Relieved by short circuit with Murphy button. Died in three months.*

History.—Mr. W., age 58, about six months before admission, was struck on the left lower quadrant of the abdomen. He continued his work during the day but after retiring he had nausea and vomiting, and abdominal pain. The left iliac pain has continued since the accident, often worse at night and sometimes aggravated by eating. He gradually lost in weight. Has had very frequent desire to evacuate the bowels, but is always unsuccessful without artificial aid.

Examination.—Abdomen distended and tender. Pain in left iliac region, where a firm mass can be palpated. Bowels can be moved only with enemata, bringing away flatus and considerable quantity of liquid feces but no blood or pus. Some free abdominal fluid can be made out. A peristaltic wave is visible. It is believed that we have to deal with a growth of the sigmoid.

Operation.—Through a median incision a large mass involving the sigmoid could be made out. The mass was firmly adhered to the posterior and lateral pelvic walls. A removal seemed out of the question. Consequently, the portion of the descending colon was brought down and fixed to the intestine at the recto-sigmoidal junction with a large Murphy button. The button seemingly did not hold the intestinal walls satisfactorily, probably on account of their thickness, therefore reinforcing sutures were employed. The abdominal cavity was closed without drainage. Recovery uneventful.

Case 9.—*Primary. Adenocarcinoma. Located in lower end of descending colon. Removed end-to-end. Murphy button. Halstead suture, double row for support. Well after one year.*

History.—Mrs. B., age 35, small woman, 5 feet, 2 inches in height, weight 92 pounds. Abdomen moderately distended, somewhat tender. Peristaltic wave can be started by tapping the abdomen lightly with the finger's end. A tender and movable mass can be made out in the left side of abdomen near the left iliac crest. She complained of more or less colicky pains. Bowels greatly constipated, enemata appear to relieve the large bowel below the mass but not above it. An occasional gurgle of gas through the tumor can be felt, especially when the lower bowel has been emptied. No blood or pus in stools. Diagnosis, neoplasm of descending colon.

Operation.—Through median incision a goose-egg-sized mass was discovered at the ileosigmoidal junction. The mass could be lifted into the abdominal wound. The intestine was clamped with Murphy clamps above and below the growth and then removed, the open ends of the colon were joined by a large Murphy button. The gut walls were somewhat thick, so that the button held them imperfectly, consequently a row of double Halstead sutures were placed over the button making the union perfect. Recovery uneventful. Nature of growth adenocarcinoma.

Case 10.—*Secondary. Carcinoma. Located in appendix, head of colon, and ileocecal valve. Removed. Lateral approximation by suture. Moynihan clamps. Well six months later, then lost sight of.*

History.—Mr. D. S. J., age 44, laborer, since seven months has had abdominal discomfort and occasional griping. Constipation at intervals, occasionally some diarrhea. Appetite variable. Five months ago he developed a tenderness in right iliac fossa and was thought to have appendicitis. Two months previous to admission a small mass could be palpated.

Examination.—On admission he appeared anemic, stated he had lost 30 pounds in weight. Abdomen moderately distended. A tumor, moderately movable, goose-egg-sized, slightly tender, could be felt in right iliac fossa. Gas could be heard and felt to pass through the mass. Peristaltic wave very distinct. No bowel movement for three days. Pulse and temperature normal. Diagnosis, cecal tumor.

Operation.—Incision right semilunar line. Tumor involves the appendix and had extended upward to head of colon and to ileocecal valve. The ileocecum, including the tumor, was removed. The end of the descending colon was closed by double-row continuous Lembert sutures. The ileum was treated in the same way. The two bowel ends were placed side by side and the bowel continuity was restored by a lateral enteroenterostomy with sutures and with the aid of the Moynihan clamps. The closed bowel ends pointing in the same direction. The nature of the growth proved to be carcinoma.

Case 11.—*Primary. Carcinoma. Located in ileocecum. Removed end of ileum implanted to side of colon. Murphy button. Died.*

History.—Mrs. A. L. D., age 49, was always in good health until she began to complain of pain in the right iliac fossa, which persisted three or four months when she developed a swelling in the ileocecal region which was regarded to be an appendiceal abscess. Under an anesthetic an incision was made, a rather firm mass was encountered but no pus. A drainage tube was inserted and further operative efforts were abandoned. A month later she came under our observation and the following condition was noted:

Examination.—She was quite fleshy, although she stated that she had lost greatly in flesh. Temperature and pulse were normal. In the right iliac fossa was encountered a fist-sized mass firmly adherent to the abdominal wall and into this mass extended a wound about two inches long discharging a small amount of pus. There was much local tenderness and more or less abdominal, colicky pains, bloating and almost complete bowel obstruction. Immediate operation was urged and consented to.

Operation.—After the usual skin preparation, the wound itself was cauterized with carbolic acid and the cavity filled with iodoform gauze. An incision was made, encircling the wound in such a manner as to remove the walls forming the tract into the mass and finally entering the abdominal cavity. It now became clear that we had to deal with a growth of the cecum. The neoplasm was detached from its posterior attachments. The colon was severed well into healthy tissues and the ileum as well. The end of the colon was closed by Czerny-Lembert sutures and the ileum was implanted by means of a Murphy button into the side of the colon. The abdominal wound was closed without suture. The patient did well for a week when she developed a peritonitis ending in death. A postmortem examination revealed a perforation at the ileocolonic juncture. Nature of the growth proved to be adenocarcinoma.

Case 12.—*Primary. Adenocarcinoma. Located in splenic flexure. Removed end-to-end. Murphy button. Lembert reenforcing. Died.*

History.—A. D. J., aged 40 years, mechanic, had always enjoyed good health until 1898. While serving with the U. S. troops in Cuba he began to complain of more or less colicky pain, diarrhea and tenesmus. The stools often contained considerable blood. He improved for short periods only to be followed by recurrences. After his return from Cuba he suffered alternately from bloody diarrhea and constipation until the latter condition became constant, amounting to a bowel obstruction when he was admitted.

Examination.—Appears emaciated, no bowel movement for five days. States that he has lost 40 pounds in weight. His abdomen is bloated and has a moderate amount of tenderness but no tumor can be felt nor any special point of tenderness. The peristaltic wave can be noted, especially when the abdomen is tapped with the end of the finger. Judging from the history it is believed that he had an ulceration of the bowel which has resulted in cicatricial contraction causing a stenosis, which seems to account for the bowel obstruction.

Operation.—On opening the abdomen the greatly distended bowels crowded into the wound. On prolonged exploration a tumor was found under the left costal arch which existed in the splenic flexure of the colon. It was globular, about the size of a goose-egg and only moderately movable. The incision was prolonged upward and after much difficulty the gut above and below the growth was doubly clamped and it was removed. The colonic ends were joined with a large Murphy button. The gut, however, was too thick for the button so a re-enforcing Lembert suture was made to insure accurate coaptation. Abdomen closed without drainage. Case progressed satisfactorily for four days when a peritonitis developed and death ensued on the sixth day. Autopsy disclosed a perforation in line of suture. The growth proved to be an adenocarcinoma.

Case 13.—*Primary. Adenocarcinoma. Located in descending colon. Removed end-to-end. Murphy button. Lembert reenforcing suture. Well after one year.*

History.—Mrs. T. B. A., age 48, passed menopause two years previously and always enjoyed good health until one year ago, when she began to have occasional colicky pains, especially in the left side of the abdomen. It became more difficult to obtain bowel evacuations. Two months ago a movable tumor was detected in the left side which was supposed to be a floating kidney. On admission the following was noted:

Examination.—A movable, somewhat tender, fist-sized tumor was noted but could not be pushed into the renal fossa. On auscultation bubbles of air could be heard to pass through it. Air inflation per rectum could be heard at site of tumor but not beyond. No abdominal distension nor peristaltic wave could be noted. Obstruction was not complete. The diagnosis of neoplasm of the colon was made.

Operation.—Incision through left linea semilunaris. A fist-sized mass located in the colonic walls, was easily lifted out. After double clamping above and below the tumor it was excised together with about six inches of descending colon. End-to-end anastomosis with a Murphy button was made, with some difficulty the thick colonic walls were approximated within the grasp of the button. A re-enforcing Lembert suture closed the operation. The wound was closed after a gauze drain had been placed near enterorrhaphy line. Recovery uneventful. Nature of growth proved to be adenocarcinoma.

Case 14.—*Primary. Adenocarcinoma. Located in splenic flexure. Removed, end-to-end suture. Czerny-Lembert. Double loop supporting ligature.. Well after one year.*

History.—Mrs. W. S. S., aged 38, for many years had suffered from uterine disease. She was always more or less constipated, which increased so that during the last three four months it has been difficult to obtain bowel evacuations. For one month a sensitive mass has been known to exist to the left of the umbilicus, moderately movable. She has had occasional bloody stools, but these were attributed to hemorrhoids. More or less indefinite abdominal pains.

Examination.—Has lost 20 pounds. Appears anemic. More or less indigestion. Moderate distension. A hen's-egg-sized mass can be felt in the left side, movable so that it can easily be pushed up to left costal arch and almost into the left iliac fossa. No peristaltic wave, no gurgling of gas through the mass, but rectal insufflation of air indicated on auscultation that the air is arrested at the growth. Diagnosis, neoplasm of the descending colon.

Operation.—Incision through left linea semilunaris. Mass easily lifted out of the abdomen and found to involve the splenic flexure of the colon. The mass is excised in the usual way. An end-to-end anastomosis is made by the aid of the double loop suspension ligature, and the intestinal ends are joined by the continuous Czerny-Lembert sutures. The abdomen is closed without drainage. Recovery uneventful. The neoplasm was an adenocarcinoma.

Case 15.—*Primary. Adenocarcinoma. Located in transverse and hepatic flexure: Closed ends. Lateral Approximation. Murphy button. Died four months later from a fall producing basilar fracture. No return of growth.*

History.—M. McL, aged 65, always enjoyed good health until a year ago when she began to lose flesh, and became somewhat constipated so that she was obliged frequently to resort to cathartics. About three months before her admission she observed a movable lump in the umbilical region. Otherwise she declared herself to be in perfect health.

Examination.—On admission she appeared moderately anemic. She appeared as if she might have lost flesh from the flabby condition of her skin. She enjoyed a fairly good appetite. No digestive disturbances. Her bowels moved only by artificial aid and then with difficulty. Occasionally she had had blood in her stools. A fist sized, very movable and painless mass existed beneath the umbilicus. It was believed to be intestinal, but whether large or small intestine, could not be made out. There was no peristaltic wave. Auscultation disclosed nothing, rectal air inflation negative. Never had had colicky pains.

Operation.—Median incision above the umbilicus disclosed a mass involving the entire transverse and hepatic flexure of the colon. The mesenterium appeared free, consequently after a ligation, with catgut, of all attachments, the colon was divided well into healthy structures to either side of the neoplasm. The ends of the colon were closed by a purse string and continuous Lembert sutures. The closed ends were then placed side by side and a lateral anastomosis made by a large Murphy button. Abdomen closed without drainage. Recovery was uneventful. The neoplasm proved to be an adenocarcinoma.

Case 16.—*Primary. Myo-fibrous polypus. Located in hepatic flexure. End-to-end. Connell-Cushing suture. Double loop suspension. Well after three years.*

History.—Miss A. V., aged 25 years, since one year had had very many bloody stools, associated with much abdominal colic-like pains. At times she was greatly constipated, at other times there were frequent bowel evacuations of muco-hemorrhagic character. She lost no flesh, her appetite and digestive functions seemed normal.

Examination.—No evidences of the source of the hemorrhage could be found in either the rectum or sigmoid. An indistinct and tender mass was found beneath the umbilicus. No peristaltic wave was discernible, probably on account of the firm and well developed abdominal muscles. Auscultation established nothing. The alternating constipation and bloody diarrhea together with tender mass led to a probable diagnosis of intestinal neoplasm, and an exploratory operation was advised.

Operation.—Incision in median line below the umbilicus disclosed a mass attached to the hepatic flexure of the colon and was drawn down nearly to the right iliac fossa. The omentum had become quite extensively adherent to it, and at first it appeared to be inoperable. However, the omental attachments were gradually severed and the mass could be brought into the wound. On close examination it appeared as if the mass was chiefly in the lumen of the colon. It was the size of a hen's egg and appeared to be attached only to the mesenteric border. The growth together with about five inches of colon was removed. The ends of the colon were united by a Connell-Cushing suture aided by the double suspension loop. Recovery was uneventful. Well after two years. The neoplasm proved to be a myofibroma springing from the mesenteric side of the colon.

In reviewing the foregoing cases, sixteen in number, we find that the majority, in fact, all but one case must be classed as malignant. Eleven were adenocarcinoma. One was papilloma, another myofibroma. One appeared to be cicatricial, secondary to a neoplasm of the uterus. In one the exact diagnosis could not be made with certainty on account of its inoperable character, but in all probability it was carcinoma. The greater number of these cases were well advanced, in fact several of them were advanced to a point where the wisdom of an extirpation might be questioned. When we consider the early dissemination of all growths of the epithelial type into neighboring glands and sometimes to more distant regions, the operator, who has dealt with numerous growths involving other parts of the body, pauses and weighs the chances for and against the possibility of prolonged relief and possible cure. Up to the present time the permanent cures have been few. The operative mortality, while not as good as from other neoplasms of the abdominal cavity, has, with a gradually improving technic improved, and I am convinced that with an accumulation of diagnostic aids that will enable us to recognize intestinal neoplasms in their incipiency, the fatalities eventually will be no greater than for other abdominal operations. Of the series here reported, we have a mortality of three cases, but the recurrences have been numerous, in fact, we are at this writing unable to state if any of them will remain free from recurrence. It is impossible to follow the history for more than a short time. Many of our cases who may have suffered from recurrence undoubtedly have fallen into the hands of other surgeons, consequently it is impossible to draw any conclusions as to permanency of cure from the few cases here recorded and for that matter, from any number.

The surgery of neoplasms of the large intestines is very much in the same state as the surgery of malignant new growths of the stomach. If operative interference is deferred until the clinical signs are positive, i. e., when bowel obstruction is complete and a tumor can be felt, then metastatic deposits have become so extensive that we can scarcely hope to eradicate all the pathologic structures. It is true we still can very often remove the principal growth, restore the continuity of the bowel lumen and achieve an operative recovery, but in the light of the present status of bowel surgery, we must expect an all too great recurrence percentage. Surgeons have dreaded to enter the abdomen when the clinical signs were doubtful. So did they, not so very long ago, where the bile tracts of the appendix were involved, chiefly because they had not become familiar with definite and well defined diagnostic signs and on the other hand on account of the uncertain technic in dealing with these organs. The same holds true of neoplastic intestinal obstruction. Sometimes the signs are absolute and yet it is with dread that most surgeons attack these cases. An intestinal neoplasm usually involves a resection.

The principles involved in such a procedure are well defined, but the details of such an operation are countless. No two operators accomplishing the same result employ the same methods. I am sure that this unsettled operative condition is responsible for much procrastination. It will be seen from the cases here detailed that a variety of methods of bowel union were used. Without going into a discussion of the respective merits of the various methods, it may be briefly stated that from the experience gained from our cases of neoplasms of the large intestine as well as bowel obstruction due to inflammatory and mechanical causes, two principal procedures for the restoration to the continuity of the bowel have commended themselves as easy and rapid of accomplishment, viz.: First, in cases where the resected ends were not entirely free from inflammatory conditions, a closure of both ends of the bowel with purse string and Lembert sutures, after the removal of the neoplasm, and a lateral approximation near the ends and the establishment of an anastomosis with suture aided by the Moynihan clamps; and, second, after the removal of the neoplasm and the bowel was otherwise sound, an end-to-end union with a Connell and Cushing suture aided by the double loop suspension ligature were found most practical and easy of application. The merits of these methods will be the subject of another communication at another time and place.

THE SURGICAL CONCEPTION OF SIGMOID PATHOLOGY.*

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In the evolution of intraperitoneal surgery, our progress has invariably been from a resultant or terminal pathology to the antecedent or original pathology; from the well-advanced and easily discovered lesions to the earlier and more obscure departures from normal. Gradually, step by step, as our knowledge has widened by experience and study, we have learned that large pelvic abscesses have small beginnings in an infected tube or endometrium: that cancer of the gall bladder or stone in the ducts means a previous infection of the parts: that malignant disease of the rectum, stomach or uterus is usually preceded by benign localized inflammatory or necrotic lesions, and we have learned to take into thoughtful account the physiologic and anatomic peculiarities of these different regions in connection with their etiologic bearing on pathologic conditions, and, lastly, as better results followed timely surgery, we have won the confidence and co-operation of our colleagues, the internists, without which many victims of intraperitoneal pathology must still have suffered or died, with their malady unrecognized, untreated or mistreated. So it has been in other parts of the abdomen, and so we have reason to hope it will be in sigmoid disease.

MORTALITY.

So long as our surgical endeavors are limited to advanced malignant disease and acute obstruction from volvulus, we can not reasonably hope to reduce the present high mortality that attends sigmoid operations. So soon as we learn to recognize, trace and interpret the successive morbid processes, that unchecked lead up to dangerous terminal pathology, we may confidently expect to realize the full benefits of timely and preventive surgery here as in other parts of the body.

In spite of the absence or scarcity of statistical operating-room and postmortem evidence, there are good reasons for believing that the sigmoid must often be the site of important pathologic processes deserving surgical consideration, of which only the small proportion that terminate in cancer or complete obstruction of the bowels are usually recognized.

ANATOMIC CONDITIONS.

No one familiar with the surgical anatomy of the sigmoid can fail to be impressed with the existence of conditions that must render this part of the alimentary canal especially susceptible to disease and accident. It is a constricted irregularly tortuous portion of the large intestine, firmly attached at either extremity by a comparatively short mesentery, the middle portion freely movable, being connected by a long mesosigmoid, and would seem to present every opportunity for the occurrence of twists and angulations (Fig. 3).

A sagging descending colon, with its loose attachment, favors angulation at the upper extremity of the sigmoid, while angulation of the lower extremity can easily occur when the middle portion falls over the more closely attached distal end of the sigmoid. Under the head of volvulus, only those distortions are described as are seen more or less imperfectly in operations, but experimentally various other twists and angulations may be produced in a way to obstruct the bowels partially or completely.[1]

It is highly probable that partial obstructions of the large intestine, malignant and benign, occur at this point much oftener than is generally believed; for unless the obstructive symptoms are urgent these cases rarely come under the observation of the surgeon and in most instances escape recognition. In the light furnished by experiments on the cadaver and recent clinical observations, I feel sure that I have in the past treated the vast majority of these cases symptomatically with no conception of the real causes of the symptoms, and doubtless others have often made the same error.

In no part of the gastrointestinal canal are the anatomic conditions so favorable for the development of ulcer. Hardened fecal matter passing from a large straight canal through a smaller tortuous one, frequent temporary angulations, with the occasional sagging of one part over another, are markedly irritating factors, all favoring localized inflammatory and necrotic lesions. Long-continued pressure of fecal accumulations on the intestinal wall, by interference with the circulation, may induce local necrosis; any twists or compression of the mesosigmoid may produce the same result by interrupting the blood supply, and these last-mentioned causative factors of ulcer must often be operative in this region.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Volvulus is permitted by a long mesocolon, but the direct cause must be either trauma, or more frequently mechanical obstruction at the distal end, sufficient to distend and displace the middle portion of the sigmoid.

PATHOLOGY AND LOCATION OF LESIONS.

Ulcer and angulation are doubtless often associated, with the former as the usual primary causative factor. In two of my operations I found the bowel angulated at the juncture of the descending colon with the proximal extremity of the sigmoid, and an ulcer at the angle, which gave way when I attempted to restore the parts to their normal position (Fig. 1). It is easy to understand how most permanent angulations or twists of the sigmoid are preceded or followed by an open or cicatrized ulcer and how recurring angulations or twists might be more likely to occur about the contracting scar of an old ulcer.

On the other hand, it is true that pus collections can not often occur in sigmoid pathology, for, unlike the infected Fallopian tube, appendix and bile ducts, where drainage is imperfect or impossible, the anatomy of the sigmoid permits good drainage from the mucosa, which is the usual site of infection. A perforating ulcer, however, might result in abscess here, as it often does in the stomach ulcer.

It is a remarkable fact that not less than 87 per cent. of all cancers of the gastrointestinal tract are situated in the narrow strictured parts of the canal, the sigmoid standing third in point of frequency. It surely can not be chance or the operation of any general cause that so distinctly marks these parts as the favored sites of malignant disease. This overwhelming predominance of cancer in certain regions can only be due to a local cause; and, so far as can be determined, that local cause is chronic ulcer, or its cicatrix. It can not matter whether that ulcer is produced by hyperacidity of the gastric juice, stagnation of the bowel contents, abnormalities of the sphincters, or the irritation or pressure of hardened feces on the intestinal wall, so long as we know that ulcer is essential to the development of cancer and the prevalence of cancer indicates the relative frequency of ulcer.

But since recent studies in stomach pathology go to show that only a small proportion of gastric ulcers terminate in cancer, and that a large majority of these ulcers either cicatrize spontaneously or remain open indefinitely, it is apparent that ulcer is far more frequent than cancer, and, as this doubtless holds as true of the sigmoid as of the pylorus, we may assume that ulcer of the sigmoid is of very common occurrence.[2]

Incomplete, non-malignant stricture, with or without a twist or angulation of the bowel, probably ranks next to ulcer in point of frequency and in time of occurrence. This belief is based on: First, the known tendency of intestinal ulcer to produce cicatricial stricture; second, the ease with which stenosis can be produced by twisting or angulating the sigmoid in the cadaver; third, the history of gradual occlusion elicited from a good proportion of the patients operated on for complete obstruction; fourth, the marked symptoms of stenosis of the sigmoid observed in a number of patients not operated on; fifth, the assumption that any contracting ulcer, perhaps insufficient to produce occlusion itself, might favor angulation with resulting obstructive symptoms. I have several patients under observation who present to my mind convincing evidence of chronic incomplete stricture or stenosis of the sigmoid, and at least three of my non-malignant cases, in which the patients were operated on for complete obstruction, gave a distinct history of gradual occlusion extending over a period of several months. The apparent slow development of sigmoid cancer noted by most careful observers should, I am sure, be interpreted as an evidence of a precancerous pathology rather than a deviation from the general law that the progress of malignant disease is essentially rapid.

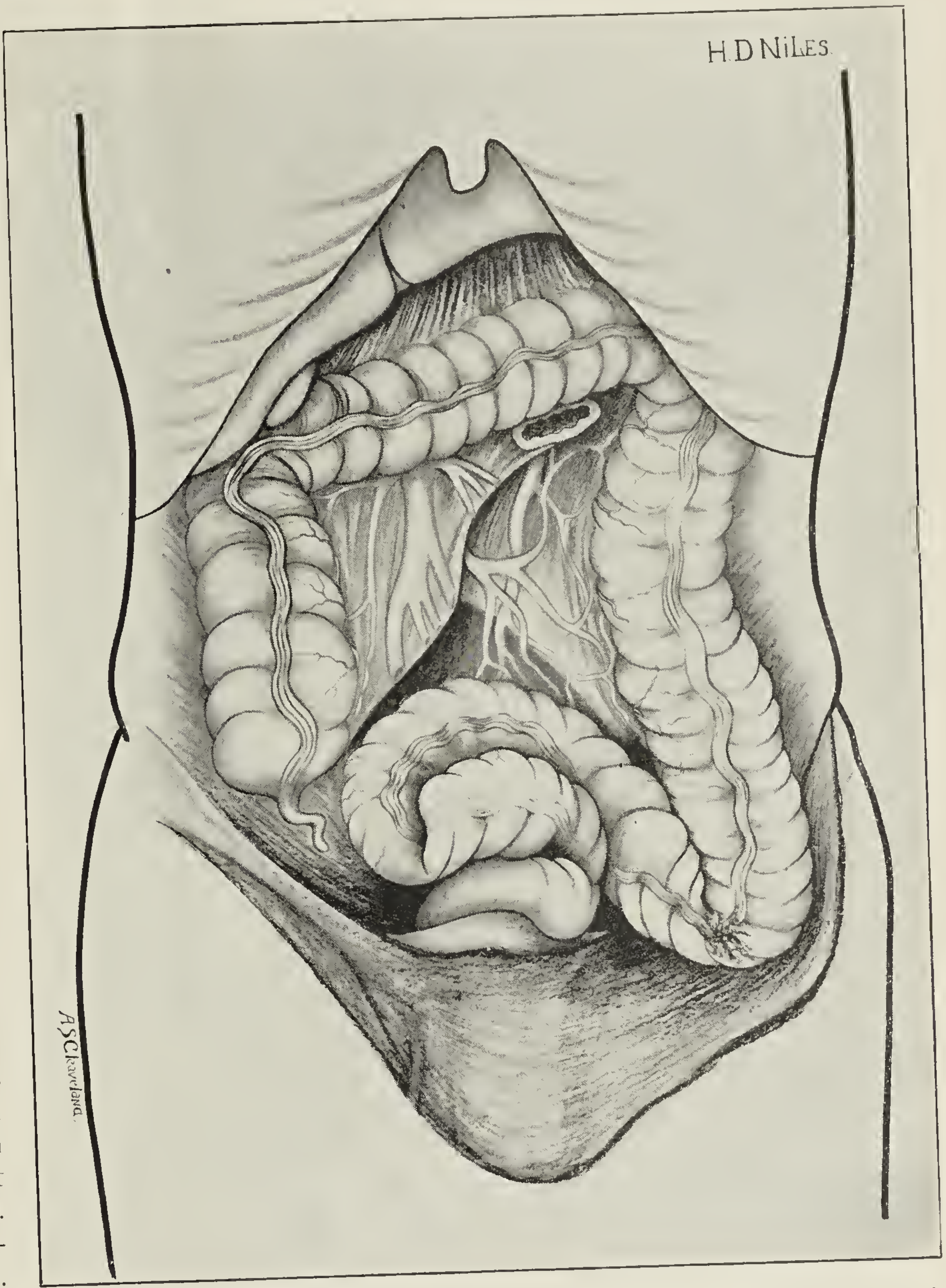

Fig. 1.—Showing commencing ulcer and angulation at proximal and distal ends of sigmoid.

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[2] A good proportion of our office patients complaining of chronic obscure abdominal symptoms should be examined for sigmoid ulcer.

In the fewest possible words I have attempted to show, first, how ulcer must of necessity be the usual primary lesion resulting from the anatomic and physiologic peculiarities of the sigmoid; second, that cancer here, as in the stomach, is preceded by ulcer; third, that ulcer is always the causative factor in annular stricture; fourth, that it is the most influential factor in sigmoid angulation and one of the predisposing causes of accidental volvulus; fifth, that, as a consequence, it is the important antecedent pathology of all malignant and most non-malignant, complete and incomplete occlusions of the sigmoid.

It must be admitted that the present available statistical, operating-room and postmortem evidence is not alone sufficient to prove these statements, but in a careful study of my own cases and those of thirty well-known American surgeons with whom I have been in correspondence I had hoped to include an analysis of these clinical statistics, but space will not permit.

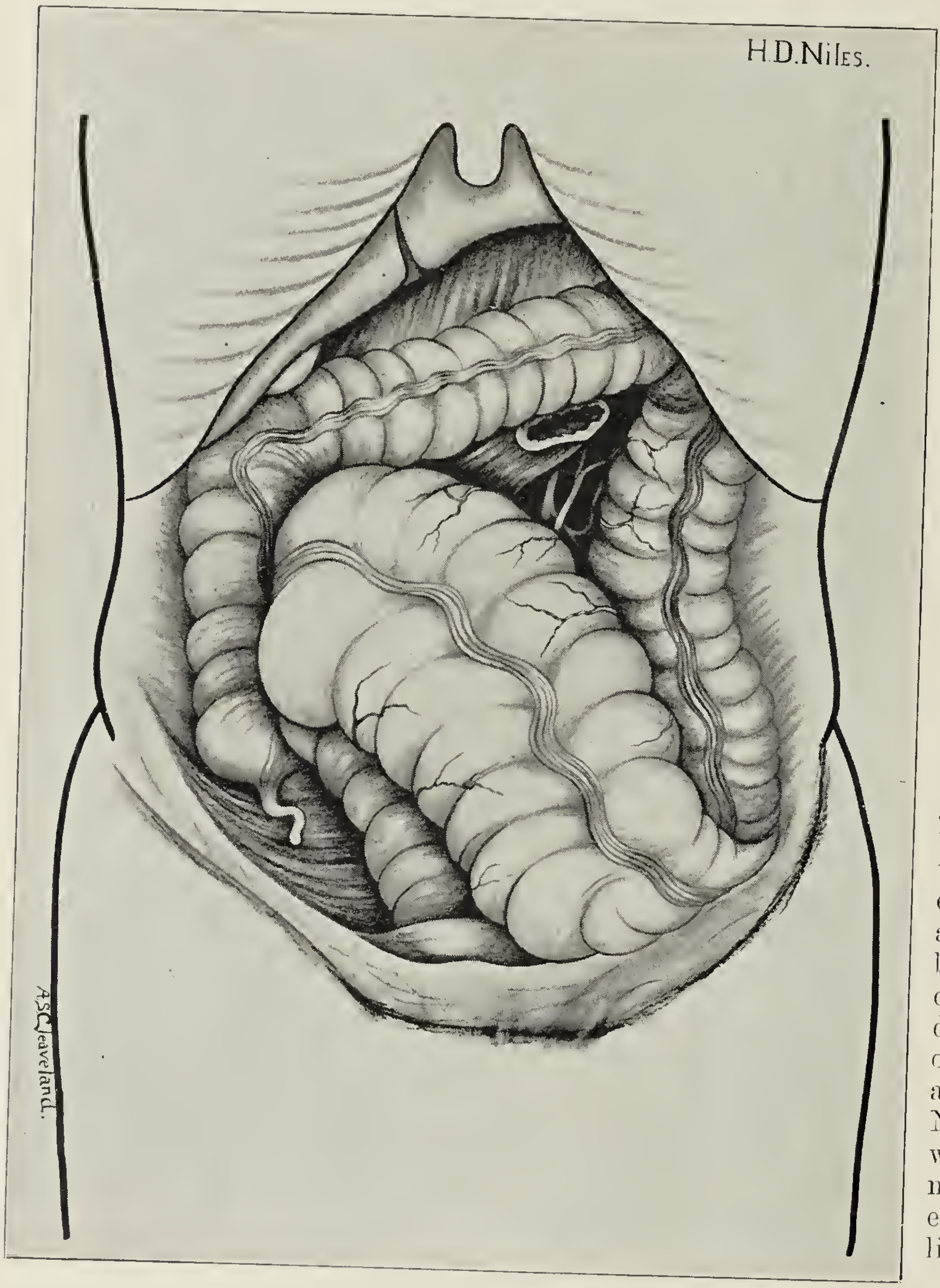

Fig. 2.—Stricture of proximal extremity of sigmoid, showing enormously distended sigmoid after inflation.

The chief (and I think sufficient) support of these conclusions comes from the following facts: First, our knowledge of the surgical anatomy of the sigmoid, gleaned from studies and experiments on the cadaver; second, the relations between ulcer and cancer and ulcer and pyloric stenosis as taught by recent observations made during operations on the stomach; third, the known relative frequency of sigmoid cancer and the occasional occurrence of acute obstruction of non-malignant origin; fourth, the fact that every variety of ulcer, even typhoid, has frequently been found in this region; fifth, the fact that ulcer is the only lesion that could be the common result of the anatomic peculiarities and at the same time the common cause of the terminal pathology of the sigmoid.

If my reasoning is sound and my conclusions are true, or even approximately true, the early recognition and rational treatment of sigmoid ulcer and its complications are worthy of the most careful consideration of both internists and surgeons. The limits of this paper will not permit me to dwell on the symptomatology of sigmoid ulcer, but those who realize the frequency of ulcer in this region and the distress and danger that may ultimately result from ulcer will not measure the gravity of the lesion by the mild symptoms that characterize its early stages. A suggestive history, the exclusion of other diseases, the absence of acute inflammatory symptoms, the left-sided tenderness, either with or without inflation of the bowel, the distension of the colon, the colicky pains, the presence of pus or blood in the stools, obstinate constipation or obstructive symptoms, are all indicative of sigmoid pathology.

METHOD OF EXAMINING THE SIGMOID.

There is one method of examining the sigmoid that I think deserves special mention. Inspection, palpation and percussion before, during and after inflation of the bowel with air or distension with water may be of the greatest value in determining whether or not the lumen is narrowed by stricture, angulation or distortion, and in this way we may even determine the degree and location of any stenosis. Pressure on the distended bowel will often enable us to locate the point of tenderness that otherwise might not be discovered. A fixed point of tenderness without stenosis would point to the probability of an ulcer which might cicatrize spontaneously. Narrowing of the lumen of the bowel with or without tenderness would indicate a permanent lesion or a progressive pathologic process that might in time become a menace to life or health (Figs. 2, 4 and 5).

BASIS FOR RATIONAL TREATMENT.

Any rational treatment of sigmoid disease must be based on our conception of the successive pathologic links that connect the anatomic and physiologic peculiarities of the sigmoid with the dangerous inflammatory and obstructive lesions which we find in late operations. To recognize and to interrupt this process at the earliest possible moment, and before irreparable damage has been done, becomes the aim of those who appreciate the relative frequency and importance of sigmoid pathology in each stage of its progress.

Pathology here passes from the medical to the surgical field: First, when any ulceration or necrotic process starting in the mucosa extends to or includes the peritoneum; second, whenever there is any evidence of mechanical obstruction, partial or complete, regardless of the cause; third, when a localized peritonitis exists that does not readily yield to simple measures directed to the suspected cause. This does not mean that every such case should be subjected to immediate operation, but that the decision as to when, when not and how to operate can best be made by those who view these conditions from a surgical standpoint. Medicines, especially cathartics, are always useless and frequently harmful.

The essential principle of treatment of sigmoid ulcer, like that of gastric ulcer, is rest. How best to secure that rest with the least distress and the greatest assurance of safety to the patient no one may as yet presume to state dogmatically. The starvation plan, irrigations from below, or continuous currents of aqueous solutions from above, through an opening in the colon; or in the presence of chronic stenosis or threatened occlusion, iliosigmoidostomy, excision of the ulcer, or exsection of the diseased portion of the gut, are all procedures that may be considered.

In formulating the treatment of a pathology that has rarely been seen or studied except in the most advanced stages we can not expect at once to be free from doubts and misgivings, but as we gradually learn to outline and to carry to the consulting room and bedside a well-defined mental picture of the successive morbid processes in sigmoid disease, more accurate methods of diagnosis will be suggested and more effective means of treatment will be evolved; and we may be assured that in this region, as in other parts of the body, symptomatic medication and "last resort" surgery will in due time be supplanted by rational measures and timely operative procedures.

DISCUSSION.

ON PAPERS OF DRS. NILES AND JONAS.

Dr. William H. Wathen, Louisville, Ky., said that recently, while preparing a paper on gastroenterostomy, he corresponded with five men whom he considered among the most distinguished surgeons in Europe in abdominal work—the late von Mikulicz, Kocher, Czerny, Robson and Moynihan—and five distinguished surgeons of this country. The inquiry was as to the kind of anastomosis they make and what method of suturing they use. From the correspondence, he was fairly convinced of the fact that the tendency was to eliminate, as far as possible, all mechanical means in making any sort of anastomosis of the intestinal tract, from the stomach to the sigmoid flexure. He believes that the Murphy button has done more in the process of evolution to show what can be done in anastomosis of the intestinal tract than anything else, and by its use it has been possible to demonstrate conclusively the promptness of firm union in properly coapted surfaces; and, also, that in the hands of the experienced abdominal surgeon the use of the suture is the safest and best method in nearly all cases. Therefore, he advises the use, with few exceptions, of the continuous suture, and especially where it is possible to use Moynihan's method of bringing the parts of the intestinal tract in apposition by including each side in a forcep covered by gum tissue. The continuous uninterrupted suture should usually be used, because it is easily and quickly applied, insures more perfect apposition, and is followed by fewer immediate or ultimate complications. Simplicity and rapid technic must be emphasized as essential factors in intestinal surgery.

Dr. R. H. M. Dawbarn, New York, said that at one time he thought that the plates carved from sweet or white potatoes, and the buttons and bobbins he devised of the same material (raw vegetable tissue) were an improvement on the decalcified bone plates of Senn. Perhaps they were; but he has not used anything of the kind for many years. For over fifteen years he has used the continuous linen suture in gut-work, plus a single temporary stitch, so placed as to make smoothly tense the surface being sewn together. He is convinced that simple suturing is the safest method and the best, and that in place of the Connell method, with interrupted stitches, the continuous suture (running Lembert) is the safest, using linen thread. But the continuous suture is not a safe one unless one uses with it the morphin splint, administering morphin, so as to put a stop to peristalsis for the time being, until (in a few hours), union is certain to be firm. Otherwise, the continuous suture might cut out at some point, and the wound gape in consequence. Of course, the saving of time in using the continuous suture is the main thing. This point can not be made too strongly.

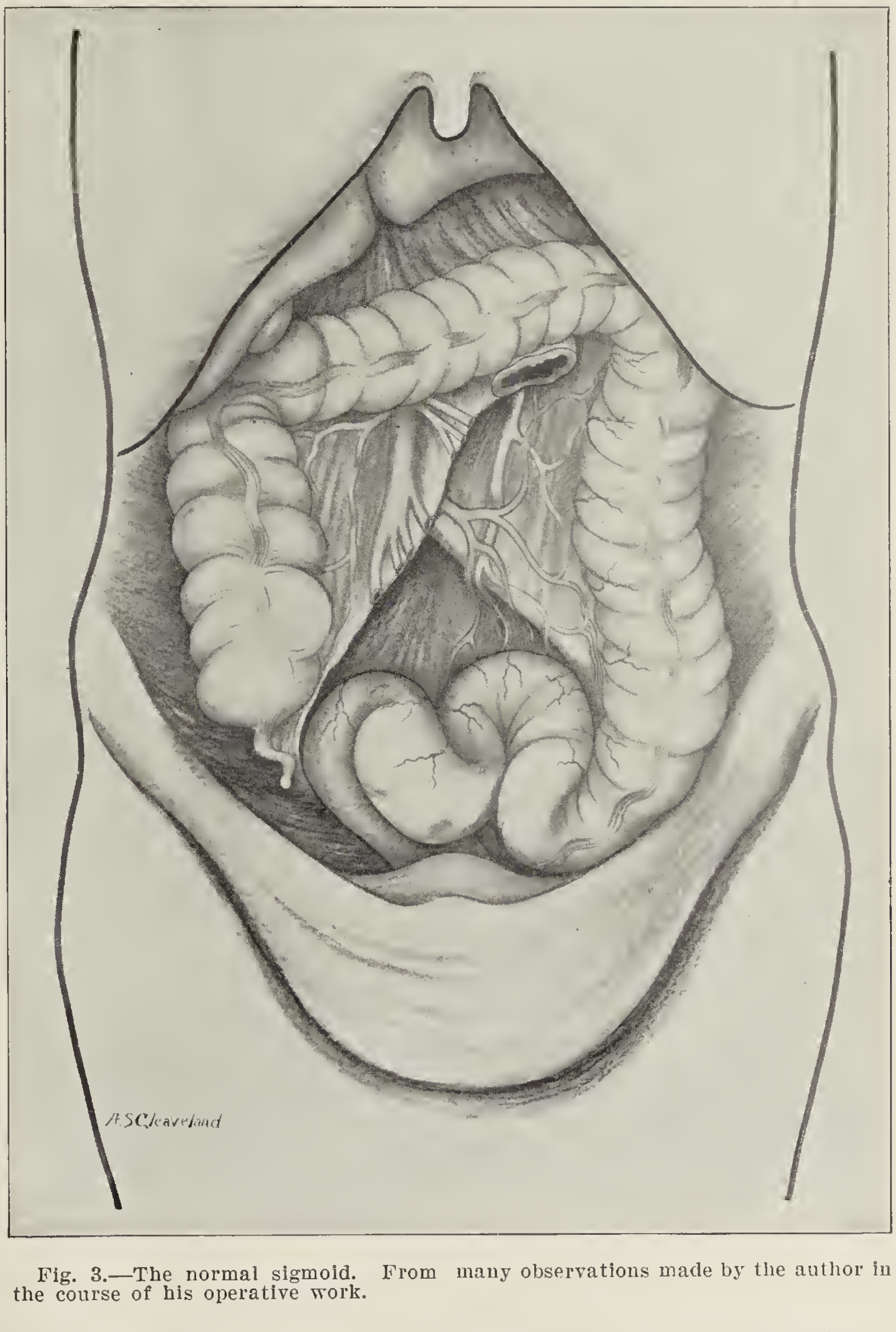

Fig. 3.—The normal sigmoid. From many observations made by the author in the course of his operative work.

As regards the Murphy button: If one uses it anywhere in the bowel without the row of sutures about it, then one is depending on Nature to throw out a plastic exudate to surround the region; and experienced surgeons have had the sad experience of killing one or more patients, before they learned not to trust to Nature in this matter. If one sews all the way round the Murphy button in order to make it safe, then its chief advantage, that of speed, is done away with. One can suture by a running continuous simple Lembert stitch as quickly as one can put in a Murphy button and suture all the way round. Another objection to the Murphy button is that when it cuts loose, one is not sure that it will cut loose on the right side—the proximal—of the anastomosis. He has had the unpleasant experience of having the button go the wrong way, by reverse peristalsis. That is called vomiting when it occurs in the stomach, but when it occurs in the intestine there has no name been given to it. It is a condition that is liable to go on for hours and even for days; and there may be just enough contraction of the anastomotic opening so that the button never passes that point. Dr. Wyeth once reported a case where for more than 120 days the button wandered around between the anastomosis on the one hand and the stomach on the other, until the patient could not stand the colic and misery any longer and a second laparotomy was done for the purpose of removing the button. The patient again got well. But any form of anastomosis that runs even the slightest chance of risk entailing another laparotomy is not to be recommended, in comparison with an anastomosis leaving no foreign body, requiring no especial instrument for its performance, and as quick as the speediest, namely: Continuous suturing of surface, made tense, to aid speed, and safeguarded against leakage, both by rapid, plastic exudate of Nature's glue (because of light scraping of peritoneal surfaces about to be sewn together), and also by the morphin splint, carrying out that cardinal principle of good surgery, to put operated parts absolutely at rest.

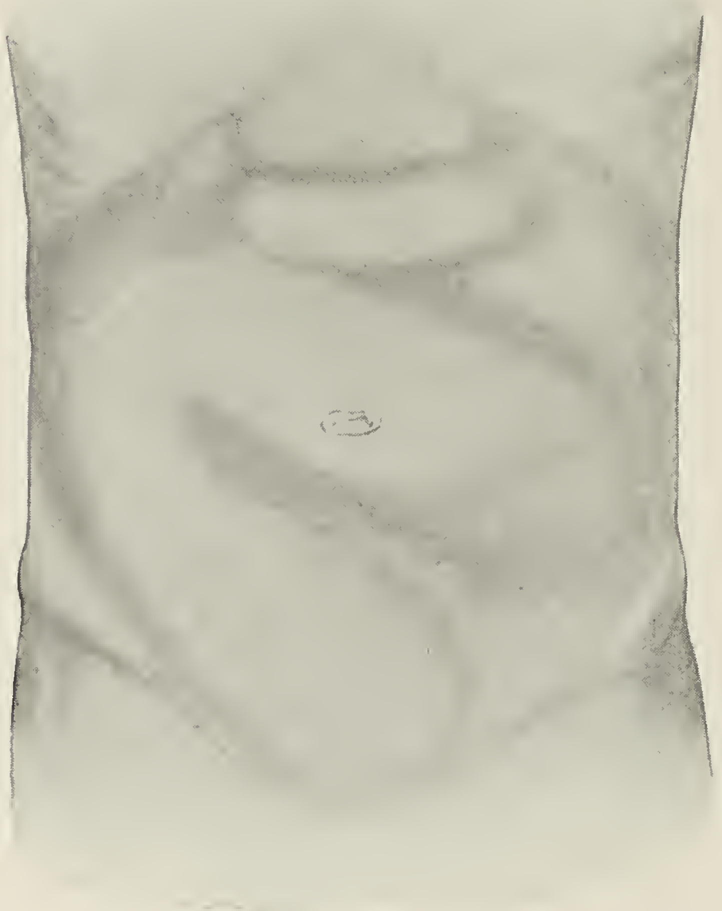

Fig. 4.—The outlines of the sigmoid, when greatly distended, as observed through the abdominal wall. This distension may occur when there is a tight stricture of the distal extremity of the sigmoid, or it may be produced by artificial inflation of the lower bowel, when the stricture is at the proximal end of the sigmoid.

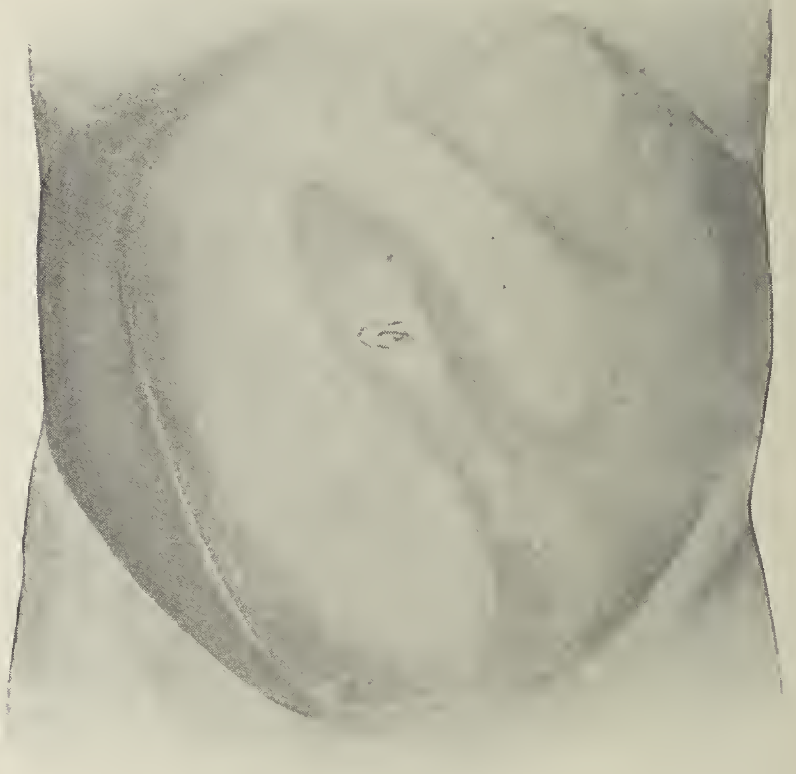

Fig. 5.—Another view of an enormously distended sigmoid. Figures 4 and 5 are redrawn from Nothnagel's "Diseases of the Intestines and Peritoneum."

Dr. F. A. Dunsmoor, Minneapolis, has been in the habit of using a button when making a gastrointestinal anastomosis, for one particular reason. The button leaves, after its escape, a peculiar circle which does not grow smaller as time goes on. This he has verified in postmortem examinations three years after operations. He has yet to hear anyone say that the opening between the stomach and the intestine did contract after having been made in the circular manner, when a Murphy button was used, no matter what became of the button afterward. He uses the suture in the colon since the button may temporarily obstruct the bowel. The lower in the intestinal tract the greater demand for the suture, but he prefers the button for operation high up in the small intestine.

As to the amount of colon to be resected. He began that work through emergency surgery, and removed the shortest possible damaged portion only. The physiologists say that the colon is not indispensable—that it does not digest food, but does absorb it, and thus helps nutrition. Dr. Dunsmoor resected the ascending colon from the head of the cecum for malignant disease, and the sigmoid and a large part of the descending colon for the same cause; but it remained for Mr. Arbuthnot Lane, of London, to give him courage to remove the colon from the terminal portion of the ileum to the splenic flexure for ulcerative colitis. Mr. Lane goes farther and removes the colon for obstinate chronic constipation.

Dr. E. W. Andrews, Chicago, called attention to the fact over fifteen years ago Dr. Nicholas Senn, at that time of Milwaukee, was making his classic experiments on the intestine of the dog, which preceded the Murphy button, and practically all intestinal work which is now so much perfected. His colleague in that research was Dr. Connell, of Milwaukee, to whom Dr. Senn gave the credit in his first book, of having devised the first bone plates for intestinal anastomosis. Dr. Connell devised the through and through suture which holds the plates, and also one without plates. Later, Dr. F. Gregory Connell perfected what is now known as the Connell enterorrhaphy, by employing it, ever since the Connells demonstrated their method in their dog experiments. Dr. Andrews has been a firm believer in the Connell suture as being the very strongest known in intestinal anastomosis. He employs it not only for anastomosis of the small and large bowel, but also for pylorectomy and gastroenterostomy. The suture has certain merits over all known stitches, the bone plates and buttons. It has at the same time the action of a clamp and of a suture line, going from the lumen of one hollow viscus to that of the next, including every layer, even the mucosa, traversing transversely through them all. When an anastomosis is made no thread can be seen from the peritoneal side, which is in distinct contrast to the Maunsell suture, where the knot lies across the suture line. Dr. Connell, when he first described this operation, gave the option between using the stitch continuously and using it interruptedly. Nine times out of ten Dr. Andrews used the suture continuously, making a back stitch about every fourth insertion of the needle. This prevents puckering and back-slipping. He was interested to note during a visit to the Mayo's clinic last fall that in performing pylorectomy, making the duodenal insertion, according to Kocher's method, they were using the Connell suture. He said that in Chicago and the West, the Connell suture has established itself most thoroughly.

Dr. F. Gregory Connell, Salida, Colo., said that the suture operation has resolved itself into the perforating and the non-perforating suture. The advantage of the perforating suture is its security. The disadvantage is a possible capillarity. This subject, the capillarity of intestinal sutures, he submitted to the section during this meeting and, therefore, did not discuss it further at this time. (The Journal, Aug. 11, 1906, page 405).

Dr. L. Freeman, Denver, called attention to the comparatively favorable prognosis of cancers of the sigmoid flexure, and cited a case which came to his notice about a year and a half ago. The patient had, in addition to the carcinoma of the sigmoid, involvement of the urinary bladder and of the peritoneal surface of the abdominal wall, so that it was necessary, in removing the tumor of the bowel, also to remove quite a large portion of the bladder and peritoneum and to resect, perhaps, six inches of the colon. Notwithstanding this complication the patient is perfectly well. Eighteen months have elapsed since the time of the operation.

Dr. A. McGlannan, Baltimore, emphasized the importance of intermittent intestinal obstruction as a symptom of cancer of the bowel. Since Dr. Bloodgood called his attention to this symptom, about two years ago, he has seen it seven times in cases where a tumor was not palpable. In all these cases there was a history of intermittent obstruction, and in each instance a cancer of the large intestine of some kind was found at the operation. That seems to be a point in diagnosis, to be borne in mind in these cases.

Dr. Charles Stoltz, South Bend, Ind., has found that it is exceedingly difficult to determine the exact nature of the obstruction previous to operation. He had a case of this kind nearly two years ago, that of a woman, 42 years of age, who had suffered since childhood from intermittent obstruction. Finally, about December, 1904, her symptoms became so intense that she sought surgical assistance. It seemed that the obstruction followed periods of fatigue. On New Year's day, after entertaining at her home, she became unable to continue her household duties. When Dr. Stoltz first saw her she had symptoms which led him to believe that she had obstructive adhesions or a small umbilical hernia, especially because of the manner in which the umbilicus was pulled about with the violent intestinal peristalsis. However, on opening the abdomen there was no evidence of adhesions or of a hernia. At the beginning of the sigmoid, however, there was a constriction and a thickening of the bowel for about five inches, the lumen being as small as a lead pencil. There were several lesser constrictions about this point, but otherwise nothing abnormal was found. He did an ileosigmoidostomy and the woman was well for about six months, when symptoms of obstruction reappeared. Recently she took a long, restful trip. During all that time she had absolutely no signs of any disturbance. Her husband, who is a physician, said that she had never been in better health. She returned home, became tired again, and her difficulty recurred. He has been unable to decide on the exact pathology. Of course, it may be ulcer or non-malignant tumor, but the fact that fatigue brought on these attacks of intermittent obstruction and that they were absent during periods of rest is an interesting feature in the case and suggestive of a neurosis.

Dr. J. B. Boucher, Hartford, Conn., said that a straight needle and a piece of linen thread are the best contrivances to be used for these cases, where there is time. In some cases, where the condition of the patient is such as to require rapid work, the Murphy button must be used. He has not had any experience with the opium or morphin splint, of which Dr. Dawbarn spoke, but it seemed to him that it might prove useful. Last year he reported six cases of resection of the bowel for cancer. Since then he has had two more, also five or six for non-malignant conditions, making thirteen or fourteen cases in all. In all these cases he used only the straight needle and the linen thread, and he has not had any mortality. Dr. Boucher thinks that in cases of cancer of the bowel the dissection should always be carried wide of the cancer. If a thorough resection is done, even desperate cases will recover from the operation and remain well for a number of years. He did a resection of the colon five years ago and the man is still living and well. The glands were enlarged clear into the pelvis and he could not get at all of them. It was a case of adenocarcinoma. Resection can be done as well, and nearly as rapidly, as anastomosis around the growth. It is strange that such patients seem to have immunity from infection to a certain extent, and their reparative power seems to be greater than that of the ordinary individual.

Dr. J. A. MacMillan, Detroit, said that although resection of a portion or of the entire colon for chronic inflammation or ulceration has been advocated by Arbuthnot Lane and others for some time, he does not believe such extreme measures for these conditions will obtain the favor of the profession. It is possible that in very aggravated cases, in which stricture seems inevitable, a resection is justifiable, but even in such cases the ulceration should be taken care of first by more conservative methods. He believes that the rational method of treating these cases is by temporary colostomy. The physiologic rest obtained in this way is followed by rapid disappearance of the ulceration and inflammation, and when the healing process is complete the artificial anus may be obliterated.

Dr. H. D. Niles said that it has become almost a habit with surgeons and internists to exclude all kinds of abdominal surgery, except in those cases that are attended by acute pain, tremor, febrile symptoms or acute obstruction. The treatment of ulceration is rest in some form. In regard to the favorable results obtained in operations on the colon, that has been the observation of all who have done much work on the large intestine, while the reverse is true in the case of the small intestine. It is surprising how many cases of malignant disease of the large intestine will survive an operation and live for years without a recurrence. He has used the Murphy button and some other appliances, and he would not like to say that he would never use them again, but gradually he has accustomed himself to do the suture operation and he likes it very much better. It has been quite a long time—years—since he used the Murphy button. He thinks that the linen thread undoubtedly is the best suture, but there is a linen, the celloidin linen, that is anhydrous. It does not soil or take up fluid or infection, and it seems to be the ideal suture material for intestinal work. He has used it and always with satisfaction. It is easier to do comparatively dextrous work with it than with any other material. The fact that it is anhydrous assures one that it is not likely to become infected, no matter what method of suturing is employed.

Dr. A. F. Jonas said that the purpose of his paper was three-fold. First, to call attention to the necessity of early recognition of this condition; second, to outline the pathology; third, to restore the continuity of the bowel after it had been broken by removal of the growth. The question of early diagnosis here is exactly the same as that of early recognition of cancer of the pylorus. The trouble with the latter is that usually surgeons wait until they can feel a lump, and then when they operate they find extensive invasion of adjacent organs. The operative success may be good, but the result obtained is not a permanent one on account of early recurrence. The same is true of neoplasms of the colon. By waiting until the tumor can be felt, and sometimes nothing else can be done, the metastases have become so extensive that recurrence takes place very soon after the operation. So that it is of the greatest importance to make use of every diagnostic aid in order to establish at least a probable, if not an absolute, diagnosis in these cases.

The methods of re-establishing the continuity of the bowel that have given Dr. Jonas the best satisfaction are the closing of the ends of the intestine by a purse-string suture and then making lateral anastomosis with suture, assisted by the Moynihan clamps, using an interrupted or continuous through-and-through suture. When the Connell suture is used there need be no fear of the tearing out of the sutures, providing the tissues are healthy. Dr. Jonas uses the Connell suture, assisted by the double loop mentioned in his paper. It is easy, rapid and safe, particularly if finally supported by a right-angle Cushing suture, and there is no danger of leakage.

TREATMENT OF ULCER OF THE STOMACH, WITH A RECORD OF CASES.*

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In the treatment of ulcer of the stomach in its various forms we have to-day two general methods—medical treatment and surgical treatment.

In cases of simple, uncomplicated ulcer, that is, ulcer with or without hemorrhage, uncomplicated by permanent obstruction of the pylorus, or perforation, medical treatment offers an efficient, though not an absolutely certain, means of cure. This treatment gives in this class of cases almost universally good results as regards immediate relief or temporary and, if the treatment is thoroughly carried out, excellent results as regards permanent cure.

The efficiency of the treatment as regards the after-results or permanent cure is dependent to a large extent on its thoroughness. In cases in which treatment is completely carried out, that is, when strict treatment is enforced for a considerable period, a period of at least four months, and when a proper manner of living is pursued subsequently, complete cure may be expected in a large majority, probably 80 per cent., of the cases.

Surgical treatment of simple ulcer is capable of providing an efficient means of cure for the disease. The record of after-results or permanent cure in the cases which survive the effects of operation under surgical treatment is quite as good at the present writing, taking the grand average of cases, as that secured by medical treatment. Owing to the number of deaths which have occurred as the result of operation, the record of immediate results of surgical treatment is, however, much inferior to that obtained under medical treatment and the record of the grand total of final results, including the deaths present in the immediate results and the recurrences or failures to cure included in the record of after-results, of surgical treatment, is much inferior when we consider all the factors of benefit to the patient, the duration of life and the comparative freedom from symptoms of stomach disturbance, to that obtained under medical treatment. That is, the expectation of benefit to the patient, taking the average of all cases, is, by the verdict of the records received up to date, greater under medical treatment than under surgical.

The argument for surgical treatment in simple ulcer lies in the fact of the considerable number of recurrences which occur in medical cases, taking the average of all cases, those of individuals in good and poor circumstances, private cases and hospital cases alike, and in the deaths which result from such recurrence.

Even with this record of recurrence medical treatment is, or can be when it is thoroughly carried out, as the results prove, a satisfactory method. In the face of this efficiency of medical treatment there can be, it seems to me, no excuse for the employment of surgical treatment with its equal liability to failure to cure, and the additional chances of death, which the records show to be associated with this treatment, in place of medical treatment in the initial treatment of cases of simple ulcer. When surgery can show better average results as regards both duration of life and permanent cure it may justifiably replace medicine in the treatment of this disease. At present it is to be considered in connection with this class of cases, only in cases which have failed to find relief or have recurred after being subjected to good medical treatment.

In cases of chronic ulcer complicated with disturbance of the ability of the stomach to empty its contents into the duodenum, that is, cases of obstruction of the pylorus, or contraction of a part of the stomach wall from ulcer, causing a permanent gastrectasis, medical treatment gives very unsatisfactory results as regards the cure of the combined condition. Under such treatment patients with this affection may, in many instances, regain comfort as regards symptoms, health, strength, weight, and ability to work, and may keep this gain as long as treatment is continued. Permanent cure, that is, absence of stasis and symptoms of discomfort for an indefinite period after the cessation of treatment is, however, rarely accomplished by this means.

Surgical treatment, on the other hand, gives excellent results as regards permanent cure in this class of cases. There are, it is true, a certain number of failures to cure or of recurence symptoms, and a certain number of deaths from operation under this treatment. In a large majority of cases, however, the treatment gives excellent results, and in consideration of this latter fact, together with the fact of the inefficiency of medical treatment to provide cure for this condition, surgical treatment should, it seems to me, be advised in all cases of this type, once the diagnosis is definitely determined.

The only argument against this procedure lies in the fact that the chances of an establishment of a fair condition of health and comfort under a continued medical treatment are fairly good, and that death under such conditions is a very rare occurrence, while under surgical treatment, though the chances of cure are excellent, there is always the risk of death as the result of operation. If the patient prefers the kind of comfort which can be obtained in a life of continued treatment, there is nothing more to be said. Excellent condition can often be maintained in this way and exacting treatment is not always necessary to such maintenance. On the whole, it seems to me that, as a rule, surgical treatment is good medical advice in these cases.

For the treatment of cases of ulcer not included in the above classes, that is, cases complicated by perforation, whether the case be one of acute perforation or one in which perforation having occurred at some previous time and adhesions between the stomach wall and the surrounding tissues having been established, symptoms of stomach disturbance are still present, we have but one form of treatment, surgical treatment.

In support of these conclusions in regard to the efficiency of our modern methods of treatment of ulcer of the stomach in its various forms, I present a record of the results of treatment of the cases of ulcer of the stomach which have been under my observation and care during the last ten years. The record is made up of all cases of ulcer treated by me in private practice and such hospital cases as have been under my observation both during and after their sojourn in the hospital. Only such cases are included as have been under observation for a period of at least two years subsequent to the time of the initial treatment. Many of the cases have been followed for a much longer period.

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* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

In the first class of cases, those of simple, uncomplicated ulcer, I have included only such cases as have a record of bleeding, that is, a history of hemorrhage or a finding of blood either in the gastric contents or feces, for the reason that without such evidence (the bleeding) the existence of simple ulcer can not, save possibly in rare cases, be accurately determined, and I wish to include in my record only cases of undoubted ulcer. Cases diagnosed as ulcer at the time of the initial treatment, which have subsequently been proved to be cancer, have not been included.

In studying these records of cases of simple ulcer I have noted a fact of which I have for a long time been aware, the fact of the much greater superiority, on an average, of the results of treatment of ulcer in individuals in comfortable circumstances to those obtained in individuals of limited circumstances, as, for example, the average of hospital cases, independently of the initial severity of the cases. These results are explained, I think, by the greater facility of the first class of individuals, through their easier circumstances and their greater intelligence to carry out a thorough treatment for a long period.

It is my custom in all cases of ulcer treated medically to insist on a continuation of strict régime as to diet and rest for a period of at least four months and to advise a certain precaution as to regimen for a much longer period. This thorough regimen can not, as a rule, be carried out with strictness by poor people, the necessities of their life, the requirements of work and the lack of facilities of obtaining proper food or proper surroundings, prohibiting it. As a result they do not do as well, on the average, as their better circumstanced colleagues in misfortune.

As it is the records of those cases which thoroughly fulfill the requirements of treatment which best serve as a criterion of the efficiency of the treatment, it seems to me that the real efficiency is to be judged to a certain extent, at all events, by the results obtained in these selected cases rather than by the record of all cases. I have, therefore, included in my summary of the cases of simple ulcer treated medically, in addition to the record of all cases, a separate record of the results of the cases which received the complete regimen.

1. Cases of Simple Ulcer of the Stomach Treated Medically.—There were 51 of these cases. The immediate results were: Complete relief (cure of hemorrhage and other symptoms), 48; failure in relief of symptoms for any length of time, 2; died (from hemorrhage while under medical care), 1.

The two patients whose symptoms were not relieved were afterward operated on. Both showed evidence of a former perforation with adhesions of the stomach over the site of perforation to the anterior abdominal wall. One died shortly after operation. The other recovered from the operation by excision and has been well since.

The after-results in 49 cases were: Cured (no recurrence of symptoms within two years), 31, or 63 per cent.; recurrence (of stomach symptoms), 18, or 36 per cent.; died (from ulcer), 1, or 2 per cent.

Among the 49 patients there were 16 only who carried out the complete treatment described, that is, who continued under a strict régime as to rest and diet for four months. The remaining 33 cases remained under strict treatment for periods of from one to two months only

The record of after-results in these two sets of cases is as follows: In the 16 cases which received complete treatment there were: Cured, 13, or 80 per cent.; recurred, 3, or 18 per cent; died, 0. In the 33 cases which received treatment from one to two months there were: Cured, 18, or 54 per cent.; recurred, 15, or 45 per cent.; died, 1.

The cases included in both sets were all cases of bleeding ulcer and, on the average, of equal severity. The less good results obtained in the cases in which treatment was continued for two months only indicate, I think, not an inherent lack in the possibilities of medical treatment, but the necessity for the provision of a thorough treatment in all cases. The difference in the results in the two sets of cases was, in all probability, not due entirely to the lesser duration of strict treatment in the latter set, but in part to the fact that the patients took less good care of themselves during the period subsequent to that of the strict treatment.

2. Simple Ulcer Treated Surgically.—There were 13 cases of simple ulcer treated surgically. All were cases in which a failure to relieve symptoms or a recurrence had occurred under or after medical treatment. The results of treatment were as follows: Cured (no recurrence of symptoms within two years), 6, or 46 per cent.; recurred; not relieved by operation, 3, or 23 per cent.; died (shortly after operation), 4, or 30 per cent.

The number of surgical cases in my record is too small to allow of any definite conclusion in regard to results as compared with the results of medical treatment. These facts of importance are brought out by the record:

First, the fact that surgical treatment does serve as an efficient means of cure of simple ulcer. Thus, of the 9 cases surviving operation, 6, or 66 per cent., were completely cured.

Second, the fact that recurrence or failure to relieve symptoms does occur after operative treatment. Thus, among 9 cases which survived there were 3, or 33 per cent., of recurrence of stomach symptoms.

Third, the fact that death from operation is a not uncommon associate of surgical treatment.

3. Chronic Ulcer with Gastrectasis.—There were 26 cases of chronic ulcer with gastrectasis. The list includes only cases of chronic gastrectasis in which there was evidence that the cause of the stasis was ulcer and not cases of temporary stasis due to acute ulcer. Of the 20 cases treated medically there were: Cured (no symptoms or stasis during a long period without treatment), 0; relieved (able to avoid discomfort and keep in physical condition by constant application of medical treatment), 17, or 85 per cent.; not relieved, 3, or 15 per cent.; died under medical treatment, 0.

A number of patients after pursuing a course of treatment have been able to go for periods of from one to three months without treatment, but a return of symptoms has occurred in every instance.

The following are the results of the 14 cases treated surgically: Cured, 9, or 64 per cent.; recurrence or failure of relief, 3, or 28 per cent.; died shortly after operation, 2, or 14 per cent.

Although, as I have stated, the facts are in favor of medical treatment and against surgical procedure for the initial treatment of simple ulcer of the stomach in the average of cases, there are certain cases where this principle is not to be strictly maintained. Occasionally in practice we meet with cases of stomach disturbance in which a diagnosis of either ulcer or cancer is suggested, and in which there is reason to believe from the character and duration of the symptoms that the latter condition, if present, may be so little advanced that the complete eradication of the disease may be accomplished by surgical procedure. In such cases it seems to me that immediate operation is justifiable. It is true that only in rare instances is it possible to eradicate cancer by operation. Cases of this kind do, however, occur and it is by following this line of procedure that we are likely to find them. The following case report illustrates this point:

History.—The patient, a man aged 50, came to me in 1904. He complained at the time of a dull pain in the epigastric region present much of the time, and slightly aggravated by ingestion of food, loss of appetite and frequent desire to raise gas from the stomach. There had been no vomiting or other symptoms. There was loss of weight. The duration of the symptoms was three months at the outside.

Examination.—Physical examination other than the examination of the gastric contents showed nothing abnormal. The hemoglobin was 85 per cent. Examination of the contents of the fasting stomach, obtained by tube 12 hours after the ingestion of food, gave the following findings: Quantity, 25 c.c.; character liquid, like the white of an egg, and colorless; no food remnants were present. The guaiac test for blood was positive. Contents gave no fermentation test with glucose. Lactic acid was absent. The contents obtained one hour after an Ewald test breakfast gave the following characteristics: Quantity, 100 c.c.; food fairly digested; free HCl present, quantity low, .007 per cent.; blood present by guaiac test.

A similar finding to that given above was obtained in the fasting contents on four separate examinations. In each instance a positive blood test was obtained. No fresh blood was seen. The feces showed blood by the guaiac test.

Operation.—The case was recommended for operation with a diagnosis of either ulcer or cancer. Operation was performed by Dr. Greenough, Oct. 14, 1904. At operation a small nodule with a slight ulceration on its surface was found in the antrum pylori. No enlarged glands were found. The nodule was excised and a pyloric resection performed.

Pathologic examination of the excised mass showed the presence of carcinoma.

The patient had a good immediate recovery and in the interval of 18 months since operation has been well. He has regained his normal weight and held it, works regularly, and has suffered from no dyspeptic symptoms. In this case the early operation was advised for the following reasons: The constant blood findings showed the probable presence of ulcer or cancer. The general picture of the symptoms was more suggestive of cancer than ulcer. The short duration of symptoms suggested that if cancer were present it might be so little advanced that the disease could be entirely eradicated by operation. Whether or not the disease has been entirely eradicated is, of course, still an open question. At all events the patient has enjoyed two years of perfect health as the result of our procedure.

ETIOLOGY AND DIAGNOSIS OF GASTRIC AND DUODENAL ULCER.*

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Acute gastric ulcer and the so-called abrasions of the mucous membrane of the stomach are identical in their morbid anatomy and pathology. As a rule these are superficial and extend wholly or through a part only of the mucosa. They are not uncommon and many occur in chronic circulatory disturbances due to heart and arterial disease and to cirrhosis of the liver. They may be postoperative events, especially in abdominal section. They appear in cachectic states due to chronic diseases and are not infrequent in the new born. They may appear in certain neurotic conditions, especially in women.

These acute erosions are soft, sometimes blood stained, often multiple, frequently consist of mere slits in the mucous membrane, may be so small as to escape detection and usually would not exceed 4 mm. in diameter. The largest may be dignified by the name of an ulcer. These acute processes are important only when the erosion involves an artery or vein of considerable size, when a fatal hemorrhage may occur. These acute processes will not be further considered in this paper.

ETIOLOGY.

Chronic ulcer of the stomach and duodenum, frequently termed round, perforating or peptic ulcer, follows nutritional disturbance of a limited area of the mucosa, which results in the destruction of this circumscribed region by the gastric juice. The gastric juice is the destructive agent and, therefore, plays the most important rôle in the causation of ulcer of the stomach and duodenum.

The cause of the condition which permits the gastric juice to attack a part of the mucous surface of the stomach or duodenum is not altogether clear. Probably several conditions may be important factors. It is probable that in certain instances vascular disease in the form of thrombus or embolism, with or without antecedent disease of the wall of the vessel, may be a cause. It is equally true that this condition is not present in the majority of the individuals who suffer from ulcer.

Hyperacidity of the gastric contents, with or without stagnation, is a common accompaniment of ulcer, but it is probable that it is an accompaniment and not a cause of the disease. Chlorosis has been noted in ulcer of the stomach, especially in the young female, but many cases of ulcer occur without anemia and the anemia, when present, is very frequently the result of the loss of blood incident to the ulcer. Central or pneumogastric nerve disease has been ascribed as a predisposing cause, but the evidence is not conclusive. Local ischemia from muscular spasm, especially in the pyloric region, thus predisposing the circumscribed area to destruction by the gastric juice, has been ascribed to this nervous influence. Traumatism from external violence or local traumatism from the contact of rough particles of food on the mucous membrane, and especially in the pyloric region, has been ascribed as a cause. It is known that small traumata of the normal mucous membrane heal rapidly and trauma alone is, therefore, probably not a cause. Stasis of stomach contents with decomposition has been ascribed as a cause, and it doubtless is a factor, especially when associated with bacterial infection. Bacterial infection with invasion of the mucous membrane may so reduce the nutrition of the cells as to render them liable to digestion by the gastric juice. Recently Dr. Fenton B. Turck, Chicago, has been able to produce a typical chronic ulcer of the stomach by feeding dogs with colon cultures over a considerable period of time.

Self-digestion does not occur in a healthy stomach because of a resistance of the normal cells which has heretofore been called vital. It has been suggested that this resistance is, in reality, the presence in the cells of the stomach of an antibody. Under certain conditions this antibody may disappear or may be so disturbed that it no longer protects the mucous membrane in certain localities permitting the gastric juice to attack the tissues.

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To sum up our present knowledge of the cause of ulcer, it is that the gastric juice is the active agent in its production in a limited area and that this occurs because of a nutritional disturbance in a circumscribed region of the mucosa. That the nutritional disturbances may be brought about by bacterial infection associated with local trauma and that vascular disease, local areas of muscular spasm, gastric stagnation and anemia may all serve as factors in certain instances.

DIAGNOSIS.

In a classic case of ulcer there are three chief diagnostic signs. These are, in their order: pain which is usually felt in a localized area and is aggravated by a palpation and by food; second, hematemesis or melena; third, hyperchlorhydria and the some time evidences of gastric stagnation.

The pain of ulcer is characterized by the fact that it is usually felt in the localized area and that it frequently appears to the patient to pass through the body, to be felt in the back, usually on the left side near the spine at the eleventh or twelfth rib. The pain is often periodic, appearing for a day or days with severity and may be followed by an interval of less discomfort varying from days to weeks to months or even years. With the pain there is a localized tenderness which is very severe and is usually situated in the epigastrium. The pain is frequently aggravated by food. In certain instances this occurs immediately after food enters the stomach and in others not for one, two or even three hours after food is taken. The pain frequently continues until the stomach is evacuated by vomiting or until the food has passed through the pylorus. Not infrequently one obtains a history of attacks of acute exacerbations of pain extending over a period of years. These exacerbations are frequently attended with vomiting of food, with or without the appreciable appearance of blood. Frequently such patients are said to have dyspepsia, with the appearance periodically of neuralgia of the stomach.

Hematemesis and melena occur in fully one-half the cases of ulcer of the stomach. The vomited blood is usually dark in color, acid in reaction and is clotted. When passed by the bowel it is frequently tar-like in consistency and color. The occurrence of blood in vomited material and in the stool in an individual who has suffered from dyspeptic symptoms, and especially if he has had pain, is an important sign of ulcer. Occult blood may be detected in the stomach contents and in the stools from all patients who suffer from ulcer of the stomach. The appearance of occult blood usually is not constant, but will always be found if the tests are applied over a sufficiently long period of time. The Weber test for occult blood is a practical one and is reliable when safeguarded by the exclusion of the contamination of the stomach contents and of the stool, by blood from other sources, than the stomach and duodenum. The presence of iron taken as medicine and excreted in the stool will give a blue line resembling the blue line of the presence of blood when peroxid of hydrogen is used in the Weber test.

Hyperchlorhydria is present in the majority of ulcers of stomach and of the duodenum. In a small minority of patients with ulcer there may be a normal or subnormal amount of HCl or an entire absence of it in the stomach contents. In many conditions, especially neurotic in character, hyperchlorhydria exists without ulcer. Therefore, the occasional absence of hyperchlorhydria in ulcer, and the fact that it frequently occurs in neurotic conditions, makes it less reliable as a diagnostic sign in ulcer. Hyperchlorhydria with evidences of pain as indicated above and with the presence of blood, either evident or occult, in the stomach contents and the stool, however, is a positive sign of ulcer. Hyperchlorhydria with gastric stagnation and especially if the fasting stomach shows the presence of a considerable amount of acid secretion, is also of importance in the diagnosis of ulcer.

Chronic ulcer is often latent, and, if latent, one or all of the signs given above may be absent. Frequent intervals of latency follow periods which present the above symptoms. A careful investigation of the history of the patient will frequently enable one to elicit a history of attacks of acute dyspepsia associated with pain followed by intervals of latency with little or no symptoms of indigestion. In the latent state an ulcer may be partially or completely healed and the subsequent acute attack be due to a recurrence of the ulceration or to the formation of a new ulcer. In the latent period a careful examination will show, as a rule, undue epigastric tenderness; will usually show hyperchlorhydria, and, if the ulcer be unhealed, occult blood in the stomach contents and stool. Not infrequently, too, the latent condition will be accompanied with the secretion of an usual amount of acid gastric juice within the fasting stomach.

Duodenal ulcer is not infrequently associated with gastric ulcer, and its etiology is probably the same. Ulcer occurs in the duodenum between the pylorus and the papilla of the bile duct. So situated, its position is so near the pylorus that it produces practically all of the symptoms of the gastric disease, with the exception that usually melena alone and no blood vomiting occurs.

Chronic ulcers of the stomach occupy, in the great majority of cases, the pyloric half of that organ and the largest number of them appear on the posterior wall. When near the pylorus, the saddle ulcers, so called, may occur, and in some instances they may cover a very large surface. When near the pylorus they cause tonic contraction of the stomach, involving the pyloric end of the stomach with resulting stenosis. Stagnation of stomach contents results with, at first, hypertrophy of the muscle of the stomach wall. Chronic ulcer involves the deeper structures of the stomach wall and may have at its base the submucosa, the muscle or the thickened peritoneum which frequently becomes adherent to some neighboring organ. The scar resulting from partial or complete healing of an ulcer, the infiltrated and thickened wall of the stomach or pylorus and the perigastric adhesions frequently produce disturbances of motility which result in symptoms of great importance in the diagnosis of ulcer. Given a history of dyspepsia with pain, tenderness, hematemesis or melena, or of occult blood in the stomach contents and stool, hyperchlorhydria with evidences of gastric stagnation, if after a full meal the stomach does not become practically empty in seven hours and if the stagnant element is hyperacid and if it contain undigested starch cells, ulcer of the stomach or of the duodenum near the pylorus is present.

DIFFERENTIAL DIAGNOSIS.

Cholecystitis, with or without gallstones, may simulate ulcer of the stomach. Such an attack is associated with more or less severe pain in the epigastrium which may radiate to the right shoulder. There is usually marked tenderness in the region of the gall bladder, which, when pressed on, causes a pain which usually radiates to the epigastrium. Hyperchlorhydria may be present, but in uncomplicated cases blood is absent from the stomach contents and from the stool. With adhesions between the gall bladder, the liver and the pylorus, motor disturbances of the stomach may be present. In the interval between the attack of cholecystitis there may be some tenderness in the gall-bladder region and especially if sharp percussion be made over a limited area. This tenderness is more characteristically elicited if the stomach is first distended with gas. When cholecystitis is associated with jaundice and evidences of general infection manifested by chill and febrile disturbance, the diagnosis is more plain.

In pyloric stenosis from simple hypertrophy, there is not the severe pain of ulcer nor is there usually the frequent hyperchlorhydria of ulcer. Simple hypertrophy occurs most frequently in the new born. The differentiation of pyloric stenosis from simple hypertrophy can be made usually from the history, which will elicit the fact that the patient suffered at some time in his life with the characteristic symptoms of ulcer.

Cancer of the stomach, especially of the pylorus, may present difficulties in diagnosis, for the reason that not infrequently cancer is engrafted on an ulcer base. When this occurs the history of the patient will frequently be characterized by the symptoms of ulcer with usually a latent period preceding the development of the neoplasm. In such cases there may be the pain, the tenderness and the hyperchlorhydria of an ulcer and usually the presence of a palpable tumor. As ulcer of the stomach may cause infiltration of the stomach wall and of the pylorus to a degree which will afford a palpable tumor, the diagnosis would necessarily be in doubt in such cases. In cases of sufficiently long standing, metastatic growths in the liver and in the palpable lymph glands, especially those above the clavicle, the cachexia, the anemia and the presence of decomposing stomach contents, containing lactic and other organic acids and the Oppler-Boas bacillus, would enable one to differentiate the disease from ulcer.

NEUROSES OF THE STOMACH.

Neuroses of the stomach are very common in everyday practice. They may be associated with sensory, secretory and motor disturbances. There may be severe pain and burning, hyperchlorhydria, vomiting or spasm of cardia or of the pylorus. In uncomplicated cases, blood, both apparent and occult, would be absent from the stomach contents and feces, but the other conditions named may be so severe that it will require a study of a considerable period of time to enable one to say that ulcer is not present.

Attacks of gastric crisis in the course of locomotor ataxia have been mistaken for ulcer of the stomach. There should be no difficulty in recognizing the fundamental cord disease if a careful examination is made.

The referred pain of appendicitis may appear in the epigastrium with the association of nausea, vomiting, etc. It may be mistaken for perforating ulcer, but should never be mistaken for uncomplicated ulcer.

The Dietl phenomenon occurring with floating kidney is associated with epigastric pain, nausea, vomiting, etc. It should not confuse the observant clinician.

The abdominal and sometimes epigastric pain of pneumonia and of pleuritis will not be mistaken for ulcer by one who examines his patients.

Ulcer of the stomach and duodenum is not an uncommon disease. When the classic symptoms are present, the diagnosis can be easily made. When the disease is latent and when it is masked by conditions, the result of a neurotic temperament, the diagnosis may be difficult. Sufficiently long study of the patient and of his history, of the chemical constituents of the stomach contents, of the motility and, finally, the test for occult blood in the stomach contents and in the stool, will enable one to arrive at a definite diagnosis in most individuals.

GASTRIC AND DUODENAL ULCERS.

WHEN DO THEY REQUIRE SURGICAL TREATMENT AND WHAT PROCEDURES ARE NECESSARY?*

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We may say that surgical opinion has crystallized on some phases of ulcer, is crystallizing upon others and in some phases is still chaotic. The treatment of such complications as perforation and subphrenic abscess admits of no discussion whatsoever and may definitely be put to one side. Both must be met by prompt operative procedure, and it is not a question of whether to operate, but how. So far as hemorrhage is concerned there is honest room for doubt, and the variety of ulcer, its acuteness or chronicity, the amount of the hemorrhage, its recurring nature and the size of the vessel involved must be considered before a conclusion can finally and rightly be made. There is a greater difference of opinion between internists and surgeons as to the treatment of non-perforating, non-hemorrhagic ulcers with disabling adhesions and other gastric disturbances, purely mechanical in nature, following in their wake.

PERFORATION.

It is not to be questioned that spontaneous recovery may take place in perforation of either a gastric or duodenal ulcer, but in admitting the possibility of such an occurrence we should not, by accentuating it, make it appear even remotely probable.

Perforation is best considered by subdividing it into acute, subacute and chronic.

By acute perforation is understood a sudden communication between the stomach and peritoneal cavity, when the stomach is full of fluid and solid contents; extravasation necessarily occurs and the effects are usually instantaneous and overwhelming. By subacute perforation is understood a more insidious process, or, if as sudden, occurring when the stomach is empty. In either event extravasation into the peritoneal cavity will not occur, or if it does, to a most limited extent. Here a neighboring piece of omentum or coil of intestine may instantly cover the small opening made and effectually prevent extravasation. By chronic perforation a much slower and more stealthy process is understood. Here the plastic exudate limits the extravasation and a subphrenic abscess results. It should be treated by drainage, employing the abdominal, lumbar, or transpleural route, according to the preference of the surgeon and the exigencies of the case. A majority favor the abdominal route, some the combined abdominal and lumbar, while Körte, who has had a vast experience with subphrenic abscesses, prefers the transpleural route.

I have seen three unquestionable cases of subacute perforation resulting in spontaneous recovery. Two were confirmed by exploration when gastroenterostomies were subsequently done. I am of opinion that perforations acute and subacute are far more common than formerly believed and my reasons for such belief are the comparative frequency of operations at the present time for perforation in latent ulcers where the disease previously had not even been suspected. (The symptoms of ulcer are at times either so masked or completely wanting that the disease is overlooked by the best physicians). Secondly, and more to the point, demonstrable and dense adhesions are found at the site of perforation. which could not have occurred except as a result of severe perigastritis following perforation. I was both interested and amazed to find that in twelve successive gastroenterostomies performed by W. J. Mayo during ten days recently passed with him, in three cases the evidence was sufficiently convincing to this careful and judicious surgeon to cause him to record them as having previously perforated. Not less interesting is the fact that eight of the cases were operated for duodenal, three for gastric ulcer, and one for a large ulcer involving both pylorus and duodenum. The ulcer was not only found in each case but it was easily demonstrable to every one present. Duodenal ulcers are far more common than we have hitherto thought and in the Mayos' experience are practically as common as gastric. My own more limited experience leads me to the same conclusion: three of the four last operations I did were for duodenal ulcer, near the pylorus it is true, and would formerly have been designated pyloric. They are practically always within one inch of the pylorus.

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Chronic perforations occur on the posterior wall and at the lesser curvature of the stomach. Per contra, perforations of the acute variety are generally found on the anterior wall. In operating for perforative gastric and duodenal ulcer there are several questions to be considered and they should be decided by the exigencies of each case.

Shall the ulcer, when found, be excised? A few favor excision but a majority do not. The tissues are necrotic, uncontrollable hemorrhage may be started, and extravasation into the cavity further increased by the manipulations necessary in excising a perforated ulcer. A few interrupted Lembert's sutures, infolding the perforation, will best meet the indications if supplemented with an omental graft. If the omentum can not be utilized in this way, gauze should be used both to protect the opening and for drainage. If the extravasation has been limited mopping will suffice, drainage, however, should usually be employed. If the perforation has been acute and the general cavity has been contaminated by gross quantities of gastric contents, lavage should be thoroughly made and supplemented by suprapubic drainage. Here the Fowler position and constant irrigation of the rectum with normal salt solution, are of the greatest value. It is rarely wise to supplement suture of a perforated ulcer by gastroenterostomy. If the ulcer be at or near the pylorus, so that the infolding of the perforation results in pyloric stenosis, then, and only then, would it seem best to perform gastroenterostomy. By the time a perforation is satisfactorily closed and the toilet of the peritoneum completed the condition of the patient will not encourage, if indeed warrant, further operative measures.

Should suturing, excision, resection, or pylorectomy all be impracticable, as is occasionally the case, on account of necrotic tissues or bewildering, if not insuperable adhesions, a tube should be placed in the bowel, distal to the perforation and brought out of the stomach as in Witzel's gastrostomy. The operative results for perforation have not been as satisfactory as they should. yielding a mortality of rather more than 50 per cent. English reports 50 consecutive operations at St. George Hospital, London, with a mortality of 60 per cent. F. and G. Gross' statistics include 369 operations with 187 deaths (50.67 per cent).

These cases analysed show:

First, 12 hours, 88 cases, 22 deaths, 25 per cent.
Twelve to 24 hours, 55 cases, 29 deaths, 52.72 per cent.
Twenty-four to 48 hours, 63 cases, 36 deaths, 56.06 per cent.
After 48 hours, 31 cases, 25 deaths, 73. 91 per cent.

The best results followed operations done between the fifth and tenth hours, as the mortality was 16.25 per cent. With early diagnoses and prompt operations the mortality should, in the near future, be reduced to 15 or even 10 per cent. The extravasated gastric and duodenal contents are frequently sterile, therefore cause a less virulent and septic peritonitis than perforations of the small and large intestines, and should give better operative results. Moreover, perforations of the intestines usually occur in typhoid patients, unable to withstand both the primary shock and subsequent operative procedure.

HEMORRHAGE.

The frequency with which hemorrhage, as a symptom of gastric and duodenal ulcer is found, varies greatly according to different authorities. It is a marked symptom in at least 50 per cent. of all cases. If the gastric contents and stools were carefully examined macroscopically and microscopically from day to day the probabilities are that it would be found in nearly every case. To give some idea as to the importance of hemorrhage as a complication of ulcer we may say that in a city of 1,000,000 inhabitants, fifty thousand (5 per cent.) will suffer from gastric ulcer. Of this number one-half will bleed from time to time, and in four thousand cases (8 per cent. of those with ulcer) the hemorrhage will be lethal.

We must, so far as we can, differentiate between hemorrhages following acute and chronic ulcers, respectively. The former are not recurrent as a rule, and are usually recovered from. The diagnosis of hemorrhage, associated with acute ulcer, can generally be made, as it occurs in young anemic women in the majority of instances. It is due to a superficial erosion of the mucous membrane, the exulceratio simplex of Dieulafoy, but may be due to the perforating ulcer of Cruvelhier. The hemorrhages occur, as a rule, without warning, and while marked and causing extreme anemia in certain instances, promptly yield to medical treatment. Surgical intervention is wholly unnecessary. Of all the remedies employed for arresting such hematemeses none acts so promptly and certainly as hot water (temperature 120 to 130) introduced through a stomach tube. I have seen the best results follow its use where all other agents had proven futile and life was practically despaired of.

HEMORRHAGE FROM CHRONIC ULCER.

The bleeding from a chronic ulcer is essentially recurrent. In considerably more than 50 per cent. of all cases it is due to ulceration into a vessel of some size, namely, the splenic, pancreaticoduodenal or coronary arteries, or their arterioles, in the order named. The size of the vessel involved makes it unsafe to depend upon Nature to arrest the hemorrhage, or on simple measures which may be entirely sufficient where the oozing is from capillaries. The surgeon will usually see the case too late to act during the first hemorrhage. Should he do so, it is best to wait until the recurrent nature of the hemorrhage has been established. During a second severe hemorrhage it may be unwise to operate. As soon, however, as the patient has sufficiently recovered from shock, it is certainly best, to prevent other hemorrhages, which may now be looked on as reasonably certain. There are two ways of controlling the hemorrhage, the direct and indirect methods. In the former, the hemorrhage having been located, the bleeding point is excised, ligated, cauterized, or otherwise treated. In the latter method the stomach is made to contract, emptied of its contents and placed relatively at rest by means of a gastroenterostomy or jejunostomy. No one can doubt that the first, or direct method is more efficient and prompter. Where the ulcer can be located and there are no prohibitive adhesions, I should invariably seek to control hemorrhage by the direct method. If there is no tumor, no thinning or discoloration of the gastric walls to indicate the probable source of the hemorrhage, gastrotomy may be practiced, the entire stomach being carefully examined through a Ferguson's speculum with an electric light, and, the bleeding point, if found, treated.

Should the search prove futile, as it often will, the opening made into the stomach may be utilized in doing a gastroenterostomy, which will frequently, though not always, be sufficient to effect hemostasis. Of the direct methods of treating hemorrhage, excision or partial gastrectomy is the most satisfactory, preventing as it does future hemorrhages, perforation and malignant degeneration. Next to it I place simple gastrotomy followed by ligating the mucous membrane en masse, so as to draw up a well-marked cone after the method advised and successfully practiced by Andrews. Transfixion of the bleeding surface with careful ligation has often succeeded. Cauterization not only seems to me unsafe theoretically but has been followed by subsequent perforation in several cases. I wish to dissent most positively from the optimistic statement which has been made by those high in authority, that gastroenterostomy will surely and quickly relieve hemorrhage. A sufficient number of cases have been reported by competent and trustworthy surgeons from all parts of the world to lessen the estimate in which it has been held, if, indeed, they do not wholly discredit it as an efficient remedy. That gastroenterostomy will generally relieve capillary bleeding or hemorrhage from arterioles is likely; that it will arrest hemorrhage from a vessel of considerable size which has been eroded laterally, making contraction and retraction within its coats impossible, is to say the least, questionable.

Fatal cases of hemorrhage after apparently successful gastroenterostomies have been reported by Mayo, Deaver, Kocher, Robson, Moullin, Connell, Czerny, Rydygier, Kümmell, and many others—von Eiselsberg losing three cases and Körte two. Anatomy and pathology are not to be forgotten and it is unreasonable to expect hemorrhage from a vessel of considerable size, with a lateral opening into its caliber, to be arrested by anything short of direct surgical measures. Three months ago I operated for duodenal ulcer, performing a posterior gastroenterostomy without a loop and subsequently the patient lost one gallon of blood. I have never seen such furious hematemesis and melena. Morphia, ice and astringents failed to make any impression whatever on the bleeding, which was finally arrested, when the patient was pulseless and almost in articulo mortis, by introducing a stomach tube and pouring a pint of very hot water into the stomach. During the past 4 months there have been frequent bleedings, none of them, however, severe. They are becoming less frequent, rarely amount to more than three or four ounces and will probably cease altogether with the healing of the ulcer. She has been a difficult patient to control and could not be kept on liquid diet; in fact, has at times eaten most imprudently and nearly every attack of hematemesis has been preceded by acute indigestion caused by gross indiscretions in diet.

CURATIVE TREATMENT OF ULCER.

We now come to the treatment of ulcer itself apart from such complications as perforation, hemorrhage and subphrenic abscess. Acute ulcers, occurring as they generally do, in young anemic women, tend to heal spontaneously and should be treated strictly by medical means. Chronic ulcers, usually occurring in men past forty, show much less tendency to heal under medicinal and dietetic treatment and when they seem to do so the cure is usually not abiding. The statistics of 500 cases treated at the London Hospital show that about 50 per cent. were uncured by medical means, and of those discharged as cured, one half relapsed. The results secured at the Massachusetts General Hospital are entirely in accord with those of the London Hospital. Is it, therefore, to be wondered why an increasing number of patients with gastric ulcer tire of medical treatment and seek surgical aid. It is well to recall at this time that the mortality from the medicinal treatment of ulcer is at least 25 per cent. (13 per cent. from perforation, 8 per cent. from hemorrhage, the balance from anemia, phthisis, etc.). If we exclude acute ulcer, which, we admit, tends to heal spontaneously as a rule, it will be found that the mortality under the medical treatment of chronic ulcer is perhaps actually greater than 50 per cent. I would, therefore, insist that medical treatment in chronic ulcer be not persisted in longer than four weeks, the limit given by Leube, the most optimistic of medical men, for if it has not succeeded by this time it almost surely will never succeed. Having decided upon surgical intervention it becomes necessary to choose between methods of relief. Of these, pylorectomy, or excision of the ulcer-bearing area, partial gastrectomy, gastroenterostomy, pyloroplasty and jejunostomy may be fairly considered. If the ulcer or ulcers are situated near the pylorus, as they will be in 80 per cent. of all cases, pylorectomy, or excision of the ulcer-bearing area should undoubtedly be given the preference, provided the pylorus is free from adhesions or can easily, along with the upper portions of the duodenum, be mobilized. It alone successfully deals will multiple ulcer, gastric and duodenal, prevents perforation, hemorrhage, disabling adhesions, stricture, hour-glass contraction and malignant degeneration. Moreover, it leaves the stomach in the best condition for its future usefulness. The strongest reasons in favor of pylorectomy are the multiplicity of the ulcers and the great danger, hitherto scarcely appreciated, of cancerous implantation upon the base of the ulcer. That Hauser, who estimated that 6 per cent. of gastric ulcers subsequently became malignant understated the fact, is now generally recognized by operating surgeons of experience. I have seen two cases of cancer of the stomach within the past six months where it was next to certain that the malignant disease had been preceded by ulcer for many years. The experience of the Mayos makes it very plain that more than one-half (54 per cent.) of all gastric carcinomata operated upon at the Rochester clinic in 1905 (40 cases), were preceded by a well-marked history of ulcer and anatomic evidence of the fact was found after operation.

When it is recalled that the topography of ulcer and cancer is practically the same, each occurring at the pylorus in 80 per cent. of all cases, the conclusion is almost an irresistible one that malignant transformation must be far more common than hitherto suspected. I remember seeing three specimens presented at one meeting of the Pathological Society, of Philadelphia, where malignant transformation of benign ulcers was demonstrable. We should keep constantly before us the unpleasant fact that one-third of all carcinomata in the human subject occur in the stomach. No other organ is subject to such constant irritation which we know to be the most potent factor in transforming simple into malignant ulceration.

Operations for cancer to avail aught must be done early and the earlier the better. Is it not wiser to choose the precancerous state, if, from the symptoms presented, it is to be feared?

The other dangers of chronic ulcers are enough to warrant either excision of the ulcer or pylorectomy, which removes the ulcer-bearing area; but, the fear of malignant disease becoming ingrafted upon a benign ulceration, in a region too prone to irritation and in a soil so markedly fertile to cancer, demands radical treatment. Pylorectomy can be followed by end-to-end approximation of stomach and duodenum, where a small portion of each has been removed, or, by closure of both with independent gastrojejunostomy. The latter is usually to be preferred on account of the disparity in size between the viscera after the necessary amount of tissue has been removed. It is unnecessary to remove more than one to one and a half inches of the duodenum, for ulcers are rarely lower down.

The mortality following pylorectomy for ulcer, has been, so far as I can learn, 1 death in 31 cases. This represents the work of five surgeons (Mayo, Robson, Park, Finney and Rodman) and included all cases reported to me. A greater number will perish from perforation, as many from hemorrhage, not to mention other dangers, as stricture, hour-glass stomach, etc., which are less direct in their effect. If the ulcer is situated on the anterior wall of the stomach, in the cardiac portion and can be easily located, is circumscribed, and reasonably free from adhesions, excision or partial gastrectomy should be done. I am conscious of the fact that in advocating this plan I am opposed by the majority of American surgeons. I also admit that the existence of other ulcers may militate against a successful result, but the tendency of such ulcers to perforation is so marked and the consequences so disastrous, that it seems to me, and has ever done so, the operation of choice. The Germans generally favor the practice, many of them doing so warmly. Jedlicka calls it the normal procedure and claims for it a mortality of 5.88 per cent. When the ulcer is excised the interior of the stomach can easily be examined for other ulcers, and if they are found can be treated directly by excision or indirectly by gastroenterostomy. Where adhesions are numerous and dense, and the stomach and upper duodenum can not be easily mobilized, particularly in subjects presumably incapable of withstanding a prolonged surgical procedure, pylorectomy and partial gastrectomy should give way to gastroenterostomy, the posterior operation always, when practicable, being given the preference. The end results after posterior gastroenterostomy without a loop, now practiced by nearly all surgeons, are much better than they were several years ago, but they are not as satisfactory as the end results of pylorectomy and partial gastrectomy. It is unreasonable to expect that drainage of a stomach can either prevent or remove pathologic changes in the gastric walls.

PYLOROPLASTY.

The old methods of doing pyloroplasty have been weighed, found wanting; and are generally discredited. The operation of Finney, which he calls "pyloroplasty," but which has generally been termed by the profession gastroduodenostomy, has greater claims for recognition. It makes the anastomosis between the stomach and duodenum at the natural site, gives a larger outlet for the gastric contents and is unlikely to be followed by peptic ulcer. It has, however, contraindications, viz.: where there is much cicatricial tissue, fresh ulceration near the pylorus, or, in cases of markedly impaired gastric motility.

Jejunostomy has been extensively advocated and practiced in Germany for the relief of gastric and duodenal ulcer, witn and without such complications as perforation and hemorrhage. It had the weighty endorsement of that great surgeon, Mikulicz, who advocated it in an address before the American Surgical Association, in 1903.

It seems unlikely to me that it will displace gastroenterostomy in the treatment of non-perforating and non-hemorrhagic ulcers, as it is substituting one makeshift for another and entails an amount of subsequent care and attention which are objectionable. In the treatment of perforation and hemorrhage where the direct method of dealing with the lesion is sometimes impracticable it has advantages over gastroenterostomy: First, it can be done under local anesthesia if the condition of the patient forbids a general anesthetic; second, it places the stomach wholly and not relatively at rest as does gastroenterostomy; third, its mortality is negligible.

THE MEDICAL TREATMENT OF DUODENAL AND GASTRIC ULCER.*

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To write a short discussion on the medical treatment of duodenal and gastric ulcer would have been a relatively simple task a few years ago; to-day it is far different and by no means easily performed. The difficulty arises in some degree because we realize more clearly than formerly that the course and prognosis of acute ulcer differ greatly from those of chronic ulcer, and especially because surgery has in a few years made such advances in the treatment of gastric ulcer that we must consider when medical treatment will suffice or when it is necessary for a surgeon to consider jointly what method of treatment will give the quickest and most permanent relief to the patient.

The medical treatment of duodenal ulcer being practically the same as for gastric ulcer, what is said for one will apply also for the other.

The acute and chronic gastric ulcer can not always be clinically differentiated. Often what seems to be an acute ulcer is in reality an acute exacerbation of a chronic and long-standing ulceration. The medical treatment for the two conditions is practically the same, being modified, as medical treatment is for other conditions, to meet the varying indications presented by different individuals. There is no specific for gastric ulcer, and we must rely on the normal reparative processes of the body to effect a healing, realizing that these processes are going on in an environment unfavorable to rapid and complete healing, and often in a body far below its normal condition of health.

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* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The conditions to be met with are hyperacidity and sometimes hypersecretion and stasis of food in the stomach; nausea, vomiting and pain arising from the morbid processes present in the gastric mucous membrane; the general conditions and symptoms of nervousness and anemia arising from the faulty nutrition of the body; and not infrequently the complications of hemorrhage, perforation and at times stenosis and distortion of the pylorus or other regions of the stomach.

TREATMENT.

Physical Rest.—The first essential treatment is rest, complete rest for body and for stomach. This means rest in bed and rectal feeding, followed by continued rest in bed and milk diet. The length of time necessary to remain in bed varies from a week or two in acute and mild cases to several weeks in the cases of acute exacerbations of chronic ulcer. This rest cure does not mean the absolute isolation necessary in some cases of neurasthenia, but the patients must stay in bed and give up all the daily cares and worries of household and business. They may be entertained by reading and games and short visits from family and friends and may receive letters and write or dictate short replies. They must, however, remain in bed until the pain and tenderness following the ingestion of a mild but varied diet shall have disappeared. This will not average more than six weeks.

Rectal Feeding.—As soon as the general bodily rest is assured we should begin the gastric rest by complete abstension from food into the stomach; only ice and small amounts of water should be permitted, and rectal feeding begun. Each morning there should be given a high lavage of the colon with about four quarts of warm normal saline solution. After a rest of an hour the regular nutrient enemata should be begun and given at four-hour intervals during the day. Three or at most four are sufficient for the twenty-four hours. Each enema should not exceed four ounces in amount, and may consist of eggs, milk, meat broths, or meat powders, or a combination of these; but all enemata should contain only thoroughly predigested food, being thus prepared by pancreatic extracts and bicarbonate of soda. Two hours' predigestion is none too long for the preparation of these enemata. Alcohol is not an essential part of a nutrient enema and should not be given except for some special therapeutic reason, although it is a prominent ingredient of most proprietary peptone foods. About half a teaspoonful of table salt should be added to each enema. Some preparation of opium should also be added if the enemata are not well borne, or if the rectum becomes irritable from frequent use, as the rectal feeding may thus be carried on longer than is possible without it.

After a couple of days the feeling of hunger from stomach starvation becomes blunted, but the feeling of thirst is troublesome, and besides the water by mouth, about 8 oz. of saline should be injected into the bowel about an hour after the last nutrient enema in the evening has been given. The daily colonic lavage will also supply some water, as some of it will be retained and absorbed, often half a pint or even more. The patient's sleep should not be disturbed, hence rectal feeding should be omitted during the night.

Even in mild cases rectal feeding should continue for three or four days, in more severe cases for a week or ten days, and in the exacerbations of chronic ulcer some authors recommend its continuance for twenty-one days. I believe we are more sure of a cure if even in the mildest cases we carry out for some period of time exclusive rectal feeding.

Gastric Feeding.—Gastric feeding should be begun before the rectum grows intolerant; and, as we gradually increase the gastric, we should decrease the rectal feeding. Peptonized milk in small doses, given at long intervals, should be the first food given by the stomach. By increasing the amount and diminishing the intervals the average patient at the end of a week from the time gastric feeding was begun will be getting a quart of peptonized milk in twenty-four hours, with the rectal feeding discontinued. The next step is to increase the amount of peptonized milk until two quarts or more a day are given. The use of an exclusive milk diet is often objected to on the ground of personal idiosyncrasy, or because of the bitter taste of properly peptonized milk. But, as was emphasized two years ago by my brother, Dr. S. W. Lambert, when writing on this subject, if we will use the rules of modified milk as practiced in infant feeding, varying as may be necessary the amount of top milk or cream, lime water and water, and using milk sugar instead of cane sugar, it is possible to obtain a milk, raw or peptonized, which will agree with any idiosyncrasy. There is, however, no epicurean or short road to the proper and palatable peptonization of milk; and the peptonized milk which we must use, whether in the colon or stomach, requires the constant application of moderate heat for two hours for its preparation, and the product has a disagreeably bitter and unappetizing taste. As soon as the patient is taking two quarts of peptonized milk a day we may begin to reduce the degree of peptonization; and usually during the third week the peptonizing process may be reduced to half an hour or twenty minutes' duration; and, by the end of another week, milk may be given raw, though perhaps still modified in strength.

As we reduce the peptonization we may add the cooked cereal gruels of barley, wheat, or oat flour as part of the diluent. During the fourth week, with the raw milk, we may add crust free bread, butter and eggs, but not hard boiled. It is well to add only one new thing at a meal that we may judge accurately if it agrees with the patient, and be ready to discontinue it if necessary. In the fifth week one may add potatoes (baked or boiled), rice (boiled), macaroni, custards, chicken and sweetbreads. In the final or sixth week of the cure, beef, mutton, green vegetables, light salad without vinegar, cooked fruits, and simple puddings may be added.

During the period in bed the patients should receive daily alcohol spongings and baths and light massage to the arms, legs, chest and back, avoiding the abdomen, to improve the general condition. Iron in some non-irritating form, as the pyrophosphate, should be given if necessary. The average patient will be out of bed in the fifth week; in the milder cases this will occur earlier. Each day from this on should see the patient doing a little more, so that before long he may resume his ordinary existence.

The Lenhartz Protein Diet.—Lenhartz recently has expressed his dissent from the abstinence diet and gives a protein diet from the first. Starting with two eggs and 6 oz. of milk on the first day, he increases the eggs one a day until eight are taken and continues at this number; the milk being simultaneously increased three ounces a day until a quart is taken and continued at this amount. The eggs and milk are given ice cold and in teaspoonful doses. On the third day two-thirds of an ounce of sugar is given, and this is gradually increased until on the ninth day 1.6 oz. are given, and this amount is continued. On the sixth day an ounce of raw scraped beef is given, double this amount on the next day, and so continued. On the seventh day 3.3 oz. of milk cooked with rice are added and gradually increased to ten ounces on the eleventh day. On the eighth day two-thirds of an ounce of zwiebach is added and gradually increased until 3.3 oz. are given on the fourteenth day. On the tenth day 1.6 oz. of raw ham are given and continued daily in this amount. Butter is also added on the tenth day, giving two-thirds of an ounce, and double this amount on the next day and continued. Lenhartz reports 60 cases treated by this method with gratifying results.

Danger of Relapse.—Whatever the diet and method of cure we pursue, after we consider our patients cured we must always remember the danger of relapse or a recurrence of the ulcer; and we must impress on them the necessity for a prophylactic diet and mode of life which we must insist they observe for a long time. These patients must avoid frequent eating and drinking and at all times the overdistension of the stomach with food. They must eat slowly and masticate their food thoroughly. No irritating or hard foods, such as bread crusts, fruit seeds, tough vegetable or meat fibers must be given the chance to irritate mechanically the gastric mucous membrane. Alcohol in all its forms, spiced and highly cooked sauces and condiments and even excess of common salt must be avoided lest there be a chemical irritation in the stomach. As recommended by Shattuck, from three to six months after they seem well they should take before each meal from one-half to two teaspoonfuls of bismuth subnitrate. Physical and mental overfatigue must be avoided and no journeys should be undertaken on which they can not control their diet and mode of life.

Drug Measures.—Two therapeutic measures with drugs used in connection with the dietary régime deserve special mention. One is the bismuth cure, as described by Fleiner, the other the olive oil cure of Cohnheim.

1. Fleiner's Method: Wash out the fasting stomach each morning until the water returns clear and is free from all acid reaction; then introduce through the tube six ounces of water in which 2.5 to 5 drams of subnitrate of bismuth is evenly suspended. As soon as the tube is withdrawn the patient should lie down and rest quietly in such a position that the bismuth will gravitate toward the supposed site of the ulcer. After half an hour's rest the patient should be given his breakfast. The use of the bismuth should begin with the gastric feeding and continue for two weeks. Fleiner claims for this bismuth cure both an antiseptic and astringent action, besides a reduction of the hyperacidity and a mechanical protective effect of the large dose. The result of such treatment given daily should be immediately apparent in a diminution of the stomach distress and a cessation of the pain, nausea and vomiting.

Ewald has suggested the use of the insoluble carbonate of lime instead of the bismuth; and Pariser has obtained excellent results by the use of a mixture of chalk, talcum and magnesium in place of the bismuth.

2. Cohnheim's Method: Introduce olive oil through the tube into the fasting stomach after a moderate lavage, before breakfast, in quantities of from two to four ounces; or give it before the three principal meals, without the use of the tube, in doses of one to two ounces. Cohnheim claims that the oil forms a protective coating to the ulcer, relieves the pain and vomiting and tendency to pyloric spasm, allows the patient to be fed, itself acts as a food and, finally, that it checks the secretion of acid. From his reports it would seem that the milder cases can be treated under this oil regimen by simply adding a regulated diet without any rest cure.

Krausz has recently recommended a mixture of 75 grains of sodium bicarbonate in three ounces of olive oil to be given in tablespoon doses before each feeding.

Objections.—The objections urged against the bismuth and oil cure are the use of the tube in gastric ulcer. The bismuth and oil are best given by a tube, but they can and often have been given directly by the mouth. The question of the use of the stomach tube in gastric ulcer is one not always easily decided; but, if care is observed not to distend the stomach and too great pressure is prevented by limiting the height of the funnel to the head of the patient, the risk of perforation of the ulcer is slight.

But in those cases in which there has been recent hemorrhage, or if even slight hemorrhage follows the lavage, the tube should not be used. Two cases of fatal hemorrhage have been recorded, due, it was believed, solely to gastric lavage.

Other objections to the bismuth cure of constipation and discoloration of the stools, preventing the observation of malæna from slight hemorrhages, do not hold good. Large doses of bismuth do not seem to constipate, the guaiac test for blood in the feces is not obscured by bismuth and is so easily performed that it should be a routine procedure carried out at least every few days.

Silver Nitrate and Iron Perchlorid.—The principal drugs used for their astringent action and in the hope of stimulating the ulcerated surface to cicatrize are the perchlorid of iron and nitrate of silver; of these the silver is by far the most useful. To insure all the silver reaching the stomach in an active condition the solution must be given through a tube. But, if the use of the tube is undesirable, the nitrate of silver can be given in pill form in .25 to .5 grain doses, or, better still, the same dose in solution with 5 to 10 grains of bicarbonate of soda given on an empty stomach three or four times a day. The nitrate of silver acts both as an astringent and as an antacid; for, if it is precipitated as an insoluble chlorid, it uses up in the process some of the hydrochloric acid in the stomach. Boas recommends a solution of silver nitrate, four grains to four ounces of water, a tablespoonful to be taken on an empty stomach three times a day. After one bottle of this has been taken, five grains of silver nitrate to four ounces of water are given and two bottles of this strength used. Then seven grains to four ounces are given and two bottles of this taken. The nausea sometimes occurring from this medication may be corrected by peppermint, and the slight diarrhea seen at times in the beginning of the silver cure will cease spontaneously during its further administration.

The Alkalies.—Simple antacid and some laxative action is all that is usually ascribed to the alkalies, and often Carlsbad salts are given the first thing in the morning as routine treatment; but Myer, quoting Binet in a recent communication, attributes still further action to calcium phosphate, sodium bicarbonate and magnesium which, he claims, increase the gastric secretion through stimulation. This action continues up to the point of saturation of the hydrochloric acid in all three cases, but in different degrees, the action being slight after sodium bicarbonate and very marked after magnesium. Sodium bicarbonate also stimulates the motility of the stomach through the liberation of carbon dioxid. It acts on the sensibility only when pain develops a long time after eating. And such pains do not always point to hyperacidity. Often when the pain is greatest the stomach contains no free hydrochloric acid or less than is found in a test meal which has caused no pain. These pains, therefore, are dispelled more promptly by sodium bicarbonate, which neutralizes but little acid, than by magnesium and calcium, which neutralize more acid. Binet believes that this pain which develops some time after the ingestion of food is due to pyloric spasms, which are relieved by sodium bicarbonate, because of its tendency to empty the stomach through the stimulation of the motor function.

Symptoms and Complications.—In the treatment of any given case of gastric ulcer there is often a predominance of some symptom or the occurrence of some complication which demands special treatment. The nausea and vomiting and nervous symptoms are often allayed by the treatment of the ulcer itself by diet, rest and the bismuth or oil as already described. If they recur during dietary treatment, often a change back to a simpler diet will suffice to allay them again. Antiemetics are certainly not contraindicated and are often of benefit. The pain may disappear without further medication during the gastric rest with rectal feeding, or it is often allayed by the silver nitrate and sodium bicarbonate; if not, codein, cocain or anesthesin may prove effective; the relief by orthoform in my experience has been of but very short duration. Morphin will relieve, but tends to increase the gastric acidity. Hyperacidity, whether it is a cause or an effect of ulcer, is usually present and often requires attention. Frequently the simple neutralization by sodium bicarbonate is sufficient. The use of bismuth, oil and fatty foods and irrigation by silver nitrate secure the same results. Atropin or belladonna has been used successfully to control or check the secretion of the acid.

The serious complications of ulcer are perforation and hemorrhage. Perforation is a surgical condition, and one can not emphasize too strongly the urgent necessity of an operation at the earliest possible moment after the perforation has occurred. Slight hemorrhages not infrequently occur in the course of treatment of ulcer, and demand no deviation from the lines of treatment already laid down. Hemorrhage is often the first indication that a patient has an ulcer and when the amount of blood lost can be measured by ounces immediate treatment with a period of initial gastric starvation should be instituted. If the hemorrhage, even though it has been severe, is not repeated, the regular routine treatment should go on. If a considerable hemorrhage is repeated, or if there are repeated small hemorrhages sufficient to reduce the vitality of the patient, medical and surgical treatment should be discussed immediately and the physician should not look on the surgeon as the last resort. The medical measures recommended for hemorrhage are absolute rest in bed, morphin if necessary to obtain physical and mental quietude, the swallowing of ice, cold application on the abdomen, subcutaneous injections of ergot, one or two teaspoonfuls of turpentine mixed with the white of an egg and thirty drops more after an hour if necessary, and solutions of adrenalin chlorid left in the stomach by a tube, clots in the stomach being first washed out and the stomach allowed to contract.

After a severe hemorrhage the question arises whether a saline infusion should be tried. If the heart can carry on the circulation without it, it should not be given; the blood will tend to coagulate and plug the bleeding point better without it, as the infusion may wash out the plug. If it seems necessary it may be given, but only enough to enable the circulation to go on and one should be satisfied with a relatively poor pulse. Subcutaneous injections of normal saline are better, and often sufficient fluid can be absorbed by injecting 8 to 10 oz. of saline into the colon and repeating this procedure a number of times at two-hour intervals. Vigorous cardiac stimulation is certainly contraindicated.

RESULTS.

This must suffice for the medical treatment. Let us now consider its results. Taking the statistics recently published by Dr. Geo. G. Sears,[1] of this city, and adding Leube's statistics, we have 1,203 cases of gastric ulcer in which the immediate results of treatment were 88.3 per cent. cured or improved. Considering the end-results after four or five years in 647 patients, of whom such statistics are available, there is a further history of 14.2 per cent. to 37 per cent. of relapses, some patients remaining well after the relapse, 5.2 per cent. were unimproved and 5.8 per cent. died. And, finally, we have 52 per cent. as cured, 40.8 per cent. as failures, 3.6 per cent. dead of ulcer and the rest dead of intercurrent diseases. These are not encouraging statistics, but there are undoubtedly among the failures many cases which to-day would without question be sent to the surgeon. There is no question to-day that, besides perforation, all cases of pyloric stenosis and distortion of the stomach from cicatrices or perigastric adhesions belong to surgery. If we could but know how many of the medical failures belonged to these surgical classes, we could form a more accurate judgment of the value of medical or surgical treatment in those that remained.

Leaving these statistics as they stand, physicians are to-day waiting for surgical statistics of end-results from gastric surgery. Surgical literature seems more concerned with its immediate results and the perfection of its technic than in reporting the value to the patient of the operation performed. Leaving out of medical consideration, as has just been said, all cases of mechanical obstruction and distortion, there remains to be considered acute and chronic ulcer and the question of surgical interference in hemorrhage. In young individuals, suffering in all probability from acute ulcers, medical treatment has obtained its best results; and could we separate these cases from the general mass of statistics, it is my belief we would find a high percentage of actual cures.

In reviewing the results of gastroenterostomy in these cases, Clairment[2] mentions a case of perforation and death and seven fatal hemorrhages following the operation and concludes that palliative gastroenterostomy for open ulcers gives poor lasting results and does not protect the patient from the dangers of perforation and hemorrhage. If the operation does not protect against these two dangers, it is certainly wise to wait until these dangers arise and to consider acute ulcers as belonging to medical treatment until life is threatened by the acute complication. These patients are in more danger from perforation than from hemorrhage; and, even after severe hemorrhage has occurred, medical treatment will save a greater number than surgical.

In what conditions of hemorrhage, then, can the physician turn to the surgeon with a fair promise of improving the chance for life of his patient? The impossibility of locating the ulcer and bleeding point before operation, frequently even at operation, and the high mortality of operations performed for severe hemorrhages convince us that we are not just to our patients nor to the surgeon if we consider surgery as the last desperate chance. We will make few errors if we accept Leube's indications:

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[1] Boston Med. and Surg. Journal, vol. clii, p 369.
[2] Arch. f. Klin. Chir., vol. lxxvi, 1905.

1. Repeated, little, unceasing hemorrhages, sapping the vitality of the patient, absolutely indicate early surgical interference, and all the more so if stasis is also present.
2. A simple profuse hemorrhage is not a surgical indication. But if it is repeated, an operation is relatively not absolutely indicated. An operation is only indicated if the pulse and general condition of the patient justify it.

In chronic ulcer, the condition in which most medical failures occur, does surgery offer a better chance of cure than medicine? In skilled hands the mortality of gastric surgery for ulcer to-day is about the same as in medical treatment without surgery. But, until the best operation and its technic is more generally agreed on, so that the skill of a few is more widely diffused and more statistics of end-results of operations are published, physicians can not enthusiastically adopt a surgical point of view. At present we are constrained to believe that all chronic ulcers should first be treated by a most careful and strict medical regimen; if that fails and the patients can not live in reasonable comfort or are debarred from the occupations necessary for their livelihood they should then undergo surgical procedures.

Note:—The discussion on the preceding papers in the Symposium on Causes, Diagnosis and Medical and Surgical Treatment of Gastric and Duodenal Ulcer will be published next week with the article of Dr. W. J. Mayo on surgical treatment.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

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(Continued from page 751).

Case 4.—Tumor of the cerebellum or cerebellopontile angle. The tumor was not found, but great benefit was obtained by a craniotomy associated with excision of a portion of one lateral lobe.

History.—C. E., aged 23, was admitted to the University Hospital, Dec. 7, 1903, and was placed under the care of Dr. Charles K. Mills who reported that his illness began several months prior to his admission to the hospital, the principal symptoms being dizziness and intense headache, starting in the occipital region and radiating toward the forehead. Five weeks later his sight began to fail and a week later some weakness of the left arm and leg were noticed.

At the time of his admission to the hospital he was suffering from the most distressing headache, which was almost constant, and from vertigo and ataxia to such an extent that it was almost impossible for him to walk alone or without support. Nor could he even stand alone unless leaning against some stationary object. His vision was so affected that he could not see gross objects and the examination of his eyegrounds revealed the presence of very marked choked discs and optic neuritis.[35]

Operation.—The patient suffered so that it did not seem justifiable to postpone operation for further and more elaborate study of the case. Accordingly within a week of his admission to the hospital a left cerebellar craniectomy was performed by Dr. Frazier. The dura was noted to be unusually tense, and on reflecting the dural flap a considerable portion of the cerebellar hemisphere protruded through the opening. It was found to be almost impossible on account of the protrusion of cerebellar tissue to make further exploration, so the operator proceeded to remove from one-third to one-half of the lateral lobe. After this was accomplished exploration was continued, but to no avail. No tumor could be seen or felt in any portion of the left cerebellar fossa.

Subsequent History.—The postoperative record of this patient is one of unusual interest because of the remarkably rapid improvement which followed. Within one week of the operation the patient's headache had entirely disappeared, his vision was restored so that he could see minute objects on the ceiling as he lay in bed and his vertigo and ataxia had almost entirely disappeared. At no time during the convalescing period was the patient's condition such as to give any concern. He was kept under observation in the hospital for a period of two months, and inasmuch as there was not the slightest return of symptoms he was allowed to go home with the understanding that he would return to the hospital if any of his cerebellar symptoms recurred.

Present Condition.—He returned to the hospital for an examination March 5, 1906. About two years and four months had elapsed since the operation and his headache, nausea and vomiting have never recurred. His vision is practically normal and he is now engaged as a laborer in the Pennsylvania railroad shops at Altoona. It should be said, however, that he occasionally has some attacks of vertigo. His weight has increased to 184 pounds and he is in all other respects apparently perfectly well (Fig 3).

Case 5.—Tumor of the cerebrum; decompression operation affording relief from headache for a period of three years.

History.—W. D., age 22, was admitted to the University Hospital, Nov. 5, 1903, having previously been under the care of Dr. W. O. Hermance. He was admitted to the service of Dr. William G. Spiller, by whom the following history was elicited: He has been suffering from headaches since 1897 and for the past nine months they have been especially severe. He has furthermore often complained of nausea, vomiting and dizziness and his sight is completely lost.

Examination.—On examination there was found to be no involvement of either the fifth or seventh nerves. The movements of the tongue and of all the limbs were unimpaired. The biceps tendon and the triceps tendon reflexes were not specially active. The grasp of each hand was normal, as was the resistance to passive movements in all the extremities. There was no involvement of the bladder or rectum and no ataxia of upper or lower limbs. There was no deviation from normal as to stereognostic conception in either hand, the gait was normal, there was no tendency to sway or fall, there was no Babinski reflex on either side and the patellar reflexes were exaggerated. There was persistent ankle clonus on the right but none on the left side. There was no word deafness and no aphasia. His sister reported that about three months previously he was unable to speak at all for at least an hour, but that this was the only time he ever entirely lost the power of speech. He was at times delusional, and imagined he was being put into a hole. He had what he calls "sinking spells" in which he felt weak and his heart stopped beating.

About six months prior to his admission to the hospital he complained of stiffness (?), probably weakness, in the back, left side of the neck, in the left arm and left leg. He had never had any convulsions, but from April to August of the present year his whole body would get stiff for about half an hour. His memory is better than it used to be. He listens attentively to what is read to him and remembers it better than the persons who read it. The headache had been frontal and bilateral until February of this year and it seemed to have become more localized to the left temporal region.

Dr. Thorington, who had examined his eyes, reported that there were no ocular palsies, but choked disc in both eyes.

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[35] This is Case 4, Dr. Mill's paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, with Special Reference to Their Surgical Removal," New York and Phila. Med. Jour., Feb. 11 and 18, 1905.

slightly more advanced in the left. There had been numerous hemorrhages, large and small, old and recent. Examination of the urine on one occasion prior to his admission to the hospital revealed a few hyalin casts and a small quantity of albumin. Since the examinations at the hospital, after repeated examinations, only on one occasion was a suspicion of hyalin casts; at no time was there albuminuria.

Nov. 5, 1903, Dr. Shumway made the following ophthalmic report: No light perception. Right eye, atrophy following choked disc. Nerve head much swollen, veins tortuous, no hemorrhages. Left eye, nerve head still more swollen, some atrophy, hemorrhage on the nasal side of the nerve, numerous white points of exudation.

Nov. 6, 1903: It was noted on this date by Dr. Spiller that pupils were dilated, there was no reaction to light and no ocular palsies. The ophthalmic reflex was present on each side. Patient closed the eyelids firmly and wrinkled the forehead well on both sides, the tongue was protruded straight, not wasted and there were no fibrillary tremors. His hearing was apparently not affected. He swallowed without difficulty. There was some tenderness to percussion over the left temporal region. There was no word deafness nor motor aphasia.

Upper limbs: Movements of the upper limbs were free at all points. The biceps and triceps reflexes hardly obtainable on either side. Grasp of each hand and resistance to passive movements were normal. Sensation for touch and pain normal in all parts of the body, and the sense of position and stereognostic conception was unimpaired. There was no wasting.

Lower limbs: Voluntary power normal, no hemiasynergy on either side and no wasting of the lower limbs. The sense of position was normal on both feet. The patellar reflexes were distinctly exaggerated on either side and more prompt on the left side. There was a slight indication of ankle clonus on the right side, although clonus was not as persistent as at the last examination. There was no clonus on the left side. The Achilles tendon reflex was exaggerated on each side, but more so on the left. The patient stood well with his feet together and the eyes open or shut. His gait was normal, although it was uncertain on account of his blindness. There was no Babinski on either side.

Further examination of the other organs including those of the thorax and abdomen proved negative.

Operation.—Craniectomy was performed by Dr. Frazier under ether anesthesia and an osteoplastic flap was reflected in the left frontal region. It was noted at the time that the skull and the dura were abnormally thick. There were no adhesions between the dura and the skull. Pulsation was visible and the brain did not bulge when the dura was reflected. Especially at the superior and anterior aspect of the opening the consistency of the brain seemed abnormally soft and an exploratory needle was introduced in various directions, but with negative results. The dural flap was replaced with sutures and the bony portion of the osteoplastic flap was removed for the purpose of relieving intracranial pressure.

Subsequent History.—The patient remained under observation in the hospital until Jan. 27, 1904, at which time it was noted that he had had no headaches since Dec. 28, 1903. His general condition had improved and he had gained in weight and strength. The last ophthalmic examination prior to his discharge from the hospital, made Jan. 1, 1904, notes that the nerve is becoming more and more atrophied.

April 15, 1904: The patient was admitted to the hospital again with a history of having had no recurrence of headache after he had been discharged; from this time on the headaches recurred generally on the right side of the head in the occipital region, accordingly it was deemed advisable to perform a second palliative operation and on April 16, 1904, Dr. Frazier performed an osteoplastic operation, reflecting a flap from the right temporo-parietal region, removing a flap 10 cm. broad and 7 cm. wide. It was noted at the time that there was no visible pulsation and that the brain appeared to be under considerable tension. The bone at the margin of the upper aspect of the opening appeared abnormally dark in color and unusually porous. An exploratory needle was introduced into the pons at about the middle of the opening but no fluid was detected.

Following the operation the patient complained for a few days of a severe supraorbital neuralgia which was attributed to the pressure which had been effected by the use of a pneumatic tube applied for the purpose of controlling hemorrhage. The patient was discharged from the hospital April 28, about two weeks after the operation. His headaches had not entirely disappeared, although they were comparatively mild in character and the patient no longer required hypodermic administration of morphia to which he had been accustomed heretofore.

Present Condition.—May, 1906: The last observation was made 2 years and 6 months after the first operation and 2 years and 1 month after the second operation, and at this time it was reported that the patient had enjoyed almost absolute relief from his headaches. He is able to perform the duties connected with the management of a cigar store and with the exception of his loss of eyesight he appears to be entirely well. The optic neuritis was so far advanced when the patient was first seen that the possibility of saving his sight was out of the question.

CASE 6.—Tumor of the cerebrum.

Patient.—M. B., aged 17, was referred to the University Hospital by Dr. R. Ross Jordan, Tyler, Clearfield County, Pa., and transferred from the service of Dr. Charles K. Mills, October 9, 1904.

History.—He was struck on the back of the head 9 months ago. He was not unconscious at the time he fell. About an hour later he became dazed, walking around aimlessly and remaining in this state for about half an hour. On Jan. 28, 1904, he was seized with shortness of breath, succeeded by tingling in the ears, and fell to the ground. It was said that during the convulsion his eyes were turned from side to side, and that the whole body with the exception of the hands and wrists fell into a state of spasm, lasting from five to seven minutes, with frothing from the mouth. Since that time he has had five attacks of this character, the latter one having been preceded by violent occipital headache and vomiting.

Examination.—He has marked optic neuritis, complains of intense headache and occasionally vomits. There is no hemiasynergia on either side. No paralysis of either facial nerve, the masseter and temporal muscles contracting well on either side. Sensation for pain and touch is equal on both sides, so that there is no involvement of either the sensory or motor root of the fifth nerve. The extraocular movements are normal, but there is a lateral nystagmus when looking from either the right or left. The tongue is protruded straight, moves freely and there are no tremors. The head is not tender to percussion.

Upper Extremities: Grasp of each hand is equal and strong; sensation for pain and touch normal in each upper limb and it is the same on both sides. Stereognostic perception is normal in both hands. Biceps and triceps tendon jerk are not distinct in either side. There is no muscular atrophy. Resistance to passive movements is normal in both upper extremities. In the lower limbs no hemiasynergia. Resistance to passive movements normal, patellar reflex normal on each side, and there is no Babinski reflex. Sensation for touch and pain are the same on both sides, gait and station are normal wih the eyes open or shut. There is not the slightest trace of hemiparesis or disturbance of sensation on the left side.

Ophthalmologic Report.—From the service of Dr. de Schweinitz: Ophthalmic diagnosis hemianopsia. Pupils react normally to light and accommodation, the muscle balance normal; eyegrounds, media clear; O. D. marked optic neuritis, 5 D. no change in macula, O. S. swelling of disc 5 D, a few small fresh hemorrhages in the fundi. No change in the macula.

Operation.—Dr. Frazier, Oct. 10, 1904. Inasmuch as the symptoms pointed entirely to a lesion in the occipital lobe, an osteoplastic flap was reflected, exposing this region. The dura exposed in the opening presented a mottled appearance as though the seat of an organized traumatic or inflammatory exudate. There was slight visible pulsation and there seemed to be considerable tension. When the dural flap was reflected the brain immediately bulged through the opening even beyond the level of the scalp. And from the opening of a jet of yellowish-red fluid spurted three or four inches. About 45 c.c. of fluid were evacuated in this way. In order to close the defect it was necessary to reflect a flap from the pericranium inasmuch as the brain still bulged considerably through the opening. This was taken from the section of bone contained in the flap and the bone itself was removed. The wound was closed with interrupted silkworm gut sutures and drain introduced through counter openings.

Subsequent History.—October 13: Since the operation the headache has entirely disappeared and the patient is now able to see objects which he could not before the operation.

October 24: On the date of his discharge from the hospital it was reported that the patient felt better than he had for some months and that the vision of both right and left eyes had improved.

R. E. V. before the operation 6/30, at the present time 6/22.

L. E. V. before the operation 6/30, at the present time 6/15.

There is still a left hemianopsia and the swelling of the discs has decreased from 5 to 3 D.

Dec. 21, 1904: The patient was readmitted to the hospital. He returned to the hospital chiefly owing to the fact that the hernia cerebri had increased and especially for the past two weeks his vision had been failing. During the past two months he had gained forty pounds. Examination of the eyeground showed that the choked disc had entirely subsided, but that there was marked optic atrophy. There was left lateral hemianopsia for light only.

Dec. 23, 1904: The original field of operation was exposed and the dura was found intact. On reflecting the latter a canula was introduced and immediately a large quantity of blood-stained fluid escaped. Immediately after the evacuation of the fluid the hernial protrusion collapsed. The question arose at the time of the operation as to whether we were dealing with a cyst of the occipital lobe or the dilator horn of the lateral ventricle. No evidence could be detected of a neoplasm in the neighborhood of the operative field. The wound was closed in the usual way.

December 29: Patient has made a satisfactory convalescence from the operation. There has been a free discharge of cerebrospinal fluid from the wound, requiring reinforcement of the dressing from time to time.

Jan. 27, 1905: The patient was discharged from the hospital to-day, the wounds having healed *per primam* throughout. The hernia was not so prominent as it was before the operation. The patient's condition, with the exception of his impairment of vision, is entirely satisfactory. The optic atrophy which was discovered after the choked disc had subsided of course precludes the possibility of his recovering his vision. In a letter received from him February, 1906, the patient reports that he is feeling very well, has had no bad spells, and is now in attendance at a school in Pittsburg, Pa.

Case 7.—Tumor of the left lateral lobe of the cerebellum. Decompressive operation, followed by striking improvement.

History.—Inasmuch as this case was reported in full,[36] it will be necessary to refer here only to the salient points.

Patient.—F. M., aged 10, was referred to Dr. Frazier's service at the University Hospital by Dr. D. J. McCarthy, March 7, 1904. The essential symptoms in the case were a gradual increase in ataxia and pronounced headache, vertigo and vomiting. There was a marked degree of choked disc on both sides.

Operation.—March 13, 1904: Dr. Frazier removed the bone overlying the left lobe of the cerebellum and proceeded to explore the hemisphere for a tumor. Exploration failed to reveal the presence of a tumor and before closing the dura, one-third of the cerebellar hemisphere was removed. The effects of the operation were most gratifying. At his discharge from the hospital on March 27 his condition was noted as greatly improved. His whole disposition had changed; he was bright and cheerful and complained neither of headache nor vomiting.

Second Operation.—November, 1904, the patient returned to the hospital because of the recurrence of some of his symptoms. On the following day the cerebellar fossa on the affected side was explored and an infiltrating tumor about the size of a walnut was found and removed.

The value of the palliative operation in those cases in which the tumor can not be localized is well illustrated by this case. Between the date of the palliative operation and the time at which the tumor was finally found and removed the patient had been comparatively free from any subjective disturbance.

Case 8.—Suspected tumor of the cerebellum. Decompressive operation including removal of a portion of one cerebellar hemisphere, followed by considerable relief as to the vision, headache, vomiting and vertigo. Death of the patient 7 months later. No autopsy.

Patient.—P. K., aged 15, entered the neurological wards of the University Hospital in the service of Dr. William G. Spiller, May 9, 1905.

History.—Eight months ago the patient complained of headache all over the head associated with vomiting. The attacks of vomiting were irregular, sometimes twice a day and again not oftener than twice a week; in the interval, however, he was occasionally nauseated. He complained for some time also of dizziness and difficulty in locomotion. He had never had any convulsions.

Examination.—By Dr. Spiller, May 12, 1905. Conjunctival reflex is distinctly impaired on the left side; corneal reflex normal, both cornea and conjunctiva are normal on right side. Movements of the face are normal on both sides and there is no involvement of motor or sensory root of the fifth nerve. Sensation for touch and pain is not impaired. Movements of the eyeballs in all directions are somewhat impaired, and somewhat inco-ordinate. Tongue is protruded straight; there is no atrophy and there are no fibrillary tremors. Hearing for the voice appears to be normal in each ear; speech and intelligence normal. When sitting up the patient holds his head fairly erect, possibly with a little tendency to incline it to the left.

The grasp of each hand is normal, finger-to-nose test normal on each side. Neither biceps tendon reflex, triceps tendon reflex nor the wrist reflexes are distinct on either side. Sensation for both touch and pain normal in both upper extremities. There is no wasting in the upper extremities.

Fig. 3.—Showing the general robust appearance of patient one and one-half years after decompressive operation for tumor of the cerebellum (Case 4).

In the lower extremities the voluntary movements are normal, and there is good resistance to massive movements. The patellar reflex is very prompt, even exaggerated on the right side, but not quite so prompt on the left side. There is no ankle clonus. The Achilles jerk on the right side is prompt, but not so prompt on the left side. There is no Babinski reflex on either side, the smaller toes being drawn downward, the great toes remaining stiffer. Sensation for touch and pain is normal in each lower extremity, the cremasteric reflex is excedingly prompt on the right side and prompt, but not so markedly so on the left. The musculature of the lower limbs is poorly developed, the patient has some difficulty in standing. On standing with his feet close together, even with his eyes open, he usually falls to the left and backwards. His gait is very ataxic with a marked tendency to go backward, and to the left. Hemiasynergy is not present on either side.

Provisional diagnosis, cerebellar tumor, more likely on the left side because of the tendency to hold the head to the left, to fall to the left and backward and because of the impairment of the left conjunctival reflex, and of the less degree of exaggeration of tendon reflexes on the left side.

May 12, 1905: Ophthalmic report by Dr. Shumway. Completely blind in the right eye, left vision about 1/100. Both pupils are widely dilated. The right pupil does not respond to light and the left responds sluggishly. There is some limitation of the movements of the eyes, particularly of inward movement, the left eye not approaching within 5 mm. of the inner angle; the movements are very jerky in character. There is a high-grade optic neuritis of the right eye which is going into secondary atrophy of the nerve. The veins are very tortuous and there is a small hemorrhage on the outer side of the nerve and an elevation of 6 D. In the left eye there is also an optic neuritis and of a milder degree with an elevation of about 4 D. The left nerve is also becoming atrophic. The patient was referred to the surgical wards.

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[36] See Dr. Mills' paper, "The Diagnosis of Tumors of the Cerebellum and Cerebellopontile Angle, especially with Reference to Their Surgical Removal," pp. 91-96, New York and Phila. Med. Jour., February 11 and 18, 1905.

Operation.—May 17, 1905. Under ether anesthesia Dr. Frazier performed a decompressive operation. The exposure of the left cerebellar hemisphere was attended with unusually free hemorrhage particularly from those sinuses which have been described on previous occasions as existing in the occipital bone in the neighborhood of the occipital protuberance. When the dura was opened the cerebellar tissue bulged considerably but on the surface of the hemisphere and to a depth of about one inch, no pathologic condition could be demonstrated. About one-third of the hemisphere was removed and the cerebellopontile angle exposed but with negative results. A very good exposure of the seventh and eighth nerves was obtained, which were demonstrated to the eight or nine physicians who were witnessing the operation. No further exploration was made and the wound was closed.

Subsequent History.—May 6, 1905. The patient reacted from the effects of the operation. Dr. Shumway reports that the optic neuritis had subsided very much, the apex of the swelling in the right eye is now only 3 D. as compared with the 6 D. before the operation, and the left eye 2 D. as compared with 4 D. before the operation. The nerves are becoming somewhat atrophied. The patient's vision has improved particularly in the left eye, so that he can count figures at a distance of two feet.

July 19, 1905: Reported to-day that the patient can walk around the ward without any assistance, although still somewhat unsteady, but, however, no tendency to fall in any particular direction. He now has no headache, and his vision has been so improved that he is able to distinguish faces and objects.

No opportunity was afforded to make any observations after the patient was discharged from the hospital, and in answer to a letter of inquiry written in January, 1906, we learned that the patient had died December 24, 1905.

Case 9.—Suspected tumor of the cerebellum in which a decompressive operation entirely relieved the subjective symptoms.

History.—S. L., aged 20, patient of Dr. T. H. Weisenburg and Dr. M. Radcliffe was admitted to the University Hospital, Oct. 25, 1905, with the following history.

Family History.—Father died of pneumonia. Mother is living and well. Two sisters and six brothers all in good health. No history of nervous disorders, tuberculosis, renal disease, cardiac disease or neoplasm.

Social History.—Patient was born in Austria and came to this country when 3 years of age. Engineer by occupation. Uses alcohol and tobacco in moderation. Patient has a small urethral discharge at the present time of one month's duration. There is no syphilis.

Previous Medical History.—Patient had measles during infancy; otherwise he has always been in excellent health. He was well until one year ago, when he began to experience nausea, followed by vomiting with pain of a severe character, starting in the nape of the neck and shooting upward to the top of the head. At first these attacks were rather frequent, occurring every day or every other day, but they have greatly decreased in frequency. Two months ago the sight in the left eye began to fail and now he can distinguish only shadow and light. At about the same time he noticed that he was deaf in the left ear. On attempting to walk he feels giddy and staggers. This began about three or four months ago and has not increased much since then. Turning the head from side to side and backward causes some pain, but not severe. Lifting causes severe pain with blurring of vision. No motor paralysis.

Examination.—By Dr. Weisenburg. Station with eyes open and shut good. Gait with eyes closed good, though occasionally he has tendency to walk either to right or left.

Eyes: Pupils dilated with atropin. Convergence impossible with left eye, i. e., on attempting to look at nose, the left internal rectus is weakened. Associated ocular movements to right and left are perhaps affected; i. e., he can look either to right or left to the normal extent, but in a short time the eyeballs have a tendency to jerk back toward the median line. Upward and downward associated movements are normal. No diplopia. Ophthalmoscopic examination shows marked choked disc on both sides, especially the left. Both optic nerves are much swollen and hemorrhages are profuse. The appearance is that of an albuminuric retinitis.

The fifth, the seventh and the twelfth nerves are normal. Hearing seems to be diminished on the left side. There is no trouble in eating; no dysphagia; no dysphonia. Memory is good. Both upper and lower limbs are normal in form. Reflexes and sensation are normal. There is no ataxia on either side. No involvement of bladder or rectum. No hemiasynergy. Touching conjunctiva on either side does not elicit any movement of eyeball while corneal reflex is present. There is no Babinski. The results of the examination of the nose, throat and larynx by Dr. Grayson and of the sense of hearing by Dr. Randall were entirely negative.

Operation.—On Oct. 26, 1905, a decompressive operation was performed by Dr. Frazier which consisted in a suboccipital craniectomy, the bone overlying the left cerebellar hemisphere was removed. There appeared to be an increased amount of intracranial tension and the dura did not present its normal pale bluish color, but in most places and particularly in the upper and inner angle it was a yellowish opaque and dotted here and there with whitish-yellowish specks. The dura was not incised.

The operative recovery was entirely uncomplicated. The wound healed throughout *per primam*.

October 31: Dr. de Schweinitz made an ophthalmic examination and reported a right choked disc plus 10 to 11 D.; left choked disc plus 9 D. and no fresh hemorrhages.

November 3: Dr. de Schweinitz reports O. D. choked disc plus 11 D., some fresh hemorrhages. Vision 6/22. O. S. choked disc plus 9 to 10 D., but more contracted laterally; fresh hemorrhage.

Dec. 23, 1905: The patient was discharged from the hospital to-day. Since the operation his vision has improved considerably.

December 22: Dr. de Schweinitz reported as follows: O. D. 6/12, subsiding neuritis plus 7 D. O. S., subsiding neuritis, plus 7 D. It will thus be seen that the choked discs have subsided about 4 diopters since the operation.

Jan. 29, 1906: Patient reported at the hospital for examination and said that there had been no headache, nausea or vomiting. O. D. the disc can be distinctly seen, slight swelling of the edges, only about plus 1 D. O. S. disc apparently normal. This is one of the most striking effects on choked disc after decompressive operations that we have observed and is particularly interesting in that the results were obtained without opening the dura.

May 29, 1906: The patient now has some headache, but much less than he had before the operation. He is occasionally dizzy. The patellar reflexes are a little increased. Gait and station are good even with eyes closed. Dr. de Schweinitz reports: Subsiding optic neuritis.

R. E., marked loss of capillarity, especially temporal half, disc swollen 5 D. (eyeground 3 D) hence actual elevation 2 D; vessels shrinking, some exudate in macula. L. E., well-marked subsiding neuritis and postpapillitic atrophy.

Case 10.—Tumor of motor region.

History.—P. S., aged 25, was referred to Dr. Spiller by Dr. de Schweinitz.

Family History.—Father and mother living and well. No history of neoplasm, tuberculosis, liver or kidney disease. Cousin became insane and committed suicide. Mother says the whole family is very nervous.

Social History.—Went to school until 18 years, then studied law for three years, but was forced to give it up on account of his nervous condition, then became a fireman on a locomotive. Smokes to excess; drinks alcohol in moderation.

Note from Dr. de Schweinitz: "Double optic neuritis (choked disc) visual fields normal. No palsy of exterior muscles. Choked disc about 5 diopters."

Up to 8 years of age had almost every infectious disease. When 11 years old he went to bed well one night and awoke blind and remained so for four months (treated at St. Agnes Hospital). Sight gradually returned. According to his mother, "eyeballs were solid red, like clotted blood." To 17 years of age he had fair sight and did not wear glasses. At 17 he began to be very nervous, and it was then that he began to take "weak spells." About once a month he would suddenly become weak, his knees would give way and he would fall to the ground, but would not lose consciousness. These fainting spells disappeared after a while and have not been present since he was 18 years of age.

At 21 years of age he again wore glasses. His sight gradually diminished and he suffered severe pain in his eyes, especially behind the eyes. Temporary attacks of blindness lasting a minute or a few seconds occurred sometimes. He has always been a heavy smoker since he was 7 or 8 years old. He has averaged twenty to twenty-five cigarettes daily and also a pipe and a cigar a day. He had gonorrhea three years ago, but has not had a chancre or other venereal sore. He has been always subject to headaches, but within the past year pain has been almost constant, worse at night, preventing sleep, and associated with attacks of vertigo, weakness, nausea and vomiting. The headache is chiefly in the vertex, but sometimes occipital and above the eyes. He had a severe fall and struck on the back of his head when a child. Weakness disappears at will; if he "were to give in to it he would go in a heap." He has never had convulsions, but says that several times he has had attacks in which the whole left side, arm and leg, especially the leg, became numb, "as though dead"; the arm was only a little affected. He has no paralysis or paresis anywhere. He was a fireman on a locomotive three years and was so nervous that he gave up the work. Every little noise would make him jump, and he was always expecting something to happen, "lost his nerve," as he expressed it. Masturbated freely before 16 years of age.

Examination.—Sensation seems normal everywhere and to every form of stimulation, and there is no astereognosis and no loss of muscle sense. Ocular movements are good. Slight nystagmoid movement is seen on extreme lateral excursion, especially to the left. Reflexes are normal. There is no Babinski and no ankle clonus.

Cardiac condition: Irregular heart action without marked accentuation of either aortic or pulmonic sounds.

Patient states that the attacks of stiffness of left lower limb previously mentioned are usually preceded by much greater headache, a "sensation of something inside expanding and bursting out." They frequently occur at night, and in them the left leg becomes very rigid and is drawn across the right, but it can be voluntarily moved. The left arm is to a less extent involved and still less the left face. During the attack consciousness persists, but the whole left side feels as though "dead." He has almost constantly a blowing tinnitus aurium; only on the right side. He quit railroading in November, 1905, and since then has had only one or two attacks of spasm; previously had one or two weekly.

March 20, 1906: Yesterday morning in getting out of bed he had headache. Between 10 and 12 o'clock he became weak in his knees, but did not fall. In the afternoon he vomited and complained of intense headache and became unconscious. The left arm was flexed on the forearm and was stiff. The left lower limb was stiff and probably the left side of the face was affected. He was unconscious all night and very noisy and hard to restrain. This morning he is perfectly conscious, but in an agony of headache, crying out at times and tossing himself about in bed, clutching at any one near him and begging for relief. There is no motor weakness in any of the limbs, but he has some slight disturbance of sensation in the right hand. Stereognostic perception, the sense of position and tactile sensation are normal in each hand. The spasms which he has had have been in the left side and have always been tonic (never clonic). The patellar reflex is exaggerated on the left side and possibly slightly so on the right. Achilles tendon reflex is not exaggerated and there is no Babinski reflex.

Operation.—By Dr. Frazier, March 20, 1906. Under ether anesthesia the usual motor opening was made, the flap measuring 3½x4 inches in width and length. When the osteoplastic flap was reflected it was noticed that at a point about 2½ inches from the front of the posterior margin of the opening and just below the superior opening the dura had already been punctured by the neoplasm, and immediately overlying this point the bone had been almost entirely worn away by the tumor. There was no visible nor palpable pulsation. The exposed dura was of a greenish hue and gave the appearance as though there were beneath it numerous large vascular channels. There was a peculiar soft fluctuating sensation communicated to the examining hand. An exploratory incision was made in the dura, beginning at the point where it had ruptured spontaneously. A tumor was immediately exposed, apparently of the infiltrating character and filled with large vessels. Its removal was considered impracticable. The dural incision was closed and the lower half of the bone contained in the flap as well as considerable portion of the temporal bone was removed. The wound was closed as usual with interrupted silkworm gut sutures and the drainage introduced through two counter openings.

March 21: The headache, of which he complained so bitterly before the operation, has entirely disappeared. Patient can move his left leg, but has no movement in his left arm, forearm or fingers. Sensation is not impaired. There is some impairment of the left facial nerve.

March 22: The movements of the left lower limb are still unimpaired. The left upper limb is completely paralyzed, as is also the lower part of the left side of the face, the muscles supplied by the superior branch of the facial nerve being weak. The tongue deviates a little to the left when protruded. The left biceps and triceps reflexes are not distinct; the left patellar reflex is exaggerated. There is no ankle clonus on the left side.

Subsequent History.—March 23: Drainage removed to-day and wound in excellent condition.

March 25: Dr. de Schweinitz reports that in the right eye there is optic neuritis, a greenish-white swelling confined to the disc and covered with numerous particles, probably cholesterin. There are no hemorrhages. Swelling of the disc is plus 3 D. In the left eye the conditions are precisely similar swelling of disc plus 4 D. Vision O. D. 4/25, O. S. 4/12.

March 26: Patient's general condition is excellent. The dressing has been removed and he is up and about the ward.

March 27: For the first time the patient can lift the left arm and raise his hand over his head without any difficulty; he can flex his fingers.

March 30: Patient still has some weakness in the lower side of the face; the left upper arm is still weak, although power is gradually returning. Tactile sensation, sense of position stereognostic conception are normal in the left hand. He is able to walk unaided.

April 1: Dr. de Schweinitz reports, under date of to-day, optic neuritis in right eye plus 3 D., in left eye plus 4 D R. E. V. equals 4/20 (?), O. D. equals 4/10 (?). Vision is very much blurred. Evidence of temporary blindness.

April 4: The patient was discharged from the hospital to-day, having had absolutely no recurrence of headache.

(*To be continued.*)

A New Clinical Method of Determining Blood in the Urine.—Klimoff announces a new technic in *Russky Vrach.*, No. 16, 1906. The urine to be examined is mixed with any quantity of hydrogen dioxid and then is added a small amount of aloin powder. On shaking the mixture it turns purple. Slightly heating hastens the reaction. If the urine contains pus or is alkaline, the reaction will always be positive, whether there is blood in the urine or not, therefore the urine should be previously made acid by adding some acetic acid. The presence of albumin does not interfere with the reaction, but that of bile pigments does. With these limitations the test is reliable and sensitive.

New Appliances

TREATMENT OF FRACTURE OF THE INFERIOR MAXILLA, WITH DESCRIPTION OF A SPLINT.*

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Fractures of the lower jaw are divided into fractures of the body, the ramus, the angle and the condyloid and coronoid processes. The most frequent variety is fracture of the body at the mental foramen; frequently the fracture is double, being two of the same variety or a combination of two different varieties. Numerous mechanical devices and operative procedures have been advanced for the treatment of these fractures, but, if one may judge from the numerous articles which appear each year, none give entire satisfaction. No one apparatus or operation will be satisfactory for all varieties of fracture of the inferior maxilla. The treatment of these fractures with the use of a chin cup and a Barton's bandage is antiquated and entirely unreliable, as well as being very uncomfortable. To be systematic. we will take up the different varieties in turn.

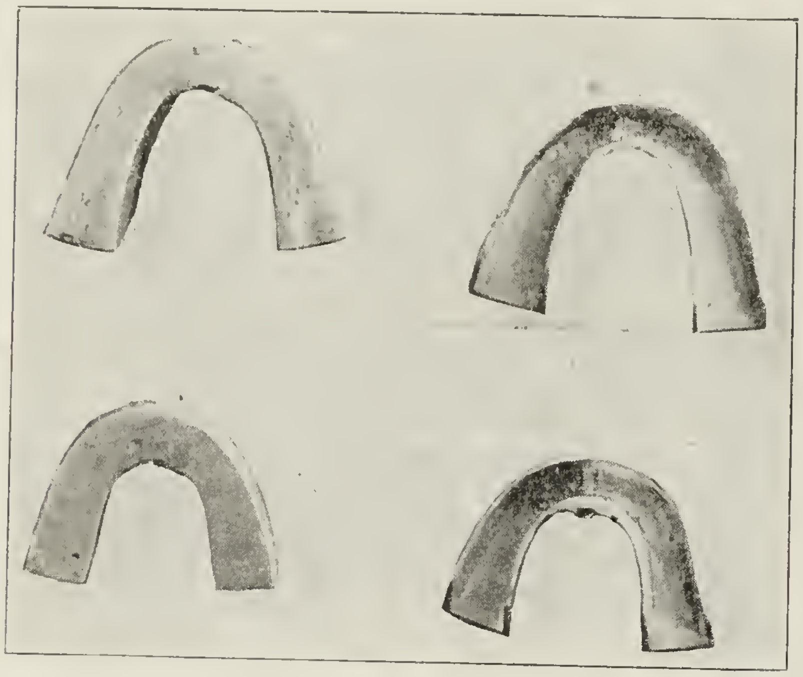

Fig. 1.—The mouth-pieces in two sizes.

FRACTURE OF THE BODY WITHIN THE ALIGNMENT OF THE TEETH.

Fractures of this variety may be treated with an interdental splint and good results obtained. The disadvantages of this method are: 1, It requires the assistance of a dentist; 2, the mouth can not be kept clean; 3, the patient can take only liquid food; 4, articulation is impossible. The Matas splint has been used by us and found very much superior to any other apparatus. but it too has several objectionable features: 1, The mouth piece bends at the slit and allows the fragments to get out of alignment; 2, the chin cup can not be adapted to the different variations in shape of the inferior maxilla; 3. all the pressure comes on the symphysis instead of being equally distributed along the body; 4, the splint extends about four inches in front of the teeth and on that account the bone is liable to be refractured; 5, the wearing of a Barton's bandage is necessary to keep it in place. To overcome these defects. we have devised the splint shown in the illustrations.

DESCRIPTION OF THE SPLINT.

This splint is constructed on the principle of a clamp. It consists of a mouthpiece, chin cup, horizontal and vertical bars and a tube which fits over the vertical bar. The mouthpiece is a horse-shoe-shaped tray resembling the impression trays used by dentists. On the center of the inner or lingual surface of the plate is a small slot for the reception of the horizontal bar. The trays are made in two different sizes (Fig. 1). From these a selection can be made to fit any jaw by bending the plate slightly. The chin cup is a perforated aluminum Levis cup which extends from the symphysis to the angles; it is attached at the tip to the upper end of a hollow square tube by a swivel and at its base to the lower end of the square

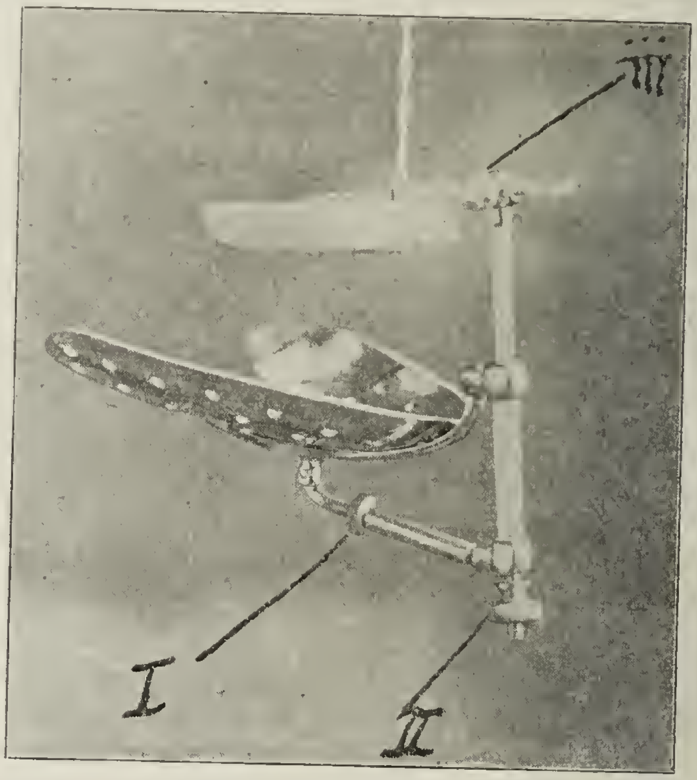

Fig. 2.—A splint for fracture of the inferior maxilla.

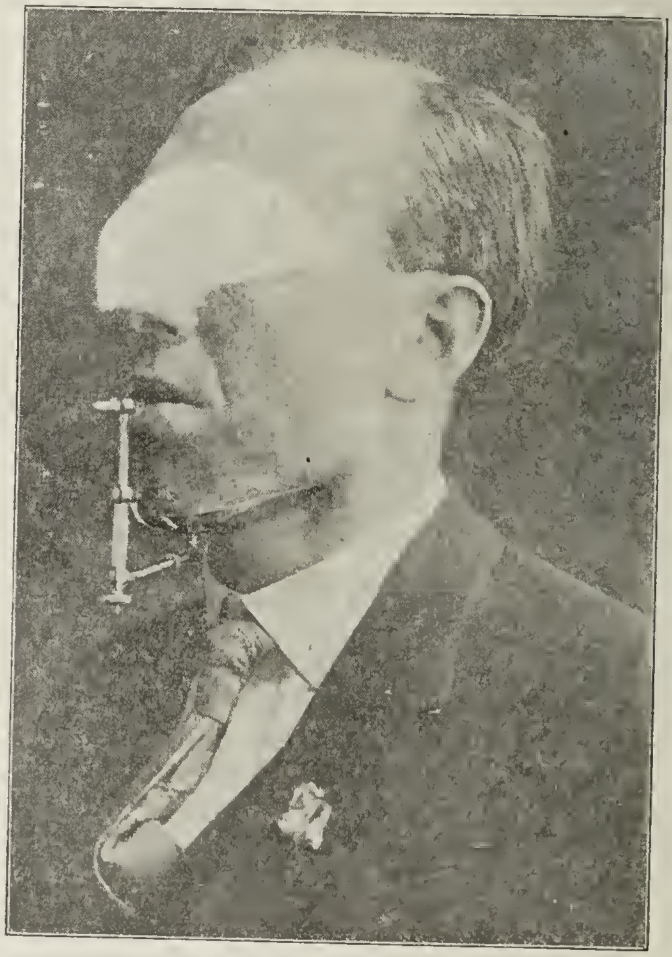

Fig. 3.—The inferior maxilla splint in place.

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* Read before the Philadelphia County Medical Society.

tube by a jack screw, by which the chin cup can be regulated to fit any jaw from angle to symphysis (Fig. 2). The square tube fits over a square rod with a thumb screw at its lower end to regulate the pressure. The vertical square rod is pierced at its upper end by the horizontal square rod. The distance of the vertical rod from the teeth is regulated by a thumb screw at the junction of these two rods.

APPLICATION OF THE SPLINT.

The teeth should be cleaned with peroxid of hydrogen and washed with boric solution. The teeth on each side of the fracture, if they are present, should be wired together with fine brass wire to keep the fragments in apposition while the splint is being applied. Then the mouth piece, which corresponds to the size of the jaw, is bent until it accurately fits the alignment of the teeth. This plate with the horizontal rod in place is filled with modeling compound which has been softened by immersing it in hot water and is pressed down on the teeth. A few drops of cold water applied to the plate will harden the modeling compound. The chin cup and the vertical bar are placed in position and thumb screw No 1 (Fig. 2) is regulated until the chin cup fits the jaw. Then thumb screw No. 2 is regulated until the chin cup and mouth piece are held firmly together. Finally thumb screw No. 3, at the junction of the two rods, is tightened to keep the chin cup from slipping forward (Figs. 3 and 4).

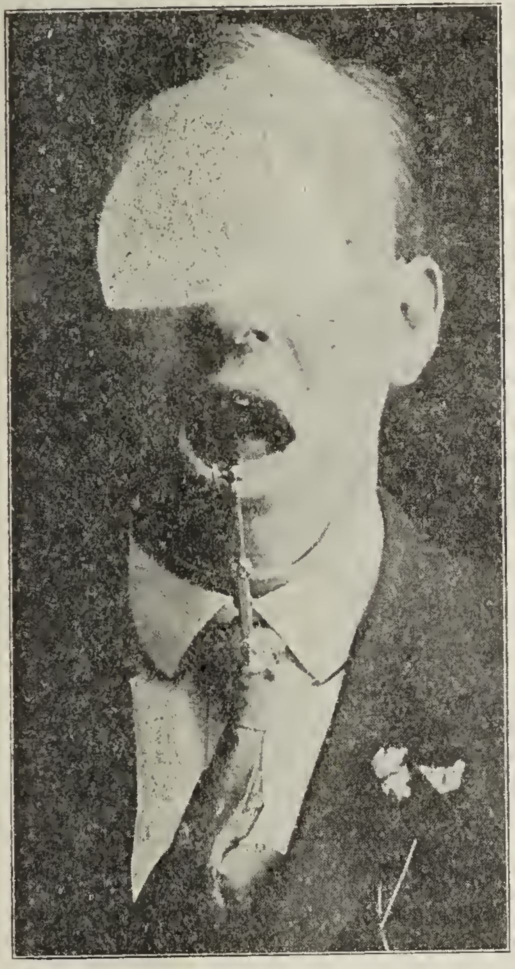
Fig. 4.—The inferior maxilla splint in place.

The chin cup should be removed once or twice a day, the chin rubbed with alcohol and dusted with talcum powder, then the chin cup reapplied. The mouth piece should be removed and reapplied with new modeling compound every few days so as to keep the mouth clean. The pressure on the chin should be regulated so as not to cause a pressure sore.

This splint has been in use in eight cases. In every one the alignment of the teeth has been perfect.

FRACTURES OF THE RAMUS, THE ANGLE, THE CONDYLOID AND CORONOID PROCESSES.

An interdental splint is the only appliance that will hold the fragments of the above fractures in place. Of the numerous varieties of interdental splints the one shown here is the best. The variety of interdental splint which separates the upper and lower jaws one-half an inch is only mentioned to be condemned. The use of said splint is frequently followed by inability to approximate the upper and lower jaws by reason of union taking place at an angle. When the interdental splint of German silver (Fig. 5) is used, the assistance of a dentist is required.

METHOD OF MAKING THE INTERDENTAL SPLINT.

Impressions of both sets of teeth are taken in plaster-of-Paris; from these impressions zinc dies are made, over these dies German silver plates are swaged for the upper and lower jaws. The plates are trimmed to fit around the necks of the teeth and placed in the mouth on the upper and lower teeth with a little wax between them and the jaws are closed in their proper relation. The mouth is then opened and the plate removed with the wax, holding them in apposition while being soldered together. After the teeth have been cleaned and dried, the splint with both the upper and lower plates filled with cement of a creamy consistency is placed on the upper jaw and the lower pressed up in place. A Barton's bandage should be worn until the cement is hard. The splint should be removed at the end of three weeks, the mouth cleansed and the splint put back for one week more. It is not necessary to extract a tooth to enable the patient to swallow as he can very readily take liquid food through and around the teeth.

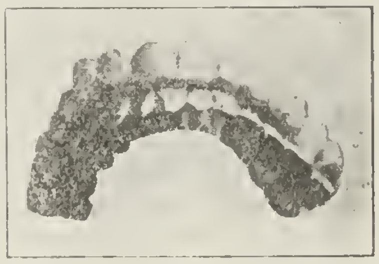
Fig. 5.—An interdental splint in German silver.

The splint shown in Figure 2 is manufactured by the Valzahn Company of Philadelphia.

MODIFICATION OF THE ESMARCH CHLOROFORM INHALER.

W. P. MEGRAIL, M.D.
WHEELING, W. VA.

This modification of Esmarch's inhaler possesses the following advantages:

1. A simple, firm and rapid method of fastening gauze or other material to the Esmarch frame by fitting the ring inside of the frame instead of on the outside, as in the old model.

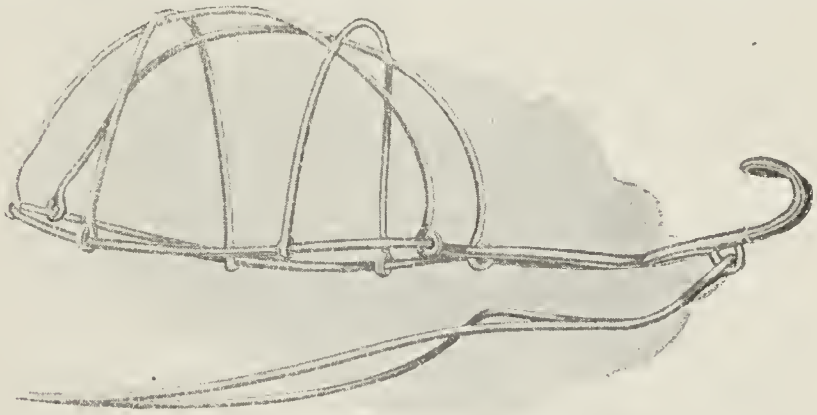
Figure 1.

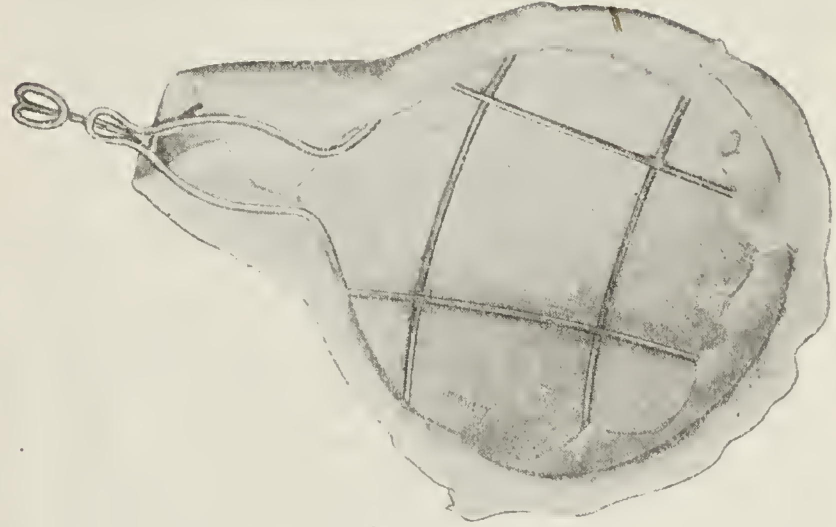
Figure 2.

2. The ring and frame are so fastened together that one can not be lost from the other, nor can they in any manner be put together wrong.

3. The patient is not annoyed by the rough edge of the gauze or metallic frame, and yet it will fit closer to the face, thereby requiring less of the anesthetic.

4. Should the gauze become soiled with vomit or sputa during anesthesia it can be almost instantly replaced with new.

New and Non-Official Remedies

The following articles have been tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in the proposed annual, "New and Non-official Remedies." Their acceptance has been based largely on evidence supplied by the manufacturer or his agent, but to some extent on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before final acceptance and publication in book form.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

Rules Governing the Admission of Articles to the Book, "New and Non-Official Remedies."

(The term "article" shall mean any drug, chemical or similar preparation used in the treatment of disease.)

Rule 1.—No article shall be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article be furnished for publication. The general composition of the vehicle, its alcoholic percentage, if any, and the identity of other preservatives, if present, must be furnished.

Rule 2.—No chemical compound will be admitted unless sufficient information be furnished regarding tests for identity, purity and strength, the rational formula or the structural formula, if known.

Rule 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, and food preparation, except when advertised in an objectionable manner.

Rule 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to literature distributed solely to physicians, to advertising in medical journals, or to vaccines and antitoxins.)

Rule 5.—No article will be admitted or retained concerning which the manufacturer, or his agents, make false or misleading statements as to geographical source, raw material from which made, or method of collection or preparation.

Rule 6.—No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value.

Rule 7.—Labels on articles containing "poisonous" or "potent" substances must show the amounts of each of such ingredients in a given quantity of the product. A list of such substances will be prepared.

Rule 8.—If the trade name of an article is not sufficiently descriptive of its chemical composition or pharmaceutical character, or is, for any other reason, objectionable, the Council reserves the right to include with the trade name a descriptive title in the book. Articles bearing objectionably suggestive names will be refused consideration.

Rule 9.—If the name of an article is registered, or the label copyrighted, the date of registration and a copy of the protected label should be furnished the Council. In case of registration in foreign countries, the name under which the article is registered should be supplied.

Rule 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished.

ACETOZONE.

A mixture of equal parts of benzoylacetyl peroxide and an inert absorbent powder.

Benzoylacetyl peroxide, $C_6H_5CO.O.O.COCH_3 = C_9H_8O_4$ is made by the oxidation of a mixture of benzaldehyde and acetic anhydride.

Benzoylacetyl peroxide occurs in white, shining crystals, melting at 36.6° C. (98°F.). When heated it slowly decomposes and volatilizes. Water at 25° C. (77° F.) dissolves one part in 1,560 or 0.639 Gm. in 1,000 Cc. It is soluble in oils to the extent of about three per cent., slightly soluble in alcohol, and fairly so in ether, chloroform, and carbon tetra-chloride, though all solvents decompose it with the exception of neutral petroleum oils.

In the presence of water it undergoes hydrolysis and slowly decomposes. This change, however, does not take place with sufficient rapidity to prevent its use in aqueous solution; in fact such hydrolysis is necessary to develop its full germicidal activity. On account of its ready decomposition, acetozone should be kept in a dry place.

For various reasons it has been found necessary to add an inert absorbent powder. As found in the market, acetozone is of a grayish white color, possessing the properties of the crystalline substance, with the exception that the absorbent powder employed is insoluble.

Actions and Uses.—Benzoylacetyl peroxide belongs to a class of compounds known as the organic peroxides in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. On contact with water it hydrolyzes, forming benzo-peracid and aceto-peracid which exert marked oxidizing and germicidal action. In consequence of this change, these compounds are thought to be particularly adapted for internal administration. The germicidal and antiseptic properties of this substance have been attested by the experimental results of several observers. It has been used in ophthalmic, aural and nasal practice with asserted good effects as an antiseptic. It has also been applied internally, especially in typhoid fever, with a view to the disinfection of the intestinal canal, and appears to be an intestinal antiseptic.

Dosage.—Acetozone is generally employed in aqueous solution prepared as follows: Add acetozone to warm water in the proportion of 1 Gm. to 1000 Cc. (15 grains to the quart), shake vigorously for five minutes, and allow to stand for about two hours. Decant the liquor as required. This solution may be drunk *ad libitum*, two quarts or more being taken by an adult in twenty-four hours. Acetozone is also used in oily solution as an inhalant.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents No. 710,005 and No. 717,016. U. S. trademark.

ACETOZONE INHALANT.

A solution of benzoylacetyl peroxide in liquid petrolatum. Formula: One hundred grammes contain

Benzoylacetyl peroxide	1.0 Gm.
Chloretone (chlorbutanol)	0.5 Gm.
Refined liquid petrolatum	98.5 Gm.

Dosage.—It is to be inhaled in the form of a very fine spray, or nebula, best produced by an atomizer especially designed for oily liquids.

Prepared by Parke, Davis & Co., Detroit, Mich.

ACET-THEOCINSODIUM.

SOLUBLE THEOCIN.

Acet-theocinsodium, $C_7H_7N_4O_2Na + CH_3.COONa$, is a double salt of sodium acetate and 1,3-dimethylxanthine-sodium (theophyllinsodium).

It is a white crystalline powder, containing about 60 per cent of theocin. It dissolves in 23 parts of water, but is insoluble in alcohol or ether.

Actions and Uses.—It has the diuretic properties of theocin, reinforced by the diuretic action of sodium acetate, and, being more soluble, it has been claimed to be more readily absorbed and better tolerated than theophylline.

It is recommended in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.2 to 0.35 Gm. (3 to 5 grains), best given after meals.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent.

ADNEPHRIN EMOLLIENT.

An ointment composed of the suprarenal active principle and a neutral base (1-1000).

Recommended as a local application where prolonged use is required.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN OIL SPRAY.

A 1-1000 solution of suprarenal active principle in a neutral oil, aromatized.

The preparation is applied as a spray to the mucous membranes in congestive and inflammatory affections, preferably after washing with Dobell's solution.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark.

ADNEPHRIN SOLUTION.

A sterile solution (1-1000) of the suprarenal active principle in physiologic salt solution containing one-half of one per cent. of methaform (chlorbutanol).

Actions and Uses.—The actions and uses of this preparation are described under Suprarenal Alkaloid.

Dosage.—The dose internally is from 0.2 to 2.0 Cc. (3 to 30 minims) in water. Adnephrin is also used in oily solution as a spray, see Adnephrin Oil Spray, and in the form of ointment, see Adnephrin Emollient.

Prepared by F. Stearns & Co., Detroit, Mich. U. S. trademark No. 41,980.

ADRENALIN.

The active alkaloid of suprarenal gland, prepared by the method of Takamine, see Suprarenal Alkaloid.

Adrenalin is a light, white, microcrystalline powder, possessing a slightly bitter taste. On heating it turns brown at 205° C. (401° F.), melts, swells and decomposes simultaneously, at 207° C. (404.6° F.).

For Tests, Incompatibilities, Actions and Uses see Suprarenal Alkaloid.

Dosage.—Locally, 1-1000 to 1-15000 solution, as the chloride. Internally, 0.3 to 2 Cc. (5 to 30 mm.) of 1-1000 solution. Hypodermically, 1 to 15 drops of 1-1000 solution, diluted with sterile water.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. patents Nos 730,175, 730,176, 730,196, 730,197, 730,198, 753,177. U. S. trademark.

ADRENALIN CHLORIDE SOLUTION.

A 1:1000 solution of adrenalin hydrochloride in physiologic salt solution, preserved by the addition of 0.5 per cent of chloretone (chlorbutanol).

Dosage.—See adrenalin.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

ADRENALIN SUPPOSITORIES.

1 part of adrenalin to 1000 parts of oil of thebroma (cocao butter). Each suppository weighs about 1 Gm. (15 grains).

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

AGURIN.

THEOBROMINE-SODIUM-ACETATE.

Agurin, $C_7H_7N_4O_2Na+NaC_2H_3O_2$, is a double salt of sodium acetate and theobromine-sodium.

It is prepared by a method similar to that used in making theobromine sodium salicylate, sodium acetate being substituted for sodium salicylate.

It is a white, finely crystalline powder, containing 60 per cent. of theobromine. It is freely soluble in water, not very readily soluble in alcohol, but more so in hot alcohol. It is quite hygroscopic, and in watery solutions gradually splits up into its components, and more readily in the presence of carbon dioxide.

It is precipitated and decomposed by carbon dioxide and by acids; it forms a bluish white precipitate with silver nitrate, a blue precipitate with copper sulphate, white with tartaremetic, red-brown with ferric salts. It is not readily precipitated by Mayer's reagent, nor by iodine.

It is incompatible with carbonated beverages, acids, saccharine and mucilaginous liquids, and most of the alkaloid reagents.

Actions and Uses.—It acts like theobromine, over which it has the advantage of great solubility and that it is well tolerated by the stomach. While inferior in diuretic power to theophyllin (which see), it is said to have greater power in sustaining the diuresis produced.

Dosage.—0.5 to 1 Gm. (7 to 15 grains), preferably in wafers or capsules. If in solution, this should be freshly prepared (with peppermint water) and without sugar or mucilage.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark.

AIROL.

BISMUTH OXYIODOGALLATE. AIROFORM. BISMUTH IODOSUBGALLATE.

Airol, $C_6H_2(OH)_3(COOBiI(OH))=C_7H_6O_6IBi$., is a combination of bismuth oxyiodide (subiodide) and gallic acid.

It is prepared by heating molecular quantities of bismuth subgallate and hydriodic acid or bismuth oxyiodide and gallic acid, in the presence of water, until a grayish-green product results, which is drained and dried.

It is a voluminous grayish-green, odorless and tasteless powder, insoluble in alcohol, ether, chloroform, and olive oil, slightly soluble in glycerin. It is practically insoluble in water, communicating to water a red color on standing, slowly in the cold, but readily when heated, being decomposed with liberation of iodine and bismuth subgallate. It is readily soluble, with decomposition, in dilute alkalies and mineral acids. It is decomposed on exposure to moist air, turning red, but in admixture with glycerin and a little water it long remains unaltered.

Airol may be identified by the appropriate tests for its components.

It is incompatible with water and calomel. It should not be exposed to moist air.

Actions and Uses.—As it liberates iodine in the nascent state in the presence of wound secretions it has been recommended as a desirable and efficient substitute for iodoform in the treatment of wounds, burns, skin diseases, gonorrhea, etc.

Dosage.—It is used externally in the pure state or diluted with talc, or in the form of a 10 per cent. suspension in equal parts of glycerin and water, or as a 10 to 20 per cent. ointment with 2 parts of petrolatum and 7 parts of wool fat.

Manufactured by F. Hoffmann-LaRoche & Cie., Basle, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 544,101, German patents No. 80,399 and 82,593. U. S. trademark No. 26,405.

ALPHA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE "A." ALPHA-EUCAINE.

Alpha-eucaine hydrochloride is the hydrochloride of benzoyl-methyl-oxypiperidine-carbonic methyl ester.

It is prepared by treating triacetonamine with hydrocyanic acid, hydrolyzing the product by boiling with water, then successively introducing the benzoyl and methyl group by treatment with benzoyl chloride and methyl iodide, purifying the synthetic base (alpha-eucaine) so obtained by crystallization from ether or alcohol, and converting it into hydrochloride by solution in dilute hydrochloric acid and crystallization.

It occurs in colorless crystalline scales or powder, neutral in reaction. It is soluble in 10 parts of cold water. Its solutions may be sterilized without change. The base is precipitated on addition of alkalies or their carbonates.

Its 5 per cent. aqueous solution yields a white precipitate with mercuric chloride, which distinguishes it from beta-eucaine hydrochloride, but not from cocaine, from which it is distinguished by a yellow crystalline precipitate produced if 3 drops of a 5 per cent. aqueous solution of chromic acid are added to 5 Cc. of a 1 per cent. alpha-eucaine solution.

It is incompatible with alkalies and their carbonates.

Actions and Uses.—The action of alpha-eucaine is similar to that of cocaine, but it is regarded as three and three-fourths times less toxic than cocaine. In large doses it first stimulates and then paralyzes the central nervous system; it slows the heart and produces a fall of blood pressure. Locally it acts like cocaine as an anesthetic, but dilates the blood vessels instead of contracting them. It does not dilate the pupil. It is more irritating to the mucous membrane than cocaine or than beta-eucaine. It has a moderate bactericidal action. It is used as a substitute for cocaine in general and minor surgery, but beta-eucaine is preferred for applications to the eye.

Dosage.—2 to 5 or even 9 per cent. solutions. Not more than 2 Cc. (30 minims) of a 4 per cent. solution should be used at one time.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering & Glatz, New York). U. S. trademark No. 28,438.

ALPHOZONE.

SUCCINIC DIOXIDE, SUCCINIC PEROXIDE, DISUCCINYL PEROXIDE.

Alphozone, $(COOH.CH_2CH_2CO)_2O_2 = C_8H_{10}O_8$, is an organic peroxide resulting from the action of hydrogen dioxide on succinic anhydride.

It is prepared by shaking 25 Cc. of a 7.5 per cent. solution of hydrogen peroxide with 10 Gm. of ordinary crystallized succinic anhydride, taking care that the temperature does not rise above 30° C. (86° F.).

It is a fluffy, white, crystalline powder, the crystals being small irregular plates. It dissolves in 30 parts of water at ordinary temperature. It is moderately soluble in alcohol, acetone, and ethyl acetate, sparingly soluble in ether, insoluble in benzene, chloroform and ligroin. Odorless or nearly so; softens at 115° C. (239° F.) and melts at 127.° C. (262° F.) with decomposition. When brought into a flame it explodes, but it does not explode on percussion or friction. It deteriorates slightly on continued exposure to air, but if kept tightly stoppered and in a dark place it remains unchanged indefinitely.

It is a powerful oxidizing agent liberating iodine from potassium iodide. It can be identified by its physical properties and its powerful oxidizing action. To test its strength add 2 Gm. of potassium iodide to 1Gm. of alphozone dissolved in 60 Cc. of distilled water. To this slowly add decinormal solution of sodium thiosulphate with constant agitation until the red brown color of the iodine is just discharged. Each cubic centimeter of sodium thiosulphate solution is equivalent to 0.0117 Gm. of alphozone. 1 Gm. of pure alphozone is equivalent to 85.41 Cc. decinormal sodium thiosulphate solution.

Actions and Uses.—Alphozone belongs to the class of organic peroxides, and by its powerful oxidizing power becomes a germicide and antiseptic.

Dosage.—Alphozone is also marketed in the form of tablets containing, each 0.065 Gm. (one grain), of alphozone, which are used for making solutions, one tablet to 60 Cc. (2 fluid ounces) of water giving a solution (1 to 1000) suitable for general external use; but, as a nasal douche, one tablet in 180 Cc. (6 fluid ounces) of water is often preferred.

Manufactured by F. Stearns & Co., Detroit, Mich. U. S. patents Nos. 768,561, 768,562 and 768,563. U. S. trademark No. 41,981.

ALUMNOL.

ALUMINUM BETANAPHTHOL-DISULPHONATE. ALUMINI NAPHTHOLSULPHONAS.

The aluminum salt of β-naphtholdisulphonic acid, $Al_2(C_{10}H_5.OH.(SO_3)_2)_3 = Al_2C_{30}H_{18}O_{21}S_6$.

It is prepared by mixing solutions of barium naphthol-disulphonate and aluminum sulphate in molecular proportions, filtering off the barium sulphate, and evaporating the filtrate to dryness.

It forms a fine, nearly white, non-hygroscopic powder, soluble in 1.5 parts of water, forming a faintly acid and slightly fluorescent solution.

It is also easily soluble in glycerin, but sparingly soluble in alcohol and insoluble in ether. When dried it loses about 9 per cent. of water, and when exposed to the air it is darkened in consequence of its reducing properties. It is precipitated from solution by albuminous and gelatinous bodies, but these precipitates are redissolved in excess of the latter bodies.

The aqueous solution (1-10) should be clear, and after acidulation with hydrochloric acid should become at most only slightly turbid, and only just tinted bluish by potassium ferrocyanide; nor should precipitates be produced in it on the addition of diluted sulphuric acid or solution of ammonium oxalate. The dried compound should yield 12.7 per cent. of ash (alumina) on incineration.

It should not be exposed to the air, and is incompatible with salts of silver, or other reducible salts.

Actions and Uses.—It is an astringent and mild antiseptic. It is claimed that it can be used as a mild astringent, an irritant or a caustic, according to the strength of the solution, and it is asserted that it exerts a peculiarly destructive action on gonococci. It has been recommended for a variety of affections in which a caustic, astringent or antiseptic is indicated. It has been particularly recommended for gonorrhea in females, especially when affecting the endometrium.

Dosage.—As a surgical antiseptic, in 0.5 to 3 per cent. solutions; in gynecology, in 2 to 5 per cent. solutions; in otology and laryngology, either as powder or in ¼ to 1 per cent. solution as douches, washes or gargles; as cautery, in 10 to 20 per cent. solution.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patent No. 74,209.

AMINOFORM.

A name applied to Hexamethylenamina, U. S. P.

Sold by C. Bischoff & Co., New York.

ANESTHESIN.

PARAMIDOBENZOIC ACID ETHYL ESTER.

Anesthesin, $C_6H_4(NH_2)(COOC_2H_5)\,1{:}4 = C_9H_{11}O_2N$ is the ethyl ester of paramidobenzoic acid, obtained by the reduction of paranitrobenzoic acid.

Paranitrobenzoic acid is obtained by the oxidation of paranitrotoluene, and this may be ethylized by the action of sulphuric acid and alcohol and the ester so obtained reduced to paramidobenzoic acid ethyl ester by the action of zinc and hydrochloric acid, or the acid may first be reduced and subsequently converted into the ethyl ester.

It is a white, crystalline powder, easily reduced to impalpability, melting at 90° to 91° C. (194° to 195.8° F.): odorless and tasteless, but producing a sensation of numbness when placed on the tongue; almost insoluble in cold and difficultly soluble in hot water; soluble in six parts of alcohol, in ether, benzene and, to the amount of 2 to 3 per cent., in fatty oils. In oil solutions it may be sterilized without decomposition, but by prolonged boiling or by warming with dilute alkalies it is split up into alcohol and paramidobenzoic acid.

It should form clear, colorless and neutral solutions in alcohol or ether; after acidification with nitric acid it should not give a precipitate with silver nitrate. Its solution in dilute hydrochloric acid (1 to 10) is not affected by hydrogen sulphide. If a few drops of sodium nitrite solution be added to the slightly acidulated aqueous solution followed by some alkaline betanaphthol solution, a cherry red coloration of bluish shade is produced, which changes to orange on further addition of hydrochloric acid. It is decomposed by prolonged heating with water and is incompatible with alkalies and their carbonates.

Actions and Uses.—It was introduced as a substitute for cocaine and is a local anesthetic, similar in its action to orthoform and said to be equally effective, but free from irritant action and toxicity. The anesthetic action, like that of the related compound orthoform, resembles that of cocaine, but is purely local, does not penetrate the mucous membranes, and in consequence of its insolubility the compound can not be used by hypodermic injection. In consequence of its insolubility the anesthetic effect is more prolonged than that of cocaine.

It is recommended in various forms of gastralgia, in ulcer and cancer of the stomach for the relief of pain, and is applied locally in rhinologic and laryngeal affections, urethritis, etc.; it is also recommended for anesthetizing wounded surfaces, burns, ulcerations and painful affections of the skin. It is more effective in cases where the skin is broken.

Dosage.—Internally, 0.3 to 0.5 Gm. (5 to 8 grains), in pastilles. Externally it is applied as a dusting powder, either pure or diluted. It may be applied as an ointment or in the form of suppositories.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). German patents Nos. K 19,416, 19,495 Anm.

ANTIPYRINE SALICYLATE.

ANTIPYRINÆ SALICYLAS. SALIPYRINE. SALAZOLON. SALIPYRAZOLON.

Antipyrine salicylate, $C_{11}H_{12}N_2O.C_6H_4OH.COOH = C_{18}H_{18}N_2O_4$. is a weak chemical combination of antipyrine and salicylic acid.

It is prepared by heating antipyrine and salicylic acid, in molecular proportions, on the water bath, allowing the oily product to congeal by cooling, and crystallizing it from alcohol.

It occurs as a white, coarsely crystalline powder, or in hexagonal tabular crystals, melting at 91° to 92° C. (195.8° to 197.6° F.); odorless, slightly sweet; soluble in 200 parts of cold and 40 parts of boiling water; readily soluble in alcohol, less readily in ether. It is decomposed by acids with the elimination of salicylic acid, and by alkalies with the elimination of antipyrine.

Its aqueous solution is rendered milky by tannic acid, then colored green by the addition of a few drops of fuming nitric acid. It is colored deep red by ferric chloride, passing to violet-red on copious dilution with water. It must not be affected by hydrogen sulphide.

It is incompatible with acids, alkalies and tannins.

Actions and Uses.—This compound possesses the properties of both antipyrine and salicylic acid and combines the analgesic power of the one with the antirheumatic action of the other. It has been used with good results in sciatica, rheumatic fevers, chronic rheumatism, influenza, pleurisy, dysmenorrhea, etc.

Dosage.—0.3 to 2.0 Gm. (5 to 30 grains) in cachets or capsules.

ANTITHERMOLINE.

A name applied to a preparation said to be made according to the following formula: Each pound contains 4000 grains of imported washed kaolin, washed and purified, 14 grains boric acid, 14 grains oil of eucalyptus, menthol and thymol combined, and 4.9 fluid ounces of glycerin. It closely resembles the Cataplasma Kaolini, U. S. P.

Prepared by G. W. Carnrick Co., New York.

ANTITHYROID PREPARATIONS.

Preparations obtained from the blood or milk of animals, after the removal of the thyroid glands.

The use of these preparations is based on the theory that the thyroid gland secretes products which are toxic, but which neutralize, and are neutralized by, other toxic substances produced elsewhere in the body. Removal of the thyroid glands, therefore, leads to the accumulation of these second toxic substances as evidenced by the phenomena of cachexia strumipriva and myxedema. On the other hand, the blood or milk of such animals is capable of preventing the effects of a hypersecretion of thyroid substance, such as is supposed to occur in Basedow's disease (exophthalmic goiter).

These views are still largely hypothetical; but the majority of clinical observers report markedly beneficial results in the milder forms of the disease and in obscure nervous disorders which are supposedly connected with thyroid hypersecretion. The effects are less pronounced in the more severe forms. The action is merely palliative and other measures of treatment should not be neglected.

Improvement occurs in two or three weeks and is indicated by an amelioration of the nervous symptoms, tremors, palpitation, insomnia and excitability.

The administration must be long continued. Oral and hypodermic administration are equally effective, but the former is usually preferred. These preparations are not toxic, even when very large doses are used.

ANTITHYROIDIN, Mœbius.

SERUM ANTITHYROIDEUM, MERCK.

The blood-serum of sheep from which the thyroid gland has been removed at least six weeks before the blood is drawn, preserved by the addition of 0.5 per cent. of phenol.

It is an amber-colored fluid, with faint odor and taste of phenol (carbolic acid). It is marketed in amber-colored vials containing 10 Cc. (2½ drams). With proper precautions, it is said to keep indefinitely.

Actions and Uses.—For actions and uses see Antithyroid Preparations.

Dosage.—It is administered by the mouth in doses beginning with 0.5 to 1 Cc. (8 to 15 min.) three times a day, gradually increasing the dose as necessary.

Manufactured by E Merck, Darmstadt. (Merck & Co., New York.)

ARGENTAMIN.

ETHYLENE-DIAMINE-SILVER NITRATE. LIQUOR ARGENTAMINI.

An aqueous solution of silver nitrate and ethylene-diamine, corresponding to 10 per cent. of silver nitrate.

It is prepared by dissolving 10 parts each of silver nitrate and ethylene-diamine in 100 parts of water. It is a colorless, alkaline liquid, turning yellow on exposure to the light, but not precipitable by chlorides or by albumin It is not materially injured by exposure to light, as it may be cleared by filtration.

Actions and Uses.—It is antiseptic and astringent like other silver salts, with the asserted advantage of being non-irritant and more penetrating than silver nitrate. It is said to be useful in all cases where the non-caustic action of silver nitrate is indicated.

Dosage.—It may be used in the anterior urethra in 0.25 to 1 per cent. solution; in the posterior urethra in from 1 to 4 per cent. solution; in ophthalmology in 5 per cent. solution.

Mnfd. by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin. (Schering & Glatz, New York.) German patent, No. 74.634.

ARGONIN.

CASEINSILVER. SILVERCASEIN.

A soluble casein compound containing 4.28 per cent. of silver.

It is prepared by precipitating an alkaline solution of casein with silver nitrate and alcohol. It is a fine, nearly white powder, easily soluble in water, forming an opalescent, faintly alkaline solution, which becomes clear on the addition of sodium chloride. It is also soluble in alkaline solutions, in egg albumin, blood serum, etc.

The usual reagents for silver do not affect its aqueous solution (1-20), which should remain clear on addition of sodium chloride, and should not be affected by hydrogen sulphide. On incineration, argonin should yield at least 4 per cent. of silver, which may be identified by the usual tests after solution in dilute nitric acid. It is incompatible with acids.

Actions and Uses.—Its action and uses are similar to those of silver nitrate, but it is claimed to have greater power of permeating living colloid membranes than other silver albumoses. It is applied as an injection in 0.1 to 0.2 per cent. solution; in ophthalmic practice a 10 to 20 per cent. solution in glycerin may be used.

Dosage.—It is generally used in 0.5 per cent. solution, but even 20 per cent. solutions have been injected without producing irritant symptoms.

Manufactured by Farbwerke vorm. Meister, Lucius & Bruening, Hoechst, a. M. (Victor Koechl & Co., New York.) U. S. patent No. 575,277.

ARGYROL.

SILVER VITELLIN.

A compound of a derived proteid and silver oxide, containing from 20 to 25 per cent. of silver.

The so-called vitellin is said to be prepared by electrolytic decomposition of serum albumin. To this product, finely suspended in water, is added freshly precipitated. moist silver oxide and the mixture is heated under pressure until combination occurs. The liquid is then evaporated to dryness *in vacuo*. The change in the proteid is in question; probably a compound of hydrolyzed proteid (serum albumin) and silver oxide is formed.

Argyrol occurs in black glistening. hygroscopic scales, freely soluble in water and glycerin, insoluble in oils and alcohol. The solution is yellowish or black, depending on concentration, and is not affected by boiling. It gives a slight cloudiness or precipitate with sodium chloride and hydrochloric acid; on addition of ferric chloride the color is discharged with formation of a white cloud With alkali and copper sulphate it gives a slight biuret reaction. It has a slight metallic taste. Silver is recognized in the usual way.

The compound is said to be incompatible with acids and most of the neutral and acid salts in strong solution.

Action and Uses.—Solutions of argyrol (20 to 50 per cent.) are said to be non-irritating to mucous membranes. Taken internally it is said to be non-toxic. It is claimed to be an antiseptic. It is recommended in urethritis and cystitis, in conjunctivitis and in affections of the nose, throat and ear.

Dosage.—It is employed in from 10 to 25 per cent. and even stronger solutions.

Manufactured by Barnes & Hille, Philadelphia. U. S. trademark.

(To be continued.)

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

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[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 15, 1906.

THE MEDICAL RECORD: AN ENEMY OF THE AMERICAN MEDICAL ASSOCIATION.

For many years the New York *Medical Record* was the leading medical weekly in America. Next to the *American Journal of the Medical Sciences*, it represented, better than any other journal, the best there was in American medicine. William Wood & Company, the owners, for nearly fifty years—practically since the present nominal head of the house, William H. S. Wood, in 1863, became a member of the firm—have conducted an exclusive medical book publishing business. The imprint of the firm has been on the title page of some of the best medical works this country has produced. This medical book and journal publishing business is presumed to have been and to be a paying one. The journal-publishing part, especially the *Record*, undoubtedly has been a source of a comfortable annual revenue.

The patronage of William Wood & Company, as medical publishers, came from the better class of physicians—those who read and think. Their journals have been of such a character as also to appeal to the intelligent in our profession. Under such circumstances, one would naturally suppose that they would have realized that the movements inaugurated by the American Medical Association against the nostrum evil, and for a better condition in the profession, would be endorsed by the thinking class of physicians—that is, by those to whom William Wood & Company were indebted for their success in the past and on whom they must depend for their support, as medical book publishers, in the future; hence, that they would, for policy's sake at least, have supported the Association in its laudable efforts. But they have done just the opposite.

Through their periodical, the *Medical Record*, they—or their employé—have seen fit, in four editorials, to attack the American Medical Association, its officers and its present activities. Their criticisms—if these attacks may be so dignified—ramify into every phase of the Association, its management, and its work. Their object, it is quite evident, was to discredit the officers of the Association, to reflect on the Association itself and to create dissension among its members. The animus prompting them also is perfectly plain to those who know how the subscriptions to the *Record* have been falling off and also to those who have observed the mass of nostrums in its advertising pages. The House of Delegates, the Board of Trustees and all the officers of the American Medical Association welcome honest criticism and suggestions that are made for the purpose of bettering conditions, but they resent attacks made to disrupt and to disorganize.

The editorials consist of insinuations and deliberate misstatements of facts and bear evidence of having been written by one who has little, if any, knowledge of the history of the Association, of the details of organization or of the work the Association is doing. These attacks should be ignored, but, appearing in a journal that in the past has been considered reliable, some of its readers have believed that there must have been some basis for the attacks, not realizing that the *Record* would stoop to malicious misrepresentations. Further, certain medical journals, for well-known reasons, have made all possible use of the matter. Knowing that their own outcries of "graft," "fraud" and "clique" were laughed at, they could now say, "You did not believe what *we* printed; now read what the *Medical Record* says."

It would be more satisfactory to quote *in extenso* from these editorials—for this would give our readers an idea of what they are, in which case no comment of ours would be necessary—but we have not the space. However, although the editorials were in the form of vague generalities, insinuations and inuendos, it evidently was the intention of the editor of the *Record* to have his readers accept the following propositions:

1. That the policy and the management of the American Medical Association is in the hands of a self-seeking "ring or clique."

This insinuation is constantly made by the editor of the *Record*. What evidence has he for such a statement? On what authority does he insinuate that the House of Delegates, composed of men elected from every state and territory in the Union and changing its membership every two years, is or can be dominated and controlled by a few men for their own purposes? Such a charge is absolutely false, is supported by no evidence whatever and is a direct insult to the representatives of the profession, who are chosen by their fellow physicians to administer and protect their interests. Never, in the history of the American Medical Association, was there assembled a more representative, fearless and independent body of men than that composing the House of Delegates at Boston.

2. That the "financial reports of the American Medical Association have been disquietingly analogous to those of insurance companies and have dealt in glittering generalities."

Had the solicitude of the editor of the *Record* regarding the affairs of the American Medical Association extended over a longer period than that of his own incumbency of his present exalted position, he would be aware that the reports of the Board of Trustees for the last few years have been far more complete and more detailed than at any other period of the Association's existence. We recommend to the editor of the *Record* a casual perusal of the Association's proceedings, not only for the current year, but for preceding years, before he attempts to misinform his readers.

3. That there is, in the minds of honest and intelligent members of the organized profession, a suspicion of "graft;" that the accounts of the Association have been "juggled;" that "more than 23 per cent. of what should have been received in dues and subscriptions remains unaccounted for."

This also is untrue, and, furthermore, it is an infamous libel on the members of the Board of Trustees, who have, without one cent of pay and at a sacrifice of their own time and professional work, looked after the business of the Association. The members of the board are men of high rank in the profession and of unblemished personal character. On what grounds does the editor of the *Record,* by covert insinuation and baseless inuendo, attempt to question their integrity? The standing of each of them is as much above suspicion as the editor of the *Record* could possibly wish his own to be. What evidence or proof has he to justify him in attacking honorable members of his own profession? As a gentleman and a member of a scientific brotherhood, it is incumbent on him either to retract his statements or to produce such evidence as will justify his malicious utterances.

4. That the House of Delegates at Boston was dissatisfied with the report of the Board of Trustees and that it was denied details regarding the business of the Association.

This statement every member of the House of Delegates knows to be false. The report of the Board of Trustees was adopted by an unanimous vote. During the reading of the report, the complete pay-roll, showing every cent paid in salaries and wages to the 150 and more employés of the Association, from the Editor to the errand boy, was submitted to the House. Detailed statements, covering every item mentioned in the auditor's report, were submitted, or were ready for the information and inspection of the members of the House. We fear the *Record* was not very well served by its Boston representatives and we suggest that hereafter more reliable and accurate data be secured as the basis for future attacks. Incidentally, we are constrained to ask by what right the *Medical Record,* or its owners, the commercial house of William Wood & Co., demand the publication of the pay-roll of the American Medical Association for the scrutiny and information of any and all commercial interests. Is such a list published by any fraternal organization, by any company or by any corporation anywhere?

5. That the surplus of the American Medical Association is nearly a quarter of a million dollars.

The editor of the *Record* has perpetrated the sophomoric error of confusing surplus with assets. The actual surplus, as shown by the auditor's report, published in The Journal, was $60,084.21. The assets of the American Medical Association, as set forth in the same report, were, on Jan. 1, 1906, $247,482.91, but the editor of the *Record* failed to note, or was unable to grasp the fact, that this included real estate and buildings, furniture and machinery, stock and cash on hand, as well as bills and accounts receivable. We have the statement of the editor of the *Record* himself made some months ago, that "the editorial and the business departments of the *Record* are absolutely separate." If his conception regarding the surplus is to be taken as a sample of his financial ability, we can not but commend the foresight of William Wood & Co. in making such an arrangement.

6. That the Treasurer of the Association, to whom the editor of the *Record* sarcastically refers as a "prominent bank director and successful financier," is responsible for the investments of the surplus of the Association.

The most superficial acquaintance with the Constitution and By-Laws of the American Medical Association would have shown the editor of the *Record* that the Treasurer is simply the custodian, under heavy bonds, of the surplus funds of the Association, which he holds subject to the order of the Board of Trustees. The Trustees themselves, and not the Treasurer, are responsible for the investment of the surplus funds of the Association.

7. That the Association has become so big "that the number of papers presented in the various sections is too great to permit of their being assimilated by the hearers, or profitably discussed."

If our self-appointed critic had been in touch with the section work, he would have known that there have been for the last four or five years fewer papers than ever before; that sixty, seventy or eighty papers in a section was not an uncommon thing in years gone by; that now, by a general law, the number is limited to forty and that some of the sections have fixed a still lower limit, some as low as twenty-five. As the editor of the *Record,* so far as we know, never attended a session of the Association, he is excusable for this misdirected criticism.

8. That there is no need of the proposed medical directory; that the proceeds of the directory will increase the income of the Association to half a million dollars; that the sales of the book to non-members and the profits of the advertising will pay the cost of production and that the publication of the American Medical Directory is absolutely without excuse.

The consideration of the Directory demands a chapter by itself, which we propose soon to present to our readers. Suffice it to say at this point that the editor of the *Record* either has no conception of the objects of the Directory and what it will stand for, or else purposely ignores them. These matters have been fully discussed in The Journal time and again. In The Journal, Nov. 18, 1905, for instance, appeared a detailed statement of the plan and scope of the work, which evidently the editor of the *Medical Record* has never read. This, however, is no excuse for his ignorance. His profound suggestion that the Association give away twenty thousand—now it would be twenty-six thousand—copies of the Directory to its members is too puerile for comment. We once more pause to congratulate William Wood & Co. that their editor has no connection whatever with the business department of the *Record.*

9. That there is "loudly expressed dissatisfaction with the present management all over the country, which is assuming definite form in the organizing of new state medical societies and even serious talk of a rival national organization."

Will the editor of the *Record* kindly name any state in which a new state medical society is being organized? The Association office is presumed to know the actual conditions regarding medical organization throughout the country. But, evidently, this presumption is unfounded. The *Record* has discovered a condition that was not known to exist. Now, what are the facts? Never before was there less opposition to the plan of organization than now prevails in every state and territory, all but two being organized on a uniform basis. Until two years ago, there was opposition in several states; now there is practically none. In Georgia, immediately after the reorganization of the State Association, there was some disaffection on the part of a few physicians and some transient agitation for the organizing of another state society, but this amounted to nothing. In one county in Michigan, six dissatisfied physicians agitated the organization of a new state body, but nothing definite resulted. This movement was never looked on seriously by those connected with the state society. The disaffection in both instances was the result of purely local conditions in no way related to the American Medical Association and was merely a remnant of the disaffection that at one time prevailed in many states. Never has the profession been more united, never before has it been so influential, never have there been so few local jealousies, and never has there been a more hopeful outlook in every way than now.

10. That the Walker resolution, introduced at the Boston session, was defeated through the efforts of the officers or the Board of Trustees or their friends, and that an attempt was made to suppress an investigation of the business affairs of the Association.

Again, we are led to deplore the inaccuracy of the reports received by the *Record.* The facts are these: The moment the reading of the resolution was concluded, it was at once tabled by the practically unanimous vote of the House. There was no discussion. The members of the House cared for none. There was no time for the officers to express themselves even had they desired to do so. The statement that the resolution was opposed by the officers, the trustees or their friends is an absolute falsehood, unless the entire membership of the House of Delegates is included under the designation "friends." The Association and its officers are fighting secrecy and deception and are not practicing it.

11. That at Boston "a strenuous effort was made to get rid of the Editor, and that so great has become the dissatisfaction with his administration that this endeavor might have been successful had the general body any voice in the management of the Association."

This statement is unqualifiedly false, as all who attended the Boston session well know. There was an opposition, it is true, and a bitter one, but it was limited to the horde of nostrum vendors who have been getting rich by humbugging and deceiving our profession, and to the owners or attachés of those medical journals nourished by the same brood, who allow themselves to be used as the mouthpieces and tools of proprietary interests. The Editor of The Journal of the American Medical Association knows full well that he is hated with a most intense hatred by these gentlemen and their allies, and that they would stop at nothing to secure his "dismissal," but he also knows, and knows thoroughly and well, that the "management" was fully and completely endorsed by 95 per cent. of the physicians at the Boston session, and, for that matter, is endorsed by a like proportion of the physicians of the country, who know the truth of what is going on.

So much for the "facts" regarding the American Medical Association as set forth by the editor of the *Record.* Just a word as to that gentleman himself. He graduated in the spring of 1877 and so has been a member of the medical profession for 29 years. During all this time, his interest in the American Medical Association and in medical organization was so great and his enthusiasm so uncontrollable that in March, 1906, just ten weeks before the Boston session, he became a member of the American Medical Association. Truly, not without reason has the zeal of the new convert become proverbial. Had he devoted a small part of the 29 years of his professional life to a more careful study of the organization of which he was, at last, to become a member, he might have been able to discuss the Association's affairs intelligently, if not truthfully. During all this time, men whose membership in the organization numbers years while his numbers weeks were earnestly and unselfishly striving, not only to build up the American Medical Association, but to bring about better conditions in our profession. During the same time, what has the editor of the *Medical Record* done in this respect? Yet he now arrogates to himself the right to criticise and, by implication and by baseless insinuations to brand these same men as "boodlers" and "grafters."

Is it probable that the business interests of an old and hitherto reputable publishing house will be enhanced by the use of its journal as a medium for such malicious, unfounded and unwarranted attacks? We think not. However, we commend this thought to the consideration of William Wood & Co. of New York.

TREATMENT OF TYPHOID FEVER.

A brief review of the opinions expressed with regard to the treatment of typhoid fever at the recent meeting of the British Medical Association will have special value at this season, not only because the subject is always a live one, but because of the different points of view of our British colleagues. There is little difference of opinion to be reported, but many of the ideas expressed in the discussion deserve notice because of their practical character. Two phases of the treatment of typhoid fever received special attention, and these may well be called the eternal questions in typhoid fever, the problem of removing harmful infectious material from the intestines, and that other ever-recurrent question, What shall the typhoid-fever patient be fed?

The declaration that the bowels of typhoid-fever patients should be kept rather loose, so as to prevent the retention of large numbers of bacilli in the intestinal tract and the consequent absorption of large amounts of the toxic material excreted by these bacilli, was not received with favor. It was pointed out both by our English and Canadian confrères that typhoid patients who are somewhat inclined to be constipated do better than those whose bowels are loose. A distinguished English authority said that the only cases of typhoid fever in his practice about which he became anxious were the sufferers from diarrhea. These patients fall victims to intestinal hemorrhage and perforation much more frequently than those who are constipated. In a large number of cases the mortality among those who had diarrhea was more than twice as great as among those who were more or less constipated.

It was further pointed out that the presence of the bacilli is evidently not a matter to be feared. Patients recover from typhoid fever, gain rapidly in weight and apparently enjoy the best of health, yet continue to excrete typhoid bacilli for many months. It must not be forgotten that these bacilli can be found in the urine of patients often for three months and sometimes for much longer, yet there is no bad effect from them, except the possibility of infection to others, and the patient is sometimes actually in better health than before the attack. The effort of the physician, then, who wishes to help Nature in the struggle with the disease must be not merely to encourage the removal of as many bacilli as possible, but to help Nature with the production of that immunity to the typhoid bacilli which eventually occurs in all persons who recover. The few bacilli that might be removed from the intestinal tract by means of purgatives are as nothing compared to the many millions of those organisms that continue to pass from the system after the patient has become thoroughly convalescent.

The rational treatment of typhoid fever, then, consists in the promotion of immunity. There are no direct means for this, but indirectly the best remedial measure is evidently to preserve the patient's strength as much as possible in order to encourage a healthy reaction. In securing this object the question of how typhoid-fever patients must be fed becomes important. There is practically universal agreement now that an exclusive milk diet—except for patients who are very fond of milk and who can take large quantities of it without disturbance—is a mistake. During the first week of typhoid fever, patients rarely crave any food, and only small amounts should be given. As soon as they begin to develop an appetite, however, additions should be made to their diet, and the extent of these additions was the special subject of discussion. Several, even of the most conservative, of British physicians declared that they considered it advisable to give a patient almost anything he asked for. This is, of course, to be followed only as far as the more nutritious classes of foods are considered. All kinds of fruit juices are to be permitted, though the greatest care must be exercised in the removal from them of seedy particles or anything else that, failing to be digested, might prove irritant to the typhoid ulcers. Some would allow all kinds of meat if asked for, provided the meat was given in a very fine state of division.

It was agreed that it is very difficult to decide just what is the meaning of solid food. Milk unmixed with barley water or with arrowroot will often, in the words of Sir Thomas Barlow, be found in the intestine in large craggy masses which certainly must prove a serious cause of irritation to the typhoid ulcers. On the other hand, finely minced meat will become thoroughly fluid under normal conditions of digestion. In normal circumstances only indigestible food remains in solid condition as low down as the terminal portion of the ileum. It would seem advisable, then, to feed patients much more liberally both as regards quantity and variety than has been hitherto the custom, first in order to shorten the stay in the hospital, an important consideration for workingmen, and, second, in order to prevent the occurrence of the sequelæ of typhoid fever, such as abscesses of various kinds and thromboses, which were shown by statistics to be much more frequent after typhoid fever treated with an exclusive milk diet than when treated with a more generous and varied diet.

THE PHARMACOLOGY OF "SOMNOS."

About a year ago "Somnos," a proprietary preparation put out by the H. K. Mulford Company, was taken up by the Council on Pharmacy and Chemistry. Preliminary examination showed that it was a preparation of chloral, probably a solution of a weak compound of chloral and glycerin. The advertising literature sent out by the H. K. Mulford Company was worded in such a way as to hide from physicians the real nature of the preparation, but, instead, stress was laid on the claim that it was free from chloral. The attention of the officers of the company was called to the matter, and it was hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform with the actual facts. This they did not seem inclined to do, at least they did not do it.

The Council having become satisfied regarding the actual composition of Somnos, a subcommittee was asked to investigate its physiologic action and to compare this with that of chloral so that the claims made by the manufacturers regarding its therapeutic action might be verified or disproved. These investigations were conducted last April and May, and the report has been ready since that time, but has been withheld, awaiting the action of the H. K. Mulford Company. By reference to THE JOURNAL. two weeks ago,[1] it will be seen that the H. K. Mulford Company, in a roundabout way, has acknowledged that Somnos is a combination of chloral and glycerin, but it still persists in claiming that "the product is safer than any known hypnotic, that it produces normal sleep, is less depressing than the bromids and absolutely without any untoward effect on the heart, respiration and vasomotor centers or the blood."

For the reason that the old claims regarding the therapeutic action and safety of Somnos were persisted in, the report of its pharmacology was ordered published. It will be found in this issue.[2] This report may not make interesting reading to the average physician, since it is more or less technical. Nevertheless, it is to be hoped that physicians have become sufficiently interested in the great question which is affected by this report to get at least the sum and substance of it. Condensed into a few words, the experiments show conclusively that the combination of chloral and glycerin, put out by the H. K. Mulford Company as "Somnos," is practically identical in its physiologic action with a solution of hydrate of chloral containing a similar quantity of the drug, that it is fatal in the same relative doses, and that the company has made claims for its preparation which, look at the matter as we may, are extravagant in the extreme.

It is to be regretted that a reputable pharmaceutical house such as the H. K. Mulford Company should have stooped to such practices. To say the least, it has not been honest and square in this matter. It has made claims for its preparation as a therapeutic agent that would be considered fraudulent in the extreme were they made regarding a "patent medicine."

While criticising the H. K. Mulford Company, however. we regret to say that it is not the only firm of standing that has been guilty of such practices, as may be shown hereafter. There are many preparations manufactured and sold by pharmaceutical houses of standing which are exploited under false claims, either as regards their composition or their therapeutic action, or both. It is to be hoped that the Council will not be obliged to make public the actual facts regarding these preparations, but that the manufacturers themselves will conclude to be honest and square with our profession and state the facts themselves, or withdraw the articles from the market.

The object of the Council is to bring about better conditions for the future, not to punish for past misdeeds.

PHYSICAL BASIS OF LIGHTNING DREAD.

The mortality statistics of the last five years show that the average annual number of deaths from lightning was more than 200. The report of these sad accidents is read with terror, yet with avidity, by many persons who have an inordinate dread of lightning, and the consequence is an increase of their lightning phobia, so that toward the end of the summer a thunder storm becomes a source of positive dismay. It is usually considered that such persons have an unreasoning dread of lightning, but an analysis of cases soon shows that most of them are sensible persons under ordinary conditions, though they lose all their confidence in themselves almost at the first sign of a lightning storm.

There is no doubt now in the minds of those who have studied a number of those cases closely that the dread of lightning is a true phobia, though there is in it very probably much more of a physical basis than there is for the most of the unreasoning dreads which are called phobias. While the sufferers from mysophobia, the fear of dirt, which makes people wash their hands dozens of times a day, have the excuse that it is because they dread the presence of microbes that they wash so frequently, it is well known that such cases occurred long before the present state of acute attention to microbes so characteristic of our day developed. There is here simply an imperative idea that they must not let themselves be contaminated by dirt, an idea from which they can not get away. Most of the other phobias are of the same distinctly psychic character and can be overcome only by suggestion, though, as a rule, the amelioration of the person's health brings about an improvement in the annoying symptoms. In all of these cases there is a distinct condition of what used to be called neurasthenia, though in recent years there has come to be a very general realization that, owing to the preponderance of the mental element in these cases, the term psychasthenia or phrenasthenia is much more expressively descriptive.

It seems clear, however, that there is something in the physical condition of the elements just before and during a thunderstorm which affects certain people very unfavorably. It has been suggested that the disturbance of the ether which causes telegraphic instruments to be less easily used than before and which so seriously disturbs long-distance telephone lines may have its effect also on the brain neurons. That the neurons may affect and also be affected by vibrations in the ether is well recognized. When as president of the British Association for the Advancement of Science some years ago Sir William Crookes took "Telepathy" for the subject of his address, he suggested as the only possible explanation for certain well-recognized phenomena of the communication of minds at a distance from one another, the traveling of impulses from one set of neurons through the circumambient ether to the other set. Only such minds can thus communicate as have the same moment of vibration, just as only such wireless telegraphic stations can communicate with each other as have their sending and receiving instruments properly attuned to each other.

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[1] THE JOURNAL, September 1, page 695.

[2] See page 872.

It would seem that the minds of persons who suffer from a great fear of lightning become primarily affected by the magnetic disturbance in the ether which sympathetically is communicated to their neurons. In spite of every reasoning, then, a panicky condition develops to a great extent beyond the control of the will. Under these circumstances reassurance is given to such persons by a straightforward explanation of the reason for their phobia in the physical affection which exists in the underlying basis of mental operations. This proves a very valuable suggestion of therapeutic value even in the worst cases. In some individuals it becomes almost curative in effect, even though the physical dread of lightning does not disappear. It has been suggested that this method of mental therapeutics would save a great deal of suffering in many cases.

NEW AND NON-OFFICIAL REMEDIES.

The first installment of the list of proprietary articles approved by the Council on Pharmacy and Chemistry appears in this issue. It is expected that an installment will appear each week for some months, or until all the articles that have been approved shall have been announced. It is understood that this publication in The Journal is preliminary to the publication in book form. It will be noticed that the Council asks for suggestions and criticisms, especially from physicians. The object is to supply our profession with reliable information regarding proprietary medicines, and in such a way that it will be a help to physicians in deciding not only whether or not a preparation is worthy of confidence, but also to aid them in judging of its therapeutic value. Hence, if our readers feel that the matter can be put in a form more useful to them, they should submit their views to the secretary of the Council. It is now over a year and a half since the Council was organized; some may wonder why so long a time has been necessary before the profession could have the benefit of its deliberations. Those who realize the actual conditions that faced the Council at the beginning, the important problems to be solved, the immense amount of work inseparable from an undertaking of this magnitude, will not wonder that so much time has passed before actual work, as far as the approved preparations are concerned, is made public. Further, the Council has realized that any false step might cause criticism and bring about a failure at the very outset; consequently, extraordinary care has been observed so that no steps should be taken that might have to be retraced.

THE WEST VIRGINIA MEDICAL JOURNAL.

The most recent addition to the state journals is the *West Virginia Medical Journal,* which, with its August number "with its very best bow, steps modestly into the charmed circle of state medical society journalism, and hopes for a warm welcome." There is little fear that it will be disappointed, as it covers a territory in which a clean, ably edited and aggressive state journal is greatly needed. The first number, carefully edited and well printed, appears in magazine form, 7 x 9¾, with fifty pages of reading matter mainly devoted to papers read at the last annual meeting of the state association, together with the minutes of the House of Delegates and news from county societies. The number also contains a complete alphabetical list of the members of the state association. The new journal is in the hands of a committee on publication, consisting of Drs. S. L. Jepson, L. D. Wilson and John L. Dickey, all of Wheeling, and is printed in Wheeling. We feel sure that the members of the West Virginia State Medical Association will appreciate the great benefit to be derived from this new journal, and will assist those in immediate charge in making it a power for good and a credit to the profession of West Virginia.

TASTES OF MOSQUITOES.

It has often been noted that mosquitoes seem to have special likes and dislikes and that some persons are much more annoyed by them than others. Now that the question of disease conveyance has become a more important consideration than the annoyance, the reasons for this special liking for individuals are being carefully studied by a number of observers. A summary of these observations and an account of a series of recent experiments have been made by Professor Galli-Valerio,[1] director of the Institute for Experimental Hygiene and Parasitology at the University of Lausanne in Switzerland. He has found that the color of the clothes worn by the individual has most to do with the supposed preferences of the mosquito. His experiments were conducted with various forms of anopheles. Nearly four times as many of these mosquitoes lighted on dark-colored clothes in a given time as on light colors. This shows that the chances of the number of mosquito bites may be greatly reduced by choosing light colors for clothing, though this is not sufficient to afford complete protection. It is thought that this is about as effective as tobacco smoke in securing immunity from the insect stings. This is so simple that as an additional precaution when in malarial countries it can be put into effect by all, and, as everything that helps to ward off malaria is of value, non-immunes going into malarial districts should be advised of it by their physicians. It is particularly the casual traveler in the tropics who is not likely to provide himself with the very light-colored clothing so commonly worn by the inhabitants, yet it is he who, most of all, needs the added protection against mosquito bites which is said to be thus afforded.

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[1] Daily Consular and Trade Reports, Sept. 5, 1906, issued by the United States Dept. of Commerce and Labor.

THE CAUSE OF DEATH.

Physicians should appreciate the necessity of designating correctly the cause of death. Science is in no way served when the cause of death, for instance, is entered on the certificate simply as "convulsions," or "heart failure," or "pulmonary edema." The patient may have died immediately or directly in such circumstance, but these unqualified statements give no clue to the disease which was the essential, indirect or underlying cause. In later years relatives are often anxious when they themselves become ill; then, again, it will be found that questions of heredity in disease, very important to be settled, must forever remain obscure. From the legal viewpoint the matter is still more grave. A defective certificate may occasion the patient's family much vexation and at the same time give the authorities unnecessary work in the way of investigation. Occasionally there may be mortification for the physician not altogether undeserved. For example, to designate a death as due simply to meningitis, peritonitis or gastro-enteritis, without qualification, may not satisfy the coroner or medical examiner. The further statement will be necessary whether the disease was idiopathic or the result of a fall, a wound, a "criminal operation" or a poisoning. Here is an example of a death certificate correctly made out, which nevertheless became a "coroner's case:" "Asthenia de senectute; contributing cause, fracture at the neck of the femur." The fracture was probably sustained in falling out of bed or by slipping on the street, as is usual in such cases. But some one may have pushed or struck the deceased, becoming thus more or less responsible for the death. In any event, whenever an accident has contributed to a death, no matter how remotely, the case is one for investigation. In most communities a letter from a reputable and responsible physician to the authorities, accompanying such death certificates, will obviate official action and spare the family annoyance.

Medical News

ILLINOIS.

Chicago.

Committed to Dunning.—Dr. Christian R. Hartung was examined in the insane court September 6 and committed to the Cook County Hospital for the Insane, Dunning.

Hospital Dedicated.—St. Vincent's Hospital, Taylorville, was dedicated August 22 with appropriate ceremonies. The hospital was erected at a cost of about $25.000 and will be in charge of the Sisters of the Most Precious Blood.

Coroner's Record for August.—The coroner of Cook County reports for August a larger death roll than any month since the Iroquois Theater fire. The table of deaths from other than natural causes during the month was as follows: Suicide, 39; drowning, 29; heat prostration, 27; railroad accidents. 26; homicide, 14; street car accidents, 13; lightning. 1, and scenic railway accident, 1.

Warning Against Diphtheria.—The commissioner of health has issued a warning to parents and teachers of children of the public schools to pay particular attention to sore throats of children, no matter if they seem to be of minor character. The opening of the schools and the consequent exposure of more than 250.000 children to unsuspected cases of diphtheria are a most important factor in the increase of the disease.

Personal.—The king of Portugal has conferred on Dr. Alexander Hugh Ferguson a commandership in the Order of Christ of Portugal in recognition of his original work in surgery.——Dr. Clinton G. Lumley, who was operated on for appendicitis August 28, is making good progress toward recovery.——Dr. and Mrs. Bernard Fantus have returned from Europe.——Dr. Henry W. Cheney and wife have returned after an eight months' absence in Europe.

Tent Sanatorium Opened.—The tent sanatorium under the auspices of the Chicago Tuberculosis Institute was opened September 3, with three portable cottages, one of which is used for a dormitory, one for a dispensary and one for a kitchen. Ten of the 20 patients for which the sanatorium has accommodations at present were already on hand at the opening day, and several other applications are being considered. The initial outlay has been about $1,500 and it is expected that the expense to maintain each patient will be about $5 per week.

Mortality Report.—The mortality for the week ended September 8 was 515, or 46 less than for the preceding week and 15 more than for the corresponding week of 1905. This is equivalent to an annual mortality rate of 13.10 per 1.000. Of children under one year of age, 127 died, and 83 over 60 years of age. Acute intestinal diseases led the death list with 113, followed by violence, including suicide, with 52; consumption with 49; heart disease with 49; Bright's disease with 47; pneumonia with 29, and cancer with 19. During the week 10 deaths from diphtheria and 10 from typhoid fever were reported.

INDIANA.

New Sanitarium.—Dr. John Little Morris is building a 75-room sanitarium and hospital at Columbus, with modern equipment, especially for the care of non-surgical, chronic diseases.

Typhoid Fever.—A great deal of typhoid fever is reported from Huntington County. The disease seems to affect chiefly the southern parts of Union and Rock Creek townships.——From Mitchell are reported 63 cases of typhoid, with 3 deaths

Smallpox.—Reports to the secretary of the State Board of Health show the prevalence in a mild form of smallpox in Starke, Marshall, Fulton and Pulaski counties. During the last three weeks there have been more than 20 cases of the disease, all of a mild type.

Personal.—Dr. D F. Davis, New Albany, has returned from Europe.——Dr. Edward N. Flynn has been elected mayor of Jeffersonville.——Dr. E. J. Schott, Terre Haute, was thrown from his carriage in a runaway accident and strained his back.——Dr. Chester C. Funk has been elected secretary of the New Albany board of health.

MARYLAND.

Baltimore.

Deaths from Violence.—During August 63 deaths from violence were reported, 11 of which were due to suicide.

Personal.—Dr. John W. Hawkins, Towson, has gone to Charles County, lower Maryland, for a visit.——Assistant Surgeon Benjamin H. Dorsey, U. S. N., is visiting his home at Ellicott City.

Vital Statistics.—During the week ended September 1, 145 deaths were reported. This is equivalent to an annual death rate per 1.000 of 13.05; for whites alone, 12.06, and for blacks alone, 18.32. Typhoid fever is on the increase.

State Society to Meet.—The semiannual meeting of the Medical and Chirurgical Faculty of Maryland will be held in the famous old Senate Chamber at Annapolis, where George Washington resigned his commission, on September 27 and 28. The address of welcome will be delivered by Governor Warfield.

New Hospitals.—The offer of the widow of Dr. Frank to give $75,000 to the Hebrew Hospital has been accepted. The building will be named "Doctor Samuel Leon Frank Memorial Hospital" and will be located on the grounds of the present institution. It will be the principal hospital and the present building will be used for incurables and nurses.——Dr. Harry

Adler has been elected to succeed the late Dr. Frank as president of the Hebrew Hospital and Asylum.——Dr. Frank G. Moyer will erect a sanitarium on the site of his present residence.

To and from Europe.—Dr. Hiram Woods, president of the Medical and Chirurgical Faculty of Maryland, and Dr. Robert Hoffmann have returned from Europe.——Dr. Roland B. Whitridge is spending September in Switzerland.——Dr. W. Hewson Baltzell is at Aix-les-Bains.——Dr. Lewis C. Lehr is at Schwalbach, Germany.——Dr. J. Hall Pleasants, who has been ill with typhoid fever in Europe, has returned to Baltimore.

MASSACHUSETTS.

Pay for Medical Examiners.—The board of health of Chicopee has voted to ask the Chicopee board of aldermen for $1,000 to defray the expenses of the proposed medical examination of school children and inspection of schools.

Physician Wins Suit.—Dr. Lyman A. Jones, North Adams, has won his suit against the city for $750, alleged to be due for extra work done during the smallpox epidemic of 1904, when Dr. Jones was physician of the board of health.

Personal.—Dr. Frederick G. Smith of Somerville has returned from Europe.——Dr. Frank L. Morse, for several years city bacteriologist, has been appointed city physician of Somerville to fill the vacancy caused by the death of Dr. Alvah B. Dearborn.

Typhoid Fever.—A serious epidemic of typhoid fever has developed at Lynn. During the last two weeks 24 cases were reported. The cases are not confined to any one portion of the city, but are scattered. It is feared that the water supply is polluted.——Springfield reports 18 cases of typhoid fever. They have developed within the last two weeks.——A number of cases are reported from Middle Farms.

New Nurses' Home.—The South Framingham Hospital and Training School has been given a new nurses' home by Messrs. Frank A. and Henry B. Day, West Newton, as a memorial to their parents. The hospital expects to secure the services of a woman physician as superintendent in place of Miss Annabel L. Stewart, who has been for nearly 12 years head of the institution and who has resigned, to take effect next month.

NEW YORK.

New York City.

St. John's Guild.—On account of the very heavy call for its services, the floating and seaside hospitals will remain open as long as funds are provided.

School for Cripples.—A school for cripples is to be built at a cost of $75,000. It will be five stories high, will have a roof garden and will be situated on Water Street.

Coney Island Hospitals.—Seaside Home, Brooklyn Children's Aid Society and the Health Home of the New York Children's Aid Society remain open. The Sea Breeze Home will be kept open until October 1.

Bellevue Doctors Robbed.—There are about 50 doctors at Bellevue Hospital and nearly all suffered from looting of their dormitories, which occurred September 4. The thieves made away with all accessible jewelry, clothing and money.

Infant Death Rate Higher.—There were 312 deaths among babies in the past week, against 233 for the corresponding week of last year, all dying of summer complaint. The infant mortality, as a rule, falls at this time of the year.

Home from Europe.—Dr. Warren S. Adams arrived from Liverpool on the *Oceanic*, September 6.—— Dr. J. Waldron Bartlett arrived from Europe on the *Caronia*, September 5.——Dr. and Mrs. Hugh H. Young arrived on the *Oceanic*, September 5.

Child Scalded in Hospital.—On September 2 a child died from scalds received while taking a bath in the Randall's Island Hospital. Coroner Harburg, after a thorough investigation, found the occurrence due to neglect and carelessness on the part of the nurse who, in consequence, was discharged.

Patients at Pasteur Institute.—An unusually large number of patients have been admitted to this institution recently, and the arrival of six in one day has caused Dr. William L. Wheeler, director of the institute, strongly to urge the shooting of all dogs suspected of being mad. He suggests shooting them through the heart so that the brains may be available for examination.

Health Department Busy.—The rules of the board of education in regard to the admittance of pupils into the public schools make this a busy season for the board of health. Much of this work is the result of neglect on the part of physicians to report births. The force can dispose of about 600 such cases a day, and in addition, some 700 or 800 vaccinations are made daily.

Death Rate Among Tunnel Workers.—The officials of the Pennsylvania Railroad Company have issued a general statement to the effect that the lives and health of its workmen are not needlessly sacrificed in the construction of the tunnels under the East and North rivers. It has been stated that the death rate is no higher than obtains among men who build steel frame skyscrapers, and where accidents have occurred, they have been due, as a rule, to a disregard of the rules and precautions laid down by the company.

Buffalo.

Personal.—Dr. Eugene Smith has returned after a four months' trip abroad.——Dr. Alvin A. Hubbell is taking a trip on the Great Lakes.——Drs. Hubert U. Williams and F. Park Lewis and family have returned from abroad.

Medical Department to Open.—The Medical Department of the University of Buffalo will open for its sixty-first annual session September 24, and continue for 34 weeks. The opening address will be delivered by Dr. James E. King.

NEBRASKA.

Personal.—Dr. A. D. Wilkinson, secretary of the Nebraska State Medical Association, leaves on September 21 for a year's trip abroad. He expects to visit Japan, China, the Philippines and Siam and to return by the way of Europe. Dr. W. H. Orr, Lincoln, will act as secretary during Dr. Wilkinson's absence.

New President of State Association.—The Council of the Nebraska State Medical Association has elected Dr. F. A. Long of Madison to serve as president of the State Association in place of Dr. J. L. Green, who resigned to take the position as superintendent of the Illinois Eastern Hospital for the Insane, Kankakee, Ill.

PENNSYLVANIA.

Much Typhoid Fever.—According to the bureau of health of Pittsburg, typhoid fever is increasing in and around that city. Two thousand four hundred and ninety-one cases have been reported during the first six months of the year, as against 858 cases for the same period last year.——On account of the prevalence of typhoid fever at Hamburg, the opening of the public schools will be postponed until September 10. It has been discovered by the authorities that the infection was present in the drinking water. In 50 per cent. of the cases reported the water used came from a well found contaminated. One hundred cases are reported in the town.——In Phoenixville 40 cases have been reported in the past three months, many having resulted fatally. A state medical inspector detailed by Dr. Warren to investigate the sanitary condition of the town, reported things in an extremely bad condition, and the local board of health claims it is powerless in the matter of checking the disease without the coöperation of the town council. Dr. Dixon has notified the authorities to take immediate action to stamp out the disease.

Philadelphia.

Personal.—Dr. Thomas F. Neil has been appointed superintendent of the county insane asylum of Blair County, Pa.——Dr. J. Malcolm Henry has returned home from a tour through Canada.

Hospital Report.—The report of the Medico-Chirurgical Hospital for August shows 5,489 patients treated; 1,510 of these were surgical. The accident ward received 913 cases. Electric treatment was administered to 196 persons and the *x*-ray was used on 168.

Improvements for Hospital.—Plans have been completed for the remodeling of the Willberham mansion, which was purchased for the purpose of increasing the facilities of the Frankford Hospital. The first and second floors of the building will contain two general wards, nurses' room and a diet kitchen. The third and fourth floors will be children's wards and private rooms. The building will be four stories high and will measure 114 by 62 feet.

War on Impure Candy.—The arrests of 19 retail candy dealers in this city by state dairy and food comissioner, Dr. Warren, resulted in the conviction of the men. The fine in each case was $57.50, making a total of $1,092.50. The fines were paid by the New York Glucose Company, known as the glucose trust. The successful crusade conducted by Dr. Warren against the manufacturers of impure candy is considered complete, and it is now stated that he will start a campaign against other impure food concerns in the state.

SOUTH CAROLINA.

Editorial Staff Named.—The editorial staff of the *Journal of the South Carolina Medical Association* is made up as follows Editor, Dr. J. Williamson Jervey, Greenville; associate editor, Dr. Walter Cheyne, Sumter, and managing editor, Dr. Curran B. Earle, Greenville.

State Society Meets.—At the annual meeting of the South Carolina Medical Association, Dr. T. Prioleau Whaley, Charleston, for 10 years its secretary, was elected president; Dr. Walter Cheyne, Sumter, was elected secretary, and Dr. Charles P. Aimar, Charleston, was re-elected treasurer.

College Changes.—Dr. Louis D. Barbot has been elected professor of anatomy in the Medical College of the State of South Carolina, vice Dr. Francis L. Parker, resigned.——Dr. Edward F. Parker has been elected dean of the Medical College of South Carolina, succeeding his father, Dr. Francis L. Parker, who has resigned.

New Hospitals.—The Hospital Association of Anderson County at its annual meeting announced that nearly $4,000 had been raised for a hospital. The site has been purchased and the work of actual construction is expected to be started soon.——The Florence Infirmary, established by Dr. F. H. McLeod and N. W. Hicks, has been opened to receive patients.

Resigns After Long Service.—After 41 years of devoted services to the Medical College of South Carolina, Charleston, Dr. Francis L. Parker has resigned as dean and professor of anatomy. The faculty and the board of trustees have adopted resolutions which set forth the splendid services done by Dr. Parker for his alma mater, and appropriate expressions of the appreciation they have for his services and their sincere regret at his resignation.

Scholarships.—The governor has announced the names of the following men to whom he has awarded scholarships in the Medical College of the State of South Carolina: First district, F. H. Marvin, Summerton; second district, L. S. Hay, Allendale; third district, F. M. Routh, Anderson; fourth district, W. T. Brockman, Greer; fifth district, B. L. Robertson, Lancaster; sixth district, J. K. Stealvey, Socastee, and seventh district, C. C. Owens, Columbia.

SOUTH DAKOTA.

First Conviction Under New Medical Law.—The first arrest under the new medical law has resulted in a conviction. A. H. Bruning, a "chiropractic," was arrested on complaint of the secretary of the State Board of Medical Examiners, on the charge of practicing medicine without a license. He was tried and found guilty, August 16. A nominal fine of $50 and costs was imposed and the case will be appealed, as it is desired to secure a final ruling.

Slaughter House Regulations.—The State Board of Health has sent out circulars to the county superintendents of health, requesting that they visit and inspect the slaughter houses in their respective counties and require the observation of the following regulations: 1. A plentiful and uncontaminated water supply. 2. Proper and adequate drainage for both the slaughter houses and premises. 3. A thorough cleansing of slaughter houses and premises from manures and offal after each butchering. 4. Each slaughter house should have watertight floors, which should be washed after each butchering, ample subdrainage and clean, whitewashed or painted walls.

UTAH.

Fee Bill Adopted.—At the August meeting of the Utah County Medical Society, held in Provo, the medical fee bill was revised and adopted.

Personal.—Dr. Walter M. Stookey and family, Lehi, expect to sail for Europe, October 10.——Dr. Samuel C. Baldwin, Salt Lake City, returned August 28 after a five months' tour of Europe.

Health Commissioner Was Arrested.—Dr. M. R. Stuart, health commissioner of Salt Lake City, was arrested August 5 for creating a nuisance by causing garbage, swill, etc., to be dumped into Horseshoe Bend. He admitted the responsibility, but plead not guilty to dumping this garbage, and the case was tried. The jury disagreed.

Typhoid Fever.—Waterloo, just outside the city limits of Salt Lake, is reported to have a serious epidemic of typhoid fever. The county physician has been empowered to investigate the source of the infection of the typhoid cases, to have the milk supply of that section analyzed and the outbuildings inspected, and has ordered a general cleaning-up of that part of the city.

VIRGINIA.

Hospital Opening.—Abingdon Hospital was formally opened August 27, and the next day the patients were received.

Smallpox.—The board of health of Lancaster County has reported 18 cases of smallpox at Churchfield, near Irvington, and one case at Whitestone, only a few miles away. Quarantine has been established. The disease is mild in character and is confined to the colored population.

Personal.—Dr. Charles W. Rodgers, Staunton, while returning from a professional visit, had a narrow escape from drowning, saving himself and his horse, but losing his buggy.——Dr. A. Chambers Ray, Eagle Lake, has been appointed physician to the Randolph-Macon College, vice Dr. William S. Ellis, deceased.

WASHINGTON.

New Sanitarium.—The Northwestern Sanitarium Association, at Port Townsend, has been incorporated with a capital stock of $50,000.

Personal.—Dr. Grant Calhoun has been appointed health officer of Seattle, vice Dr. William L. Ludlow.——Dr. R. B. Cassil, Walla Walla, has returned from a trip to Alaska.

Will Yield to Decision of Experts.—The King County Medical Society, which made a strong protest against the attempt of the Chicago, Milwaukee & St. Paul Railway to extend its road through the Cedar River water-shed, has withdrawn its objection, on account of the opinion of sanitary experts that the watershed could be crossed without pollution to the water supply of the city.

WISCONSIN.

Leaves Large Estate.—The will of the late Dr. John A. Rice, Merton, has been filed for probate, the testator leaving about $100,000 in personal property and nothing in real estate.

Personal.—Dr. Henry W. Morgenroth, Berlin, who was operated on for appendicitis at St. Mary's Hospital, Oshkosh, August 14, is reported to be making an uneventful recovery.——Dr. Thomas S. Clark, Knowlton, has been committed to the State Hospital, Oshkosh.——Dr. O'Leary, Husher, sailed for Europe, August 30.

Physical Examination of School Children.—The Milwaukee Medical Society is making preparation for the inauguration of physical examination of school children. The expense of the experiment will be borne by the society, and Drs. Arthur J. Patek, Arthur W. Akerly and George P. Barth have been appointed a committee and placed in charge of the work.

GENERAL.

Hospital Cars.—It is reported that the Pennsylvania and the Baltimore & Ohio railroads are about to have hospital cars built to care for the injured in the railroad wrecks. The Erie is said to be the only eastern railroad at present possessing such cars.

Copies of The Journal Wanted.—We are in need of the issues of The Journal of July 7 and 14, 1906, so that orders for back numbers may be filled. If any of our readers will return these numbers we will remit ten cents for each copy, or will send in exchange any other numbers desired.

A Fraudulent Agent.—Dr. Franklin H. Martin, Chicago, asks us to warn physicians against one G. E. Simpson, who is fraudulently taking orders for *Surgery, Gynecology and Obstetrics*. He says that many physicians have already been victimized by this man by paying him in cash or giving him checks payable to his own order; and this notice is published in the interest of the profession and to stop his further operations.

Pathologists and Other Physicians Wanted in Illinois Hospitals.—The Illinois Civil Service Commission will hold examinations very soon for a pathologist at Kankakee ($2,500 a year and maintenance), and pathologists in six other hospitals for the insane, paying from $75 to $125 per month and maintenance; also for physicians in the charitable institutions, not insane, and for assistant physicians in the hospitals for the insane. These positions pay from $75 to $150 a month. There will also be examinations for surgeons in the Soldiers Orphans' Home at Quincy, positions which pay from $60 to $125 a month and maintenance. These positions are of great importance to the institutions of Illinois, and the commission is greatly interested in obtaining the very best talent for the examinations and in making them a success. Joseph C. Mason, secretary, Springfield, Ill., will send further information.

CANADA.

Winnipeg Hospital News.—The Winnipeg General Hospital treated 346 patients during the week ended September 1. Of this number 212 were men, 100 women ad 34 children.

Personal.—Dr. Charles Monod of Paris, France, is visiting his son, Dr. Ferdinand Monod of the Glengarry Hospital, Montreal.——Dr. Charles A. Ritchie, Winnipeg, Man., has gone to London, Edinburgh and Dublin to study.——Dr. Hamilton of Halifax is on her way to China to take a position in the hospital at Shanghai as a medical missionary.

Health Officers on Tour of Inspection.—Dr. Montizambert, director-general of public health. Ottawa, has been in British Columbia on a tour of inspection. Accompanied by the chief quarantine officer of British Columbia, Dr. Watt of the William Head quarantine station, he is visiting the Grosse Isle quarantine station and the leper hospital at Tracadie, N. B. They will return to British Columbia and choose a site for the new leper hospital in British Columbia.

Vaccination of School Children in Montreal.—No child is now allowed to attend school in Montreal unless able to show a certificate of successful vaccination. In certain new wards recently annexed to the city vaccination in the past few years has not been very rigidly enforced. In one of these out of a population of 600 pupils but 175 had been vaccinated. The Montreal medical health officer states, however, that there is now very little trouble in inducing parents to have their children vaccinated.

Analysis of Canned Meats.—A bulletin has just been issued from the laboratory of the Canadian inland revenue department dealing with the subject of canned meats. In all 322 samples were purchased in different sections of Canada and subjected to the same examination. Both canned meats from the United States and Canada were selected. The former were from dealers, but the latter were secured from dealers, wholesalers and also from the factories. Only four samples gave any evidence of decomposition, a proportion amounting to only 14 per cent. The preservatives sought for were salicylic, benzoic, sulphurous and boric acids, but the latter was the only one detected, and that in a percentage lower than required by the English parliamentary commission, namely, 0.5 per cent. A close inspection of the tabulated list of the analyses shows that as far as Chicago packing-houses were concerned in these products that two samples of one house showed "slight traces of boric acid" and "boric acid;" while two samples of another Chicago house showed "boric acid" and "meat badly decomposed."

FOREIGN.

Congress of Microbiology.—A three-day session of the newly founded Association for Microbiology—*Freie Vereinigung für Mikrobiologie*, was held at Berlin in June with a comparatively large and much interested attendance. The *Berliner* and the *Münchener med. Wochschr.* are publishing a simultaneous report of the proceedings. They represent the "last word" in bacteriologic, serotherapeutic and similar research among German scientists.

Retirement of Some Prominent German Professors.—It is rumored that von Leyden and Olshausen intend to retire from the medical faculty at Berlin University. E. v. Bergmann will also give up further teaching this fall when he passes his seventieth birthday, and W. Erb of Heidelberg will retire at the close of the winter semester. These men are all doing good work and do not feel their encroaching age, but they say they want to make room for the younger men.

To Combat Bovine Tuberculosis in Argentina.—The *Semana Medica* of Buenos Ayres states that the government has commissioned the director of the Bacteriologic Institute, don José Lignières, to go to Germany to study on the spot von Behring's method of treating tuberculosis in cattle. He is given leave of absence for five months, and the ministers from Argentina to France and Germany are ordered to facilitate his task, as special envoy from the government, by all the means in their power.

Demonstration Against Surgical Exhibition.—A foreign exchange states that an exhibition of Doyen's lantern slide, cinematographic representation of various operations, which he was giving, for some strange reason, before a lay audience, caused an uproar. The pictures representing an amputation of the arm and a trephining were accepted without protest by the general audience, but when Doyen proceeded to an abdominal operation the audience protested so clamorously against the reproduction that he was obliged to desist. Our exchange comments that such views are not adapted for the general public, however instructive they may be for medical men.

The Bottini Memorial.—A memorial tablet was recently unveiled at Pavia, Italy, to the memory of the late surgeon. E. Bottini. Behind the tablet were immured a gold medal with the portrait of the deceased and an elaborate souvenir volume containing works by his pupils and friends, with an address on parchment—all of which had been prepared to present to the master on the occasion of the twenty-fifth anniversary of his assuming the chair of surgery at Pavia. The plans for the ceremonies were annulled by the unexpected death of the great surgeon not long before the arrival of the anniversary. The tablet stands between one erected to the memory of Scarpa and another to Porta, and the inscription on the marble is merely a few words of tribute to the man "who by his genius in the science and the art renewed the glorious traditions of the Pavia school of surgery." Golgi is the dean of Pavia University, and Tansini is the present incumbent of the chair of surgery.

Visit of French Physicians to Germany.—A number of prominent French physicians and surgeons have recently taken a trip to Germany, with their ladies, and visited the scientific institutions in some of the larger cities. At Marburg, von Behring regaled the party with an account of his latest researches on tuberculosis, especially with a description of his tulase, a clear fluid containing somatic substance of the tubercle bacilli, obtained by treatment with chloral. It is used for active immunization or Mithridatization, as he calls it, and his extensive experience with sheep has been very encouraging. In the clinic it has to date been given subcutaneously, but it is given by the mouth to sheep, and this will probably prove the preferable route. Until the clinical value of this new Mithridatic remedy has been thoroughly established, he said, it will not be obtainable except in free samples for clinical research. Already favorable reports are being constantly received. He spoke rather discouragingly of the possibility of an effectual serotherapy for tuberculosis. Active immunization will probably be required, possibly combined with a serum. The trip generally proved so delightful and instructive, and the cordiality of the reception on the part of the physicians and surgeons of Berlin and elsewhere opened up such pleasant vistas of future trips of the kind, that, on Kutner's suggestion, an international committee for medical study trips was organized while the party was at Berlin. The committee appointed consists of Kossmann of Berlin as chairman, Bazot of Paris, Guyot of Geneva, Kutner of Berlin, Lifrange of Bertrix in Belgium, and Pini of Bologna.

LONDON LETTER.

(*From Our Regular Correspondent.*)

LONDON, Aug. 24, 1906

Typhoid Fever in India.

Lord Kitchener has presided over the first meeting of a committee on typhoid fever, which was held at Simla. He stated that he thought it necessary to form the standing committee to advise as to efforts to reduce typhoid fever among the troops and to coördinate in the work of the whole medical profession in this direction. The ravages of cholera were worse in days gone by, but they are now, happily, a reminiscence. He has great hopes that the scourge of typhoid fever will eventually be brought under control. Young soldiers are most subject to the disease on arriving in the country. For some time experiments in antityphoid inoculation have been performed in India and great advances have been made on the system prevailing at the time of the South African war. The thoughtlessness of the soldier with regard to care of himself is a great difficulty. If inoculation is to be made more popular, he thought efforts should be directed to make it less painful and unpleasant. He suggested an inquiry as to whether this could be accomplished by using a more diluted serum or distributing the dose over three or more injections, instead of two, as is the practice now, or reducing the amount of serum to be injected. Since the South African war the dose has been reduced considerably. If all discomfort could be avoided in the process an immune period of six months might be sufficient instead of two years, which is now aimed at. Then universal inoculation of the new arrivals might be looked for.

Phthisis in Calcutta.

In recent years the mortality from phthisis in the large towns of India has caused some anxiety to the authorities. In the absence of medical certification registration of the causes of death is imperfect, but such information as can be obtained points to a serious and increasing mortality from tuberculosis. In Calcutta, the matter has been specially investigated by the officers of the plague department. The results for 1905 have been published in a report to the municipality by Dr. F. T. Pearse. The population of Calcutta is 847,796—562,596 males and 285.200 females. The umber of Hindus is 551,462—361.176 males and 190,286 females; and of Mohommedans 249.939—174,117 males and 75.822 females. The report takes cognizance only of those two classes which constitute about three-fourths of the population of the city. The number of deaths due to phthisis in 1905 was 1.648 or 1.9 per 1,000. In England the rate is 1.3; in Bombay, 3.8; and in Indian gaols, 2.96. Thus in Calcutta the rate is high as compared with European figures, but low as compared with Indian. The age and sex incidence of the mortality is peculiar. The death rate for males is 1.4 and for females, 2.86. For Hindus, 1.8 and Mohammedans, 2.8; for Hindu males, 1.4 and females, 2.4; for Mohammedan males, 1.6 and females, 4.6. The excess of mortality among females, especially Mohammedan females, is striking. In England, on the contrary, the death rate of males from consumption is higher than that of females. The proportion of cases at early ages is also higher in Calcutta than in England. The excess of female mortality is attributed by Dr. Pearse to deficiency of fresh air. He finds that the proportion of cases is higher in huts than in houses. The average number of persons to a room is 2.41 in former and 1.72 in the latter.

The Antitoxin Treatment of Diphtheria.

The above report also shows that since 1889 the mortality rate of diphtheria has declined from 40.5 per cent. to 8.3 per cent. in 1905, when it reached its lowest point. How far this is due to the antitoxin treatment and how far to the more complete diagnosis of diphtheria by the aid of bacteriology may be debated. The declining mortality of tracheotomy cases, however, points to a marked influence of antitoxin. In the two years preceding the use of antitoxin the mortality was 66 and 70 per cent. respectively. In the next year, 1905, it was 50.2 per cent., and since then it has steadily declined to 27.6 per cent. in 1905.

The Proposed Union of the Medical Societies.

A meeting of the general committee of representatives of the medical societies in London has been held to consider the report of the organizing committee. Sir William Church presided. The first meeting of the members of the societies was held at the Royal College of Physicians, in 1905, for the purpose of promoting union. The report recommended that all male members of those societies which took part in the amalgamation should be permitted to join the new society on its formation as fellows or members without election, and that all female members of the societies should become members of the corresponding section or sections of the new society. It was recommended that the society should consist of the following sections which represented existing societies, but that the new society should have power to add new sections: 1. Anesthetic; 2. balneologic and climatologic; 3. clinical; 4. dermatologic; 5, diseases of children; 6, electrotherapeutic; 7, epidemicologic; 8, laryngologic; 9, life insurance; 10, medical; 11, neurologic; 12. obstetric and gynecologic; 13, odontologic; 14, ophthalmologic; 15, otologic; 16, pathologic; 17, surgical; 18, therapeutic. It is hoped that in the early future an anatomic and physiologic section and a section of preventive medicine will be formed. The Medico-Physiological Association and the Medico-Legal Society hope to join at some future date. It was recommended that each section should be self-governing so far as possible and should have direct representatives on the council of the society and on the editorial committee, but that expenditure should be subject to the control of the finance committee of the general council. The general management of the society would be under the control of a general council consisting of the president, the presidents of the various sections, two treasurers, two librarians, two secretaries, and 8 other fellows.

The Report of the Rotunda Hospital, Dublin.

The reports of this celebrated hospital are always looked forward to with interest by those interested in the progress of obstetrics. In the report for 1904-5, which has recently been issued, important structural additions are announced which will increase the accommodation by two large maternity wards and will supply ample isolation wards, a special room for the delivery of infective patients, and a disinfecting chamber. The maternity beds are of an antiquated pattern and date from a time when it was not uncommon to place two mothers with their babies in one bed. Their width precludes the possibility of placing cots between them and as a result the child has to be placed in bed with its mother. Many disadvantages follow: The infants are irregularly fed and occasionally suffer from infective enteritis, the result of the mother's dirty fingers or her pocket handkerchief being placed in the child's mouth. A more serious result is fatal overlying. A new form of bed has been introduced with a lever and rachet arrangement for elevating the head so as to ensure more efficient lochial drainage. The number of women delivered in the hospital has been steadily increasing and during the year exceeded that of any similar period since the foundation of the hospital. The number of admissions was 2,241 and of deliveries 1,904. As the result of better antisepsis and the more even distribution of the admissions, which prevented the overcrowding recorded in the last report, the morbidity has fallen from 10.7 to 6.7 per cent. and the number of deaths from 13 to 6. A most useful form of chart is employed for more readily recording morbidity and has been adopted by many other maternities. It consists of separate charts for temperature and pulse and is ruled with a deep line at 99° on the former and at 90° on the latter. Temperature and pulse must rise above these lines and remain above them for 3 consecutive morning and evening registrations, or in other words, for a period of 24 hours, before the case is recorded in the books as morbid. Thus the transitory and unimportant exacerbations of temperature and pulse which are not infrequently seen in cases which it would be misleading to term morbid are eliminated. Furthermore, the irregularities of pulse and temperature so frequently seen within 24 hours of delivery are not taken into account.

Doctors and Medical Emergencies.

The refusal of a physician to respond to an emergency call by persons who are not his patients often becomes a subject for criticism in coroners' courts. The following case is an example: A man poisoned himself by drinking oxalic acid. A physician who was summoned refused to go on the ground that the man was not his patient. The coroner, in summing up the evidence, raised the question as to whether the death of the diseased was accelerated by the absence of medical treatment and, if so, whether any one was to blame. He said that it is very difficult to say whether medical assistance would have been of any use or not. The opinion of the police surgeon was that it would not. The jury, however, could not overlook the fact that the first physician called, though told that the man had poisoned himself, refused to go on the ground that the deceased was not his patient. He was asked by the coroner whether he would like to attend the inquest or had any statement to make. He replied that he was not aware that he was bound to attend to any call that might be made on him, whether by the police or other persons. If the police required assistance they had their proper officer to whom to apply. In the present case he was expecting to be called out and therefore declined to leave home. Commenting on this, the coroner said that there is no law which compels a physician to answer a call to a man dying in the next street. But he said that he thinks there is a law higher and stronger than the law of man which calls us to try to help those in great distress without waiting to think what it will cost us, or what we shall have to pay, or whether it is convenient. Even those who have no medical knowledge would feel it a duty to go and help, as one witness did, if they knew a man was dying. He thought that the refusal of the physician to go in this case brought disgrace on a high and honorable profession. The jury endorsed the coroner's remarks by adding them as a rider to the verdict. Subsequently, the proceedings at the inquest were considered by the North-East Essex Division of the British Medical Association and a protest was made against the coroner's remarks. The meeting resolved that it is not the duty of individual members of the profession but of the municipality to make proper provision that so far as practicable no case of sudden and dangerous illness shall remain without prompt medical attention; that while physicians are ever ready to respond to the calls of humanity they are bound to consider the claims of their own patients and can not neglect these to attend to casual calls to strangers; that such summonses, even when stated to be urgent, are often found to be not so; that in the present case the messenger had not made clear to the physician the urgency of the case; that the members of the division, while repudiating the impracticable view of their duties in such cases suggested by the coroner, would be prepared to coöperate with the municipal authorities in devising a proper scheme for providing medical attendance in emergencies.

The Ventilation of the House of Commons.

The ventilation of the House of Commons has been a frequent subject of debate during the past 40 years and no satisfactory method has ever been devised. The ventilation of both houses of Parliament was originally planned by Dr. Boswell Reid. From 1865 to 1889 it was superintended by Dr. John Percy, the metallurgist, who devised many ingenious contrivances for cleansing the entering air and for regulating its flow; but he never succeeded in establishing a system beyond the reach of criticism or one equally adapted to the variations of weather. Since his death, the problem has continued and the chemical examinations of the earlier period have been supplemented by bacteriologic ones. Last year a committee consisting of Sir Michael Foster, as chairman, with Dr. J. S. Haldane and Dr. Mervyn Gordon, was appointed to carry out further systematic observations. Their report has been recently published. Whether judged by the amount of carbonic acid present, the temperature or the humidity, the atmosphere of the House was found to fulfill all reasonable requirements. The cause of the appointment of the committee was an outbreak of influenza among the members. It was admitted that so far as objective tests went, the quality of the air of the house was good, but the subjective test of the members' sensations pointed in the opposite direction. It was a common experience that the air of the chamber wanted "freshness," and that a stay in it for a length of time caused "lassitude and a feeling of heaviness." It was also pointed out that as the air is admitted through the floor it is liable to dust and various pollutions carried on members' boots. The character of the air admitted from the terrace was also impugned. It was found that, although the Thames mud below the terrace swarms with intestinal bacteria, these but seldom reach the air inlet, either in the form of spray or dust. The admitted air is washed and filtered through cotton wool. Even before washing it presents no appreciable quantity of any noxious ingredient. The boots of the members were found to be responsible for a small quantity of dried and powdered manure in the dust of the house. There was no discoverable entrance of influenza by either road. Dr. Mervyn Gordon has devised an ingenious method of testing the contamination of the air of rooms by speakers. He discovered that a characteristic bacterium (*Streptococcus brevis*) is always present in human saliva. On placing plates of agar in various positions about a room cultures of this organism appeared. He demonstrated the fact that in speaking droplets of saliva are projected through the air to a distance varying with the vigor of the speaker, sometimes as far as 40 feet. He inoculated the mouth of a speaker with an emulsion of a harmless and easily recognized bacillus (*B. prodigiosus*) and distributed plates in various position in the House of Commons. On one plate, which was placed on the minister's box, he found no fewer than 83 colonies of this bacillus. There was abundant evidence that a member convalescent from influenza might be a source of danger to those in the direction of his speech. The committee recommend a more abundant introduction of air and its better diffusion. As regards the introduction of dirt into the house on the feet, ample precautions are already taken against ill results. The matting on the gangways is disinfected weekly and the floors are aspirated with a vacuum cleaner. The amount of dust so extracted from the debating chamber amounts to 45 pounds weekly.

VIENNA LETTER.

(*From Our Regular Correspondent.*)

Vienna, Aug. 12, 1906.

New Regulations for the Out-Patient Departments in State Hospitals.

With the beginning of the new term or semester at the university hospital, new regulations for the admission of patients to the out-patient halls will come in force for all public, i. e., state hospitals in the capital. The abuse has attained such a degree that at last our ever too slow magistrates were forced by a very powerful agent to condescend to reconsider the matter. This most influential agent was the deficit in the yearly report of the financial committee, which reached the figure of 27 per cent. of the total turn-over for 1904-5. A joint action of both the hospital managers' board and the representative of the medical council was proposed and resulted in the adoption of the long-expected changes. In future, material help to these out-patient departments will be free only to such as will provide a testimonial of poverty, to be signed either by the landlord of the tenement or by specially appointed guardians of the poor. This testimonial will admit the bearer to the out-patient department or ambulatorium, as it is termed here, and he will receive in exchange for this document a card entitling him to be seen by the medical staff of the hospital. For certain cases exceptions to the rule are provided for. Thus every case of accident or emergency is free from all formality or "red tape." If the treatment has to be continued for a very long period, or by unusual apparatus and remedies not in possession, as a rule, of the general practitioner (radium, *x*-rays), the patient or his medical advisers may apply for permission to frequent the ambulatorium. A moderate charge is then not inappropriate. Patients of the hospital wards, if discharged, may continue the treatment if it proves necessary, at the ambulatorium without any special permit. This applies to the surgical and certain medical cases. A special feature, and one which will meet the approval of all general practitioners, is the clause debarring persons belonging to one of the obligatory sick benefit clubs from the privileges of the hospital. These persons, who by their positions as subordinates of commercial or business establishments are by law forced to enter one of the "contract clubs," and who have to be attended by specially appointed contract doctors, have their own specialists and still abuse the hospitals. They will have to be seen in future by their own medical advisers. Furthermore, the present habit of supplying the out-patient with bandages, medicines and the like free of charge will be stopped, only such material as is used in the dressing room for surgical patients will in future be granted. To insure a just mode of dealing with the patients they will be treated according to the time of their arrival.

Increase of Poisonous Serpents and Protective Measures.

Certain districts in the southern countries of Austria are suffering from the presence of dangerous serpents of the viper type. The abnormal condition of the temperature seems to have a very favorable effect on the development of whole families of these pests, and during recent maneuvers several accidents happened therefrom. The ministry of war, therefore, has ordered a number of men in each company to be supplied with small packets of permanganate of potassium, which has been found to be very useful in counteracting the poisonous effects of the bite, and small gratuitous quantities of the permanganate are distributed in the affected district by the local authorities, apart from the regular "serpent hunts" established by certain army officers.

New Radioactive Baths.

Ever since the examinations, conducted by competent scientists, of the nature of the therapeutic action exercised by the Gastein waters have shown that the main source of the beneficent quality is the presence of radium emanation, experiments have been going on in the place where the greatest quantities of pitchblend and radium salts are found, in Joachimsthal near Prague, to ascertain whether the waters found in these mines could not be used for medical purposes. At the clinic of Professor Neusser of Vienna, whose name is well known in Europe, a large number of patients have been subjected to a treatment with these waters. Patients with gout, rheumatism, neuritis and diabetes have been benefited by the internal and external use of Joachimsthal mine water. It has been found that there are two distinct groups of waters to be obtained therefrom. The weaker water, containing from 8.000 to 10.000 volts of emanation, was derived from the underground springs and brooks, which are constantly flowing in the deeper shafts and have to be pumped away to keep the mine workable. The stronger water was obtained from the refuse of the mining process, which combines various chemical processes, and in its last step requires the washing of the material by sulphuric acid. The ultimate results are uranium (used for coloring purposes) and a water charged with radium emanation in a high degree, so that it excels the Gastein waters three or four times in its voltage. These latter waters have been used also for prostatic enlargement with remarkable success. The baths have shown themselves so active that general symptoms (due to destruction of leucocytes) may appear after incautious use. In Joachimsthal itself, a bathing house with at present only 12 cabins has been established for radium baths. In a similar way the hot sulphur baths of Baden, near Vienna, have been tested and the presence of radium emanation, though in a lower degree, was detected. The experiments tend to show that the presence of the active principle is in an inverse ratio to the temperature of the water. The sulphur mud deposited at the hot springs in this place contains radium bromid, so that it affects the photographic plate. This explains why, for instance, inveterate cases of skin disease respond so readily to the mud baths at Baden, although they are refractory to water baths and ointment even in Achen or other hot sulphur baths. It is planned now to institute special radioactive sulphur baths in this place, and it will be the first health resort of its kind which can boast both of the vicinity of the capital and of the radioactivity.

Pharmacology

SOMNOS.

To the Council on Pharmacy and Chemistry of the American Medical Association:—Your subcommittee, to whom was assigned Somnos, H. K. Mulford Company, submits the following report of experiments, undertaken to compare the effects of Somnos with those of chloral hydrate. These experiments demonstrate that the statements made in regard to the action of Somnos are in conflict with Rule 6 of the Council, which requires: "No article will be admitted or retained concerning which the manufacturer or his agents make unwarranted, exaggerated or misleading statements as to the therapeutic value." It is, therefore, recommended that Somnos be not approved for inclusion in the book until the claims made for it are corrected. It is also recommended that the report be published:

The Pharmacology of Somnos.

When these experiments were begun, April, 1906, there was nothing in the advertising literature on Somnos to indicate whether this article is a solution or a pure substance. On the label on the bottle, in the circular accompanying the bottle, and in the booklet "Somnos," the word Somnos seemed to be used as a synonym of "Chorethanal alcoholate," $C_9H_{11}O_5Cl_9$ and physicians were prescribing and pharmacists dispensing it in the belief that it was a pure substance. "The pure substance; some kind of an alcohol; nothing to do with chloral," was the way the druggist from whom the samples were purchased put it. Thus information absolutely indispensable for any rational comparison of Somnos with other hypnotics was witheld from the physician.[1]

Hence, before beginning the physiologic experiments it was necessary to determine the strength of the preparation; for this purpose three chlorin determinations (by the Carius method) were made. On the assumption that all the chlorin present was in combination as chloral glycerate, $C_3H_5[CCl_3.C(OH)_2]_3 = C_9H_{11}O_6Cl_9$, and calculating the percentage of this in Somnos, the following results were obtained: (1) 5.11 per cent.; (2) 5.15 per cent.; (3) 5.10 per cent.

Somnos, therefore, was found to contain approximately 5 per cent. of chloral glycerate and its physiologic action was compared with that of a 5 per cent. solution of hydrated chloral. In some experiments the hydrated chloral was dissolved in water; in others, in 10 per cent. alcohol (Somnos was found to contain at this time about this percentage of alcohol); in other experiments glycerin was added, as Somnos was found to contain this substance. No very marked differences were found in the physiologic action of the three solutions.

FATAL DOSE OF SOMNOS FOR THE LOWER ANIMALS.

The booklet on Somnos states that "Somnos has no toxicology"; that while chloral hydrate causes "acute poisoning," "deep coma," etc., Somnos is "harmless in twenty times the dose prescribed," "coma unknown, etc." The physician would scarcely suspect from such statements that Somnos is as poisonous a substance as solutions containing hydrated chloral in corresponding amount; that such is the case is shown by the following experiments. These experiments were necessarily made on the lower animals. While such results do not enable us to draw very definite conclusions as to the absolute toxicity of poison for man, the results on animals are conclusive as regards the relative toxicity for man of such closely related drugs as hydrated chloral and Somnos.

EXPERIMENTS ON MICE.

Injected subcutaneously into mice, there is but little difference in the lethal doses of Somnos and a 5 per cent. solution of hydrated chloral (Tables 1 and 2).

Table 1.—Somnos injected subcutaneously.

Weight of mouse	Somnos c. c.	$C_9H_{11}O_6Cl_9$		Results
		Per mouse	P'r gm. mouse	
19.86 gm.	0.28	13.9 mg.	0.7 mg.	Survived.
18.12 gm.	0.25	12.68 mg.	0.7 mg.	Survived.
19.35 gm.	0.29	14.51 mg.	0.75 mg.	Died 1¾ h.
18.62 gm.	0.3	14.9 mg.	0.8 mg.	Died 15 h
15.68 gm.	0.26	13.33 mg.	0.85 mg.	Died 4 h.
25.02 gm.	0.45	22.52 mg.	0.9 mg.	Died 10.5 h.

Table 2.—Hydrated chloral. injected subcutaneously.

Weight of Mouse	Hydrated chloral (in 5% aqueous)		Results
	Per mouse	Per gm. mouse	
18.62 gm.	11.17 mg.	0.6 mg.	Survived.
24.12 gm.	15.68 mg.	0.65 mg.	Survived.
24.62 gm.	17.23 mg.	0.7 mg.	Survived.
20.16 gm.	15.12 mg.	0.75 mg.	Survived.
22.16 gm.	17.73 mg.	0.8 mg.	Died 30 min.
17.72 gm.	14.53 mg.	0.82 mg.	Survived.
18.50 gm.	15.73 mg.	0.85 mg.	Died 5 h.

Table 3.—Hydrated chloral. *per os.*

Weight of guinea-pig	Mg. of Hydrated chloral (in 5% aqueous solution)		Results
	Per animal	P'r gm. anim'l	
455 gm.	227.5	0.5	Survived.
335 gm.	184.25	0.55	Survived.
660 gm.	369.5	0.56	Survived.
305 gm.	183.0	0.6	Died, 9 h.
340 gm.	240.0	0.6	Died, 6¼ h.
365 gm.	240.9	0.66	Died, 4¾ h.

Table 4.—Somnos, *per os.*

Weight of guinea-pig	Somnos c. c.	Mg. of $C_9H_{11}O_6Cl_9$		Results
		Per animal	Per gm. animal	
590 gm.	5.66	283.2	0.48	Survived.
420 gm.	4.2	210.0	0.5	Survived.
265 gm.	2.65	132.5	0.5	Died, 14 h.
370 gm.	4.07	203.5	0.55	Died, 7¾ h.
355 gm.	4.26	213.0	0.6	Died, 34 h.
340 gm.	4.41	220.5	0.65	Died, 3¼ h.
435 gm.	5.8	291.45	0.67	Died, 3½ h.
415 gm.	5.9	294.65	0.71	Died, 2 h. 10 m.

Table 5.—Hydrated chloral in 10 per cent. alcohol *per os.*

Weight of guinea-pig	Hydrated chloral in 10% alcohol per animal c. c.	Mg. of Hydrated chloral		Results
		Per animal	Per gm. animal c. c.	
290 gm.	2.9	145.0	0.5	Survived.
435 gm.	4.35	217.5	0.5	Survived.
410 gm.	4.53	221.4	0.54	Died, 2½ h
350 gm.	4.06	203.0	0.58	Died, 1¾ h
340 gm.	4.28	214.2	0.63	Died, 2 h.
385 gm.	5.2	261.8	0.68	Died, 3 h.

EXPERIMENTS ON GUINEA-PIGS.

Administered *per os* to guinea-pigs, there is but little difference in the lethal dose of Somnos and a 5 per cent. solution of hydrated chloral in water or dilute alcohol (Tables 3, 4 and 5).

On page 5 of the booklet "Somnos," the astonishing statement is made, "All tests showed that Somnos, given in twice the fatal dose of chloral hydrate, merely produced natural sleep, from which the animals awakened in a normal condition." Since Somnos is about a 5 per cent. solution of chloral glycerate, it is evident that a 5 per cent. solution is here compared with a pure substance; this is equivalent to saying that it is possible to give more of a 5 per cent. solution of a poison than of the undiluted poison. When it is remembered that in the booklet in which this statement is made the strength of

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[1] Two weeks ago (Journal A. M. A., Sept. 1, 1906, p. 695) it was pointed out that the manufacturers now give this information, but in a wholly unnecessarily obscure form.

Somnos is nowhere given, can there be clearer evidence of a deliberate attempt at misrepresentation?

2. The conclusions drawn by C. C. Stewart in a report in Bulletin No. 1 of the American Pharmacologic Society are of interest in this connection. This writer states, p. 19: "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose (that is, 10 ounces of the elixir, Somnos, for a 70 kilo. man) must be considered as an extremely dangerous quantity, while thirty times the prescribed dose (that is, 15 ounces fo' a 70 kilo. man), may be considered as lethal." It is a well established fact in pharmacology that the more highly developed the brain the more toxic, relatively, are substances which act primarily on this organ; hydrated chloral, for example, is, in proportion to body weight, more toxic for man than for the dog. Hence it is fair to assume that this figure 20, derived from experiments on the lower animals, is high rather than low. Yet the firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed." To what extent this statement has been accepted it is impossible to state. In the booklet, "Somnos," p. 17, is an interesting testimonial from Kent Kibbie, professor of anatomy, Medical Department, Dallas University, Fort Worth, Texas: A woman violently insane for three weeks, to whom had been given "liberally" "morphin, chloral, sulphonal, and the bromids," was given ten tablespoonfuls of Somnos in the course of five hours; after five hours, she "simmered down" and slept for twelve hours. The question may be asked what would have been the result had she received twenty to forty tablespoonfuls, the amount which is stated by the manufacturer to be harmless?

It may be noted, in this connection, that in the above report Stewart records no experiments on the comparative toxicity of Somnos and hydrated chloral; if the American Pharmacologic Society is really endeavoring to get impartial information about Somnos before the medical profession, it would seem that this should have been one of the first subjects investigated.

EFFECTS OF SOMNOS ON RESPIRATION, CIRCULATION AND TEMPERATURE.

The booklet on "Somnos," in comparing the effects of Somnos with chloral hydrate states, page 13, for Somnos, "heart never depressed; pulse strong, regular and full, respiratory center stimulated rather than enfeebled, temperature uninfluenced," etc., while the dire effects of hydrated chloral are stated thus: "Weak, irregular, slow, feeble pulse; diminished respiration and lividity; temperature subnormal," etc. In the following experiments, the effects of Somnos on respiration, blood pressure and temperature were compared with those of corresponding amounts of hydrated chloral; the doses employed were just sufficient to cause a few hours quiet sleep. Sometimes the sleep caused by Somnos was slightly deeper and more prolonged; in other cases, the effect of the hydrated chloral was slightly greater, but we do not believe that the most experienced observer could have told from the effects with which drug he was working.

Experiments on Dogs.—Experiments were made on two dogs very similar in breed and disposition:

Experiment 1.—April 30, 1906. Black bitch; weight, 4.75 kilos.

10:26 a. m.—Rectal temperature, 39.6 C. Very lively; barking.
10:28—1.899 gm. hydrated chloral dissolved in 38 c.c. of 10 per cent. ethyl alcohol *per os* (=0.4 gm. hydrated chloral per kilo. body-weight).
10:32—A little quieter, but moving about; staggering. Stands on
10:37—Rolling about; raises body up on fore feet.
10:36—Unable to stand; tries it and falls.
hind legs; does not bark.
10:35—Tumbles about a little.
10:38—Respirations 44 a minute.
10:39—Barely able to raise head; does not react strongly to pinching ear.
10:40—No conjunctival reflex.
10:43—Impossible to arouse.
10:45—Respirations 68 a minute.
11:15—Rectal temperature 38 C. Respirations 36 a minute. No reflexes.
12:00—Moved about on insertion of thermometer; had to be held. Rectal temperature, 35.9 C. Easily aroused, almost gets up.
12:45—Moves about; can raise up on forelegs; then falls. Very "groggy." Impossible to insert thermometer without holding.
1:00—Rectal temperature, 35.8 C.
1:20—Slight convulsive movements.
2:00—Dog standing, but staggering. Rectal temperature, 36.7 C. Up and howling.
3:00—Practically recovered; very noisy. Rectal temperature, 38.4 C.
4:00—Rectal temperature, 38.8 C. Entirely recovered.

Experiment 2.—May 1, 1906. Black bitch; weight, 3.943 kilos.

11:06—Rectal temperature, 39.6 C.
11:10—31.5 c.c. Somnos given *per os* (= 1.577 gm. of chlorethanal alcoholate = 0.04 gm. per kilo.).
11:15—Movements slightly incoördinated.
11:19—Tumbling about; hind legs paralyzed, but holds head up.
11:21—Barely holds head up.
11:26—Lying down, unable to hold head up; 40 respirations a minute.
11:35—Moves head slightly on inserting thermometer.
11:40—Rectal temperature, 37.8 C. Reacts very slightly to pinching.
11:45—Respirations, 42 a minute.
11:50—Conjunctival reflex absent. Impossible to arouse; pinching, etc., causes slightly accelerated respiration.
12:05—Barely perceptible reaction on insertion of thermometer.
12:10—Rectal temperature, 36.2 C.
12:45—No reaction on insertion of thermometer.
12:50—Rectal temperature, 34.8 C.
1:05—Respirations, 18 a minute.
1:15—Shows tendency to wake; throws herself about slightly
1:20—Rectal temperature, 34.3 C.
1:25—Almost gets up. Respirations, 16 a minute.
1:50—Rectal temperature, 34.2 C.
2:00—Respirations, 16 a minute. Deeply under; can be aroused slightly.
2:10—Quivering.
2:30—Reacts considerably to insertion of thermometer.
2:35—Rectal temperature, 34.4 C.
2:39—Holding head up; tumbles about a little.
2:55—Sitting up, but very unsteady.
3:00—Stood up, but very unsteady.
3:05—Rectal temperature 36.2 C.
3:20—Up and walking about; almost recovered.
3:35—Rectal temperature 37.2 C.
4:20—Rectal temperature 38 C.

The condition of the animals in these two experiments was very nearly the same; the narcosis was equally prolonged (about three hous). The narcosis from Somnos was a little deeper: the temperature and respiration were also more depressed. The effects on the temperature are shown in Figures 1 and 2

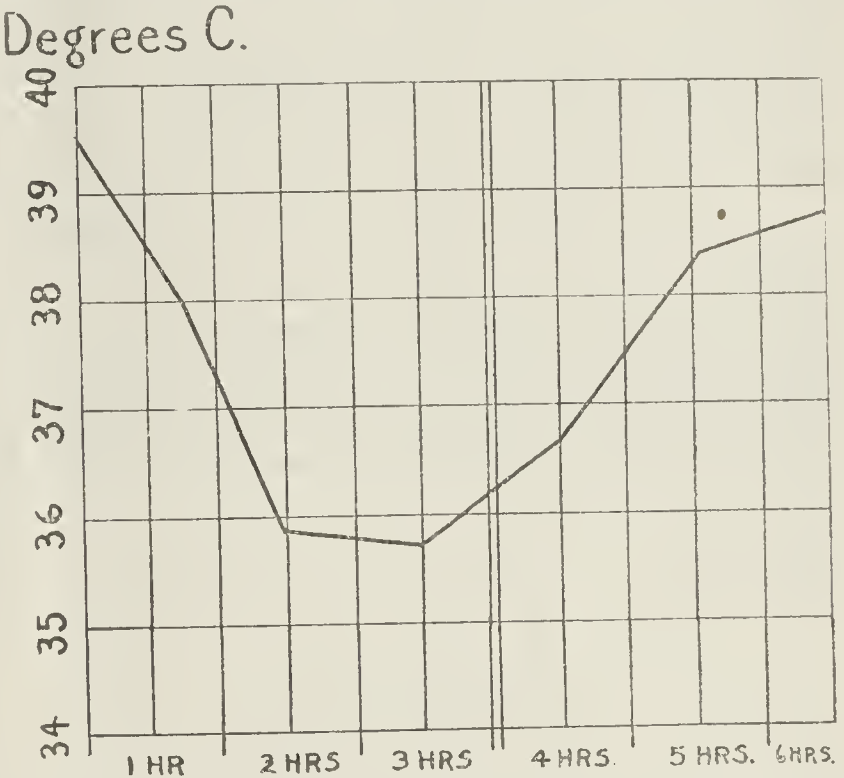

Fig. 1.—Experiment on a dog (1) showing depression of the temperature caused by 38 c.c. of a 5 per cent. solution of hydrated chloral (= 0.4 gm. hydrated chloral per kilo. dog). This solution, which about corresponds in strength to Somnos, caused less depression of the temperature than did the latter (cf. Fig. 2). The sleep continued about three hours.

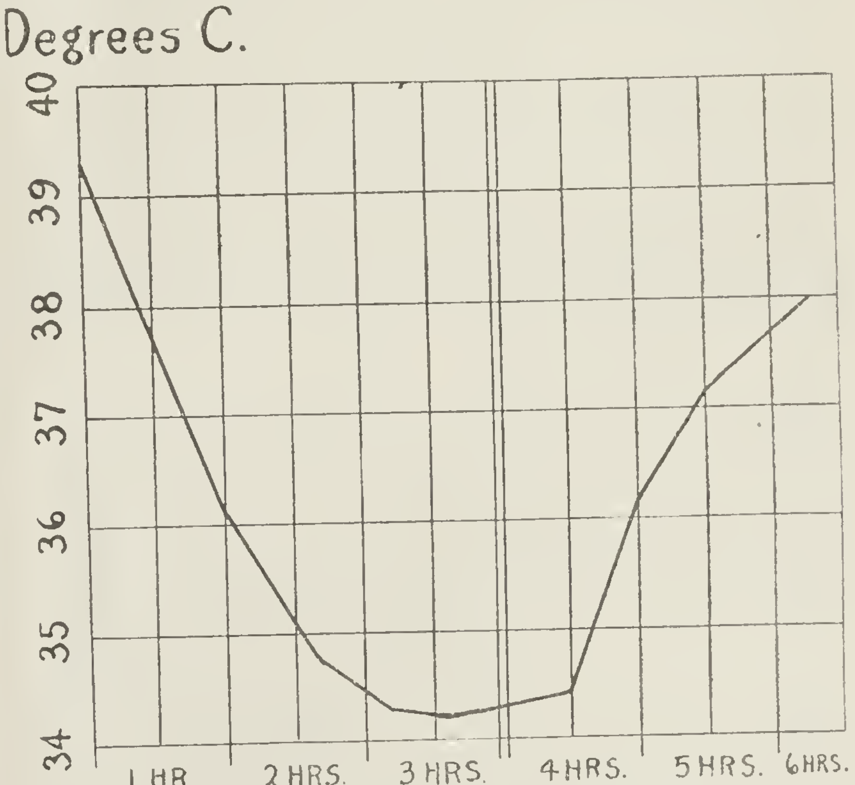

Fig. 2.—Experiment on a dog showing the depression of the temperature from 31.5 c.c. Somnos (= 0.4 gm. chloral glycerate per kilo. dog). The Somnos caused a greater depression of the temperature than did a solution of hydrated chloral of corresponding strength (cf. Fig. 1). Sleep continued about three hours.

In the following experiment a smaller dose of Somnos was given; the results show the inefficiency of small doses:

Experiment 3.—May 2, 1906. Yellow bitch, 5.98 kilos.

11:00 a. m.—23.9 c.c. Somnos (containing 1.196 gm. chlorethanal alcoholate or 0.2 gm. per kilo.) given *per os*.

11:25—Lying down, asleep most of the time; very easily aroused; gets up and seems normal, except for some incoördination. After a little the incoördination passed off, but she continued sleepy for about three hours; was easily aroused by snapping fingers.

Blood Pressure Experiments.—The following blood pressure experiments were made:

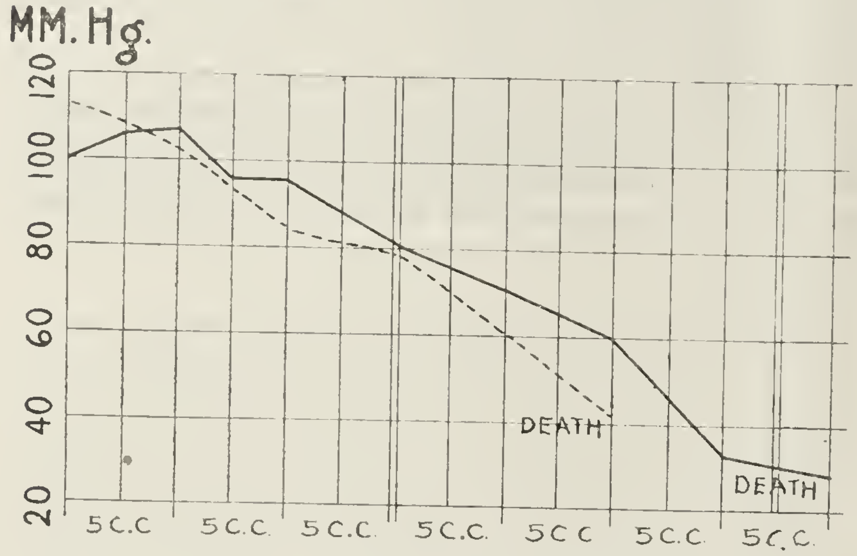

Fig. 3.—Showing the depression of the blood pressure from equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The effect on the blood pressure was about the same, but death resulted from a smaller amount of Somnos than from a 5 per cent. solution of hydrated chloral. The figures on the left represent blood pressure in millimeters of mercury.

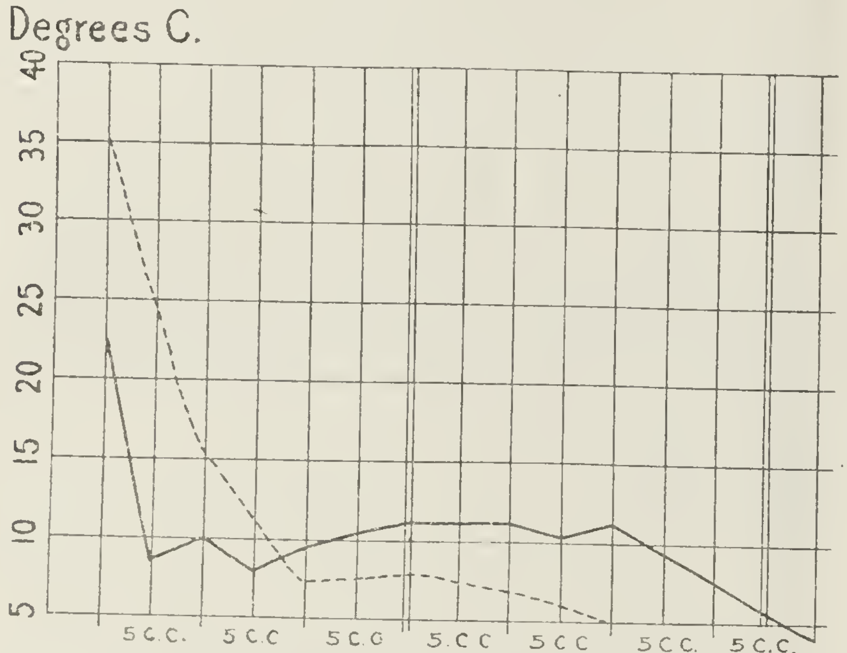

Fig. 4.—Showing the effect on the respiration of equal amounts of Somnos (dotted line) and a 5 per cent. solution of hydrated chloral (continuous line). The depression is about as great from the one as from the other.

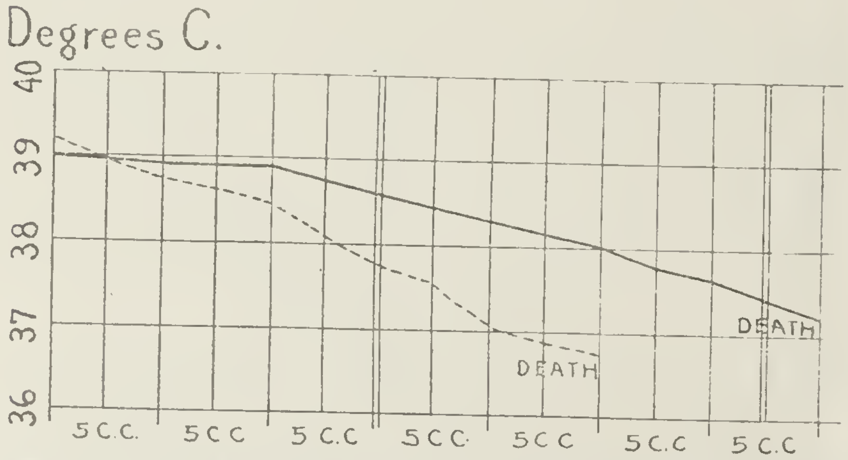

Fig. 5.—Showing the depression of the temperature from Somnos (dotted line) and hydrated chloral (continuous line). Somnos caused a greater fall of temperature than did an equal amount of hydrated chloral.

Experiment 1.—April 25, 1906. Rabbit, 2190 gm. Somnos injections into saphenous vein.

Time	Somnos injected c c.	Duration of injection, minutes	Respiration in 10 sec.	Blood pressure (carotid) in mm. mercury	Rectal temperature.
12:36	....	....	....	....	....
12:45	....	....	....	....	39.2
12:45½	5	2	35½	114	....
12:52	....	....	....	....	....
12:59	....	....	....	....	38.8
1:21	5	1 ½	15½	105	....
1:23	....	....	....	....	....
1:32	....	....	....	....	38.6
1:49	....	....	....	....	38.5
1:50	5	1 1-6	7½	86	....
2:17	....	....	....	....	....
2:20	....	....	....	....	37.8
2:20 1-6	5	1 ½	8	79	....
2:25	....	....	....	....	....
2:45	....	....	....	....	37.6
2:49	....	....	....	....	37.1
2:49 1-6	5	1 ½	7	61	....
3:12	....	....	....	....	....
3:20	....	....	....	....	36.8
3:20 1-6	5	1 1-3	5½	42	....

3:22½, respiration ceased; 3:24, heart ceased.

Experiment 2.—April 26, 1906. Rabbit, 2300 gm. Five per cent. solution of hydrated chloral injected into saphenous vein.

Time	Hydrate chloral c.c.	Duration of injection, minutes	Respirations in 10 sec.	Blood pressure (carotid) in mm. mercury	Rectal temperature.
12:08	....	....	....	....	....
12:12	....	....	....	....	39
12:12 1-3	5	1	23	100	....
12:19	....	....	....	....	....
12:24	....	....	....	....	38.9
12:50½	....	....	9	106	....
12:51	5	1 1-6	10	107	....
12:57	....	....	....	....	....
1:21½	....	....	8 ½	96	38.9
1:22	5	1 1-3	9 ½	96	....
1:49	....	....	....	....	....
1:49 1-3	5	1 ½	11	81	....
2:17	....	....	....	....	....
2:19	....	....	....	....	38.3
2:19 1-6	5	2	11	72	....
2:26	....	....	....	....	....
2:49	....	....	10½	....	....
2:49 1-3	5	1 ½	11	59	38
3:06	....	....	....	....	....
3:21	....	....	....	....	37.8
3:21 1-3	5	1 1-3	10	34	37.7
3:26	....	....	....	....	....
3:38	....	....	6	29	....
3:40*	....	....	4½	....	37.2

*3:40, respiration ceased; 3:42, heart ceased.

Results of these experiments are shown in Figures 3, 4 and 5.

Many other similar experiments were performed. The results were very uniform and admit of the following conclusions: Somnos is slightly more toxic than a 5 per cent. solution of hydrated chloral in water; the narcosis produced by it is slightly deeper but the respiration and temperature are also correspondingly more depressed; the blood pressure was equally depressed. The physiologic action of Somnos is practically indistinguishable from that of a 5 per cent. solution of hydrated chloral in 10 per cent. alcohol; sometimes the one, sometimes the other produced a slightly greater effect (depending probably on individual variations in the animals) but witn the deeper narcosis there was invariably associated a greater depression of the respiratory center and of the temperature.

The urine of rabbits which had been given Somnos contained a levo-rotatory compound which reduced Fehling's solution readily; it was probably urochloralic acid, the same substance found in the urine after the administration of hydrated chloral.

Experiments on the effect of Somnos on the number of red blood corpuscles (on which the manufacturers lay considerable stress) have not yet been made; but surely no one experienced in blood work would attach much importance to experiments such as those described in the booklet on "Somnos," pages 6 to 10.[3] The method of administering the drug, the time at which the blood was taken for examination, the intervals between the different experiments are passed over without a word. It is very improbable that amounts of hydrated chloral varying from 1½ to 2 grains, amounts having no noticeable effect on a dog, would cause a reduction of 16.02 per cent. in the number of red blood corpuscles.

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[3] These statements are repeated, practically unchanged, in the report by W. H. Lippert, M.D., in Bulletin No. 1 of the American Pharmacologic Society.

In the absence of any proof, the statement on page 4 of the booklet "Somnos," that Somnos produces sleep by causing a contraction of the neurons and that it is the only hypnotic known possessing this property, is an insult to the intelligence of the physician.

CONCLUSIONS.

To sum up our results on the physiologic action of Somnos: We have been completely unable to verify the claims of the manufacturers that Somnos is less toxic than hydrated chloral, or that it has a less depressing effect on temperature, respiration or circulation. On the contrary, the physiologic effects are indistinguishable from those of hydrated chloral, doubtless because the action of Somnos is simply the action of hydrated chloral. We can see nothing in the animal experiments or in the chemical composition which would suggest that Somnos would possess therapeutic advantages over an elixir of hydrated chloral of corresponding strength.[4]

It is to be hoped that physicians who have been blindly using Somnos without even knowing the strength of the preparation, much less what it is, will compare its effects with those of a 5 per cent. elixir of hydrated chloral.[4]

The Vice of Generalizing.

According to Rupert Hughes, writing in the current *Harper's Weekly*, says a lay exchange, the habit of generalizing from single sentences is far too general and influential. One would think, from some of the generalizations, he says, that the monopolists of money, for example, had also monopolized wickedness. "Yet the news of the day will tell of preachers caught in plagiarism or adultery, of druggists selling poisoned soda water, of bakers vending unclean bread, of theological students cheating." Each trade, he says, has its graft. The fact is that "drawing indictments against classes is as insane and illogical as drawing indictments against nations." There are "burglars who are chaste, and parsons who are sots; there are rich women who are nuns of asceticism, and poor women who are so vilely extravagant as to bankrupt their ditch-digging keepers; there are poets who are domestic models, and plumbers who are voluptuaries; there are rich men who overwork, and poor men lazy enough to beg; there are millionaires' sons who are normal and athletic, and self-made men who are degenerates; there are robust athletes who are abnormal, and cigarette fiends who are leaders of progress; there are Sicilians who never saw a dagger and Puritans who seek vendetta with a knife or with poison; there are policemen who would reject a bribe, and senators who are devoted to their country; there are chorus girls of unimpeached repute, and Sunday-school teachers who commit infanticide."

The above is interesting to physicians, in so far as the comparison would apply with equal force to medicinal agents, whether official or proprietary. In the crusade against nostrums, some are inclined to go to the extreme. All nostrums are proprietary medicines, but by no means are all proprietaries nostrums. Just as the laborer is worthy of his hire, a fair reward should be allotted to the discoverer of a medicinal agent; but this reward should not be made perpetual. A coined word, trademarked, grants a perpetual monopoly, and hence should not be encouraged. But a patented article, or a patented process of manufacture gives protection for a limited time only, and is not necessarily to be condemned.

In a recent letter in The Journal, the following appeared in parenthesis: "I regret to say that this is also a proprietary remedy, but it seems to work well; possibly other silver compounds would do as well." Our correspondent evidently did not know that the preparations he had previously referred to in his communication are also proprietary. Universal condemnation of proprietary preparations will not help the work of ridding the medical profession of nostrums. We, therefore, appeal to our readers to use judgment, tempered with patience, in dealing with this troublesome question.

Correspondence

The Walker Resolutions.

Kansas City, Sept. 6, 1906.

To the Editor:—After reading Dr. Carstens' letter in The Journal, September 1, I desire, as the mover of the motion to lay the Walker resolutions on the table, to correct some erroneous impressions that have gained circulation regarding the reasons for tabling these resolutions.

In the first place, I had no knowledge that such resolutions were to be introduced, nor had I been asked by any one to take any position relative thereto. When they were read, however, they at once impressed me as a covert attack on the honesty of the members of the Board of Trustees, and of the officers of the Association. I consider it necessary in any organization that a few men of capacity should have the main work fall on their shoulders. Such an organization would always be called by others a "machine." I do not object to this name, as a machine is understood to be an instrument for the accomplishment of work through improved methods. Admitting that there is a machine in the American Medical Association, in this sense, I would certainly find in that fact nothing objectionable. I fully believe that every member of the Board of Trustees and all the officers of the American Medical Association are perfectly honest, untainted by the slightest suggestion of personal graft, and it is, therefore, a machine in which I have full confidence.

In the second place, I was impressed with the idea that this resolution was introduced for ulterior purposes by influences which were antagonistic to the present policy and conduct of our Association and its journal. In this particular, I must fully support the course pursued by the Board of Trustees and the management of The Journal, and I believe that their course is approved by 90 per cent. of the profession. I was unwilling, therefore, to countenance any scheme, under any mask, whose chief purpose was to thwart the wishes of the American medical profession and to stop the good work which had been well begun.

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[4] The booklet on Somnos, "Somnos, a Pharmacological Report," which is referred to here, contains a "Therapeutic Index to the Usefulness of Somnos." We give below a list of diseases mentioned in this index to show the wide range of usefulness (?) that is claimed for this chloral compound. Abortions. Abscess—of brain, kidney, liver, tonsils, paroid gland, mediastinum; in appendicitis, glanders, perinephritic, retropharyngeal, pyemic, pelvic, ovarian. Somnos lessens pain and quiets nervous state. Tablespoonful, repeated once or twice. Use liberally. Alcoholism—full doses, repeated often. Gives calm sleep. No blood changes like those produced by chloral. Anemias—progressive and secondary. Somnos has no deleterious action on blood as is common with other hypnotics. Aneurism. Angina. Apoplexy. Appendicitis. Arthritis. Arsenical poisoning. Arteriosclerosis. Asthma. Biliary colic. Bright's disease. Carbuncle. Carcinoma. Catarrh. Cellulitis. Cerebrospinal fever. Chlorosis. Cholecystitis. Chordee. Chorea. Cirrhosis. Coccydynia. Colic. Colitis. Concussion. Confusional insanity. Contusions. Convulsions. Coryza. Cough. Cramps. Cystitis. Delirium. Diabetes. Diarrhea. Diphtheria. Dropsy. Dysmenorrhea. Dyspnea. Ear. Emphysema. Empyema. Endocarditis. Endometritis. Epididymitis. Epilepsy. Erysipelas. Fevers. Fistula. Gallstones. Gastralgia or Gastrodynia. Gastritis. Gonorrhea. Goiter. Gout. Hallucinations. Hay fever. Headache. Heart Disease. Hemicrania. Hiccough. Hydronephrosis. Hydrophobia. Hydrothorax. Hyperesthesia. Hysteria. Indigestion. Inflammation. Insomnia. Kidney disease. Laryngitis. Liver abscess. Cirrhosis. Lobar pneumonia. Lockjaw. Locomotor ataxia. Lumbago. Mal de mere. Malarial fever. Meningitis. Migraine. Melancholia. Metritis. Morphinism. Muscular rheumatism. Myelitis. Myocarditis. Myositis. Nephritis. Nervous dyspepsia. Neuralgia, occipito-cervical, etc. Neurasthenia. Neuritis. Night sweats. Orchitis. Otitis media. Paresthesia. Paralysis. Parotitis. Peliosis rheumatica. Pericarditis. Perimetritis. Perihepatitis. Perichondritis. Peritonitis. Pertussis. Petit mal. Pharyngitis. Phthisis. Pleurisy. Pneumonia. Post-epilepsy. Prolapsed uterus. Pseudo angina pectoris. Purpura. Rabies. Rheumatic fever. Salpingitis. Sarcoma. Scarlet fever. Smallpox. Spasms. Stomach. Stomatitis. Sunstroke. Tenesmus. Tetanus. Tonsilitis. Trauma. Trismus. Typhoid fever. Typhus fever. Ulcers. Urticaria. Varicella. Vomiting. Vulvitis. Yellow fever.

Finally, it struck me as the height of impudence that the mover of the resolution should lack sufficient confidence in the House of Delegates to permit it to name its own committee, should such a committee be desired. I certainly think, with no reflection on the names therein suggested, that a committee selected from the House of Delegates itself, where each member was more or less familiar with the matter in hand, would have been a more competent committee in every way. On the whole, therefore, the entire resolutions seemed to me to be uncalled for, improper and insulting, and for these reasons I made the motion to lay them on the table. I would judge that this same impression was produced on most of the members of the House of Delegates, since my motion was immediately seconded by several and unanimously carried.

It was evident that the principal desire in the minds of the members of the House of Delegates was to dispose of the resolutions in the quickest and most effective manner possible. The idea that the Trustees or the officers of the Association opposed or in any way hindered the adoption of the resolutions is absolutely contrary to the facts of the case, and palpably absurd.

JABEZ N. JACKSON, M.D.

State Board Results in the Educational Number.

SPRINGFIELD, Sept. 1, 1906.

To the Editor:—The data collected and tabulated in the Educational Number of THE JOURNAL (Aug. 25, 1906), gives to the medical profession a compact arrangement of facts not obtainable elsewhere, but it is to be regretted that existing conditions are not such as to render the results of your immense labor more generally satisfactory. Much may be learned by any person by a careful analysis of your figures, but at the same time many of your deductions and conclusions would convey most erroneous impressions to the casual reader. Inasmuch as the great majority of your readers will glance at your results rather than consider the conditions surrounding the origin of your data, I feel that it would be wise more emphatically to impress the fact on them that deductions based on figures which are not uniform in significance are very apt to be misleading.

The peculiar results to which we may be led by figures and statistics may be illustrated by the following brief instances: In your Table E, page 590 (Colleges Grouped by States Showing Numbers Examined and Percentages of Failures), we find that graduates of Arkansas colleges of the years 1900-1905, were successful in 100 per cent. of cases in state board examinations, while the Arkansas graduates of 1899 and previous years failed in 50 per cent. of cases. We might infer from these percentages that in mental and educational attainments, recent Arkansas graduates stood at the highest possible place in the list of all states, and infer further that the marked difference in standing between old and recent Arkansas graduates indicated an astonishing improvement in Arkansas' educational institutions. These deductions are, of course, set at naught when we find that the total number of 1900-1905 Arkansas graduates examined was one and of those of 1899 and previous years but two. Had the 1900-1905 graduate failed on examination, Arkansas would have fallen to the lowest place on the list, 46 per cent. lower than any other state. Had the one who failed of the graduates of 1899 and previous years, been successful, Arkansas would have gained the topmost place for all years, with only Connecticut and Maine in the sisterhood of supremacy. Of course, these percentages have not the slightest weight in showing the relative standing of Arkansas colleges as compared with those of other states. The same is true of Connecticut, which is given an equally exalted place. Of graduates of 1899 and previous years, Connecticut had one. He passed on examination. The effect of his failure on the percentage of Connecticut colleges in your table is obvious.

Table G (Comparison of Results Obtained by the Graduates of Colleges in Their Own States and Elsewhere), shows Dearborn Medical College with 100 per cent. of successes in Illinois and with 100 per cent. of failures in "other states." The 100 per cent. of failures in other states represents the failure of one graduate in one other state. Without consideration of this latter fact, it might not unreasonably be surmised that Illinois had licensed all graduates of a college not one of whose alumni had proven acceptable to any other state.

In the system you have adopted to facilitate comparison of the different state boards in passing or rejecting applicants, figures are used which, it would seem, are hardly susceptible of comparison. You state editorially that in Kentucky and Colorado a number of applicants have been admitted without examination and that "these are included in figuring the percentage of rejections." Those so admitted in Colorado and Kentucky, seem, however, to have been included as successful. It would appear to me that to include these applicants either as rejections or as being successful renders more confusing a table which the casual reader, at least, had assumed to be for the purpose of showing results of examining boards.

Without burdening your columns with additional details, I should suggest the following points which must be given due consideration in comparing the results of the various state boards or colleges: 1. It is impracticable to compare the showing of a college whose graduates were examined exclusively by one board with the showing of another college whose graduates were examined exclusively by another board. It is impossible to tell whether the school or the board is responsible for the results. 2. The great majority of graduates in practically all schools are examined, first at least, in the states in which the individual colleges are located. Hence, the character of the schools in each state is an important factor in considering the severity or laxity of the examining boards of the state. 3. We may as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination.

The importance of these points may be briefly illustrated in the following: Of the 104 colleges listed by you, there were but 10 whose graduates had appeared before as many as twenty state boards. Of this group of 10, but two are found in your Table 1—those whose candidates were rejected in less than 10 per cent. of cases before all boards. The 8 colleges are located, 1 in Maryland; 1 in Michigan; 1 in New York: 2 in Pennsylvania and 3 in Illinois. In Maryland, Michigan, New York and Illinois, from 75 to 80 per cent. of all applicants examined were graduates of schools in those states. Michigan rejected but 1.6 per cent. of her own graduates: New York 1.9 per cent. of New York graduates and Illinois 2.8 per cent. of Illinois graduates. These low percentages of rejections of the graduates of the states' own schools were due to the fact that these states have the largest number of graduates of colleges who have received high recognition in the largest number of other states. Maryland, on the other hand, rejected a much larger percentage of her own graduates, but in Maryland it is noted that the three largest schools come in your Table K—having over 20 per cent. of failures. Without the foregoing facts, it might be assumed that these states dealt with undue leniency with their own graduates.

As to the standing given by your tables to Illinois, on which the foregoing figures have considerable bearing, I desire to say a word.

Illinois does not pretend to be a state in which exactions in medical examination are unusually severe. The statutes require that the examination "shall be of a character sufficiently strict to test the qualifications of the candidate as a practitioner," and the State Board of Health endeavors to carry out the provisions of the law. If the candidate shows sufficient evidence of his ability as a practitioner, it becomes the duty of the board to grant him a certificate.

The showing that Illinois rejects a smaller percentage of Illinois graduates than of those of other states is largely due to the fact that the board is called on to examine so large a percentage of graduates of Illinois colleges whose alumni receive uniformly high grades in all states and also to the fact that but 7 per cent. of the applicants appearing before the board and coming from outside the state represent those colleges showing less than 10 per cent. of failures. A word on this subject is warranted in view of the fact that, to the casual observer, the difference between the number of rejections among graduates of Illinois colleges and from outside colleges might appear as circumstantial evidence, at least, of discrimination against those from other states.

I am not sufficiently conversant with the examination methods of other states in which this evidence of possible discrimination appears in your tables, to speak authoritatively concerning them, but I can say, without possibility of successful rebuttal, that the Illinois method of examination practically precludes the possibility or discrimination either for or against any individual, any school, or any class of applicants.

The examinations of the Illinois State Board of Health are conducted by the secretary. None of the other members of the board attends or takes part in the examination. The secretary, however, has nothing to do with the preparation of the questions or the grading of the answers. The questions are prepared and the answers are graded by the other members. The identity of the applicant is unknown to the members who grade the answers. Each applicant is identified by a number. The number given the applicant at the examination is changed in the office of the board before the papers are submitted to the members, so that the papers of each applicant are graded under an entirely different number from that given the applicant at the time of examination—a number which can not be known to the applicant. The members examining the papers do not know and can not know, until after the papers are graded, whether the applicant comes from Maine or Illinois or California, and it might be said in this connection that no member, during the ten years in which I have been secretary, has ever manifested the slightest curiosity on the subject.

The Illinois State Board of Health acts as an examining board rather than as an examining and rejecting board, and the examinations are so conducted as practically to guarantee that all those who pass have done so fairly and honestly.

James A. Egan,
Secretary Illinois State Board of Health.

[Our correspondent's comments on Arkansas' percentage are correct, as far as Arkansas is concerned, but they do not apply to Connecticut, since the latter had a total of 30 applicants examined when the former had only 3. In our editorial accompanying the tables referred to, the following statement is made: "In making comparisons, besides the percentage, one must consider also the number examined and the number of state boards before which the college was represented." This applies to practically all the tables and particularly to Tables I, J and K, and if this is kept in mind there need be no misinterpretations. Table H was arranged particularly to show comparatively rejections by examining boards, and the terms "registered" and "rejected," instead of "passed" and "failed," as well as the comments on the table should prevent any one from thinking that it was based on examination only. States which register applicants on credentials without examination would certainly appear in a wrong light if those registered in such manner were not included in figuring the percentage of rejections. The methods adopted by the Illinois board in marking papers are interesting and may be of service to other examining boards.—Ed.]

A National Examining Board.

Chicago, Sept. 1, 1906.

To the Editor:—To the extensive and rapidly growing literature of reciprocity in medical licensure may I add another contribution for the purpose of reviewing and elaborating a suggestion already made by others of a voluntary national examination and certificate?

In the address published in The Journal, August 25, Dr. Harvey has forcibly set forth the difficulties which stand in the way of interstate reciprocity. The examinations given by over sixty state and territorial boards are, and of necessity must long continue to be, so diverse in character and severity as to afford no satisfactory basis for any general reciprocity. Nor is any scheme of compulsory national licensure possible under our form of government. At the same time it is clearly the opinion of the large majority of contributors to this discussion that an examination and certificate by some central board under the control of the national government offers the most direct and satisfactory solution of the whole question.

The way is already paved for such a plan, by the fact that in many of the states medical officers of the Army, Navy and Marine-Hospital Service are already exempted from the operation of the medical practice acts. It only remains for such an examination to be open to any and every medical graduate who might wish to take it, paying therefor a suitable fee, and for the several state boards to accept the certificate obtained by the successful candidates in such examination.

In order that the tests proposed might furnish the best possible guarantee of the competence of those examined, certain conditions would have to be fulfilled. The examiners should be experts, each in his own medical branch. The board would not, therefore, be composed of Army and Navy surgeons, although the examinations should be conducted under the auspices and control of the medical departments of the U. S. Army and Navy, who would attend to the details of arranging time and place, keeping of records, issuing certificates and the like. The actual examiners should be recruited from the ranks of those who are engaged in teaching and research in the several medical sciences who would be detached from their teaching position by leaves of absence for the limited periods necessary for this duty. In order that the burden of this work might not fall unduly on any one person, no examiner should be expected to serve more than six or twelve months consecutively. By this plan the board of examiners would be composed of a professional anatomist from one college, a physiologist from another, a chemist from another, a surgeon from a fourth, etc., each of whom is an expert in his chosen line, familiar by long experience with the purpose and methods of examining.

We must come to recognize in this country, as they do abroad, that the business of examining is one demanding special training and experience, particularly in teaching, and that examinations can not be satisfactorily made by the average general practitioners who constitute the personnel of the several state boards. Moreover, it is a "narrowing" occupation of such restricted scope that exclusive devotion to it tends to unfit the individual for its duties. A changing board, such as is here proposed, renewed by the enlistment of fresh material every few months would be much more satisfactory and effective than a permanent board.

The examinations should be exhaustive, thorough and *practical*, extending as a rule over four to six days for each applicant, and comprising, as the most important features, actual tests of his ability in the various laboratories, in the actual examination of actual patients, the performance of dissections and operations on the cadaver and the like, as is the case abroad.

The same prerequisites should be exacted of candidates as are now demanded by the better state boards, such as evidence of graduation from a recognized medical college and certificates of good moral character.

The examinations might be held at suitable intervals in five or six of the largest cities of the country, where ample facilities could be secured for conducting them. The fee exacted of the applicants should be commensurate with the comprehensive and somewhat expensive character of the examination, and with the value of the certificate to be obtained. Every candidate could well afford to pay a fee at least as large as that now exacted by any of the state boards, for a certificate which would entitle him to practice anywhere in the United States at any time. It is believed that the income from such fees would be ample to meet the expenses of the board, including the payment of adequate compensation to the examiners.

It is difficult to see how any state board could refuse to recognize a certificate obtained by such an examination conducted by such a body of men; and accept it, too, not on the basis of an I-will-if-you-will reciprocity (an attitude which can never result in reciprocal licensure without a lowering of standards), but solely on the basis of merit.

It may be objected that the proposed plan offers no relief to the old practitioner who is sometimes compelled to migrate, not from mere "wanderlust," but by force of circumstances. Something must be done for these. The flippant manner in which their claims to just treatment are discussed in some of the recent contributions on the subject and dismissed by the state boards, argues an absence of appreciation of individual rights which ill befits a judicial body—for such as an examining board in the best sense should be.

May I add another case to the several which have been reported, showing how absurd, intolerable and indefensible is the present attitude of many of the state boards? A teacher in a prominent medical college had recently been invited to take the professorship of a special branch of medicine in the medical department of the state university of a western state. On applying for a license by reciprocity with the state in which he has successfully practiced for sixteen years, he is informed that owing to a ruling adopted by the board within a month, he must take the full examination. Naturally, being nearly twenty years away from his study of the fundamental branches, he hesitates to abandon his present position and practice to remove to a distant city, in the face of the very considerable risk of failing in the kind of examination—a purely written test of his book-cramming, memorizing ability—in which case he would be ineligible to practice in that state. And so this state university must fail to secure the accession to its medical faculty of a distinguished specialist, because of a three-weeks' old arbitrary enactment of the state board of medical examiners. This practitioner, like many others, would not hesitate to undergo a practical test of his real ability to practice medicine, and such an examination as has been here suggested he might successfully pass.

This plan is not offered, however, as a means of securing reciprocity for the older practitioner, but for the recent graduate, and to serve as a means of guarding the portals of the profession for the future. For all physicians who graduated previous to 1900, let us say, reciprocity should be universal. A physician who has been licensed by any state on any basis, and who is not disqualified from practice by any breach of moral or professional conduct, should be entitled to a license by reciprocity in every other state. The public is responsible by its neglect, for the present conditions—the excessive number of cheap medical colleges and the consequent abundance of incompetent practitioners. No state has very much to boast of in this regard in comparison with the other states. Much as the community may desire to purge itself, or to exclude from its borders these incompetent physicians, for the existence of which the people themselves are responsible, it has no right to seek correction of present conditions at the expense of hardship and injustice to the innocent individual physician. The courts have ruled that retroactive medical practice statutes are unconstitutional within a state. Logically they are equally unjust as between states. Time alone, and death, will remove from the community the large number of poorly trained, ignorant physicians now in the profession. It should be the business of the state boards to guard the future. The plan of a voluntary examination and certificate by a national examining board, I believe, offers the best solution of the question.

John M. Dodson.

Interstate Reciprocity and Frauds in Medical Schools.

Detroit, Sept. 5, 1906.

To the Editor:—Under the above heading Dr. Dudley Tait, of San Francisco, a member of the California Board of Medical Examiners, calls attention to the necessity of coöperation of examining boards in the investigation of medical colleges, as follows:

> In the discussion of the perplexing problem of interstate reciprocity one important phase of the question has apparently been totally overlooked: the necessity of the coöperation of examining boards in the investigation of medical colleges. Forgetful of the fact that the origin of examining boards is directly traceable to the fraudulent acts of medical colleges, boards authorized by law to go behind diplomas are notoriously prone to accept diplomas as *prima facie* evidence of regular and complete college work.

In connection with the above Dr. Tait calls attention to the point that rejection of a diploma obtained under fraudulent conditions, in which fraud both the graduate and the college of graduation were concerned, in one state would not prevent the seeking of recognition of the rejected diploma in new fields or other states. He also writes in relation to holders of diplomas rejected by his board:

> They apply for registration or examination in other states, where their credentials are often accepted without question. Now, were California to reciprocate with these states it would, *volens nons volens*, open the door to all such medical bandits, thus defeating the purpose of the law. Surely, reciprocity under these conditions can not be founded on justice.

In commenting on the above criticism of one of the phases of medical reciprocity I can only state that it is self-evident from his remarks that Dr. Tait is not only unfamiliar with the requirements and methods of reciprocity, but he also fails to grasp the meaning and intent of the term "reciprocity," especially so as applied to the endorsement of the medical license of one state by another state on the basis of a reciprocity agreement under the qualifications of the American Confederation of Reciprocating, Examining and Licensing Medical Boards.

Medical reciprocity is not in any sense an unlimited reciprocity. It is rather limited or restricted reciprocity, or individual reciprocity. The medical acts of nearly all of the states contain the following reciprocity provision:

> Where the requirements for license shall be deemed by the board to be equivalent to those of this act.

The recognition of the license of another state obtained (in part only) through a diploma which was not recognized by the receiving board could hardly consistently be designated an equivalent qualification, especially so if the receiving board had a record of the fraudulent nature of the qualification on which the license was obtained.

Dr. Tait evidently thinks that medical reciprocity between states is an unlimited recognition of the official acts of either board concerned in the matter of qualification for license. A careful reading of the reciprocity qualifications of the American Confederation would absolutely dispel this view.

In addition, also, the confederation has adopted itemized standards of preliminary and medical education, which, if in any sense lived up to, even in spirit, and are included in the reciprocity agreement between states, make it necessary for boards in investigating applications for endorsement not only to go behind the diploma, but also the license, and ascertain the actual quality of both.

It is possible, as in the specific case mentioned by Dr. Tait, for the possessor of a defective diploma to deceive or commit a fraud on a state in reciprocity with California and thereby obtain registration, but to assume that California or any other state, having knowledge of such fraud, would, through reciprocity, be obliged to recognize a license of this nature, is little less than an irresponsible statement. The mere application to the California board by the applicant under such conditions would furnish the defrauded board with the information on which the license could be canceled rather than endorsed.

Dr. Tait credits me with the statement that I never have had occasion to reject a diploma from a recognized medical school. I am positive there must be some error in this statement, whether made by myself or by some one else. As the executive officer of my board it is my duty and practice to go behind every diploma of whatever nature presented to the board for recognition and to examine every detail of the course and work in connection with the granting of such diploma, either in direct registration or in registration through reciprocity. It has been my duty, in connection therewith, to reject a large percentage of the diplomas presented—seldom for fraud, in nearly all cases for defective course—even when the colleges granting the diplomas have been on the approved list.

The objections to medical reciprocity by Dr. Harvey, secretary of the Massachusetts Board of Registration in Medicine, in his article in The Journal, August 25, entitled "The Impractibility and Interstate Reciprocity," are based wholly, as in the case of Dr. Tait, on the defective understanding of what medical reciprocity really means as practiced and a want of knowledge of the standards of reciprocity and the method of their administration. He lays special stress on the assumed danger of the lowering of the standards through reciprocity on the theory that a state with a high standard would be obliged to receive and endorse licentiates of other states having lower standards. In this connection he states that a practitioner unable to qualify in Massachusetts, for example, could go to a state having lower requirements and then return and register in Massachusetts through reciprocity.

In connection with the above he assumes that reciprocity is an unlimited and unrestricted reciprocity and eliminates the "equal requirements" provision of the law. He also fails to recognize the qualifications and itemized standards forming the agreement between states on which reciprocity is based, and which would create a most effectual barrier against all the evils he predicts.

A mathematician attempts to demonstrate his opinion and conclusion by a statement represented by figures. In his preliminary figures, however, he makes an error by recording that twice five is fifteen; he then produces a column of figures based on this error and finally shows the result and proves his conclusion in exact form. This is exactly what Dr. Harvey has done in his article, which as a literary effort, combined with high ideals and conscientious endeavor for proper methods, is beyond criticism. He is so completely in error in regard to the range and limitations of medical reciprocity, its practical meaning, its qualifications and standards and the methods of administration, that I can only compare the conclusion attempted in his article to the result attained, by the mathematician above quoted.

His attempt to prove his conclusions through the examination statistics of state boards is also equally unfortunate. For example, he compares, among other states, the percentage of failures in examination in Massachusetts with Michigan, the former state's percentage of failures being greatly in excess of that of the latter, and asks: How can an equitable reciprocity be possible under such conditions? He is satisfied that it is impossible and impracticable.

The explanation, however, is a simple one. Massachusetts admits not only the graduates of every chartered American and foreign medical college to her board examination for license, but also undergraduates, osteopaths or any others, with or without a smattering of medical education, are admitted and examined.

Michigan, on the other hand, has an exceedingly high itemized standard of preliminary and medical education, and her list of recognized medical colleges, in consequence, is a very limited one, and an applicant for examination must be a graduate of a listed college. Through her method of standard a graduate of a recognized medical college is accepted for examination, while another graduate of the same college and of the same year may be refused such examination. If a standard provision of the medical act is effective and properly administered and the list of recognized colleges meritorious, then the percentage of failures before the state board should be almost *nil*. A large percentage of failures would certainly indicate laxness in the administrative functions, for a college examines on a maximum of standard and a board examines on a minimum of the same standard. Eliminating accidents, therefore, graduates of properly accredited medical colleges should rarely fail in a state board examination. Comparing the actual requirements of Massachusetts with those of Michigan, is it to be expected or is it even possible that the percentage of failures of the latter should in any way equal the former?

Dr. Harvey is fearful that reciprocity will result in the leveling of the high-standard state with that of the low-standard state. In the possible event of a reciprocity agreement between Massachusetts and Michigan in the near or distant future, I can assure Dr. Harvey that only licentiates of his board who are graduates of colleges fulfilling in every detail the preliminary and medical standard of Michigan through her recognized college list would be accepted, and that these standards would not be in any degree lowered by such a process.

Under present conditions and standards, every licentiate of Michigan at the present day could qualify for endorsement by Massachusetts, but only a small percentage of Massachusetts licentiates could qualify for endorsement by Michigan or other state with equal standard. A fair and proper comparison of products does not tend to lower the quality of such products. The old story of the two grocery stores located far enough apart to prevent comparison or competition is in evidence. The removal of one of them to close proximity to the other will not result in the clean, tidy well-kept, well-stocked and well-managed grocery descending to the status of the other, which is an unclean, untidy, ill-kept, poorly-stocked and badly-managed affair. Just the opposite would result.

If the Massachusetts board will enter into reciprocity with some of the states having higher standards and better methods than those of Massachusetts, I can assure Dr. Harvey, who is without question a consistent and conscientious advocate of better things in medical qualifications, that the result will make possible a standard in Massachusetts which, under past and present conditions, has been impossible. B. D. HARISON.

The Anatomy of the Ear: A Criticism.

EVANSTON, ILL., Sept. 1, 1906.

To the Editor:—An article on "The History of the Mastoid Operation," by Dr. Frank Allport, in THE JOURNAL, July 14, 1906, contains certain errors regarding the anatomy of the ear that should not be allowed to pass unchallenged.

In the first place, the term middle ear is repeatedly confused with the tympanum and the two terms used as synonyms, whereas the cavum tympani is but a part of the series of cavities that make up the middle ear. The middle ear includes all the series of connected cavities extending from the opening of the Eustachian tube in the pharynx to the most remote mastoid cell.

In the second place, the antrum is frequently referred to as a mastoid cell. This is not at all the case. The antrum is quite distinct developmentally and pathologically from the so-called mastoid cells and as its scientific name, "Antrum tympanicum" implies, is a part of the tympanum as are also the recessus epitympanicus and recessus hypotympanicus.

On page 96 the following statement occurs: "Above the foramen ovale and at the angle of the inner tympanic wall and the roof or tegmen runs forward the bony portion of the Eustachian tube, its roof being continuous with that of the tympanum, aditus ad antrum and antrum." The author has confused the canal for the tensor tympani with the Eustachian tube. The bony plate forming the tegmen does not form any part of the roof of the Eustachian tube. The Eustachian tube lies directly beneath the canal for the tensor tympani.

The drawings for Figures 8, 9 and 10 are reproductions of drawings from Deaver's work on anatomy for which no credit is given, and are inaccurate and misleading in many ways as will be apparent to any one who has made a study of the relations of the parts represented. G. W. BOOT, M.D.

The Anti-Nostrum War Is Right.

SAINT LOUIS, Sept. 10, 1906.

To the Editor:—Just a word to express my endorsement of your editorial September 8. When I compare present conditions with what we have had a few years ago, the better organization, the increased *esprit de corps*, the local interest, the aggressive nostrum war and the "mute but eloquent" proof which comes to us with every issue of THE JOURNAL, I would be false to my ideas of right did I not express my appreciation.

The policy of THE JOURNAL toward the "patent-medicine" interests and those who support them is right. Its campaign in effecting local organizations and in building up state associations is right. Its successful work in giving us the best and most complete presentation of literature which we need each week is right. I know I am the better, the A. M. A. better, and THE JOURNAL better and more prosperous than ever before. "Let the galled jade wince," and let us lose no sleep.

WILLIAM PORTER.

Book Notices

Unconscious Therapeutics, or the Personality of the Physician. By A. T. Schofield, M.D., M.R.C.S. Second edition. Cloth. Pp. 317. Price, $1.50. Philadelphia: P. Blakiston's Son & Co., 1906.

The physician of to-day, perhaps more than any time in the past, is reminded of the value of the psychic element in therapeutics. That the profession takes some heed to these reminders is apparent by the appearance within two years of a second edition of Dr. Schofield's work. It covers the subject of the value to the physician of the impression that he makes consciously and unconsciously on the mind of his patient. The facts are, we might say, of universal recognition, but there are some of us in the profession who seem to need reminders of them from time to time. Perhaps some of us suffer under a disadvantage of a more correct appreciation of our limitations than others whose success is greater, with lesser qualifications. A little knowledge is said to be a dangerous thing but more is sometimes worse, as far as pecuniary success is concerned. The reading of this work ought to be profitable to very many of our profession and what Dr. Schofield says about the advisability of more attention being given to the subject of mental therapeutics in our medical instruction is very largely true. It does not follow that we should use quackish methods or deceive our patients—and the physician who does not have faith in scientific methods or who is a therapeutic nihilist is in danger of not being so very far removed from a quack. We know that we can do things for the benefit of our patients by material methods and should cherish our faith in them. Good looks and self confidence are not everything in medical practice, Mephistopheles to the contrary, notwithstanding. We mention this matter not because we think Dr. Schofield ignores it, but because in noticing a work like this one should perhaps guard against any overestimation of the special points which it so well and usefully emphasizes. The book is exceedingly readable and its occasional perusal will be interesting as well as probably useful in other ways. It is certainly full of valuable suggestions by which some of us may profit.

A Nurse's Hand-Book of Medicine. By J. N. Henry, M.D., Clinical Professor of Medicine, Woman's Medical College of Pennsylvania. Cloth. Pp. 268. Price, $1.50. Philadelphia: J. B. Lippincott Company, 1906.

This book comprises the lectures delivered to the nurses of the Pennsylvania Hospital during the last four years. It deals entirely with medical cases and with the care of children. The chapters on personal hygiene and the hygiene of the sick room are practical, as also is the chapter on hypodermic medication, catheterization and the use of the stomach tube. The chapter on diet contains a number of good recipes, for which the author acknowledges his indebtedness to Miss Walker and to Miss Byerly of the Pennsylvania Hospital.

A Compend of Operative Gynecology, Based on Lectures in the Course of Operative Gynecology on the Cadaver at the New York Post-Graduate Medical School and Hospital, delivered by W. S. Bainbridge, M.D., Adjunct Professor of Operative Gynecology on the Cadaver, New York Post-Graduate Medical School and Hospital, etc., Compiled with Additional Notes, in Collaboration with Harold D. Meeker, M.D., Instructor in Operative Gynecology on the Cadaver, New York Post-Graduate School, etc. Cloth. Pp. 66. Price, $1.00 net. New York: The Grafton Press, 1906.

This book is intended to serve as an aid to students in operative gynecology on the cadaver. The various operations are briefly described. The book concludes with "Miscellaneous Points," in which the different forceps, needles and methods of inserting sutures, of making incisions and of controlling hemorrhage are discussed.

Marriages

William B. Nye, M.D., West Newark, Ohio, at Newark, August 30.

B. F. Zobrist, M.D., Jewett, Ill., to Miss Lillie A. Apple of Keysport, Ill., September 4.

Harvey Brinton Stone, M.D., Baltimore, to Miss Ethel Hoffman, at Baltimore, August 27.

Edwin A. Reisenfeld, M.D., to Miss Reta Kratzenstein, both of New York City, September 4.

Theodore A. Lafferty, M.D., New Baltimore, Mich., to Miss Mabel Lindahl of Detroit, August 30.

Carl Wilhelm Young, M.D., Philadelphia, to Miss Freida Rippelmeyer of Baltimore, August 22.

Louis H. Ruegnitz, M.D., Webster City, Iowa, to Miss Grace Kilburn Meigs of Chicago, September 3.

Charles Burr Caldwell, M.D., Bethany, Ill., to Miss Lydia Stevenson of Monticello, Ill., August 30.

George Burnside Storey, M.D., to Miss Grace Edna Watkins, both of Portland, Ore., September 5.

Albert George Jenner, M.D., Milwaukee, to Mrs. Birdie M. Weston of St. Louis, at Chicago, August 28.

Marvin D. Hubbell, M.D., New York City, to Miss Alma Hathaway Jones of St. Louis, September 1.

Henry Bascom Thomas, M.D., Chicago, to Miss Louise Downing Wendell of Louisville, Ky., September 5.

Hal Bailey Brownell, M.D. Buffalo, N. Y., to Miss Irene Helen Trowbridge of Toledo, Ohio, September 1.

Anson Le Roy Nickerson, M.D., Momence, Ill., to Miss Laura May Chesney of Bucyrus, Ohio, August 29.

William Province Garshwiler, M.D., Indianapolis, to Miss Florence Maria Province of Franklin, Ind., September 12.

Deaths

Millard P. Sexton, M.D. University of the State of Missouri, Medical School, Columbia, 1880; a member of the American Medical Association, Medical Society of the State of Missouri, Kansas City District Medical Society and Jackson County Medical Society; secretary of the Eastern Kansas Medical Society; fellow of the Kansas City Academy of Medicine; professor of diseases of the mind and nervous system in the College of Physicians and Surgeons, Kansas City, Kan.; formerly physician to State Hospital for the Insane No. 1, Fulton; superintendent of the Bonner Springs (Kan.) Sanatorium; neurologist to Bethany Hospital, Kansas City, Kan., died at St. Luke's Hospital, Denver, September 5, after a short illness, aged 50.

Edith Warner Cadwallader Crowder, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1900; formerly a member of the American Medical Association and of the Philadelphia County Medical Society, and professor of obstetrics in the Woman's Medical College of Pennsylvania, died at her home in Chicago, Aug. 18, 1906. On her marriage to Dr. Thomas R. Crowder of Chicago, in October, 1905, all her medical appointments were resigned.

Samuel A. Buchanan, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1893; a member of the American Medical Association, Medical Society of the State of Pennsylvania and Philadelphia County Medical Society; surgeon of the Baltimore & Ohio and Pennsylvania Systems, died in the Polyclinic Hospital, Philadelphia, August 26, from septicemia, after a prolonged illness, aged 40.

Ludwig H. Van Ghoren, M.D. Charity Hospital Medical College, New Orleans, 1876; at one time a member of the New Orleans board of health; for several terms a member of the City Council of Bay St. Louis, Miss.; mayor pro tem and a member of the board of health of the city, died at his home, August 31, after an illness of nearly a year, aged 62.

David V. Yerex, M.D. Bellevue Hospital Medical College, New York City, 1869; a prominent and influential citizen of Imlay City, Mich.; for two years member of the Lapeer County poor board, died in Harper Hospital, Detroit, August 27, four days after an operation for intestinal obstruction, from shock, without having regained consciousness, aged 61.

George Mackie, M.D. Long Island College Hospital, Brooklyn, 1874; a member of the American Medical Association, the Massachusetts Medical Society and Bristol County Medical Society; one of the most prominent and esteemed physicians of southeastern Massachusetts, died at his home in Attleboro, Mass., August 31, after a short illness, aged 56.

Abram Irvin Clarke, M.D. University of Virginia, Medical Department, Charlottesville, 1845; who served for several terms as a representative from Campbell County, Va.; some-time president of the board of health of Lynchburg and of the Lynchburg Academy of Medicine; the oldest physician of the city, died at his home, August 31, aged 89.

Alexander K. MacLean, M.D. Toronto University, 1897, of Chicago; professor of otology, rhinology and laryngology in the Chicago Eye, Ear, Nose and Throat College, and instructor on diseases of the eye, ear, nose and throat in the Illinois Medical College, Chicago, died from acute dysentery at Battleford, Sask., August 12.

James A. Finn, M.D. Harvard University Medical School, 1875, of Roxbury, Mass.; for 28 years attending physician to the Home for Deaf Mute Catholic Children, and for many years medical examiner to the House of the Good Shepherd and St. Vincent's Infant Asylum, died in Carney Hospital, Boston, September 1, from cancer.

Orlando Miller Woodrow, M.D. Kentucky School of Medicine, Louisville, 1894; a member of the American Medical Association and of the Jackson County (Ohio) Medical Society; a practitioner of marked ability, died at his home in Wellston, Ohio, August 24, from brain abscess, after an illness of three years, aged 38.

Arthur Barlow, M.D. Memphis Hospital Medical College, of Willow Hole, Texas; a member of the Madison County (Texas) Medical Society and of the Brazos Valley Medical Society, died at Zulch, Texas, March 29, from uremic poisoning, after an illness of one week, aged 40.

Columbus G. Slagle, M.D. University of Louisville Medical Department, 1861, a member of the American Medical Association and an old resident and practitioner of Minneapolis, Minn., died at his home in that city, August 27, from heart disease, after a short illness, aged 72.

Richard Rush Hanley, M.D. Jefferson Medical College, Philadelphia, 1852; a member of the first board of supervisors of Fremont County, Iowa, and for several years justice of the peace at Tabor, died at the home of his son in Shenandoah, Iowa, August 4, aged 77.

Henry C. Thatcher, M.D. Eclectic Medical Institute, Cincinnati, 1887, of Youngstown, Ohio, a specialist on diseases of children, died at the Mahoning Valley Hospital, Youngstown, from spinal tuberculosis, September 2, after an illness of two years, aged 40.

Neilson Abeel Baldwin, M.D. Medical Institution of Yale College, New Haven, 1861, of Brooklyn, N. Y.; a member of the American Academy of Medicine, died in Seney Hospital, Brooklyn, August 29, after a surgical operation, aged 67.

Clement Clay Greene, M.D. Southern Medical College, Atlanta, Ga., 1881, formerly a widely known practitioner of Atlanta, Ga., who had been an invalid for about six years, died in his apartments in Atlanta, September 2, aged 49.

Harriet S. French, M.D. Penn Medical University, Philadelphia, 1865, said to have been the oldest woman practitioner in Philadelphia, died at her home in that city, from heart disease, following a cerebral hemorrhage, September 5, aged 82.

Daniel Ream, M.D. Eclectic Medical Institute, Cincinnati, 1867; state senator in 1872, and formerly sheriff and coroner of Siskiyou County, Cal.; for more than 50 years a practitioner of Yreka, died at his home in that city, September 1.

Isidore Fregeau, M.D. Ecole de Médécine et de Chirurgie, Montreal, 1861; for one term a member of provincial parliament from Sherbrooke County, died at his home in Sherbrooke, Quebec, September 2, aged 72.

Ira W. Johnson, M.D. Mobile (Ala.) Medical College, 1906; a member of the Shelby County Medical Society, died at his home in Calera, Ala., August 5, from the effects of an overdose of tincture of aconite root, aged 25.

John Henry Weaver, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1873, of Altoona, Pa., died at the home of his son in Greensboro, Md., from cerebral hemorrhage, August 18, aged 75.

Ernest Woolfolk, M.D. University of Virginia Medical Department, Charlottesville, 1876, died at his home in Thornhill, near Lahore, Va., August 25, from disease of the stomach, after a long illness.

Benjamin E. Hays, M.D. Bellevue Hospital Medical College, New York City, 1870, of New York City, a veteran of the Civil War, died in the Presbyterian Hospital, New York, August 19, aged 69.

James A. Leech, M.D. Columbus (Ohio) Medical College, 1886, workhouse physician of Columbus, Ohio, died at the home of his sister in Cambridge, Ohio, from an overdose of morphin, August 29, aged 43.

Alexander Thomasson Dozier, M.D. Louisville Medical College, 1849, who had given up practice for a number of years, was accidentally burned to death in Auburn, Cal., Dec. 25, 1905, aged 84.

William B. Watkins, M.D. University of Louisville Medical Department, 1857, one of the most prominent practitioners and citizens of Clay County, Miss., died at his home in Big Springs, August 31.

Albert Whitlock, M.D. Pulte Medical College, Cincinnati, 1878, died at his office in Wichita, Kan., August 31, from hemorrhage of the lungs, after an illness of about four months, aged 50.

Edward J. Chapman, M.D. Rush Medical College, Chicago, 1871, died at his home in Missouri Valley, Iowa, August 28, from locomotor ataxia, after an illness of four years, aged 61.

Henry Austin Gould, M.D. 1874, a former practitioner of Hammond, Wis., died in Minneapolis, August 7, from cholera morbus and nephritis, after an illness of two days, aged 82.

Andrew Klingberg, M.D. Rush Medical College, Chicago, 1869, died at his home in Osage City, Kan., August 10, from nephritis, after an illness of about three years, aged 67.

J. Thompson Morton, M.D. Medical College of Georgia, Augusta, 1900, of Keysville, Va., died from typhoid fever in a hospital in Richmond, Va., August 30.

Harry L. Helper, M.D. Department of Medicine of the University of Pensylvania, Philadelphia, 1888, died at his home in Reading, Pa., August 18, aged 43.

Charles E. Howland, M.D. Eclectic Medical Institute, Cincinnati, 1865, died at his home in Adrian, Mich., September 1, after a lingering illness, aged 75.

Henry F. Graetzel, M.D. Baltimore University School of Medicine, 1893, died at his home in Baltimore, August 30, from disease of the stomach, aged 76.

Charles W. Musgrove, M.D. Jefferson Medical College, Philadelphia, 1879, died at his home in McEwensville, Pa., July 29, after a long illness, aged 62.

Justus Beebe (Examination, Michigan), died at his home in Wixom, Mich., April 22, from angina pectoris, after an illness of three days, aged 68.

John Jay Higgins, M.D. College of Physicians and Surgeons in the city of New York, 1850, died at his home in New York City, August 28, aged 79.

James Ambrose Osborne, M.D. Hahnemann Medical College and Hospital, Chicago, 1897, died recently at his home in Harmony, Pa., aged 35.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

MERCURY SOZOIODOLATE.

Kwang Ju, Korea, Aug. 2, 1906.

To the Editor:—Please tell me what Lengfeld's solution is. How is it used in syphilis?

J. W. Nolan.

Answer.—Probably our correspondent refers to a solution of mercury sozoiodolate recommended by Dr. Garceau of San Francisco in an article published in the *Journal of Cutaneous Diseases,* June and July, 1906, and prepared for him by F. Lengfeld, chemist. This solution contains 0.5 per cent. of mercury as sozoiodolate held in solution by sodium iodid. This proportion is advantageous in that one can calculate the amount of mercury, since each twenty minims contains 1/10 of a grain of mercury. The sozoiodolate of mercury dissolves in 500 parts of water, but is readily soluble in solutions of sodium chlorid or of other halogen salts. It is a fine yellow powder which should dissolve with slight turbidity to the extent of 0.5 gm. (7½ gr.) in 30 c.c. (one ounce) of water on the addition of 1.5 gm. (22½ gr.) of comon salt. The following formula is given by Hager (Handbuch der Pharmaceutischen Praxis) as suitable for hypodermic injection:

℞. Hydrargyri sozoiodolatis	gr. xii		8
Potassi iodidi	gr. xxiv	1	6
Aquæ dest.	ʒiiss	10	

M. Sig.: For subcutaneous injection.

To produce the strength specified by Garceau we need a solution containing 1,556 per cent of sozoiodolate. Using the same relative proportion of sodium iodid as of potassium iodid in the above formula we arrive at the following formula, which must closely represent the formula of Garceau in the article referred to:

℞. Hydrargyri sozoiodolatis ....gr. 2.4 | 156
Sodii iodidi ....gr. 4.8 | 312
Aquæ dest. ....gr. 150 10 |

Sozoiodolate of mercury, a mercury salt of di-iodo-paraphenol-sulphonic acid, $C_6H_2.OH.I_2.HSO_3$, is to be obtained of the various dealers in chemicals. Twenty minims of the solution are injected into the buttock with the usual precautions for asepsis. Swabbing with ether may be used to cleanse the skin and at the same time produce a mild anesthesia. A trochar needle is quickly plunged into the gluteus muscle, the trochar removed, and, if there is no oozing from the wound, the barrel of the syringe is attached to the needle and the injection made. Massage of the site of injection relieves pain materially and tends to prevent nodulation.

COMPARATIVE VALUES OF SILVER PREPARATIONS.

Jefferson City, Mo., Aug. 21, 1906.

To the Editor:—Will you please give in your "Queries and Minor Notes" the relative and comparative germicidal value of "protargol," "argyrol," and "nargol," as found by disinterested parties, by both laboratory and clinical tests? Argyrol, I know, is less irritating, but has it the same germicidal properties, grain for grain, when compared with protargol?

J. A. Hill.

Answer.—In the discussion on a paper by Myles Standish in The Journal, June 17, 1904, page 1854, the comparative values of silver nitrate, protargol and argyrol in the treatment of purulent conjunctivities are considered. The consensus of opinion was that the effectiveness of protargol and argyrol is about the same, except in gonorrheal opthalmia, when the cornea is involved, in which case better results seem to be obtained with protargol. It has been assumed by S. Fränkel (Arzneimittel-Synthese, 2d edition, p. 611) that the germicidal value of freely soluble compounds of silver with albumins depends on the percentage of silver which they contain. The recent report (see abstract, p. 398, this issue) of Marshall and Macleod Neave to the therapeutic committee of the British Medical Association, however, indicates that the bactericidal power has no definite relation to the percentage of silver since they found that argyrol, which is said to contain 25 per cent. of silver, produced very little bactericidal effect, while nargol, containing 10 per cent., and protargol, containing 8 per cent., were strongly bactericidal, and of about equal value.

LACTOPHENIN AND ASPIRIN.

Coronado Beach, Cal., Aug. 24, 1906.

To the Editor:—Will you kindly publish in The Journal some reliable information regarding lactophenin and aspirin, especially as to their pain relieving properties. The literature I have received from the proprietors of these preparations is written by obscure men, and, as it is uniformly favorable, it is, in my opinion, unreliable.

X. Y. Z.

Answer.—Lactophenin is chemically very similar to phenacetin. While phenacetin is acetparaphenetidin, lactophenin is lactparaphenetidin; while phenacetin contains an acetic acid group, lactophenetidin contains a lactic acid group, and because of this lactic acid group, the compound is more soluble than phenacetin. Therapeutically also it is similar to phenacetin, and possibly it acts somewhat more energetically because of greater solubility. Aspirin is acetyl-salicylic acid and is produced by heating together salicylic acid and acetic anhydrid or chlorid. It is not changed in the stomach, but is decomposed in the intestine, forming a salicylate. It may be regarded as a useful substitute for salicylic acid, possessing essentially the same sphere of therapeutic action, with certain advantages over the older drug, the chief being that it is not decomposed in the stomach, and hence is not so likely to give rise to gastric irritation. H. C. Wood says: "It has been used by good clinicians with asserted good results, to depress the temperature in fevers, and has been highly praised as a means of subduing pain in migraine, neuralgia, and even in the fulgurant agonies of locomotor ataxia." Some by-effects have been reported by O. Meyer (*Deutsch. med. Wochnschr.*, vol. xxxix, No. 7) and Winckelmann (*Muench. med. Wochnschr.*, vol. i, No. 42). R. Freund reports three cases of drug eruptions occasioned by it (*Muench. med. Wochnschr.*, vol. lii, No. 15, April 11, 1905). It is controlled by patent in the United State, but not elsewhere. The consequence is that in this country the use of a very valuable therapeutic agent is restricted by its unnecessarily high price as compared with the prices in foreign countries, where it is not protected by patent.

A STRYCHNIN TOXIN.

Toledo, O., Sept. 6, 1906.

To the Editor:—Kindly tell me whether there is a toxin which produces the following train of symptoms: During our warmest weather a man had, for a week, so much soreness along the entire length of the spinal column that in the morning he had difficulty in getting out of bed; but after he had forced himself to get up, and had moved around for a time, he had, during the rest of the day, only an aching sensation in his back. After a warm bath in the morning he began to perspire profusely, felt a little nauseated, and in about half an hour began to have tonic muscular contractions in the right arm, and in the course of an hour the contractions had involved all of the voluntary muscles of the body, excepting those of the face. The contractions would last as long as a half minute sometimes, but generally were of shorter duration. The flexors and extensors seldom contracted at the same time; the forearm, for example, would be very strongly flexed on the arm for a while, when those muscles would let go, and the extensors would suddenly just as powerfully straighten the arm, making him strike the back of the hand on the floor until his hands were bruised by the blows. He was entirely rational and conscious all of the time, and when an arm or leg or any part of the body was in the spasm, would want it rubbed as hard as a strong man could rub it. The muscles of the arms, legs and back seldom contracted at the same time, though they were sometimes in spasm at the same time. Opisthotonos was often very marked; and he complained occasionally of the tongue drawing just like his arms. The muscles might all remain quiet for five minutes, and again might contract a half dozen times in three minutes. The day that the convulsions came on was one of the warmest of the season. He was on the floor, and said that ice rubbed along the spinal column was very grateful to him. One grain of morphin given hypodermically within an hour did not relieve the contractions, but chloroform did so. After the first day ½ grain of morphin morning and evening controlled most of the contractions, though any movement of the body was likely to cause momentary contractions some place. There were no eye symptoms, and until the end of the third day he had no temperature; then for two days it was 100, then went to normal, where it remained. Now, at the end of two weeks since the attack, all of the muscles, except the large muscles of the back, are free from pain and soreness; but any use of the back muscles causes him pain about as they did the week before the spasms of the muscles came on. Thinking that the man was being poisoned from some source, and most likely from the intestinal tract, he was given, all through his sickness, 15 grains of acetozone every twenty-four hours. Drs. McVetcy and Kirkley saw the man in consultation, and if there is a toxin which will cause such symptoms, we will be obliged if you will tell us what it is, and where we can find it described.

J. L. Tracy.

Answer.—Strychnin-like substances have been isolated from decomposing organic mixtures, especially from moldy corn meal. The substance obtained from corn meal is really a mixture of ptomains which give color reactions similar to strychnin, but the physiologic action of some of them is very different from strychnin. Selmi was able to extract from corn meal a base which produced tetanic convulsions and also gave reactions similar to strychnin, but differed from it in the fact that it could not be extracted with ether. A base obtained by Gautier and Etard from decomposing flesh produces tetanic convulsions toward the end of its action (Vaughan and Novy, "Ptomains and Leucomains," 3d edition, 1896, p. 316). Tetanin has been isolated by Brieger from cultures of tetanus bacilli (Ibid., p. 398), and produces most of the symptoms of tetanus. C. P. Howard states (*Amer. Jour. Med Sci.*, February, 1906), that Ewald has isolated a peptotoxin from the urine in cases of tetany. In cases like the one described, it is probable that the toxin is produced in the alimentary canal, provided of course, that the case is one of toxemia. Care should be taken in making the diagnosis to distinguish from strychnin poisoning, tetanus, possibly hysteria and tetany. For the diagnosis of the latter see Howard's article.

THE PHYSICIAN'S LIBRARY AND THE FILING OF CLIPPINGS FROM JOURNALS.

Whitewright, Tex., Aug. 31 ,1906.

To the Editor:—To the suggestions embodied in your reply to Dr. E. A. Hines in The Journal, Aug. 25, 1906, allow me to add that I find it easy to preserve and find all my medical literature. To do this it is necessary only to procure an ordinary straight punch, some stiff cardboard, and cheap shoestrings. I punch a pair of holes at the top and two at the bottom of the back of each number, and file it on the loops of shoestrings and tie. I string on and tie each number as it comes from the mail, and when the index arrives I put it on, and then the last cardboard for the back. My weekly medical literature constitutes by far the most important part of my library. For instance, after reading the article in The Journal, Aug. 18, 1906, on "The Relations of Gastric Acidity to Gastric Symptoms," I immediately turned to my text-book on "Diseases of the Stomach," now two or three years old, and annotated on the margin: "J. A. M. A., Aug. 18, '6, p. 496." There is room along the margins for indices of the important current articles for four or five years. Using this method I do not mutilate my weekly periodicals.

S. H. Landrum, M.D.

Galva, Kan., Aug. 27, 1906.

To the Editor:—Noticing the query of Dr. Hines and your answer in The Journal, Aug. 25, 1906, page 609, I should like to recommend a method I have used for a number of years and found very satisfactory. It was given me by one of my instructors in college, Dr. Hickey, of Denver. It consists in making a note on the margin of the page treating of that particular subject in the text-book most often referred to, of the name or initials, volume and page of the journal in which the article to be referred to is to be found. For example, in an old edition of Osler, under etiology of smallpox, opposite the sentence, "The nature of the contagion of smallpox is still unknown," I have this reference: J. A. M. A., vol. xl, pp. 1221 and 1233. This refers to Dr. Councilman's report of the discovery of the germ of smallpox. By this method physicians can keep their text-books constantly up-to-date.

C. D. Weaver.

Durand, Ill., Sept. 4, 1906.

To the Editor:—In reply to your correspondent in the issue of August 25, I would suggest a plan that I have followed for several years of indexing my journal reading. It is simple, practical, and requires but a very short time to make an entry, and although it sometimes takes a little time to find the reference if it is far back and there is much uncertainty as to when I read the article, still it serves the purpose admirably. I procure a small blank book and keep it convenient to my reading desk. When I read an article that I may want to refer to again I enter the title in my blank book in black ink, under that the name of the author and the journal, giving volume number and date in red ink. The following is a sample, letting italics indicate red ink:

Some Phenomena of Tuberculosis Infection.
Wm. Porter, A.M., M.D.
J. A. M. A., xlvi, 21, 5-26-'06, p. 1573.

If some time later I wish to look up the article by title I run my eye over the pages, observing only that in black ink; if by the author, I carry my eye over the red ink only. When a volume of each journal is complete I tie it in a bundle, attach a tag on which is written the name of the journal, the volume and the dates of the first and last numbers, and shelve them where they are convenient of access. Thus each volume of a journal becomes a part of my library, and almost as easy to consult as a bound volume.

George M. Haines.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers. U. S. Army, week ending Sept. 8, 1906:

Loving, R. C., and Whaley, A. M., asst.-surgeons, granted leave of absence for one month and authorized to return to the United States via the Suez Canal on one of the transports to leave Manila, P. I., for New York City, on or about Sept. 1, 1906.

Boyer, Perry L., asst.-surgeon, left Camp of Instruction, Austin, Texas, with 2d Battalion Field Artillery, marching to Fort Sam Houston, Texas.

Fife, J. D., asst.-surgeon, reports departure from Fort Slocum, N. Y., on detached duty with recruits, and on arrival at Boise Barracks, Idaho, to avail himself of seven days' leave of absence.

Bartlett, C. J., asst.-surgeon, relieved from further duty at Camp of Instruction, Murray, Washington, and ordered to report to the commanding general, Department of California, for duty.

Havard, Valery, asst.-surgeon general, on adjournment of the Association of Military Surgeons, Buffalo, N. Y., will proceed to Camp Roosevelt, Mount Gretna, Pa., for observation of the medical department in the field and inspection of new sanitary methods and appliances in use at the camp; on the completion of this duty he will proceed to Camp of Instruction at Fort Benjamin Harrison, Ind., for similar duty, and then return to his proper station.

Mason, C. F., surgeon, will proceed to Camp Chickamauga, Ga., to observe the methods of instruction and organization of the medical department in the field, and to inspect the new sanitary methods and applances in use at the camp; on the completion of this duty he will return to his proper station.

Darnall, C. R., asst.-surgeon, will proceed to the Camp of Instruction at Fort Riley, Kan., for observation of the methods of instruction and the organization of the medical department in the field, and to inspect the new sanitary methods and appliances in use at the camp; on the completion of this duty he will return to his proper station.

Phalen, J. M., asst.-surgeon, left Camp of Instruction, near Austin, Texas, en route to station, Fort Logan H. Roots, Ark.

Miller, E. W., asst.-surgeon, left Camp of Instruction near Austin, Texas, with the 1st U. S. Cavalry, en route to station, Fort Clark, Texas.

O'Reilly, R. M., brig.-gen., reappointed Surgeon-General, U. S. Army, for the period of four years, from Sept. 7, 1906.

Arthur, W. H., surgeon, granted ten days' leave of absence.

Purnell, H. S., asst.-surgeon, leave of absence extended one month.

Byars, C. R., cont.-surgeon, returned to duty at Jefferson Barracks, Mo., from practice march with 3d Squadron, 9th Cavalry.

Stone, F. P., dental surgeon, left Camp Mabry, Austin, Texas, for Fort Sam Houston, Texas.

McCallum, F. M., cont.-surgeon, granted leave of absence for one month, to take effect on his relief from his present duties.

Carpenter, Alden, dental surgeon, left Vancouver Barracks, Wash., and arrived at Camp Tacoma, Wash., for the purpose of attending to the necessary dental work of officers and enlisted men at that camp.

Jordan, E. H., left Denver for San Francisco to take transport to sail for Philippine Islands, Sept. 5, 1906.

Whinnery, J. C., dental surgeon, left Fort Flagler, Wash., and arrived at Vancouver Barracks, Wash., for duty.

Daywalt, cont.-surgeon, sick leave of absence extended one month.

Leeper, J. F., cont.-surgeon, returned to duty at Fort Duchesne, Utah, from Camp of Instruction near Fort D. A. Russell, Wyoming.

Chase, A. M., cont.-surgeon, left Camp of Instruction near Austin, Texas, with 1st Cavalry, en route to his station, Fort Reno, Oklahoma.

Stone, F. P., dental surgeon, granted fourteen days' leave of absence.

Van Kirk, H. H., cont.-surgeon, left Fort Sill, Okla., on leave of absence for one month.

Thorp, C. W., cont.-surgeon, returned to duty at Fort Ethan Allen, Vermont, from leave of absence.

Wolven, F. H., dental surgeon, left Fort Terry, N. Y., and arrived at Fort Trumbull, Coun., for duty.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Sept. 8, 1906:

Medical Director R. A. Marmion, to be placed on the retired list of officers of the navy, Sept. 6, 1906, in accordance with the provisions of Section 1444 of the Revised Statutes.

Surgeon L. W. Curtis, detached *Pensacola,* Naval Training Station, San Francisco, etc.; to home and wait orders.

Surgeon C. E. Riggs, detached Navy Yard, New York, N. Y., etc.; to *Pensacola,* Naval Training Station, San Francisco, and additional duty Naval Training Station.

Asst.-Surgeon P. T. Dessez, detached *Severn,* to home and wait orders.

Asst.-Surgeon J. O. Downey, to Naval Hospital, Philadelphia.

Passed Asst.-Surgeon C. N. Fiske, detached *Marblehead,* when out of commission; to *Yorktown.*

Passed Asst.-Surgeon, G. M. Mayers, detached Navy Yard, Washington, D. C., etc.; to *Marietta.*

Acting Asst.-Surgeon E. P. Huff, appointed as acting assistant surgeon in the navy from Aug. 31, 1906.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Sept. 5, 1906:

Sawtelle, H. W., surgeon, directed to report to chairman of board of medical officers, Washington, D. C., September 4, for physical examination.

Stoner, G. W., surgeon, directed to proceed to Washington, D. C., for special temporary duty, on completion of which to rejoin station.

Mead, F. W., surgeon, directed on expiration of leave of absence, to proceed to Savannah, Ga., and assume command of service at that port.

Carrington, P. M., surgeon, granted three days' leave of absence from Sept. 3, 1906, under provisions of Paragraph 189 of the Service Regulations.

Williams, L. L., surgeon, leave of absence granted for one month and fifteen days, from July 16, 1906, amended to read nineteen days from July 16, 1906, and five days from Aug. 19, 1906, in all twenty-four days.

Guiteras, G. M., surgeon, directed to rejoin station at Cairo, Ill.

Hough, J. Spencer, acting asst.-surgeon, granted leave of absence for thirty days, to be taken on or about Oct. 15, 1906.

Thomas, A. M., pharmacist, granted leave of absence for fifteen days from Sept. 9, 1906.

BOARDS CONVENED.

Board of officers was convened to meet at the Bureau, Washington, D. C., Sept. 4, 1906, to determine whether or not the physical condition of Surgeon H. W. Sawtelle is such as to entitle him to "waiting orders." Detail for the board: Asst.-Surgeon General J. M. Eager, chairman; Asst.-Surgeon General J. W. Kerr, Surgeon L. L. Williams, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Sept. 7, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 18-25, 7 cases.
New York: New York, Aug. 18-25, 3 cases.
Ohio: Cincinnati, Aug. 24-31, 1 case.
Pennsylvania: Sunbury, July 4, 1 case.
Texas: Houston, Aug. 18-25, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 14-28, 30 cases.
Canada: Toronto, Aug. 18-25, 1 case.
France: Paris, Aug. 4-11, 7 cases.
Great Britain: Liverpool, Aug. 18-25, 2 cases.
India: Bombay, July 24-Aug. 7, 3 deaths; Calcutta, July 14-28, 21 cases; Karachi, July 24-Aug. 5, 7 cases, 2 deaths; Madras, July 21-Aug. 3, 5 deaths; Rangoon, July 14-21, 2 deaths.
Japan: Kobe, July 14-21, 1 case.
Russia: Moscow, Aug. 4-11, 2 cases, 2 deaths; Odessa, Aug. 4-18, 8 cases; St. Petersburg, July 28-Aug. 4, 1 case, 1 death.
Siberia: Vladivostok, July 14-21, 2 cases, 1 death.

YELLOW FEVER.

Cuba: Havana, Sept. 3-8, 1 case, 1 death.
Mexico: Merida, Aug. 12-25, 10 cases, 5 deaths; Vera Cruz, Aug. 19-25, 1 case.

CHOLERA.

India: Bombay, July 24-Aug. 7, 207 deaths; Calcutta, July 14-28, 19 deaths; Madras, July 21-27, 10 deaths.

PLAGUE—INSULAR.

Honolulu: Hawaii, Aug. 30, 1 death.

PLAGUE—FOREIGN.

Arabia: Djeddah, July 16-22, 11 cases, 11 deaths.
Egypt: Alexandria, Aug. 4-9, 8 cases, 7 deaths; Suez, Aug. 3-9, 4 cases, 4 deaths.
India: General, July 7-14, 450 cases, 346 deaths; Bombay, July 24-Aug. 7, 69 deaths; Calcutta, July 14-28, 17 deaths; Karachi, July 22-Aug. 5, 16 cases, 16 deaths; Rangoon, July 14-28, 277 deaths.
Japan: Formosa, July 21-31, 20 cases, 29 deaths.

Society Proceedings

COMING MEETINGS.

American Electro-Therapeutic Association, Philadelphia, Sept. 18-20.
Am. Assn. of Obstetricians and Gynecol., Cincinnati, O., Sept. 20-22.
Medical Association of District of Columbia, Washington, Oct. 2
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Utah, Aug. 30-Sept. 1, 1906.

The President, Dr. M. L. Harris, Chicago, in the Chair.

(Continued from page 788.)

Gastrointestinal Ulcer.

Dr. H. D. Niles, Salt Lake City, stated that ulcer is not only a producer of symptoms, as a primary lesion, but may be the antecedent of many grave complications and sequelæ; it might indirectly cause a great variety of puzzling symptoms, which the surgeon must try to interpret correctly. So long as physicians think of gastrointestinal ulcer simply as a theoretical possibility, of rare occurrence, and of obscure pathology, the symptomatic treatment will prevail, and unsatisfactory results will follow. As soon as physicians learn to appreciate that ulcer is not only a real pathologic entity, but that it is the most common of all gastrointestinal lesions, they will find themselves very near the true explanation of many obscure chronic abdominal symptoms, and will be prepared to formulate a timely and rational treatment for the pathology that produces these symptoms.

DISCUSSION.

Dr. Andrew C. Smith, Portland, Ore., said that gastrointestinal ulcer is a common pathological entity that should be considered in all conditions of chronicity of abdominal symptoms.

Dr. W. W. Grant, Denver, said that gastroenterostomy for ulceration of the stomach and intestine, particularly the duodenum, and for obstructive lesions of these parts, is now one of the most common and conservative of modern operations. Like most new surgical triumphs, it is likely to be abused somewhat before it reaches its proper status as a surgical procedure. Surgeons should be a little more conservative in the surgical treatment of these conditions, and not until there are manifest evidences of ulcer, such as persistent ulceration or obstruction is it desirable to perform this operation. A large number of these cases are attended with profuse acute hemorrhage. They are the chronic digestive cases, in many of which the hemorrhage is not manifested; but the investigations of Rosenthal and Frederick show that in these cases there is occult hemorrhage. This is shown chiefly by microscopic examination of the contents of the stomach and of the fecal discharges. When this condition exists and persists, operation is demanded. Operation, however, should not be undertaken until medical treatment and other non-surgical measures have been given reasonable trial.

Dr. B. B. Davis, Omaha, said that in a number of instances of ulcer of the stomach, duodenum, and in the region of the pylorus, he has been able to get a definite idea as to the location of the ulcer by distending the stomach, whereas before this he was absolutely at sea. Whenever there is suspicion of ulcer, either of the stomach, the duodenum, or intestinal tract lower down, the physician should resort to systematic daily examinations of the stools for blood. In a number of instances he has been able to arrive at a definite idea in this way, whereas, if he had resorted to gross inspection simply, he never would have suspected what existed.

Dr. John C. Morfit, St. Louis, said there was nothing that he admired more than radical conservatism. He liked to see a man who could use his head without using his knife, but who never used his knife without using his head. The greatest point of gastrointestinal ulcer is not the operation; it is the diagnosis. Gastroenterostomy has been so perfected that it is now a comparatively simple procedure, and for that reason men with surgical tendencies might operate sometimes because they could, and not because they ought to. He would hesitate to operate on a case of gastric ulcer until the patient was seen by a good internist and a good neurologist, on account of the elements of hysteria and neurasthenia being connected with the case.

Dr. E. F. Root, Salt Lake City, said it ought to be made plain to the general practitioner that ulceration of the bowel is very much more frequent than was previously supposed. General practitioners, men who were not doing very much surgery, are liable to have a very vague idea of what is going on within the abdomen. If gastrointestinal ulcer is diagnosed, it should be dealt with surgically as soon as possible.

Dr. R. C. Coffey, Portland, said that these ulcers are the seat of cancer in a very large proportion of cases. He has also learned that ulcer and cancer occur in the same location, usually, where the gastrointestinal contents are detained for some reason or other. A frequent seat for cancer is the cecum. Fecal matter is detained here for a while, then it is passed over until it reaches the sigmoid. Very rarely is cancer found at the splenic flexure, at the hepatic flexure, or in the transverse colon. The next frequent point for ulcer and cancer is the sigmoid; next the rectum.

Surgical Treatment of Splanchnoptosis.

Dr. B. B. Davis, Omaha, presented a brief statement of the anatomic changes found, and described the various surgical procedures which have been proposed and carried out for the relief of this condition. He gave a résumé of his own operations.

Late Phlebitis Following Clean Abdominal Operations.

Dr. W. W. Grant, Denver, presented that form of phlebitis culminating in the veins of the legs and which is known to occur most frequently about two weeks after simple, aseptic abdominal operations, without being preceded by faster pulse, elevation of temperature, pain or any indication at present known of its advent. In the great majority of cases it culminates in the vessels of the left leg, no matter where the incision is made. He quoted at length from the literature, and showed that the etiology of this condition is still very hazy. His belief is that the cause of phlebitis of the epigastric, iliac, femoral, saphenous and tibial vessels, occurring late after a perfectly aseptic operation, and clean, prompt healing of the wound, is probably not septic. The specific cause is unknown. In the absence of convincing or pathological evidence, and in the face of profound surgical skepticism, it is not rational in the best and cleanest days known to surgery to assume infection that was devoid of satisfactory evidence. It is exceedingly difficult, in fact quite impossible, to reconcile the facts with the recumbent position, the simple ligature, or injury to small veins, in a distant field on the opposite side of the body, although admitting that infection might not come from the site of operation. The author believes there is a general condition affecting the composition of the blood that might be caused before operation, which is an essential factor in the cause of thrombo-phlebitis in these cases. A careful scrutiny of patients should be made before operation and an examination of the blood made before and after operation. If the patient is chlorotic and anemic, or the conditions not satisfactory, the health should be improved, if delay is permissible, by the administration of iron and acids, and metabolism should be improved by a suitable food supply, while specific or constitutional affections should receive just consideration.

DISCUSSION.

Dr. A. C. Stokes, Omaha, said that there was referred to him an anemic, pale woman, 56 years of age, in whom beginning carcinoma of the rectum was suspected. She was given an anesthetic for the purpose of examination. A speculum was introduced well up into the rectum without producing any great amount of traumatism to the mucous membrane. After this the patient was returned to bed and kept there on account of her anemic condition. Four days later she developed phlebitis. He was unable to say whether the phlebitis was due to the traumatism of the rectum or to the anesthetic. He thought it was the anesthesia which produced a general toxemia in some cases, and this might produce in turn a chemical change in the blood, which at times might produce, in connection with rest in bed, venous stasis, etc. He is inclined to believe that the great majority of these cases are septic, and whenever he sees a case of phlebitis he always searches for a focus of infection.

Dr. Harry M. Sherman, San Francisco, cited one case of phlebitis of the left femoral vein and mentioned two others occurring in the practice of other surgeons, all three operations having been done by different men and each operation being different.

Dr. Leonard Freeman, Denver, pointed out that femoral phlebitis occurs in connection with appendicitis even when no operation is done. He has seen a double femoral phlebitis result in a case of appendicitis within a few days, with the patient not lying in bed. Phlebitis occurs in connection with other things where there is no question about septic infection. For instance, in an ordinary Pott's fracture of the right leg, and in one case of simple fracture, left femoral phlebitis resulted in the course of a week or two. In another case of fracture of the left patella a right femoral phlebitis developed and a left phlebitis afterward. These could not be explained by infection.

Dr. E. S. Wright, Salt Lake City, recalled his first case of phlebitis following an operation for appendicitis. The appendix had ruptured and had filled the pelvis with pus. He drained through the cul-de-sac and the vagina became partially obliterated. Possibly the traumatism incident to the introduction of the speculum in this case contributed to the result. The patient recovered from the phlebitis without any particular treatment.

Dr. J. Clark Stewart, Minneapolis, said the general impression among pathologists is that thrombosis is in many instances of bacterial origin. The term sepsis is a *bête noir* for the surgeon, and naturally surgeons refuse to accept sepsis as a cause of anything in connection with what they are doing. If the term bacteriemia is used they would be, perhaps, more willing to accept it. It would seem that many cases, if not all, of thrombosis are due to bacteriemia. Pus bacteria enter the blood from unknown sources and give rise to such diseases as osteomyelitis. There is only one way to do, and that is to have blood cultures made of the cases that have femoral thrombosis and see whether or not they have bacteria in the blood. The presence of bacteria in the blood does not necessarily mean sepsis in a surgical sense, as a patient might have a certain number of bacteria circulating in the blood without clinical manifestations. It is only when some point of least resistance occurs that the lesions are localized.

DISCUSSION.

Dr. Andrew C. Smith, Portland, Ore., recalled three cases of phlebitis from three different types of operations in his own work. None of them was immediately septic, but each of them was remotely septic. He attributed each case to the catgut, and thought the slight sepsis present was due to late disintegration of the chromic catgut and the absorption of toxins from that.

Dr. Union Worthington, Salt Lake City, did not believe that trauma is a cause of phlebitis. Whenever he has a case of phlebitis it is his practice to look for infection. The fact that phlebitis more frequently occurs in the left leg than in the right has never been satisfactorily explained to him.

Dr. Grant expressed the belief that blood examinations by bacteriologists and pathologists would have to settle the question. Pathologists have not been given a good chance thus far because most of the patients recover; but the rather dogmatic statement of Murphy that recumbency is the cause is not a tenable one.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25, 1906.

(*Continued from page 800.*)

SECTION ON STATE MEDICINE.

This section, which met in the new science building and was presided over by Dr. Frederick Montizambert, Ottawa, Ontario, had a most attractive program, divided by days into symposia on "Tuberculosis," "Control of Water and Milk Supplies," "Hygiene of the Home and Public Institutions" and "International Sanitary Protection."

Problems of Water Supply.

Dr. Hibbert W. Hill, assistant director of the health laboratories, Minneapolis, prepared a paper on "Water Supplies from a Sanitary Standpoint," which was read in his absence by Dr. F. F. Wesbrook. He advised the continuous supervision of the water supply in order to forestall outbreaks of typhoid fever. He expressed the advice that in municipalities where large quantities of water were used filtration was the only practicable method of artificial purification. The English filter bed may be compared to a water-tight reservoir, suitably underdrained and filled to the depth of five or six feet with proper filtering material. The water flows evenly and slowly over the surface of the sand, leaving most of its suspended material on the top. The rate of filtration by this method of slow filtration averages from about two to two and a half million gallons per acre per day, and, of course, a large filter costs less in proportion than a small one. A filter one acre in extent would cost about $60,000. The essayist urged the repeated examination and treatment of water supplies which have been allowed to become polluted. In speaking of the purification of water he discussed the methods of filtration, distillation and aeration, giving special attention, as above stated, to the "slow sand" or English filter bed. In mechanical filtration a small quantity of some coagulant, preferably aluminium sulphate, is added to the sand before it reaches the water. The aluminium hydrate thus formed becomes a most important constituent of the filter, for without it its bacteriologic efficiency is very low. Water is then added to the filter, which is a tank or cylinder, three parts full, of a specially selected sand with a suitable underdrawing for carrying the filtered water to the reservoir. The sand becomes dirty in a short time, depending on the turbidity of the water, and must be washed by a reversed current at least once every day.

Water Purification.

Dr. Henry D. Holton, Burlington, Vt., secretary of the state board of health, in his paper on "Water Supplies" declared that the custom of discharging sewage into rivers and other bodies of water can not be too strongly condemned. This practice is a long-standing menace to all water supplies and will sooner or later be the cause of disaster to the health of the community using the water supply. He advocated the careful analysis of all sources of public water supply, and considered the filtration of water a necessary precaution and the filtration of sewage, by which a comparatively harmful effluent might be discharged, also necessary. He called attention to editorials on sewage disposal which he had seen since his arrival in Toronto, which could have been written only in ignorance of the dangers arising from the contamination of the water supply by sewage. He attributed a great proportion of the intestinal and kidney troubles from which the people suffer to a pollution of the water supply. Many interstate and international bodies of water have become affected by the prevalent custom which tends to pollution. The question of reservoirs itself is one that demands governmental attention. Filtration removes the odor and dangerous bacteria, but the tendency among the municipalities to overlook the importance of this feature of water supply is all too apparent.

Purification of Water Supply.

Dr. William J. Robinson, medical health officer of Guelph, Ontario, considered the artificial purification of water for human consumption. He discussed the effect of the sand filter, the rates of filtration and the questions of chemical and mechanical filtrates, and finally referred to the experience of several American cities in which the lowering of the death rate from typhoid fever had followed the adoption of filtering plants.

Prof. John Glaister, Glasgow, said that a water supply, pure and abundant, is the best line of defense against the epidemics which formerly swept communities. As a result of such care, he stated that there is now no such thing in Scotland as an epidemic due to impure water. Large reservoir accommodations and adequate sedimentation areas are needed for filtration, but the color can not be removed by filtration. In his experience there are three ways of securing a good, pure supply of water: First, the purchase outright of the gathering ground or watershed of the district of supply, or of the lake itself, as in the case of Manchester; second, as in the case of Glasgow, the purchase of the rights of conservation of the watershed with the object of preventing pollution, and, third, an arrangement whereby a municipality secures the right of inspection of its water supply.

Pollution of Canadian Streams.

T. A. Starkey, professor of hygiene in McGill University, Montreal, discussed the question of pollution of water supplies by sewage and gave a summary of his observations for a series of years of the gradual deterioration of the water in the Ottawa and St. Lawrence rivers. He expressed disbelief in the popular idea that large rivers completely purify themselves of pollution by sewage. From a bacteriologic point of view the so-called purification is merely dilution and the pollution is not disposed of. In the St. Lawrence River there has been a gradual increase from an average of 90 colonies of bacteria in 1903 to 168 in 1906. These figures are striking, showing that, whether from sewage or surface drainage, the waters of the river were becoming more polluted every year. The progress of pollution of the Ottawa River is more rapid, the average of increase in the colonies of bacteria having risen in the same period of time from 110 to 300 colonies, and on some special occasions in that part of the river from which Westmount obtains its water supply he found from 1,000 to 1,500 colonies of bacteria, and the average for the entire year was 600. However, a chemist would have been forced to pass this water as first class. Under modern conditions it is practically impossible to obtain a supply of pure water without filtration. He believes that the condition of Canadian waters is becoming dangerous and that the conditions which prevail in Winnipeg would in a very short time exist in the eastern cities unless radical measures are adopted.

Water Situation in Ontario.

Dr. Peter Henderson Bryce, Ottawa, formerly secretary of the board of health and now dominion officer of health, said that the question to be decided in Ontario was whether a fight was to be made against the pollution of streams or whether filtration was to be depended on. He is opposed to the pollution of streams. He described the methods adopted by the provincial boards of health for the disposal of sewage in Muskoka, by reason of which, with an average summer population of 20,000, there had not been as much typhoid fever in the last five years as there would ordinarily be found in a common rural community. He was gratified to be able to announce that in at least 125 towns in Ontario the water supply is now reasonably free from suspicion.

Control of Milk Supply.

Prof. R. Harcourt, Guelph, Ontario, contended that the milk is very rarely kept and handled under proper conditions and that the methods applied to the handling and bottling of milk are in almost every instance faulty. Milk should be used more extensively as a food and not regarded as a luxury. While a most valuable food, milk is especially susceptible to contamination, which it is almost impossible to prevent. Even the use of the milking machine, an improvement on the old method, has not been entirely successful in the elimination of contamination. If a commission were appointed to investigate the conditions under which the milk supply is handled and delivered to the consumer, the report would, he believed, be worse than that recently made regarding the packing establishments of the United States. The consumer has a right to demand milk which, if kept at a temperature of 60 degrees or less, will remain sweet for twenty-four hours. The advisability of the establishment of such a standard for milk, the price of which should depend on the quality of the article furnished, was considered. The addition of preservatives of any kind was deplored as injurious to the public health, and as, under some circumstances, deleterious to the food quality of the milk.

Prof. John Glaister, Glasgow, in his paper on "Administration and Control of Milk Supplies," detailed the methods whereby the purity of milk could be assured to the consumer and gave the result of the efforts to that end in Glasgow.

Prof. R. Tanner Hewlett, London, stated that one of the greatest difficulties in this matter is that public opinion has not been sufficiently aroused and that it is difficult to have legislation preceding public opinion. He emphasized the necessity of compulsory inspection of cattle, the eradication of bovine tuberculosis by approved scientific methods. He also spoke of the regulation to be applied in connection with the housing of cattle and the advisability of the adoption of more satisfactory mechanism for the enforcement of sanitary laws. The questions of temperature and the care of milk were declared to be very important, and the speaker believed that many of the containers now used are veritable microbe traps. He favored the use of sealed bottles for the distribution of milk, and further suggested as a preventive measure the immediate chilling of the milk.

A resolution was thereon adopted by the section that the section strongly recommend to the local government boards of Great Britain, Ireland and to the provincial board of health of Canada that the time has come when the existing provision of the law with regard to the housing of dairy cattle, milk storage and milk distribution and the periodic inspection of such cattle and dairies should be more strictly enforced.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

The President, Dr. Casey A. Wood, Chicago, in the Chair.

The academy was called to order by the president, and an address of welcome on behalf of the state of Michigan was made by Congressman Edwin Denby, to which a suitable response was made by Dr. Charles B. Stockwell, Port Huron, Mich, president of the Michigan State Medical Society.

Addresses.

Dr. Casey A. Wood, Chicago, president, and Dr. Joseph A. Stucky, Lexington, Ky., vice-president, delivered a joint address on the "Relationship of the Eye to the Orbit and the Neighboring Cavities."

The oration on oto-laryngology was delivered by Dr. Dundas Grant, London, Eng., on "Some Practical Problems in Otology and Rhinology."

The oration on ophthalmology was delivered by Mr. R. Marcus Gunn, F.R.C.S., London, Eng., on "Optic Nerve Ailments."

Both these orations were illustrated by the stereopticon.

Election of Officers.

The following officers were elected: President, Dr. Joseph A. Stucky, Lexington, Ky.; vice-presidents, Drs. Richard A. Reeves, Toronto, and Eugene Smith, Detroit; secretary, Dr. George F. Suker, Chicago (re-elected); treasurer, Dr. Otto J. Stein, Chicago (re-elected), and members of the council, Drs. Joseph A. Stucky, Lexington, Ky., Hanau W. Loeb and Adolph Alt, St. Louis; Alvin A. Hubbell, Buffalo, N. Y., and William L. Ballenger, Chicago.

The academy will probably hold its 1907 session in Louisville, Ky., but the exact time and place will be fixed by the council about six months before the time for the meeting.

(To be continued.)

AMERICAN ORTHOPEDIC ASSOCIATION.

Twentieth Annual Meeting, held in Toronto, Canada, Aug. 20-22, 1906.

(Concluded from page 801.)

Congenital Dislocation of the Hip.

Dr. George B. Packard, Denver, reported cases and made remarks on the treatment by manipulative reduction. The most favorable time for reduction is shortly after the patient begins to walk. The hamstrings should be left unstretched, so that if redislocation occurs after application of the plaster this may be indicated by sudden relaxation of the hamstrings. In unstable cases especially the plaster should be applied very snugly.

Coxa Valga.

Dr. James K. Young, Philadelphia, reported several cases in which, as shown by skiagraphs, the angle between neck and shaft of femur seems to be wider than normal, i. e., more than 135°. Adduction of the thigh is limited.

DISCUSSION.

Dr. John Ridlon, Chicago, in discussion of the two foregoing papers, said that in congenital anterior dislocation of the hip reduction should be effected by inward rotation after flexion, Anterior dislocation is shown by feeling the head in the groin on extreme outward rotation. The angle between the neck and the shaft of the femur in a skiagraph can be increased by rotating the leg, and this probably accounts for the apparent cases of coxa valga reported.

Dr. Albert H. Freiberg, Cincinnati, said that great caution was necessary in estimating the angle of the neck from a skiagraph.

Dr. Young said that he believed that at least three of the cases presented by him were coxa valga.

Plaster-of-Paris.

Dr. Walter G. Stern, Cleveland, said that the greatest strength is obtained from slow-setting dental plaster that requires from 6 to 7 minutes to set. All agents that hasten the time of setting weaken the result. From 10 to 20 per cent. Portland cement in the plaster strengthens the result without lengthening the time of setting. The mixed plaster and cement can be softened by immersion in water for half an hour so that it can be cut by a sharp knife.

Intermittent Limping.

Dr. Robert W. Lovett, Boston, said that early symptoms simulate those of simple static foot trouble. The trouble is primarily circulatory and the only effective treatment of it is rest. He recorded three cases, one of which came to amputation.

DISCUSSION.

Dr. Albert H. Freiberg, Cincinnati, said that cases of foot trouble which are not relieved by rest are probably only secondarily static and should suggest arteriosclerosis.

Dr. Joel E. Goldthwait said that the regularity of onset of symptoms, as always after walking two blocks, suggested arterial trouble. Great and sudden pain is also suggestive.

Dr. Lovett said that in every case of foot trouble that he saw he palpated the dorsalis pedis and the posterior tibial arteries in order to rule out circulatory trouble.

Dr. Compton Riely, Baltimore, read a paper entitled "Report of a Case of Chronic Dislocation of the Lower Jaw, Presenting a Simple Device for Maintaining Reduction."

Old Fractures of the Tarsus.

Dr. Leonard W. Ely, New York, reported seventeen cases. He said that in cases of chronic foot trouble an old fracture is often unrecognized. Treatment of old cases should be symptomatic, as by supportive adhesive strapping; but treatment is unsatisfactory. Recent cases of foot trauma should be skiagraphed to discover fracture if present. Recent fractures of the tarsus should be immobilized; displaced fragments should be dealt with surgically.

DISCUSSION.

Dr. Charles F. Painter, Boston, said that prolonged immobilization of old cases in plaster-of-Paris is the only effective treatment. Operative treatment in old cases is usually to be avoided.

Dr. Frank E. Peckham, Providence, R. I., reported an old case in which removal of a fracture spicule entirely relieved the symptoms.

Supports for the Arch.

Dr. Phil. Hoffman, St. Louis, read a paper entitled "A Method for Measuring for Shaping and Placing Cork, Felt, Leather or Similar Arch Supports." A paper model is cut out to cover area of sole enclosed between marks at posterior margin of ball of great toe, anterior margin of weight-bearing surface of heel and ¾ inches from outer margin of sole. The astragaloscaphoid juncture is marked on the paper as the highest point of the support, and the support made from this model is set in the shoe so that the highest point is as far from the back of the shoe as the astragaloscaphoid juncture is from the back of the heel.

Dr. Ansel G. Cook, Hartford, Conn., read a paper entitled "A New Form of Shoemaker's Last." The foot is placed on a steel plate shaped like the sole of a shoe, and foot and plate swathed in plaster-of-Paris. This is cut off and filled with plaster. The shoe is made directly on the resultant cast, without hammering. The cast can be changed by the surgeon to any shape desired.

Suture Necrosis in Tendon Suture and Tendon Transplantation.

Dr. David Silon, Pittsburg, reported having made an experimental study of the influence of such necroses. The research leads to the conclusions that the strength in the union of grafted tendons depends on the callus: that failure to hold from necrosis must be very rare; that failure to hold on account of insufficient suturing is probably common. Tendons should be raised from their sheaths as little as possible, and sheaths should be restored by suturing the divided edges.

Torticollis.

Dr. Reginald Sayre, New York, said that many cases of torticollis, formerly supposed to be due to "cold" or "rheumatism" in the soft parts, are probably dependent on arthritis of the cervical spine, or to slight fracture. He reported cases.

Drs Robert W. Lovett, Boston, and S. C. Baldwin, Salt Lake City reported cases.

Hemophilic Joints.

Dr. Arthur J. Gillette, St. Paul, reported that subcutaneous injection of 5 per cent. gelatin solution in one case several times stopped dangerous hemorrhage into joints. Great destruction of joint may be caused, thus simulating joint tuberculosis. Rise in temperature precedes hemorrhage into joints. Immobilization and ice application relieves the severe joint pain. Gelatin by mouth is sometimes prophylactic.

DISCUSSION.

Dr. Edwin W. Ryerson, Chicago, reported a hemophilic joint that had been mistaken for a gonorrheal joint.

Dr. Joel E. Goldthwait, Boston, said that in one case 5 grains salicylate of sodium, twice in day, always greatly relieved the pain of an attack.

Dr. Gillette said that he believed that so-called purpuric rheumatism was really hemophilic joint.

Wednesday morning, August 22, the Association visited the Toronto Orthopedic Hospital, where a clinic was conducted by Dr. MacKenzie, and a luncheon given by the ladies' board of the hospital. Apparatus was exhibited and cases reported by Drs. David Silon, Pittsburg; Herbert P. H. Galloway, Winnipeg, Canada; Ansel G. Cook, Hartford, Conn.; Compton Riely, Baltimore; Wm. E. Blodgett, Detroit; Bart E. MacKenzie, Toronto; Walter G. Stern, Cleveland; Edwin W. Ryerson, Chicago, and J. T. Watkins, San Francisco.

AMERICAN ROENTGEN RAY SOCIETY.

Seventh Annual Meeting, held at Niagara Falls, N. Y., Aug. 29-31, 1906.

(Concluded from page 798.)

Teaching Roentgenology in Medical Colleges.

Dr. Vernon J. Willey, Ann Arbor, Mich., urged that medical colleges should give some attention to the teaching of Roentgenology, because of its value in diagnosis and therapeutics. Instruction should be given in the principles rather than in the technic, which must be acquired by actual experience. An intelligent grasp of the principles of Roentgenology involves a knowledge of radiophysics, a general knowledge of the apparatus employed, of radiography and fluoroscopy, with especial reference to the interpretation of screen and negative;

of radiotherapy, with especial reference to pathologic conditions which yield to irradiation. Students should be taught the effects of the rays on various tissues, and the limitation of the ray in therapeutics. A course of twelve or twenty hours is sufficient.

Method of Estimating X-Ray Dosage.

Dr. Henry G. Piffard, New York City, takes a brass ball about one and one-quarter inches in diameter and supports it about four inches from the wall of the tube just within the circle of rays issuing from the anterior hemisphere. The ball is then connected by a cord about eight feet long to the charging device of the electroscope. As soon as the current passes through the tube the aluminum needle or foil indicates the charge and the angle is easily read off on the scale. For this purpose he found Braun's electroscope, which is graduated in volts, or his own, which is graduated in degrees of an arc, very convenient. The angle varies directly with the current passing through the tube, and also shows whether the tube is running steadily or not, and indicates any notable change in the vacuum.

Roentgen Ray Filter.

Drs. G. E. Pfahler and J. F. Schamberg, Philadelphia, conducted a series of experiments on rabbits in which use was made of silver, leather and aluminum, for the purpose of establishing their value as filters. They found the leather of decided value for filtering out the soft, medium and hard rays. They also found that the susceptibility to the rays varied in animals, which doubtless is also true of man.

New Direct Reading of X-Ray Meter.

Dr. George C. Johnston, Pittsburg, takes advantage of the fluorescence produced on a tungstate of calcium or other screen as indicating the quantity of the *x*-rays emitted. The fluorescing screen is placed in a light, tight box, and facing it is a selenium cell, which has the property of changing its ohmic resistance to the passage of the electric currents with relation to the presence or absence of light waves. Such a cell, when kept in total darkness, may have the resistance of several hundred ohms, yet on permitting light, natural or artificial, to strike on the cell, its ohmic resistance falls almost instantly to a great degree, and this alteration bears a direct relation to the intensity of the light. If there is placed in series with such a cell a galvanometer or ammeter of sufficient delicacy, a series of current such as an ordinary dry battery and a variable rheostat providing a means of introducing more or less ohmic resistance into the circuit, and the rheostat, the measuring instrument, and the selenium cell be balanced, the point will be found at which the ohmic resistance of the rheostat, the communicating wires, the selenium cell, and the measuring instrument will exactly balance the electromotive force of the battery.

If, however, the container having within it the screen and cell be placed in the path of the *x*-rays, the screen will become luminous in proportion to the distance from the source of the rays and the quality of rays striking it. The container will be illuminated, the selenium cell under the influence of this light will change its ohmic resistance in proportion to the light, and the current flow will be measured and indicated on the dial of the galvanometer or other instrument employed for the purpose of making these electric measurements.

President's Address.

Dr. Henry Hulst, Grand Rapids, Mich., presented further observations on the "Roentgenology of the Stomach and Intestines," and illustrated his paper with a large number of instructive radiographs.

Treatment of Lupus Vulgaris.

Dr. H. W. Van Allen, Springfield, Mass., reported 15 cases, with 80 per cent. cures. The average time since treatment was discontinued is from one year to eight months. The average time of treatment is six months, the shortest period being three months and the longest nine months. The most recent case was treated three months ago. The longest time that has elapsed since treatment is three years. Eleven cases were cured; in one there was an apparent cure; one is returning, and two cases were not benefited.

Tubercular Adenitis.

Dr. Russell H. Boggs, Pittsburg, said that the results obtained by the Roentgen ray in the treatment of tubercular adenitis compare favorably with those obtained by any other method. A large proportion of the cases can be apparently if not permanently cured. Several cases have remained cured for over four years. Improvement is not obtained, as a rule, until at least twelve treatments have been given. There are exceptions, however, one patient being improved after four treatments, and others not improving until after twenty-five or more treatments. A permanent cure should not be expected until after at least three months' treatment. He advised that in treating these cases the apices of the lungs should also be rayed. To be beneficial treatment must be energetic.

Ultimate Results in Carcinoma of Breast.

Dr. George C. Johnston, Pittsburg, advised treatment of all cases of carcinoma of the breast, both before and after operation. The application of the *x*-ray combined with skillful surgery offers the only hope of cure. Postoperative treatment should be begun not later than the tenth day. The mediastinum and axilla should also be rayed. Primary carcinoma should be treated by the ray alone only when the age and condition of the patient argue against operation. Mediastinal involvement is not a sign of fatality. No case should be treated with the *x*-ray that can not be treated surgically. Filters should always be used.

Measurement of Diameter of Pelvis.

Dr. George E. Pfahler, Philadelphia, described his method of measuring the diameter of the pelvis by means of the Roentgen ray. The technic is based on four principles: 1. The plate must be brought parallel to the brim of the true pelvis. 2. Measure the distance of the brim of the pelvis from the anode of the tube. 3. Distance of anode of tube from plate. 4. To place the anode in the axis of the brim of the true pelvis. To assist in attaining successful results he makes use of a very simple apparatus, which was exhibited.

Roentgen Ray in Dermatology.

Dr. Andrew P. Biddle, Detroit, said that experience has shown the value of the Roentgen ray in the treatment of skin affections when it is used conservatively and with due regard to recognized dangers. The ray is useful in selected cases, but not as a routine treatment. It should be used in addition to other remedies, especially in those cases which have resisted ordinary treatment and where there is a marked infiltration of tissue. Stubborn cases of acne, otherwise incurable, yield readily to the ray and relapses are less frequent. The *x*-ray is contraindicated in all acute cases and in the acute exacerbations of all chronic cases.

Treatment of Epithelioma.

Dr. Kennon Dunham, Cincinnati, said that in epithelioma of the face, except when the tumor is situated on the lip, the *x*-ray gives the best results in every way. That the *x*-rays have scattered the growth throughout the body, doing more harm than good, is true, but that is due to the fact that physicians generally use any tube in place of securing the most suitable tube. In cases of tumor of the lip a radical operation should be done, with careful dissection of all lymphatics draining the part. Radiation before and after operation (for at least two months) is essential. After operation exposures can be made every second or third day, using a leather filter. In cases of recurrent rodent ulcer and large epitheliomata of the body or extremities which have penetrated deeply he uses the galvanic current, with local or general anesthesia, completely surrounding the tumor with galvanized needles, connecting these with the positive pole of the battery, using 30 to 110 volts. This closes the lymphatics and blood vessels surrounding the tumor, lessening the danger of metastasis and a large part of the tumor sloughs out. His results have been excellent.

Diagnosis of Renal Calculi.

Dr. F. H. Baetjer, Baltimore, said that with a good apparatus and technic calculi, when present, can practically always be found. The position of the calculus should be determined positively, so that the surgeon, when operating, can not overlook the stone. The use of the x-ray for this purpose is free from danger and of great benefit to the patient. Negative findings should not be relied on.

Diaphragm in Roentgenography of Chest.

Dr. P. M. Hickey, Detroit, said that a small negative made with the diaphragm shows more detail of structure than a large general plate. Early changes in the lung are easily shown with a diaphragm plate, and it is more accurate in detecting small areas of involvement than is the stethoscope. Diagnoses can also be made earlier.

Roentgen Ray in Blood Diseases.

Dr. Henry K. Pancoast, Philadelphia, reported the final results in cases referred to in previous papers, and added three new cases. He said that in leukemia the x-ray is not a curative agent, but by secondarily destroying excessive and abnormal kinds of lymph tissue, and by greatly increasing the numbers of leucocytes in the blood, the individual organism is given a chance to remove the cause of the disease. In certain constitutional disorders the x-ray is not only dangerous, but may contribute to a fatal issue. One of the cases which last year he reported symptomatically cured had two relapses since, and the patient died. Another case reported as symptomatically cured has relapsed.

Changes in Kidneys Produced by Roentgen Ray.

Dr. A. S. Warthin, Ann Arbor, Mich., examined the kidneys of three cases in leukemia treated by the Roentgen ray. He found extensive necrosis and calcification, the changes in general resembling those produced by certain posions. He believes that long exposures damage the renal cells primarily to but a slight degree, but that after long irradiation there is a second injury to the kidney epithelium, due most probably to an intoxication. The destruction of the lymphoid tissue is the most probable source of the poison, the symptoms of the intoxication in general resembling those due to products of proteid distintegration.

Localization of Foreign Bodies in Eye.

Dr. Charles F. Bowen, Columbus, Ohio, has devised an apparatus for locating accurately foreign bodies in the eye. It is a modification of Sweet's apparatus, and can be used in conjunction with the compression cylinder diaphragm. It is so arranged that the patient's head is held absolutely quiet during the exposure. The plates are changed by means of a plate-holder without disturbing the head.

Carcinoma of Bladder.

Dr. Alfred L. Gray, Richmond, Va., reported a case of squamous cell carcinoma of the bladder in which the tumor was removed surgically, the pedicle being treated with the x-ray. Treatment was administered every other day, and after twenty-one treatments the stump of the tumor had disappeared entirely, leaving a soft linear scar.

Fee Table.

The committee appointed to prepare a fee table reported as follows: For work done in the laboratory: Sinus examinations, $25 to $50; location of foreign bodies in the eye, $25 to $50; examination of teeth, $10 to $75; diagnosis of renal and vesical calculi and gallstones, $50 to $200; examination of stomach and bowel, $75 to $200; examination of chest, $25 to $100; examinations of shoulder, $25 to $50; examination of elbow, $15 to $50; knee and wrist, $15 to $50; hip and pelvis, $50 to $150; foot and ankle, $15 to $50; leg and knee, $25 to $75; for work done outside of the laboratory, from 50 to 500 per cent. additional, according to mileage. The report was adopted.

The following papers were also read: "Further Experimental Research Concerning Direct, Indirect and Secondary Skiagraphic Rays," by Dr. L. G. Cole, New York City; "The Induction Coil," by Mr. H. C. Snoop, Philadelphia; "Résumé of the Radiometric Dosage of Roentgen Ray Therapy," by Dr. M. A. Kassabian, Philadelphia; "Use of X-Ray Filters in Radiotherapeutics," by Dr. Reginald Morton, London, Eng.; "The Tube in Roentgen Therapeutics," by Dr. E. G. Williams, Richmond, Va.; "Possibilities of Formulating a Standard of Radioactivity," by Dr. C. D. S. Phillips, London, Eng.; "Roentgenologic Study of Certain Manifestations of Syphilis," by Dr. Percy Brown, Boston; "Action of the Roentgen Rays on the Central Nervous System," by Dr. Carlo Colombo, Rome, Italy; "Differential Diagnosis of the Chronic Non-tubercular Joint Diseases by Means of the Roentgen Ray," by Dr. Robert B. Osgood, Boston; "Skiagraphy of the Accessory Sinuses of the Nose," by Dr. E. W. Caldwell, New York City; "General Observations as to the Effects of the X-Rays on Hair and Other Tissue Elements," by Dr. W. S. Newcomet, Philadelphia.

State Boards of Registration

COMING EXAMINATIONS.

Oklahoma Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

New York Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

Utah State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

Arizona Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

Colorado State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

Idaho State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

Montana Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

Minnesota State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

North Dakota State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

Rhode Island State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

Georgia Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

Arkansas State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

Kansas State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

Michigan State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

Mississippi State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

District of Columbia Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

New Jersey State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

Texas State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

Florida Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

Illinois State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

Louisiana State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

Indiana Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary, W. T. Gott, Indianapolis.

Kansas June Report.—Dr. F. P. Hatfield, Secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Kansas City, June 12-13, 1906. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 82, all of whom passed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
Hahnemann Med. Coll., Chicago	(1905)	84
University of Kansas (1906) the grade of 75 was reached by one, 76 and 77 by two each, 78 by one, 79 by three, 80 by two, 81 by five, 82 by four, 83 by seven, 84 by six, 85 by five, 86 by four, 87 by three, 88 by one, 89 by two, and 90 by one; total, 47.		
Kentucky School of Med.	(1895)	78
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906	83, 84
Washington University	(1906)	83
Barnes Med. Coll.	(1904) 80; (1906)	75, 79, 82
Homeopathic Med. Coll. of Missouri	(1895)	85
Kansas City Hahnemann Med. Coll.	(1905)	86
Eclectic Med. University	(1906)	79, 80, 80
University Med. Coll. of Kansas City	(1906)	78, 78, 80, 80, 84, 84
Ensworth Central Med. Coll.	(1905) 77; (1906)	75, 75, 75, 76, 76, 79, 80, 80, 82.
Eclectic Med. Instiute, Cincinnati	(1906)	83
University of Nashville	(1906)	78
Meharry Med. Coll.	(1906)	84

The following questions were asked:

EYE, EAR, NOSE, THROAT AND MEDICAL JURISPRUDENCE.

1. (a) How would you detect a foreign body in front of the lens? (b) behind the lens? 2. Give differential diagnosis of acute iritis and keratitis and give treatment of each. 3. Give etiology, pathology and treatment of acute otitis media puruienta. 4. Give symptoms, pathology and treatment of chronic otitis media. 5. Give diagnosis, symptoms and treatment of pharyngeal abscess. 6. Give treatment for the removal of foreign bodies lodged in the trachea or bronchus. 7. Give the positive signs of death previous to onset of rigor mortis. 8. Describe the patholoogy of a burn before and after death.

ECLECTIC MATERIA MEDICA.

1. (a) What are antiseptics? (b) Name five and give indications for their use. 2. Give botanical name and description of phytolacca, dose and indication for its use. 3. Give specific indications for the use of bryonia. 4. Name three drugs that have an action on the heart and give the indication for each one's use. 5. In what condition would you use apocynum? 6. Give the specific indications for the use of baptisia, sulphite of soda and colocynth. 7. In what conditions of skin and tongue would you give nux vomica? 8. In what pathologic conditions of the body would you give cathartics? 9. (a) What are emetics? (b) Name and classify three remedies used as emetics. 10. Give specific indications for the use of rhus tox., pulsatilla, lycopus and quiuin.

ECLECTIC THEORY AND PRACTICE.

1. Describe and treat a case of cholera infantum. 2. What is specific medication? 3. What is meant by (a) excess, (b) defect and (c) perversion? (d) What are their effects on health? 4. Name four remedies that act specifically on the (a) respiratory organs, (b) digestive organs, (c) urinary organs and (d) the reproductive organs. 5. Give the special indications for (a) phytolacca, (b) apocynum, (c) eryngium, (d) nux vomica, (e) viburnum, (f) ergot. 6. Name five remedies used in sepsis. 7. Do you recommend the use of poultices? If so, why? 8. (a) Name the remedies usually indicated iu typhoid fever; (b) scarlet fever. 9. How are remedies best prescribed? Why? 10. Treat a case of constitutional syphilis.

HOMEOPATHIC MATERIA MEDICA.

1. Give five prominent indications for sulphur. 2. Give five characteristics common to both bryonia and sanguinaria. 3. Name five leadiug remedies for typhoid fever and give three characteristic symptoms of each. 4. Iu beginning treatment of a chronic disease in which the patient has been previously overdrugged, what two remedies are usually recommended? 5. Give five characteristic indications for echinacea. 6. Write what you know of crataegeus oxycanthe. 7. Differentiate between camphor and veratrum alb. in cholera. 8. Is the law of similars the only true law of curing disease? 9. Differentiate between mercury and kaliiod. in the treatment of syphilis. 10. Differentiate bladder symptoms of cantharides, terebiutha and cannabis sativa.

HOMEOPATHIC THEORY AND PRACTICE.

1. Make a diagram of the chest and locate the valves of the heart thereon, on the surface. 2. Give differential diagnosis between gastralgia, gastric ulcer and duodenal ulcer. 3. Give symptoms and diagnosis of cirrhosis of the liver. 4. Give methods of diagnosis and symptoms in epidemic cerebrospinal meningitis. 5. Give diagnosis and treatment of herpes zoster. 6. Give differential diagnosis of renal and hepatic calculi and acute peritonitis. 7. Describe minutely typhoid fever in its different stages. 8. Name the abnormal heart sounds and points of intensity. 9. Give diagnosis and treatment of acute and chronic hepatitis. 10. Give differential diagnosis between acute yellow atrophy and sclerosis and hepatic cancer.

OBSTETRICS AND GYNECOLOGY.

1. Write two pages on diseases of pregnancy. 2. Face presentation—diagnosis and classification. 3. Cause of prolonged labor, and when is instrumental interference imperative? 4. Cause of pelvic deformity. 5. Placenta prævia—diagnosis and treatment. 6. Puerperal septicemia—history of the disease. 7. Puerperal insanity—classify and give prognosis. 8. Give indications for use of forceps. 9. Give four deformities of the pelvis. How would you detect them? 10. How would you treat fibroid tumor of the uterus?

PATHOLOGY.

1. Give the pathologic conditions of acute and chronic systitis. 2. Give the pathology of mitral stenosis. 3. Give the pathologic differences between chancre and chancroid. 4. Give the pathology of chronic parenchematous nephritis. 5. Give the pathology of amyloid liver and hepatic cancer. 6. Give the etiology and pathology of arterial sclerosis. 7. Give the etiology and pathology of multiple neuritis. 8. Give the etiology and pathology of pulmonary tuberculosis. 9. Give the etiology and pathologic condition in pachymeningitis spinalis. 10. Write two pages on the pathologic condition found in the different stages of acute croupous pneumonia.

CHEMISTRY AND TOXICOLOGY.

1. How is the specific gravity of a body heavier than water determined? 2. How are the decimal multiples of a gram designated? 3. What is electromotive force? 4. If a glowiug charcoal ember is immersed in a jar containing oxygen, what takes place and what the result? 5. What is the treatment of acute poisoning by free iodin? 6. What are the chemical properties of HNO_3? 7. What is the treatment of poisoning by HCY? 8. In what quantities is NaCl, or chlorids represented by it, eliminated from a healthy person in twenty-four hours? 9. What is the treatment of chronic plumbism? 10. Give the principal tests for sugar in urine.

ANATOMY.

1. Describe the sphenomaxillary fossa, giving its boundaries. 2. Trace a blood corpuscle from the heart to end of great toe and return. 3. Which are the peculiar vertebræ (dorsal), and give peculiarities of each. 4. Bound Scarpa's triangle and name the various recognized triangles of the body 5. Describe the changes in the vascular system at birth. 6. Describe the lungs and give their histology. 7. Name structures divided in amputation of the thigh at the middle third. 8. Give the histology of the skin and name its appendages. 9. Describe the thymus gland, giving its minute anatomy and peculiarities. 10. Give the histology of the mammary glands.

SURGERY.

1. (a) Describe the operation for strangulated femoral hernia. (b) Including preparation of the patient. (c) Technic of the operation and the after treatment of the patient. 2. Give the differential diagnosis between malignant and non-malignant tumors. 3. Give treatment for a sprained ankle and name the tissues involved. 4. (a) Give the differential diagnosis between three varieties of hip-joint dislocations. (b) Give method of reducing each. 5. Give minute description of Chopart's operation. 6. Name the different varieties of talipes and give treatment of the last you name. 7. Describe minutely the ligation of the subclavian artery in its most accessible portion. 8. In gunshot wounds, what are the chief indications for operative treatment? 9. Name the different varieties of dislocation of shoulder joint and minutely describe reduction and treatment of any one of them. 10. (a) Give cause, diagnosis aud treatment of tetanus. (b) How would you prevent it?

BACTERIOLOGY.

1. (a) Describe minutely and name the micro-organisms that produce cerebrospinal meningitis. (b) What bacterium does it closely resemble? (c) What three micro-organisms are usually associated in cerebrospinal meningitis? 2. (a) Differentiate parasites from saprophytes. (b) What are their functions? (c) What do they depend ou for existence? 3. (a) Give general characteristics of *Bacillus tuberculosis.* (b) How would you stain the bacillus in sputum? (c) Name the most frequent channels of infection. (d) Name three bacilli that closely resemble the tubercle bacillus. 4. (a) Describe and name the micro-organism found in relapsing fever. (b) Are they ever found in any other disease? 5. (a) What are aërobis, anaërobics and faculative anaerobics? (b) Give examples of each bacteria. 6. (a) Give simple method of staining bacteria; (b) of staining bacteria in tissues. (c) Give Gram's method of staining. 7. (a) Give general characteristics of *Bacillus diphtheriæ.* (b) What bacteria are usually associated with diphtheria bacillus? (c) Give the difference between pseudodiphtheria bacillus and diphtheria bacillus. 8. (a) Describe the *Bacillus typhosus.*. (b) Give some of the commou methods of infection from the bacillus of typhoid. (c) Give the best methods of prophylaxis against typhoid fever. 9. What pyogenic organism produces pyemia? 10. (a) What is phagocytosis? (b) What is the difference between contagion and infection?

PHYSIOLOGY.

1. How is physiology studied? 2. Describe the main features of the circulation. 3. (a) Name the divisions of the vasomotor system. (b) From what part are the fibers of each known to arise? 4. (a) Name the fluids of the alimentary canal. (b) Where is the succus entericus found? 5. What conditions produce variations in the normal temperature? 6. Name the structures necessary for the formation of a reflex arc. 7. What three forces are in action in the absorption of digested food? 8. In what organs is the blood changed? 9. Give the symptoms of insufficient oxygen in the blood. 10. Mention three inorganic substances found in the body and state in what part each is found.

HYGIENE.

1. What are the most common sources of infection in diphtheria? 2. What means should be employed by persons prone to "catch cold"? 3. Does change in climate require any change in food? If so, what? 4. State the physical condition that makes the practice of taking hot baths inadvisable. 5. What constitutes hard and soft water? 6. What instructions as to hygiene should be given in a case of diphtheria? 7. Does alcohol possess a food action? 8. State the best means of disinfecting sputum. 9. What is meant by natural and acquired immunity from disease? Give an example of each. 10. What are the general effects of breathing impure air?

New Jersey June Report.—Dr. J. W. Bennett, Secretary of the New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 19-20, 1906. The number of subjects examined in was 14; total number of questions asked, 135, from which candidate was required to answer 90; percentage required to pass, 75. The total number of candidates examined was 56, of whom 53 passed and 3 failed. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
George Washington University	(1900)	75.1, 83.9
Georgetown University	(1904)	80.5, 82.1
Howard University	(1905)	79.4
Yale University	(1890)	81.
Hahnemann Med. Coll., Chicago	(1891)	81.5
College of P. & S., Baltimore	(1904) (1905) (1906)	76.3; 83.1; 85.2, 88.
Baltimore Med. Coll.	(1897) (1905) (1906)	85.9; 77.8, 78; 88.9
New York University Med. Coll.	(1885)	80.
Long Island Coll. Hosp.	(1904) (1906)	75; 83.5, 85.3
Cornell University	(1905)	81.1
Woman's Med. Coll., Philadelphia	(1903) (1906)	82.6; 88.5, 78.7
Medico-Chirurgical Coll., Philadelphia	(1905) (1906)	77.9, 81; 76.7, 77.1, 79, 82.3, 83.3, 85, 85.4, 85.8, 86.4.
Jefferson Med. Coll.	(1905) (1906)	81.6; 77.8, 79.1, 80.3, 82.3, 82.5, 83.5, 84.9, 85.5.
University of Pennsylvania	(1894) (1906)	78.6; 84.2
Hahnemann Med. Coll., Philadelphia	(1906)	78.6, 81.5
Medical Coll. of South Carolina	(1901)	81.
University of Vermont	(1889)	81.2
Medical College of Ohio	(1903)	77.
Queen's University, Ontario	(1903)	84.7
Woman's Med. Coll., Ontario	(1906)	89.8
Western University	(1905)	84.5

FAILED.

College.	Year. Grad.	Per Cent.
Baltimore Med. Coll	(1905)*	
Baltimore University	(1904)*	
Boston University	(1904)*	

* Percentage not given.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Treatment of Chlorosis.

For the successful treatment of this condition five methods should be adopted: 1, Dietetic; 2, hygienic; 3, medicinal; 4, non-medicinal; 5, mental.

DIETETIC.

The food should be light and nutritious and capable of easy digestion and ready absorption. At first a small or moderate quantity should be given. Milk is one of the most useful foods when it is easily digested, but it fails in two ways of being a perfect food; it contains too little iron and large quantities must be taken to satisfy the patient.

A cupful of peptonized milk 3 or 4 times a day will be useful when unprepared milk disagrees. A good substitute for milk is a mixture of equal parts of cream and hot water (2 oz. of each), to which a little sodium bicarbonate and a teaspoonful of brandy may be added. All forms of animal food, prepared in a manner easy of digestion, are beneficial. G. Sée recommends scraped raw beef, as much even as 14 oz. a day. Raw, scraped, or powdered meat may be given in consommé, in the form of sandwiches, or mixed with chocolate or Burgundy and water. The digestive power for this kind of food must be carefully watched, and if necessary, aided by the addition of some appropriate digestive ferment. Eggs in any form are valuable, as they are generally rich in iron and easily digested.

Animal albuminates should predominate in the diet at first. Easily digested fat, such as butter, cream, broiled fat bacon, cod-liver oil, should not be added. Green, fresh vegetables, especially in the form of purées are useful, not only as food, but to obviate the tendency to constipation.

HYGIENIC.

At the outset rest in bed in a well ventilated room or on a couch in fresh air should be particularly enforced. In chlorosis the cardiac muscle undergoes fatty changes, and if the heart wall is to recover itself and perform its function normally afterwards, it must have as much rest as possible during the treatment. For some time the patient should not be allowed to rise before midday. As soon as some improvement in the blood condition is observable, and some return of healthy functional activity is apparent, a moderate amount of gentle out-of-door exercise may be permitted, and this should be gradually increased with each increasing gain in health and strength.

Rectify such disadvantages of the life of the patient as can be ascertained. Over-pressure at school, unwholesome conditions of work or amusement, late hours, worry, any emotional strain or excitement, sexual aberrations, tight lacing, etc., are points to which the physician's attention will be directed.

MEDICINAL.

Free elimination by the bowels, kidneys and skin must be maintained. Autotoxemia is a very frequent cause of chlorosis. A saline laxative given every morning is usually of great value.

In many cases the laxative iron mixtures are to be preferred. The following are excellent prescriptions:

℞.	Tinct. ferri chloridi	m. x		60
	Magnesii sulphatis	gr. xx	1	20
	Sodii sulphatis	gr. xx	1	20
	Glycerini	ʒss	2	
	Infusi quassiæ, ad	℥i	30	

M. Ft. mist. Sig.: Two tablespoonfuls to be taken three times daily after meals.

If gastric symptoms are prominent, the following may agree with the patient better:

℞.	Ferri sulphatis	gr. iv		24
	Sodii bicarbonatis	gr. x		60
	Sodii sulphatis	ʒi	4	
	Tinct. zingib	m. xx	1	20
	Spiritus chloroformi	m. viii		48
	Infusi quassiæ, ad	℥i	30	

M. Ft. mist. Sig.: Two tablespoonfuls to be taken twice daily after meals.

Iron in some form is almost invariably indicated, yet it is well to remember that an alterative, arsenic, copper or mercury, will sometimes act much better than iron alone. It is surprising how rapidly many chlorotic patients improve on alterative treatment, even when there is no evidence whatever of specific disease. Arsenite of copper in doses of 1/100 gr. two or three times a day after meals, or the specific tincture of copper of the eclectics in doses of 3 to 6 minims will prove very efficacious. Fowler's solution (m. v to x) in water after eating; small doses of arsenous acid (1/100 to 1/60 gr.), or the solution of arsenic and mercuric iodid (5 to 10 minims), are all valuable in anemic conditions. Indeed, inunctions of a very small amount of mercurial ointment once a day, or every other day, or small doses of mercuric chlorid, from 1/60 gr. to 1/40 gr., are often of decided benefit in chlorosis.

Nearly every form of iron has been employed, the preference seeming to be for Blaud's mass.

The following prescriptions are all good:

℞.	Ferri et potassii tartratis Liq. potassii arsenitis, āā	ʒi	4	
	Aquæ dest., q. s. ad	℥iv	120	

M. Sig.: Five to ten drops in wine before meals twice daily.

℞.	Ferri et potassii tartratis	ʒiiss	10	
	Ext. cinchonæ	ʒiiss	10	
	Glycerini	ʒv	20	
	Aquæ dest.	ʒiiss	10	
	Vini (Madeira), q. s. ad	Oii	960	

M. Sig.: Take as a tonic; wineglassful three or four times a day.

℞.	Ferri sulphatis	gr. xxiv	1	44
	Magnesii sulphatis	ʒvi	24	
	Acidi sulphurici aromatici	ʒi	4	
	Tinct. zingiberis	ʒii	8	
	Infusi gentianæ comp., ad	℥viii	240	

M. Ft. mist. Sig.: A sixth part twice a day.

℞.	Vini ferri amari	℥vii	210	
	Tinct. nucis vomicæ	ʒiv	16	
	Liq. potassii arsenitis	ʒii	8	

M. Sig.: Two drams in a wineglassful of water after meals.

℞.	Ferri sulphatis exscic. Potassii carbonatis, āā	gr. xxx	1	95
	Ext. nucis vomicæ	gr. v		30

M. Ft. Cap., No. xx. Sig.: One three times daily, after meals.

The following formulas for pills are valuable where one wishes an iron laxative preparation, particularly where there is amenorrhea:

℞.	Ferri sulphatis exscic.	gr. xx	1	30
	Potassii carbonatis	gr. xx	1	30
	Myrrhæ pulveris	ʒi	4	
	Aloes socotrinæ	ʒss	2	

M. Ft. pil., No. xxx. Sig.: Take two or three a day.

℞.	Ferri et sodii pyrophosph.	ʒss	2	
	Extracti rhei	gr. xiv		84
	Extracti aloes	grs. viii		48
	Extracti taraxaci, q. s. ft. mass.			

M. Ft. pil., No. L. Sig.: Take two night and morning.

Intestinal antiseptics are as much needed as laxatives. The following prescription has been highly recommended as an intestinal antiseptic:

℞.	Creasoti (Beechwood)	mxxxvi	2	16
	Ol. gaultheriæ (Mercks)	mxxxvi	2	16
	Eserin salicylate	gr. 3/5		036
	Pancreatin	gr. lxxii	4	32
	Pulv. ext. cascara sag.	gr. xxxvi	2	16
	Pulv. ext. colocynth co.	gr. xviii	1	08
	Pulv. oxgall	gr. xxxvi	2	16
	Pulv. acaciæ Aquæ Glycerini Pulv. glycyrrhizæ, āā, q. s. ft. caps., No. 72			

Sig.: One after each meal.

The sulphocarbolates are also excellent intestinal antiseptics and so is beta naphthol. This may be given in two-grain doses three times daily.

It is advisable in treating all cases of chlorosis to administer some intestinal antiseptic.

Often it will be necessary to give some cardiac tonic like digitalis or strophanthus.

NON-MEDICINAL.

Hydrotherapy is of the greatest value as an adjuvant to medicinal treatment. It cannot well be dispensed with.

Enteroptosis may be helped by a cold abdominal douche and by abdominal massage. Elimination of toxic waste matter may be facilitated by warm bath, electric light bath, or sun bath to beginning of perspiration, followed by short cold application by rubbing the patient with a mitten or coarse towel, with water at about 60°, or by giving the patient a cold douche of from 5 to 20 seconds' duration at temperature 70° to 60.° The temperature should be lowered 1 degree daily and the pressure increased. This is a powerful circulatory stimulant and combative of autointoxication as well as a powerful stimulant of vital resistance. Various general graduated cold procedures are invaluable.

For vasomotor spasm and visceral anemias such measures as the general Scotch douche, visceral douches, short percussion douches, alternate compress, etc., are very effective. Cold sponging over the spine and outside and inside of thighs increase elimination and stimulate circulation. Constipation may be relieved and peristaltic activity increased by drinking a glass of cold water, preferably carbonated water, before breakfast; small cold enema; fomentation over liver twice daily, followed by heating compress during interval; wet girdle at night; cold fan douche to abdomen; cold percussion douche to spine; abdominal massage.

General massage, properly given, is a valuable means of treating chlorotic patients who are unable to take active exercise. It acts by increasing the circulation of the blood, by strengthening the muscular system, as an eliminant of waste matter, as a stimulant to the digestive system, as a mild cathartic by increasing peristalsis, as a sedative to the nervous system and as a sleep producer.

Static and Faradic electricity will aid in the treatment of these cases. Faradism to the chest will stimulate respiration and oxygen inhalations will improve the quality of the blood.

Chlorotic patients should drink plenty of water. Under certain conditions water is a hematic. It washes away waste matter and paves the way for growth of new material. Chalybeate remedies may be rendered more effective by adding to them large draughts of water.

MENTAL.

The physician should get his patient into a cheerful, hopeful frame of mind. The hopefulness and optimism of the physician do far more than cure feeble minds and faltering wills. They assist in the cure of every disease he encounters. Alteratives and tonics for the mind are often quite as important and efficacious as alteratives and tonics for the body. Get the patient out of her introspective moods. Cheerful companions, a change of place and scenery, a visit to some chalybeate springs inspire the psychical impulses and form a great incentive to those who are despondent and prone to worry, to exert themselves, and so aid in their own recovery.

Tonics are both mental and material. Hope is a capital tonic. Depressing mental conditions often neutralize the best medical treatment. The prospect of recovery will often bring about satisfactory results almost in the absence of drugs, and certainly often helps out wonderfully a lame line of treatment. Mental tonics should always be combined with material tonics.

Collodion and Acetanilid Dressing.

Dr. F. G. Mohlan, Pueblo, Colo., writes calling attention to the fact that an excellent dressing—one that is aseptic, odorless, clean and white, as well as flexible and adhesive—is collodion, to which is added 5 or 10 per cent. of acetanilid. He says that he has used it for over six years with great satisfaction, in cases in which a collodion dressing is indicated.

The Treatment of Chronic Constipation.

In the treatment of chronic constipation, according to M. J. Krohn, in the *Denver Medical Times*, one must first ascertain the cause and so direct the treatment. He divides the treatment of chronic constipation into three classes: 1, The dietetic; 2, the mechanical; 3, the medicinal. The foods prescribed should be rich in water, and cellulose should be ordered. Thus graham or rye bread, all fruits, except persimmons, fresh vegetables, soups, fats, buttermilk, cider, etc., are of value. If there is gastric hyperexcitability the alkalies are indicated, while all concentrated foods are to be avoided.

If there be an enteritis, such foods as cauliflower, spinach, tender asparagus and mashed potatoes are permissible. He advises the habit of taking cold water before meals and on going to bed.

The mechanical treatment, according to Krohn, consists in massage, gymnastics, electricity, Swedish movements and the cannon-ball massage over the abdomen. Contrary to the opinion of some authorities, he recommends enemas and irrigations as very efficacious.

The medicinal treatment consists of such drugs as belladonna, jalap and cascara sagrada.

If there is a decrease of mucus, ammonium chlorid and sodium phosphate should be given; and when there is excessive hyperacidity, accompanied by constipation, the following combination is recommended:

℞.	Magnesiæ calc.	℥ss	15
	Pulv. rhei	ʒii	8
	Sodii carbonatis	ʒi	4
	Extracti belladonnæ		
	Extracti nucis vomicæ, āā	gr. ii	12

M. Sig.: One-half teaspoonful three times a day one-half an hour before meals.

If the constipation is associated with the absence of hydrochloric acid, the following combination is recommended by this author:

℞.	Acidi hydrochlorici dil.	℥ss	15
	Strychniæ sulphatis	gr. 1/3	02
	Tincturæ rhei q. s. ad	℥vi	180

M. Sig.: One tablespoonful in a wineglassful of water three times a day, before meals and taken through a glass tube.

In those cases occurring in adipose individuals with a tendency to passive congestion of the intestinal canal and having a tendency to hemorrhoids, Krohn recommends the neutral salts, such as magnesium sulphate, sodium phosphate and sodium and potassium tartrate. The very drastic purgatives should be avoided.

F. E. Prewitt, in the same periodical, after enumerating the various causes of constipation, states that the medicinal treatment of constipation is of the least importance. Not infrequently the slightest change in the diet will overcome the constipation. Consequently, the diet should be carefully inquired into and carefully regulated, remembering that single articles of food, such as milk, may serve as a laxative for one person and tend to constipate another. In addition to giving a somewhat abbreviated diet list, he emphasizes the importance of instructing the patient to go to the toilet regularly each day at the same time, whether there is a desire or not, and at the same time advising him not to put in his time reading a newspaper or a book while at stool, but to keep his mind concentrated on the purpose for which he is there, and to remain there for fifteen minutes if necessary. He is of the opinion that vibratory massage will in time occupy a place in the treatment of constipation. Gymnastics are invaluable in the treatment of constipation, and can be carried out at home if a gymnasium can not be obtained. Of the medicinal preparations he regards cascara sagrada as the best preparation and jalap is considered next in order of efficiency and acts best as a rule combined with podophyllin and aloes and belladonna.

Inflamed and Protruding Piles.

The following combination is recommended by the same periodical in the treatment of inflamed and protruding piles:

R.	Cocainæ hydrochloratis	gr. iiss	
	Sol. adrenalin. chlorid. (1-1,000)	f.ʒss	2
	Bismuthi subnitratis	gr. x	65
	Petrolati liq	℥i	30

M. Ft. unguentum. Sig.: Bathe the parts in cold water and apply the ointment after each stool.

Acute Nephritis in Scarlet Fever.

In the treatment of true nephritis following scarlet fever, Hughes-Bennett, according to an abstract in the *Med. Review of Reviews*, recommends the following combination:

R.	Potassi acetatis	ʒii	8
	Spts. etheris nitrosi	f.℥ss	15
	Aquæ q. s. ad	f.℥ii	60

M. Sig.: A teaspoonful every two hours well diluted in water.

Or:

R.	Hydrarg. chloridi mitis		
	Pulv. scillæ		
	Pulv. digitalis, āā	gr. ¼ to ½	015-.030

M. Ft. pil. No. i. Sig.: One such pill every three or four hours.

In addition to the foregoing treatment, saline purgatives are recommended with hot-water or hot-air baths taken twice daily.

And in scarlatinal rheumatism some preparation of iron should be given alternating with the following combination:

R.	Ammonii salicylatis	ʒii	8
	Elix. simplicis		
	Syrupi simplicis, āā	f.℥ss	15
	Tincturæ cardamomi co	f.℥i	30

M. Sig.: One teaspoonful well diluted in water four times a day.

Multiple Warts.

The following combination is recommended by the *Med. Review of Reviews* to aid in the removal of multiple warts:

R.	Chloralis hydratis		
	Acidi acetici	f.ʒiss	6
	Acidi salicylici		
	Spts. etheris nitrosi, āā	f.ʒi	4
	Collodii	f.ʒiv	15

Misce. Sig.: Apply to the warts twice daily.

Medicolegal

Cross-Examination of Physician—Discrediting Evidence.

The Supreme Court of Washington says, in the personal-injury case of Williams vs. Spokane Falls & Northern Railway Company, that the plaintiff, no doubt, waived his privilege when he permitted a physician who had examined him in his professional capacity to give his testimony without making any objection thereto. But he had a right to discredit the witness by showing interest or bias in the case, and legitimate cross-examination was perfectly proper for that purpose. A wide latitude is usually, and should be, given on cross-examination, the extent of which must be governed largely by the discretion of the trial court. Such discretion will only be reviewed for abuse thereof.

The principal defense in this case was that the plaintiff was in a large measure simulating his injuries. The defendant's evidence tended to show that he was afflicted with what the physicians termed hysterical paralysis, and that the pendency of a lawsuit had a strong tendency to prevent improvement in such cases. Evidence with regard to the frequency of the visits to him at the hospital of the defendant's claim agent was received by the trial court on the theory that it had a tendency to rebut the evidence of the physicians by discrediting their statements that the plaintiff was suffering from hysterical paralysis, because under such circumstances the attending physicians would not have permitted the claim agent to visit the plaintiff. The Supreme Court holds that the evidence was admissible for that purpose, and for that reason only.

Power of State Association—Certificate Requirements.

The Supreme Court of Alabama says, in Brooks vs. State, that section 5333 of the code of 1896 reads: "Any person who practices medicine or surgery without having first obtained a certificate of qualification from one of the authorized boards of medical examiners of this state must, on conviction, be fined not less than $25 nor more than $100." Section 3262 says: "The standard of qualification, the method or system and the subjects of examination of practitioners of medicine shall be prescribed by the Medical Association of the State of Alabama and must be observed by the boards of medical examiners." It will be observed, the court continues, that the lawmakers have clothed the Medical Association of the State of Alabama with full authority to prescribe the rules and regulations governing the issuance of certificates to medical practitioners, and the Alabama statutes in this respect are not only intended as a means of maintaining a high standard in the ranks of the medical profession, but are designed to protect the public from imposition and fraud by authorizing the state medical association to prescribe the rules and restrictions governing the issuance of certificates to those engaged in or desiring to engage in the practice of medicine.

The state medical board adopted in 1899 the following ordinance: "Be it ordained by the Medical Association of the State of Alabama that hereafter all certificates conferring the privilege of practicing medicine in this state, issued by county boards of examiners, shall be countersigned by the senior censor of the state association before the same shall become legal and valid." It is to be noted, the court says, that every certificate issued by a county board after the adoption of the above had to be countersigned by the senior censor, else it would be invalid. The state proved a *prima facie* case against the defendant (party first named, who was convicted of a violation of section 5333, quoted above), who attempted to defend under a certificate issued by the county board, Jan. 29, 1900, but which had not been countersigned by the senior censor of the state, and which was insufficient, and an objection by the state to the introduction of same was properly sustained.

There was no error in sustaining the state's objections to the defendant's attempt to introduce a diploma or proof of the length of time he had practiced medicine. These facts may have been sufficient to authorize the county board to issue him a certificate without undergoing an examination, but could in no sense make valid a certificate not issued in conformity with the rules of the state association.

It was not competent for the defendant to show the action of the Medical Society of Marion County, since he did not show that it issued him a certificate prior to the adoption of the ordinance in 1899. Neither was it competent to show that other physicians had no certificates or had not stood examinations. If they were violating the law it did not justify the defendant in doing so.

Liability of Company Silent When Services Rendered.

The Supreme Court of Rhode Island says that the case of Nelson R. Hall vs. New York, New Haven & Hartford Railroad Company was brought to recover $1,573.75, with interest, for services rendered during a period of twenty weeks and for supplies furnished by the plaintiff, a physician and surgeon, to the defendant's employé, a carpenter, who was injured in the course of his employment at its power station in Warren, R. I., by steam and hot water in an accidental explosion. The company denied liability and claimed that it never engaged the services of the plaintiff. But it appeared that on the day after the accident the physician sent to New Haven, where the principal offices of the company were located, by the foreman under whom the man was working when injured, a report, stating that on the preceding morning he was called to the power station in Warren by the station agent to attend the man, naming him, who had been scalded by steam and hot water which came from condenser pipe. "The scalds," the report continued, "appear to be of the second degree and involve both legs and the lower third of both thighs. The patient now suffers from prolonged shock and is much exhausted. . . . Trained nurse is in attendance." What the foreman did with the report did not appear, but at the trial the company produced it, and in the absence of explanation as to how or when it obtained possession of the same it was not unreasonable to infer that it was delivered to the company with reasonable celerity.

What was the duty of the company in the premises? To let the physician remain ignorant of the truth of the invalidity of his employment in its behalf? To permit him to incur large expense and employ valuable time in a malodorous and repulsive employment in the faith that he would be compensated by a responsible company, while that company intended that he should be compelled to resort for payment to the nonresident injured mechanic, whose expenses would be greatly increased and whose resources would be greatly diminished, if not cut off, by this very accident, which would deprive him for a long time of the ability to perform his daily toil? The ordinary physician is not an eleemosynary institution, and, although he often does perform services for charity, it can not be expected that he will compete with the hospitals that are established for general public use. It was the duty of the company to early apprise the plaintiff of the true condition of affairs; to either disaffirm the act of its station agent in toto (entirely) or to explain the extent of his authority to the physician in order to give him the opportunity to make further arrangements for treatment of the patient beyond the time of any authorized limited employment. But the company did neither; it neither accepted nor rejected the services of the physician under his supposed employment, but it elected to remain silent.

The evidence also disclosed that on two occasions, the first of which was soon after the accident, the claim agent of the company and its physician visited the patient to ascertain if he was in a condition suitable for removal to a hospital, and after examination on each visit found that he was not. But no fault was found by them with the treatment that he was receiving. When the physician rendered his bill for $1,573.75, and on two later dates sent similar bills, no notice of them was taken by the company. Similar silence was maintained concerning the bills as was observed in the matter of the report.

Under these circumstances, whether or not the company ratified the act of its station agent in employing the physician to attend the injured man, the court holds, was a question of fact to be determined by the jury. As their verdict was for the physician, without any special finding, it might be safely assumed that they found a preponderance of evidence satisfying them of such ratification. This court can not say that the verdict in this respect was against the evidence. Moreover, the court says that, although the physician had rendered several bills to the company, each showing the amount charged by him for his services, for which this suit was brought, the company introduced no testimony tending to contradict that of the physician, who went into a minute and detailed explanation of the nature of his services and testified that the prices charged by him for the same were reasonable. In such circumstances the court is unable to say that the verdict was excessive.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

September 1.

1 Japanese Naval Sanitation. B. K. Takaki, Tokyo, Japan.
2 *Banti's Disease (Splenomegalia and Cirrhosis of the Liver). M. Einhorn, New York.
3 *Brief Résume of the World's Recent Cancer Research. W. S. Bainbridge, New York.
4 *Habitual Constipation, Viewed from the Standpoint of Modern Evolution of Dietetics, is a Physiological Phenomenon. C. D. Spivak, Denver.
5 *Acroparesthesia. W. W. Lesem, New York.
6 *Two Cases of Varicose Veins Successfully Treated with the X-Rays. J. C. McGuire, Washington, D. C.

2. **Banti's Disease.**—Einhorn has seen eighteen cases, which he has tabulated and placed in three groups: 1. Pure form; splenomegalia, anemia, cirrhosis of the liver, ascites. 2. Hemorrhagic form, showing in addition to the symptoms just enumerated, gastric and intestinal hemorrhages. 3. Splenomegalia, enlargement of the liver, anemia, sometimes associated with grave gastric symptoms. Treatment depends on the stage of the disease and the group to which it belongs. In some cases extirpation of the spleen may be considered. The *x*-ray treatment has given good results. Gastric hemorrhages should be treated according to the accepted rules. The physician may be a little bolder in giving food in these cases. Stomach symptoms should be combated and a strengthening diet is indicated. The administration of sodium iodid with iron and sometimes arsenic is generally followed by good results.

3. **Résumé of World's Cancer Research.**—Bainbridge states that cancer occurs with the same essential characteristics throughout the vertebrate creation. There is a variety of conflicting evidence in reference to the influence of diet on the development of cancer. However, cancer is comparatively rare in hot countries, especially in those whose inhabitants subsist largely on vegetable diet. With certain exceptions it seems to be prevalent where animal diet is mostly consumed. Black races are remarkably immune from cancer, yellow races are more prone to it, while the white races are the most susceptible. It occurs when the tissues are undergoing retrograde metamorphosis. Cancer is undoubtedly on the increase. The principal increase involves the alimentary tract. There are certain districts called "cancer belts." Such areas are usually low-lying and damp. Women are attacked by cancer far earlier and more often than men. Much recent experimental work points to the cell as the essential element in the development of cancer. The parasitic theory is discredited by the Harvard Commission. The report of the Imperial Cancer Research Fund destroys all known theories of the origin of cancer, but proposes no new theory. Surgical treatment has been established on a firmer basis than ever before.

4. **Habitual Constipation.**—Spivak summarizes his paper as follows: Habitual constipation in a great many cases is due to a mistaken diagnosis. The patient makes the diagnosis himself, based on his sensation only. Once the diagnosis is made, and then corroborated by the physician, it becomes an etiologic factor. The tendency of civilized life in general and of modern dietetics in particular is toward the production of lesser quantities of fecal matter and less frequent evacuation. There is no doubt that the habit of regularity is beneficial, but no one should allow every unusual sensation to become a source of morbid concentration. The treatment of habitual constipation should be directed more toward rectifying the errors of the mind than those of the body. The patient should be impressed with the fact that certain foods are better absorbed than others, and that it is not imperative for the preservation of good health to have a movement of the bowels daily, nor is the small quantity indicative of disease.

5. **Acroparesthesia.**—Lesem defines acroparesthesia as an affection of the peripheral nerves, characterized by burning, pricking, pins-and-needles, numb, crawling, itching or breaking sensations disturbed usually over the extremities. Not infrequently, however, the head, face, chest, back and abdomen are involved. The viscera are rarely affected. Among 200 cases seen by Lesem, 94.5 per cent. occurred in women. The majority of the patients were between the ages of 30 and 40 years. Circulatory and gastrointestinal disturbances appear to be the cause of the large majority of the writer's cases. Menstrual and puerperal disorders occurred in 12 per cent. Occupations such as tailoring and constant immersion of the hands in water occurred as an etiologic factor in 1 per cent. The symptoms vary with the intensity of the disease. The course of the disease is either short or it becomes chronic and progressively worse. The types most susceptible to treatment are those dependent on puerperal and climateric disorders and on autointoxication.

6. **Varicose Veins Successfully Treated with X-Ray.**—McGuire reports two cases. The first patient was a woman, aged 45, with eczema of both legs, complicated with varicose veins and an ulceration on the right leg. The ulcer resisted all treatment, until the application of the *x*-ray. This caused inflammation of the skin, which extended over the whole surface of the leg. The treatment was stopped for four days, when it was again tried. Inflammation resulted, but during the next five days, without the application of the *x*-ray, the dermatitis gradually subsided and by the end of the week had

disappeared. The ulcer completely healed and the varicose veins disappeared. The second patient was a man 50 years of age with a large bunch of varicose veins on the right leg. Treatment by the *x*-ray is gradually reducing the tumor and without causing any great reaction of the tissues. The rays cause contraction and atrophy of the tissues and those of low vitality easily break down.

Boston Medical and Surgical Journal.

August 30.

7 Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
8 *Care of Far-Advanced Cases of Pulmonary Tuberculosis. S. G. Bonney, Denver.
9 Sub-pectoral Abscess. J. H. Musser, Philadelphia.
10 Fracture of the Fifth Metatarsal Bone by Inversion. F. J. Cotton, Boston

8. Care of Far-Advanced Cases of Pulmonary Tuberculosis.—Bonney summarizes his paper as follows: 1. About one case out of every four or five may reasonably be expected to exhibit a pronounced diminution of temperature by the end of a week or ten days. 2. The remaining cases do not show any bad results from its employment, other than those due to the occasional intolerance of the system for the serum of a horse. 3. This so-called reaction, which is independent of the specific nature of the remedy, but common to all other serum preparations, bears no relation to the ultimate results obtained. 4. Some cases show marked improvement in spite of temporary discomfort in the way of chills, fever, urticaria and painful swelling with stiffness of the joints, while others exhibit no improvement, although there is entire absence of constitutional disturbance. 5. Reaction may take place within twelve hours after the use of the serum or it may be delayed for six weeks. 6. Occasionally the improvement is delayed indefinitely until the occurrence of the reaction, following which there may be complete and enduring subsidence of the fever. 7. As a result of the serum the temperature either may subside to normal or may be reduced several degrees, remaining, however, somewhat elevated. 8. He has not been in favor of its continued subcutaneous employment, and has given, as a rule, not over four or five doses at intervals of one or two days and awaited results. 9. During the past nine months he has practiced the tentative administration of the remedy by the rectum for ten or twelve doses before resorting to its hypodermatic use, in order to avoid the discomfort which sometimes follows its injection into the tissues. 10. He has seen unquestionably good results attend its use even when streptococci were not found in the sputum, and believes that even under such conditions the clinical evidences of a persisting sepsis may sometimes afford, from a humanitarian standpoint, a warrantable basis for its use.

New York Medical Journal.

September 1.

11 Address on Climatology. E. L. Shurly, Detroit, Mich.
12 Use of the Pessary. H. A. Slocum, Philadelphia.
13 Treatment of Uterine Retrodisplacement. R. S. Hill, Montgomery, Ala.
14 Typhoid Infections of the Appendix. M. A. Austin, Anderson, Ind.
15 *Electrolysis in the Treatment of Deafness Due to Stricture of the Eustachian Tubes. D. G. Yates, New York.
16 Diagnosis of Tumors of the Stomach. J. J. Gilbride, Philadelphia.
17 Case of Little's Disease. A. Glascock, Washington, D. C.
18 Review of the Present Day Therapy of Pulmonary Tuberculosis. B. M. Randolph, Washington, D. C.
19 *Four Cesarean Operations and a Labor Complicated by Fibroma in which Hysterectomy was Performed on the Sixth Day of the Puerperium. J. Aspell, New York.
20 Is Nervous Dyspepsia a Disease from Gencris? A. Rose, New York.

15. Electrolysis in Stricture of Eustachian Tubes.—Yates reports four cases of deafness due to stricture of the Eustachian tubes in which electrolysis was employed successfully. The apparatus consists of a gold wire, olive tipped, bougie attached by a cord to the negative pole of a galvanic battery of sufficient voltage to overcome the body resistance. Forty volts is strong enough. An ordinary hand electrode is connected with the positive pole of the battery and grasped by the patient. The Eustachian catheter, insulated by winding with rubber tissue, is placed in position and the ear inflated in the ordinary manner to make sure that the catheter is properly situated. The iodin, menthol and camphor vapor is used in inflation, and has a valuable influence in preventing infection. The bougie is now passed through the catheter and on through the tube as far as it will go without exercising force, and the current turned on until three to five milliampères are indicated by the meter. No stronger current is necessary. The sensations of the patient must also guide the surgeon, for pain should be avoided. Having engaged the stricture, the bougie is allowed to lie snugly in contact for a few moments, when it will be found possible to advance the point a short distance. This maneuver is repeated until the stricture is passed and the surgeon is satisfied that the tube is open, when the bougie is slowly withdrawn and the current turned off. Inflation should be performed before, but not immediately after the bougie is used, for fear that air should be forced through a possible puncture of the mucous membrane into the loose surrounding tissues and so set up a traumatic emphysema. Treatments with the bougie should be about ten days apart, with one or two inflations between.

19. Cesarean Section.—Aspell reports 5 cases. In 2 the existence of a deformed pelvis was the indication for Cesarean section. In 2 cases labor was complicated by the presence of a fibroma. In 1 of these cases the tumor did not obstruct the delivery, but in the uterine contraction, after the third stage, the tumor of its own weight obstructed the free discharge of lochia and became so great an irritant that its removal was imperative in the first week of the puerperium. In the second case the tumor was situated in the broad ligament.

Lancet-Clinic, Cincinnati.

August 25.

21 Prophylaxis and Treatment of the Summer Diarrheas of Children. A. Friedlander, Cincinnati.
22 *Measure for the Quantity of X-Rays. K. Dunham, Cincinnati
23 Feeling for Fees. E. S. McKee, Cincinnati.

September 1.

24 Case of Banti's Disease. H. J. Whitacre, Cincinnati.

22. Measure for Quantity of X-Rays.—Dunham's instrument consists of a selenium cell, which is placed inside of a wooden pill-box and surrounded by tungstate of calcium. This and a volt meter are placed in series in a direct current of not less than 60 volts. When this is placed before an *x*-ray tube the tungstate of calcium is caused to fluoresce and the light derived from the fluorescence causes the resistance of the selenium cell to be reduced (as does any light). The fluorescence is, of course, much less powerful than a 15-candle power lamp. This lowering of resistance in the cell allows the current to flow more readily, and this can be directly measured by a very sensitive volt meter. The next instrument depends for its action on the fact that a 2 per cent. solution of iodoform in chlorform is very easily and uniformly affected by the *x*-rays. Its appearance when so treated varies from a light pink to a very dark reddish brown. The second instrument is as follows: The selenium cell and volt meter are put in series as before, but no fluorescent salt is used. The wooden box is removed and the cell placed in a light tight box. The resistance of the selenium cell is reduced by the electric lamp beyond a partition. The light must pass from a lamp to the cell through the bottle because of the small aperture. To make this doubly certain the opening is fitted with a small cylinder so that the rays must pass as desired. When it is desired to measure a given dosage all that is necessary to do is to fill the bottle, place it in the box and make the reading. The solution is clear and practically all the light passes to the cell. The resistance drops and the voltage as read on the meter goes up. The bottle is now removed, laid on the surface of the patient near the part to receive the irradiation. After the treatment it is quickly placed in the box and the reading taken. The quantity of *x*-rays will be read by the difference of the voltage before and after the exposure.

St. Louis Medical Review.

August 25.

25 Incessancy of Rhythmic Reiteration in Organic Matter. S. S. Wallian, New York.
26 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

University of Pennsylvania Medical Bulletin, Philadelphia.

August.

27 Clinical Study of Gastroptosis, with Special Reference to the Value of the Bismuth Skiagraph Shadow in Determining the Topography of the Gastrointestinal Tract. C. B. Worden, J. Sailer, H. K. Pancoast and G. G. Davis, Philadelphia.
28 *Peculiar Pressure Symptoms Due to Enlarged Tuberculous Bronchial Glands. T. S. Westcott, Philadelphia.

28. **Pressure Symptoms Due to Enlarged Bronchial Glands.**—The subject of this report first came under Westcott's notice when she was just past three months of age. The upper part of the chest was noticeably high and full. At the age of two months the baby began not to nurse well and the stools showed signs of indigestion. She breathed with effort. Examination of the lungs showed only a weakened respiratory murmur. Venous enlargements were noted over the anterior surface of the chest; the cheeks showed some stellate capillary venous enlargements and the larger veins about the eyes and on the temples were noticeably full and clearly marked. The evidences of intrathoracic pressure gradually became more distinct. An irregular fever appeared. Digestive disturbances became more marked. Cyanosis of the fingers and hands was constantly present in some degree. Death ensued one month later, the child being then four months old. At the necropsy both lungs were found thickly studded with miliary tubercles. At the root of the lungs, in such a position as to press on the trachea to some degree, but more particularly on the descending cava, was a mass of tuberculous glands the size of a pigeon's egg, the center one of which had broken down and contained about 20 minims of purulent fluid. A few scattered tubercles were found in the spleen. The other organs were not affected.

In discussing the possible origin of the infection in this case the mother stated that at the time of her confinement at the hospital a patient was dying of pulmonary tuberculosis in a room across the hall from her room. The fact that the child was only two months old and that the large bronchial gland showed advanced disease makes it certain that the original infection must have occurred soon after birth by inspiration.

Archives of Pediatrics, New York.

August.

29 *Multiple Rhabdomyoma of the Heart Muscle. J. H. M. Knox, Jr., and E. H. Schorer, Baltimore.
30 Etiology and Diagnosis of Tubercular Spondylitis in Infancy and Childhood with Fatal Coma Following the Administration of Alcohol, Chloroform and Ether Anesthesia for Diagnostic Purposes. J. H. Hess, Chicago.
31 Osteogenesis Imperfecta. E. D. Ferner, New Orleans.
32 *Case Simulating Peptic Ulcer. S. S. Adams, Washington, D. C.
33 Case of Acute Suppurative Thyroiditis, with Pressure Symptoms Relieved by Intubation. F. S. Meara and R. S. MacGregor, New York.
34 Further Observations on Citrate of Soda. J. W. Van Derslice, Chicago.

29. **Multiple Rhabdomyoma of Heart Muscle.**—The patient from whom Knox and Schorer obtained this specimen was only 7 months old. The tumors were situated in the myocardium and in the right and left ventricle, the latter being pedunculated.

32. **Case Simulating Peptic Ulcer.**—Adams reports the case of a girl, 11 years of age, who complained of a sudden severe pain in her stomach and soon vomited blood in large quantities. She vomited blood several times that day and incessant hiccough followed. Pain was less after vomiting, but persisted, and the abdomen remained very tender to touch. The patient did not vomit again, although slight nausea was present. A probable diagnosis of peptic ulcer was made, but Adams was of the opinion that the blood did not come from the stomach. The uvula of the patient was adherent to the right tonsil. Adams separated this adhesion after the patient had vomited the blood without exciting any bleeding. He inclined to the belief that the vomited blood came from the irritated fauces by a voluntary effort resembling hiccough. The clinical findings were opposed to the original diagnosis.

Montreal Medical Journal.

August.

35 *Case of Carcinoma of the Upper End of the Esophagus, with Perforation into the Trachea. J. Bell and J. McCrae, Montreal.
36 *Three Cases of Typhoid Fever with Unusual Complications. W. A. Molson and A. H. Gordon, Montreal.
37 Cerebral Tumor Simulating a Vascular Lesion. F. G. Finley, Montreal.
38 Malaria and Its Transmission. S. McGibbon, Forest, Ontario.
39 Case of Epidemic Meningitis of Twenty Hours' Duration. J. McCrae, Montreal.
40 Osteomalacia Associated with Lipemia. O. Klotz, Montreal.
41 Cerebral Complications Secondary to Nasal Disease. R. H. Craig, Montreal.

35. **Carcinoma of Esophagus with Perforation into Trachea.**—In the case reported by Bell and McCrae, a woman, aged 32, the tumor was situated in the upper part of the esophagus. Death ensued as the result of a bilateral aspiration pneumonia with abscess and gangrene of the lung.

36. **Typhoid with Unusual Complications.**—The three cases reported by Molson and Gordon presented features of blood destruction and were accompanied by convulsive seizures. One of the patients also had multiple subcutaneous hemorrhages.

American Medicine, York, Pa.

August.

42 *Influence of Rest. Exercise and Sleep on Gastric Digestion. J. Friedenwald, Baltimore, Md.
43 Pernicious Effects of Alternating Currents of High Voltage. F. H. Millener, Buffalo, N. Y.
44 *Intestine Surgically Considered with Special Reference to Its Sterilization. A New Open Method for Lateral Anastomosis. S. E. Sanderson, Detroit, Mich.
45 Typhoid Fever; Round Worms; Cholecystitis; Cholangitis; Hepatic Abscesses. C. W. Sharples, Seattle, Wash.
46 Mastoid Operations. T. H. Shastid, Marion, Ill.
47 Multiple Chancre. A. F. Büchler, New York.
48 Treatment of Cancer of Breast. B. MacMonagle, San Francisco, Cal.

42. **Influence of Rest, Exercise and Sleep on Gastric Digestion.**—As the result of a number of carefully conducted experiments Friedenwald arrives at the following **conclusions: 1.** In persons with normal digestive powers it makes but little difference whether the individuals rest, exercise or sleep after meals; though after violent exercise or sleep the gastric digestion is very slightly impaired. 2. In patients suffering with superacidity and subacidity it is best to order rest after meals; after violent exercise or during sleep the digestion is impaired in these cases. 3. In patients suffering with motor disturbances of the stomach, it is best to prescribe moderate exercise after meals, for rest, violent exercise or sleep disturbs the digestion under these conditions.

44. **Lateral Anastomosis of Intestine.**—Sanderson's method in some respects copies Connell's method. An opening is freely made into the lumen of the guy at both points where the anastomosis is desired. This opening may be linear or oval and should be large enough to equal, if not exceed, the lumen of the guy. A guy suture of silk or silkworm is passed in to hold the ends of the opening in approximation, two sutures being necessary. Beginning near one the bowels are sewed together from the mucous membrane side approximating the serous coats. The suture employed is a continuous right angle through-and-through suture, all work being done within the lumen of the intestine. Reaching the other guy suture, a knot is tied in the running suture and the guy suture is removed. The running suture is continued around to the starting point, as in the Connell method. The suture material to be used may be silk or catgut.

Journal of the Association of Military Surgeons of the United States, Carlisle, Pa.

September.

49 Importance of the Prevention of Infectious Diseases in the Navy, with a Suggestion as to the Prophylactic Treatment of Some of the Acute Exanthemata. H. G. Beyer, U. S. N.
50 *Treatment of Gonorrhea by Irrigation. W. G. Miller, U. S. Army.
51 Gonorrhea—Its Treatment from the Standpoint of a Military Surgeon. R. M. Thornburgh, U. S. Army.
52 Question of the Origin of the Lues Venerea Among the Conquistadores in Mexico. H. du Rest Phelan, U. S. Army.
53 Suggestion for the Greater Efficiency of the Organized Militia. C. S. Butler, Boston.
54 Calx Sulphurata U. S. P. as a Preventive of Yellow Fever. W. F. Waugh, U. S. N.
55 Otitis Media and Mastoiditis as a Sequel of Influenza. C. D. Center, Quincy, Ill.
56 *Treatment of Fractured Ribs. R. M. Woodward, P. H. and M.-H. S. of U. S.
57 An Emergency Case for Field Service. L. B. Almy, U. S. Army.
58 *A New First Aid Packet. W. M. Angney, Philadelphia.
59 Method of Artificial Feeding of Infants in the Tropics. L. T. Lewald, U. S. Army.

60 Personal Experience with Spinal Analgesia, and Its Application to Military Surgery. H. D. Thomason, U. S. Army.
61 Liver Abscess, with Special Reference to the Etiological Importance of Ascaris Lumbricoides. J. F. Leys, U. S. N.
62 *Peculiar Case of Appendicitis. W. N. Bispham, U. S. Army.

August.

63 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. A.
63½ Status of the Hospital Ship in War. J. C. Wise, U. S. N.
64 Gunshot Wounds of the Abdomen. G. T. Vaughan, U. S. P. H. and M.-H. S.
65 Roll of Honor for 1904-05. Capt. S. C. Stanton, Chicago.
66 X-Ray in Military Surgery. H. H. Hartuug.

50. **Treatment of Gonorrhea by Irrigation.**—Miller employs Valentine's method, except that during the first three days, when the urethra is highly inflamed and very sensitive, he uses only warm sterile water, which thoroughly cleanses the urethra and also allays the inflammation. After the mucosa becomes less swollen the germicide, which is then used, is more effective.

56. **Treatment of Fractured Ribs.**—After determining the nature of the fracture, Woodward scrubs the skin with alcohol or ether to remove all the oily material. The chest is then immobilized by strips of plaster. The plaster which he has found best for the purpose is that known to the trade as Z O plaster. The width of the strips to be employed varies according to the obesity or the reverse of the patient, but as a rule strips two inches wide are used. One of these is measured around the patient and cut of a length to reach from a point one inch beyond the mid-sternal line to a point one inch beyond the mid-spinal line. The other strips are cut the same length, about twelve pieces being necessary. The first strip of plaster is applied parallel to the ribs, i. e., from in front backward and upward, but is placed well below the point of fracture, in some cases nearly as low as the crest of the ilium. The front end is attached first, and then while making considerable tension on the strip, it is carefully and smoothly applied upward and backward to a point just beyond the spine. The second strip is attached in front at a point level with the nipple, and is passed downward and backward to a point in the lumbar region. The third strip follows the direction of the first, overlapping its upper half. The fourth overlaps the second, etc. The line of overlapping should fall directly over the seat of fracture. When completed, the chest should be strapped from a point slightly above the ilium to a point well into the axilla. A four-inch gauze bandage is now evenly applied over the entire chest and abdomen. This makes a soft lining for the starch jacket, which is next applied.

Crinoline used for starch bandages is of different qualities, and it is not always the most expensive crinoline which is the best for the surgeon's purpose. The most suitable quality is saturated with starch. It should be made into bandages four or five inches wide, not rolled too tightly. These bandages should be immersed in tepid water a few moments, but should not be squeezed much, as this wastes the starch. They are then applied over the gauze bandages, and like them form a jacket over the entire chest and abdomen. The crinoline should not be applied with much tension, as it shrinks in drying, and may prove too tight. If the crinoline is of proper quality each layer will agglutinate itself to the one underneath and the edges of the bandage will not curl up. Two safety pins in the end of the bandage are all that is necessary. To hold the jacket in its original position, Woodward makes suspenders by passing a three-inch muslin bandage over each shoulder, the ends meeting low down in front and behind. These are attached to the starch jacket by a series of safety pins. The patient is now placed on his back in bed until the jacket dries, when it will be found straight and smooth, and in this condition it will remain indefinitely. The jacket is not heavy or uncomfortable, and immediately on its application the patient feels a sense of security in taking a long breath without the fear of the sharp pain which he had before.

58. **New First Aid Packet.**—The dressing which Angney has adopted consists of two compresses, each three by three and one-half inches of gauze with absorbent cotton in the center; one is tacked permanently on the bandage; the other is placed loosely on the top of the first compress, and overlying the second compress are a few layers of loose gauze which can be used by a physician for tamponage. The compresses are dusted with boro-salicylic acid. When one wound is present, the double pad can be placed on it; if two are present or if the wound be a long one, then the compresses can be separated and placed in position. There is sufficient bandage to wrap around the leg in its widest diameter or for use around the trunk. The end of the bandage is split, which is a satisfactory method of fixing it in position. Two strips of adhesive plaster are added.

62. **Peculiar Case of Appendicitis.**—The subject of Bispham's report complained of severe pain in the back just below the articulation of the twelfth rib and spine on the right side, one inch from the column. The abdomen was not distended and there was no pain on palpation, except at the point mentioned where there was also some swelling, but no redness. He vomited only when food was taken. His bowels had not moved for several days. Acting on the supposition that there was pus somewhere beneath the localized area in the back, Bispham made a linear incision parallel to the spinal column and directly over the area of swelling and tenderness. A small hematoma was found, about the size of a pigeon's egg, in the latissimus dorsi muscle. This muscle was cut through, and the liver, kidney, colon and pelvis were examined carefully. Everything seemed to be normal, however, with no adhesions or exudates of any kind. The wound was closed and dressed. For the next few days the temperature went up and there appeared some tympanites with pain and tenderness over the right side of the abdomen. Owing to the patient's poor condition, no further operative procedure was undertaken until the third day, when the old incision was opened and several pus cavities were found in the muscular tissue of the back, next to the peritoneum. Further exploration revealed a perforation of the tip of the appendix and a localized peritonitis. There was also a small ulcerated hole through the peritoneum just beneath the appendix which communicated with the cavities in the back. The patient died shortly after the operation.

Ophthalmology, Milwaukee, Wis.

July.

67 Ocular Injuries from Glass and Stone. W. M. Sweet, Philadelphia.
68 Observations on Worth's Methods of Treatment of Convergent Squint in Young Children, with Presentation of Cases. L. Emerson, Orange, N. J.
69 Cure of Convergent Strabismus by Orthoptic Treatment at 20 Years of Age. H. V. Würdemann, Milwaukee.
70 A Secure, Looped, Single-Stitched Advancement Suture, with a Consideration of Scleral Anchorage. M. D. Steveuson, Akron, Ohio.
71 Antipyrin Keratitis. M. Iuouye, Uchi-Saiwai-Cho, Tokio, Japan.
72 Effects of Full and of Minimum Doses of Atropin Sulphate and of Homatropin Hydrobromate. L. Howe, Buffalo.
73 Ophthalmic Subjects in Talmudic Literature. A. Brav, Philadelphia.
74 Monocular Visible Spasm of the Central Artery of the Retina. D. F. Harbridge, Philadelphia.

Journal of Nervous and Mental Disease, New York.

August.

75 Public Obligations of the Neurologist. H. R. Stedman, Boston.
76 Carcinoma of the Nervous System. W. G. Spiller and T. H. Weisenburg, Philadelphia.
77 Temporary Disappearance of the Sensory Symptoms in Syringomyelia. C. W. Burr, Philadelphia.
78 Sphincter Reflexes in Tabes Dorsalis and Paresis. C. F. Martin, Philadelphia.

Journal of the Kansas Medical Society, Lawrence.

August.

79 Prophylaxis of Typhoid with the Influence of the Soil, Fabrics and Flies in Its Dissemination. J. E. Foltz, Hutchinson.
80 Medical Organization. J. Dillon, Eureka.
81 Suggestion in the Treatment of Certain Psychoses. W. D. Toby, Salina.

St. Paul Medical Journal.

August.

82 Surgical Affections of the Patella. G. Schwyzer, Minneapolis.
83 Etiology and Pathology of Gallstone Disease. W. Lerche, St. Paul, Minn.
84 Diagnosis of Gallstones. J. Goodrich, St. Paul, Minn.
85 Surgical Treatment of the Gall Bladder and Bile Passages. J. T. Rogers, St. Paul, Minn.
86 Some General Considerations in the Treatment of Fractures by the Country Practitioner. Emil King, Fulda, Minn.
87 The Toxemia of Pregnancy. F. Leavitt, St. Paul Minn.

Medical Fortnightly, St. Louis.

August 10.

88 Cough—Extrapulmonary Causes of Cough, in Consequence of Pathologic Changes in the Upper Respiratory Tract, and Disturbances in the Function Thereof. J. C. Buckwalter, St. Louis.

89 Two Cases of Cancer Treated with Trypsin Infections and Lotio Pancreatitis Locally. R. H. Davis, St. Louis.

90 Senile Arteriosclerosis. G. E. Rosenthal. Quincy, Ill.

91 Case of Aneurism of the Thoracic Aorta with Ulcer of the Esophagus and Perigastritis. W. H. Rush, St. Louis.

Brooklyn Medical Journal.

August.

92 Stomach as an Etiologic Factor in Disease. C. B. Bacon, Brooklyn.

93 Surgical Treatment of Obstinate Dyspepsia. W. F. Campbell, Brooklyn.

94 Significance of Albuminuria from the Insurance Standpoint. G. H. Pierce, Brooklyn.

Indiana Medical Journal, Indianapolis.

August.

95 Injuries to the Brain, Diagnosis and Treatment. C. E. Cottingham, Indianapolis.

96 How Progress Comes in Medicine. F. C. Shattuck, Boston.

97 Science and Art of Fitting Glasses. E. Davis, New York.

Interstate Medical Journal, St. Louis.

August.

98 Primary Retroperitoneal Sarcoma. J. C. Munro, Boston.

99 Injuries to the Diaphragm. W. C. G. Kirchner, St. Louis.

Journal of the Outdoor Life, Saranac Lake, N. Y.

August.

100 Sanatorium and Its Mission. A. J. Richer, Montreal.

101 Rest vs. Passive Exercise. J. T. Rothrock, Mont Alto, Pa.

102 Hints and Helps to Tuberculous Patients. C. L. Minor, Asheville, N. C.

103 Treatment of Pulmonary Tuberculosis. G. W. Goler, Rochester, N. Y.

Canadian Practitioner and Review, Toronto.

August.

104 Gastroptosis. G. Chambers, Toronto.

Journal Missouri State Medical Association, St. Louis.

August.

105 Anterior Vaginal Coeliotomy Incision. O. B. Campbell, St. Joseph.

106 Nervous System of the Child in Relation to Its Development. S. P. Child, Kansas City.

107 Apparent Cervical Menstruation. T. C. Witherspoon, St. Louis.

Journal of the Michigan State Medical Society, Detroit.

August.

108 Rural City Milk Supplies—Their Relation to Infant Feeding—Home Modification Versus Laboratory Feeding. A. M. Cook and D. M. Cowie, Ann Arbor.

109 Clinical Examination of the Infant's Stool. H. M. Rich, Detroit.

110 Use of Local Anesthesia in the Treatment of Rectal and Anal Disease. L. J. Hirschman, Detroit.

111 Medical Inspection of Schools. E. K. Herdman, Ann Arbor.

American Practitioner and News, Louisville, Ky.

August.

112 Proper Preparation of Plaster-of-Paris Casts in Treatment of Fractures of the Extremities. G. W. Griffiths, Louisville.

113 Thoughts on Uremia. C. P. Fox, Greenville, Tenn.

114 Temperature 92.8° Following Fracture of the Skull. W. O. Humphrey, Louisville.

115 Maternal Impression Superstition, and Why It Survives. E. T. Shelly, Atchison, Kan.

Medical Examiner and Practitioner, New York.

August.

116 Diseases of the Heart. Diagnosis, Prognosis. J. Nevins, Jersey City.

117 Recognition and Importance of Chronic Myocardial Disease. C. S. Williamson, Chicago.

118 Cardio-Vascular System from an Insurance Standpoint. W. F. Boggess, Louisville, Ky.

119 Heredity as a Factor in Life Expectancy. J. M. French, Milford, Mass.

120 Two Factors in Life Insurance; Medical and Family Histories of the Applicant. W. W. Pennell, Mt. Vernon, Ohio.

121 Dangers of the Potters' Trade from the Life Insurance Standpoint. H. G. Norton, Trenton, N. J.

122 Treatment of Dysmenorrhea. M. Jacoby, Mannheim, Germany.

Virginia Medical Semi-Monthly, Richmond.

August 24.

123 Consideration of Serious Surgical Emergencies. J. A. Day, Jacksonville, Ill.

124 Treatment of Placenta Prævia by Cesarean Section. A. P. Condon, Omaha, Neb.

125 Wandering Parasitic or Aberrant Retroperitoneal Uterine Fibromata. I. S. Stone, Washington, D. C.

126 Preliminary Tracheotomy to Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.

127 Arsenicum. H. B. Miller, Lincoln, Neb.

Journal of the South Carolina Medical Association, Greenville.

August 21.

128 Management of Acute Diffuse Septic Peritonitis. Le G. Guerry, Columbia.

129 Scarlet Fever. W. L. Kirkpatrick, Pacolet.

129½ Diagnosis of Obstructive and Nerve Deafness and Classification of Each. L. O. Mauldin.

130 Mountain Sickness as Observed in the Andes. F. A. Coward, La Paz, Bolivia.

131 Negroes and Malaria. R. Wilson, Jr., Charleston.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

August 15.

132 Surgical Opportunity. C. H. Mayo, Rochester.

133 Retroperitoneal Sarcoma. W. D. Shelden and J. F. Corbett, Minneapolis.

134 Acute Gonorrhea in the Male. F. R. Wright, Minneapolis.

135 Microscope in Diagnosis. J. J. Catlin, Buffalo, Minn.

FOREIGN.

British Medical Journal.

August 18.

1 *Pulmonary Edema. F. J. Wethered.

2 *Acute Nephritis (Morbus Brightii). A. G. Gullan.

3 *Food and Food Preservatives. R. Jones.

4 Direct Examination of Esophagus and Upper Air Passages. D. R. Paterson.

5 *Human and Bovine Tuberculosis. N. Raw.

6 Case of Sudden Death Possibly Due to Vagus Inhibition. E. D. Telford.

6½ *Bacterial Action of Compounds of Silver. C. R. Marshall and F. F. M. Neave.

1. **Pulmonary Edema.**—Wethered discusses the clinical history of this condition, with special reference to its causes.

2. **Acute Nephritis.**—In this paper Gullan takes up particularly the treatment of nephritis. To produce a free diaphoresis he prescribes the follownig mixture:

Tincture of jaborandi	m. xxx	2
Sodium benzoate	gr. xv	1
Chloroform water	℥i	30

M. Sig.: One ounce every four hours.

3. **Food and Food Preservatives.**—Jones' paper is based on the report of the London departmental committee on food preservatives made in 1901 and is largely a review of what has been published before.

5. **Human and Bovine Tuberculosis.**—Raw reiterates his previously expressed views on this subject, namely, that human and bovine tuberculosis are distinct varieties of disease, but that the human body is susceptible to both, and especially to bovine tuberculosis in the milk-drinking period of life. He is at present collecting the blood of animals, killed for tuberculosis, the serum of which, after careful preparation, he proposes to use in vaccinating children whose parents died of phthisis, with a view to protecting them against that disease.

6½. **Bactericidal Action of Compounds of Silver.**—An important investigation was recently undertaken under the authority of the therapeutic committee of the British Medical Association by C. R. Marshall and E. F. Macleod Neave to determine the comparative value of the various compounds of silver as bactericides and antiseptics. The following preparations were examined:

	Percentage of silver.
Collargol	86.6
Silver fluoride	81.7
Silver nitrate	63.6
Itrol	60.8
Actol	51.5
Argentol	31.2
Ichthargan	27.1
Argyrol	20.0
Albargin	13.4
Nargol	9.6
Largin	9.4
Novargan	7.9
Protargol	7.4
Argentamine	6.4
Argonin	3.8

The solutions for experiment were made each to contain a definite percentage of silver so that comparisons are made between strengths of the different preparations containing equal percentages of silver. Bactericidal power was determined by noting the percentage of silver necessary to destroy organisms in a mixed culture obtained by allowing uncooked beef to stand in water in an open vessel for four to six weeks. Experiments were also made with a pure culture of *Staphylococcus pyogenes aureus*. The antiseptic action was tested (1) by observing the time taken by minced cooked beef to putrefy in presence of solutions of silver compounds of known strength, (2) by inoculating an agar medium containing a definite quantity of the various silver compounds. The power of diffusion of the various compounds was tested by immersing glass tubes filled with coagulated agar and inoculated with *Staphylococcus pyogenes aureus* in solutions of the various silver preparations and observing the distance to which the silver penetrated, as shown by visible discoloration and also by the antiseptic action. Argyrol excelled the other preparations in diffusion power.

The authors conclude with the following summary: The experiments show that as regards bactericidal action the various silver compounds investigated fall into three groups: 1, Those which are powerfully bactericidal; 2, one—nargol—much less powerfully bactericidal; 3, two—argyrol and collargol—which possess practically no bactericidal action whatever. The first group includes most of the substances investigated, namely, silver nitrate, silver fluorid, actol, itrol, argentamin, argentol, albargin, argonin, ichthargan, largin, novargan and protargol. The bactericidal action of these in solutions containing the same percentage of combined silver is closely similar, and it is practically impossible to place them in any order of activity which would be true under all circumstances. As argyrol and collargol are not bactericidal, it is evident that the amount of silver which a compound may contain is no criterion of its bactericidal power. Moreover, in view of the results obtained with argyrol, it seems impossible to attribute the good effects which many clinicians have obtained with it to its bactericidal action.

The Lancet, London.

August 18.

7 *Treatment of Cancer of the Stomach. A. W. M. Robson.
8 Public Supply of Pure or Specially Prepared Milk for the Feeding of Infants. C. F. McCleary.
9 Infantile Mortality and the Employment of Married Women in Factory Labor Before and After Confinement. G. Reid.
10 *Increase of the Power of Local Authorities with Regard to Milk Supply. A. K. Chalmers.
11 *Sterilization of Tuberculous Sputum and Articles Infected by the Tubercle Bacillus. T. Kirkland and M. S. Paterson.
12 Observations on the Life History of Leucocytes. C. E. Walker.
13 Acute Lobar Pneumonia in a Pygmy. W. H. Gregory.
14 Internal Secretion and the Ductless Glands. S. Vincent.
15 Frictional Electricity: A Factor in Caisson Disease. G. W. F. MacNaughton.
16 *Observations on the Action of Strontium Salts on the Coagulability of the Blood. J. B. Nias.
17 Note on the Structure of Spirochæta Duttoni. J. W. W. Stephens.

7. **Cancer of Stomach.**—Robson emphasizes the importance of an early diagnosis of cancer of the stomach in order that a radical operation may be performed at the earliest possible moment. If necessary, an exploratory operation should be done, even in cases where the disease is advanced and a tumor is perceptible. When the disease is too extensive for any radical operation to be done, the palliative operation of gastroenterostomy is indicated. It can be done with very small risk and may considerably prolong life. Robson has found that some cases, thought to be cancer, too extensive for removal, have cleared up after a gastroenterostomy, the patient getting quite well. In cases of disease of the cardiac end of the stomach too extensive for removal, the operation of gastrostomy may considerably prolong life and prove of great comfort to the patient by preventing death from starvation. Even where the disease is too extensive either for removal or for a gastroenterostomy, the operation of jejunostomy may prove of service to the patient. Where a radical operation can be performed, the thorough removal of the disease may bring about as much relief to the patient as does the operation for the removal of cancer of the breast, uterus, and other organs of the body. In some cases a complete cure may follow.

10. **Improved Milk Supply.**—The object of Chalmer's paper is to consider what alteration in existing legislation seems to be necessary to enable local authorities to insure the provision of a pure milk supply in the city of Glasgow.

11. **Sterilization of Tuberculous Sputum.**—Kirkland and Paterson describe the method employed at the Brompton Hospital. To sterilize sputum an iron vessel is used which is provided with a movable lid and which has at the bottom two steam jets so arranged that a circular motion is given to the contents. The sputum having been poured into this vessel, the lid is screwed down and steam is allowed to enter until a pressure of 15 pounds has been obtained. The contained sputum is allowed to boil under the action of steam for a period of 20 minutes, after which it is allowed to cool to a temperature somewhat above 100 F. and is emptied into the drain by opening a valve in the bottom of the sterilizer arranged so that all the contents can drain away. For cleaning the sputum pots they employ a large iron tank having the necessary valves for admitting water and steam and a valve in the bottom of the tank through which the contents could be emptied into the drain. Inside the tank is a cage which can be raised out of, or lowered into, the tank at will. This cage is constructed of brass tubes framed and braced together. On the horizontal tubes the sputum cups are suspended by their handles and the covers of the cups are placed in suitable trays provided in the cage. For the purposes of sterilization and cleaning, the cage full of soiled sputum cups and covers is lowered into the tank. Water is admitted into the tank and boiled by the admission of steam. After boiling for 20 minutes this water is emptied and the process is repeated. The cage is then raised and the cups and covers are removed. By this method much less handling of the cups is required and the cleaning of both cups and covers is found to be more thoroughly performed than when washed by hand. The saving of time effected by this method of washing the cups enables the same staff as was formerly employed in collecting and washing the cups to wash the handkerchiefs in addition. The soiled handkerchiefs are conveyed from the wards in covered pails and are at once placed in the sterilizing and washing machine, where they are first sterilized and afterwards washed. After washing they are taken out and placed in the hydro, which, with the calender, is in a separate room. After being dried in the hydro they are passed through the calender and are then folded and returned to the wards.

16. **Action of Strontium Salts on Coagulability of Blood.**—From personal experiments Nias is convinced that the lactates of strontium and magnesium, in doses of from 1 to 2 grams, are serviceable substitutes for the salts of calcium when the latter are not absorbed from the alimentary canal.

Journal of the Royal Army Medical Corps, London.

August.

18 Prevalence of Mediterranean Fever Among British Troops in Malta, 1905 (To be Continued). A. M. Davies.
19 Health of the Soldier; With Special Reference to Preventable Diseases. H. J. Barratt.
20 *Rapid and Practical Method of Diagnosing Typhoid Fever. L. W. Harrison.
21 *Rider's Sprain. P. G. Levers.
22 Removal of Wounded in Hill Warfare; A Method Lately Introduced into Practice in the 30th Punjabis. W. W. Jeudwine.
23 Inspection of Tinned Foods. W. W. O. Beveridge.
24 South African Stock Diseases. D. Bruce.
25 Internal Anatomy of Stomoxys. F. M. G. Tulloch.
26 Hints Regarding the Management and Use of X-Ray Apparatus (To be continued). F. Bruce.

20. **Diagnosis of Typhoid.**—Harrison suggests the routine examination of the blood by culture as a rapid means of diagnosing typhoid fever. The method should be applied to every case of fever. The method employed is as follows: The patient's arm, at the bend of the elbow, is cleaned with soap and water, turpentine, 1 in 1,000 solution of perchlorid in rectified spirit, and ether rubbed on; ether is then dropped on from a drop bottle every few seconds till the puncture is made. The vein is made prominent, as for venesection. During this time an antitoxin syringe of 10 c.c. capacity is being sterilized by filling with oil at 160 C. As soon as the syringe has cooled down to the temperature of the hand, the needle is given a final dip in the oil to destroy any germs which might have fallen on its point during the cooling of the syringe barrel, and is then, almost at once, run into the vein. The puncture of the vein is very simple; the needle is kept almost parallel with the vein, the point is run through the skin and pushed steadily on; the eye of the needle should look upward and the point is bound to enter the vein. The syringe is filled by withdrawal of the piston and the needle withdrawn from the vein. A flask of 500 c.c. of broth is opened in the usual manner, and after expressing a few drops of the blood to wash off any germs which might have fallen on the eye of the needle during the

necessary interval between withdrawal of the needle and opening of the flask, the whole of the 10 c.c. of blood is forced into the broth and the flask replugged. The flask of broth with the patient's blood is then put into an incubator and kept at a temperature of 37 C. In a successful result, after 20 hours, the broth is often found to be turbid, particularly if the culture is made early before agglutinins and bactericidal substances have developed in the blood. A loopful of the turbid broth is put out on a slide, covered with a slip, and examined with an eighth-inch objective. If motile bacilli are seen, a portion of antityphoid serum, of which the maximum agglutinating power has previously been ascertained, is suitably diluted with distilled water, a loopful of the diluted serum placed at the edge of the slip, and the effect watched. If agglutination occurs, one is in possession of the information that a patient admitted with fever has a motile bacillus circulating in his blood, which bacillus is agglutinated by a suitable dilution of antityphoid serum.

21. **Rider's Sprain.**—Ievers insists that rider's sprain deserves a most careful study, both as to its causation and treatment. The muscle engaged is not what is sometimes erroneously called the "tailor's muscle," but the adductor longus, which may be affected to any extent, varying from a slight sprain to more or less complete rupture of the muscle and its sheath or tendon. In severe cases the point usually torn is at its insertion into the rami of the pubes. The sheath of the muscle may be completely severed in addition to its tension, and the belly of the muscle forming a large tumor in the upper or inner third of the thigh; more often than not it is in the right thigh that the muscle gives way, and when there is much laceration one often finds very extensive ecchymosis extending in all directions from the part immediately implicated. The cause is usually owing to the extra effort occasioned in keeping one's seat, either in taking a fence, when the horse happens to peck badly, or when in jumping a high wall the horse unexpectedly attempts to change, thereby causing the rider a sudden jar, the extra strain being sufficient to cause the muscle to give way. In the treatment, Ievers advocates a somewhat similar procedure to that of a fractured bone. He has, therefore, advised an appliance for this purpose, formed of the stoutest elastic band made, which should be five inches in width, stiffened by a couple of slips of whalebone let in at intervals, and cut so as to envelop in its circumference the upper portion of the thigh, taking care that the opposite ends do not approximate by two and one-half inches, so as to admit of the required stretch to get a good grip when fastened by means of three straps and double or whole buckles on outer aspects of thigh. Further, it is essential that the upper edge of band be brought right up to the fork. A suitable pad should be inserted inside the elastic band over the seat of injury, and finally a soft leather strap, similar to a bridle rein, should be attached to a stud or buckle on upper and outer edge of appliance, then brought round the body and crossed so as to form a figure-of-eight over hip of side affected, and also fastened to a separate buckle attached to elastic band. By this means the great drawback of most appliances, i. e., the tendency to slip down, is effectually prevented. With this appliance on, the patient is made quite comfortable and could almost at once commence riding.

The Dublin Journal of Medical Science.

July, 1906.

27 *Further Series of Enucleations of the Prostate. Sir William Thomson.
28 Notes on the Training of the Voice. H. Law.
29 Treatment of Eustachian Deafness. A. Cresswell and G. Cresswell.

27. **Enucleation of Prostate.**—Thomson reports on 18 cases in which the prostate was removed by the suprapubic method. The ages of the patients varied from 53 to 76. There were five deaths in this series. One was due to ether bronchitis and occurred in a patient 75 years old, who also suffered from mitral disease. Another man died 14 days after operation from a suddenly developed peritonitis. The third death was due to sepsis and occurred within 24 hours. Another patient died 12 weeks after operation from gangrene of the right lung. The last death was due to a pelvic cellulitis.

Presse Médicale, Paris.

30 (XIV, No. 62) La présence de colloides dans l'eau de boisson de Paris et dans les eaux minérales (in drinking water). H. Iscovesco.
31 Le radium au point de vue physiologique et thérapeutique. H. Dominici.
32 *Les torticolis d' origine otique. R. Leroux.
33 (No. 63). Traitement des broncho-pneumonies graves par les abcès de fixation. P. Daireaux.
34 *Radioscopic Study of Infant's Stomach. L'estomac du nourrisson. Forme: limite inférieure; mode de remplissage et d' évacuation. G. Leven and G. Barret.
35 *Spoons.—Cuillers. A. Martinet.

32. **Wryneck from Otitis.**—Leroux reviews the history of torticollis resulting from some lesion in the ear or complications, since Gellé first called attention, in 1894, to its possibility. In many cases the torticollis is due to neuritis of the spinal accessory nerve, as he had occasion personally to observe in 2 patients. After a suppurative otitis, the sterno-cleido-mastoid and trapezius muscles showed signs of paralysis and atrophy. In tests in which wax was injected in the cadaver at the points where pus usually presents in a suppurative process in the ear, the spinal accessory nerve was always found encircled by the wax, showing the almost unavoidable involvement of this nerve in such a process. If examination fails to reveal signs of mastoid or glandular suppuration, thrombophlebitis of the jugular vein may be suspected, as the spinal accessory nerve almost forms part of the wall of this vein, or the torticollis may be traced to meningitis. In the absence of signs of any of the above, examination of the blood may reveal latent suppuration or an extradural abscess. When the torticollis is the only symptom observed, it suggests that the nerve is involved only in its cervical portion, and only the external branch. Laryngeal disturbances are liable when both branches are involved. In some cases the patient becomes deaf after or during torticollis without ever exhibiting any symptoms pointing to the ear. In others there are no ear symptoms, but suddenly violent cerebral symptoms follow the torticollis. In every case of wryneck careful examination should be made of the ear.

34. **Radioscopy of Infant's Stomach.**—Among the interesting findings reported was the lack of any time difference between the emptying of the stomach after ingestion of breast milk and of diluted cow's milk. The evacuation proceeds progressively, and with quantities between 80 and 175 c.c., requires from an hour and three-quarters to two hours before it is completed.

35. **Spoons for Medicines.**—Martinet suggests various ways in which physicians can be sure that their patients are getting uniform doses of medicine. Spoons vary widely in size and capacity and cause irregular dosage. A good remedy would be to prescribe only the amount needed for the 24 hours, to be taken in four portions. Graduated medicine glasses, he says, are inaccurate, for mechanical reasons, which he cites. He accepts as the best remedy the use of an inexpensive semi-spherical spoon, 3.82 cm. in diameter, to hold 15 c.c., the handle straight, the spoon to be made of aluminum or something of the kind, and to be presented by the druggist with each filled prescription.

Revue de Chirurgie, Paris.

Last indexed, page 156.

36 (XXVI, No. 7). *Le traitement chirurgical des anévrysmes de l'artère sous-clavière. M. Savariaud.
37 Déformation de l'epine de l'omoplate (scapula). C. Féré.
38 *Des fistules gastro-cutanées. M. Patel and R. Leriche.
39 Amputation osteoplastique femoro-tibiale (dite de Sabaneieff). Etude cadavérique. L. Chevrier.
40 L'énucléation incomplète du-scaphoide. C. Capillery and M. Ferron.
41 *Technique opératoire de la pyloro-gastrectomie pour cancer. R. Leriche.
42 (No .8). *Des luxations du poignet compliquées d'issue des os (dislocations of the wrist complicated by protrusion of boues). Couteaud.
43 *Résection totale des saphènes dans le traitement des varices superficielles des membres inférieurs. Terrier and Alglave.
44 *Contribution à l'étude du cancer du rectum. Son traitement. (Continued). Martin du Pan.

36. **Aneurism of the Subclavian Artery.**—Savariaud reviews the results of operative treatment of aneurism of the subclavian artery during the last 20 years. Treatment differs as the aneurism is exclusively outside of the scalenus muscle, or partly inside and partly outside. In the latter case surgical

measures are too dangerous, as the ligature would have to be applied so close to the heart. The Brasdor technic of peripheral ligature, above and below the aneurism, is preferable. The mortality is nearly zero, while the remote results are often surprisingly excellent. Nine cases in which this treatment was applied all resulted in an operative cure, without any mishap. In 22 cases of extrascalenic aneurism, treated by incision, extirpation or ligature of the second or third part, there was only a single death for which the operation was in any way responsible. In 20 cases of extrascalenic and intrascalenic aneurism there were only 9 operative cures, with 3 recurrences and 8 deaths. Out of the total material of 56 cases in which an operation was attempted, there were 41 operative cures and 10 deaths. Gelatin treatment was unable to effect a permanent cure in the 4 cases in which it was tried. One patient was reported cured by the gelatin, and the case is handed down in the records as cured, although operative treatment was required later, and it figures also as a surgical case. The motor disturbances seemed to be aggravated by the gelatin in Savariaud's own case. Gelatin should be given a trial before surgical measures, without fail, as it certainly is harmless and has quite a number of improvements and cures to its credit. It is especially indicated when operative measures are liable to prove too serious, as, for instance, when the lower two-thirds of the subclavian are involved. The details of the various cases are summarized.

38. **Fistulæ Following Gastric Ulcer.**—Patel and Leriche here give the particulars of 6 cases of gastrocutaneous fistula following an ulcer. If the fistula is located high, the discharge from it is intermittent and there is not much disturbance of the general health. Medical measures should be given a thorough trial, and if they fail the best treatment is by resection of the ulcer with suture of the stomach walls. When the fistula is located low, the discharge is practically continuous and the general health soon suffers. Resection and suture are inadmissible, the authors state, for obvious reasons, and palliative operations, such as duodenostomy and jejunostomy, are serious and insufficient. Direct suture should be attempted, although it does not always prove successful.

41. **Pylorogastrectomy for Cancer.**—Leriche gives a detailed description of the technic by which the duodenum is mobilized as a preliminary to resection of the stomach. The various steps of the operation are shown in 8 illustrations.

42. **Dislocation of the Wrist with Protrusion of Bones.**—Couteaud warns against amputation in such cases, as a mutilated hand is worth far more than an artificial one. Resection is better than amputation, and reduction alone is better still. Resection of the dislocated bones of the carpus is necessary, he states, and tardy resection of the bones of the wrist is the last resort. Protracted antiseptic baths are indispensable, with mobilization and massage at the earliest possible moment. Radiograms of patients treated on these principles show excellent healing without ankylosis.

43. **Total Resection of the Saphena.**—The first part of this article by Terrier and Alglave was reviewed on page 156. This part gives the history of 21 cases, with 35 illustrations. The technic includes the total resection of the saphenous veins in treatment of superficial varices and ulcers of the leg and thigh, sometimes of both legs. The results were extremely gratifying.

44. **Cancer of the Rectum.**—Du Pan reviews 123 cases of cancer of the rectum, treated by Kocher between 1873 and 1904. Of this number, 40 proved inoperable and only palliative measures were attempted, but 83 patients were treated by extirpation of the rectum. Kocher does not accept adhesion to the prostate as a true contraindication. About 41.67 per cent. of the patients—a total of 20—have had no signs of recurrence to date, but 5 have succumbed to an intercurrent affection and only 15 are alive at present, some of them 11 years after the operation. His proportion of long survivals is thus 25.75 per cent., while other European surgeons report only from 5 to 18 per cent., with the single exception of Hochenegg, who has 21 surviving out of 84, that is, 25 per cent. Kocher advises as the best technic that which includes fixation of the central stump to the anus with or without invagination in the peripheral stump denuded of its mucosa. The peritoneum should be carefully sutured, not tamponed nor drained. The after-treatment should be extremely solicitous, with constant supervision. At the slightest sign of infection, opening up the wound and irrigating give the best results. He ascribes his freedom from heart failures to the use of ether instead of chloroform. Local recurrence was observed only in 39.7 per cent., generally in the perirectal tissue. Recurrence operated on at once gave excellent results. One of the patients, a woman, is still in good health after fifteen years, although she has been operated on four times for recurrence. Frequent examination is necessary, as recurrences rapidly become inoperable. Metastasis in the liver occurred only by way of the veins, and only when gaping vessels were left into which the cancer cells could then find their way. Hemostasis should be immediate and as complete as possible, avoiding leaving any bone surface in the operative wound. Spontaneous metastasis in the liver was observed only when there had been some complication in the vascular system.

Semaine Médicale, Paris.

45 (XXVI, No. 33.) *Parallelism between Condition of Blood and Condition of Bone Marrow in Pernicious Anemia..—Du parallélisme entre l'état du sang et l'état de la moelle osseuse dans l'anémie pernicieuse. C. Aubertin.
46 *L'hypothermie migraineuse chez les tuberculeux. C. Mantoux.

45. **Parallelism Between the Condition of the Blood and That of the Bone Marrow in Pernicious Anemia.**—Aubertin does not refer to the quantity of the blood, but to its composition, and he states that examination of the blood is an infallible index of the condition of the bone marrow, as he describes in detail.

46. **Migraine and Hypothermia in the Tuberculous.**—Mantoux has had occasion to observe 4 tuberculous patients with attacks of migraine at which times the temperature was subnormal. The tuberculous are extraordinarily sensitive to all causes which send the temperature up or down.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

47 (XXXII, No. 29.) Die Behandlung der Verlagerungen des Uterus (displacements). Schatz. Clinical lecture.
48 *Inflammation of Extradural Tissue of Spinal Cord in Epidemic Cerebrospinal Meningitis.—Pachymeningitis spinalis externa acuta aut cellulitis perispinalis acuta. R. Peters.
49 *Ueber traumatisch-chirurgische Facialislähmungen (paralysis). L. Jacobsohn.
50 *Die Resektion der Nasenscheidewand bei primärer Tuberculose (of nasal septum). A. Onodi.
51 Foreign Bodies in Urethra and Bladder.—Fremdkörper in Harnröhre und Blase. M. Weinrich.
52 Ueber missed labour (missed abortion). M. Plaut.
53 *Ueber Menstruationsfieber, menstruelle Sepsis, und andere während der Menstruation auftretende Krankheiten infektiöser resp., toxischer Natur (menstruation fever, etc.). (Concluded.) G. Riebold.
54 Yeast for Cutaneous Affections.—Ueber Hefebehandlung bei Hautkrankheiten. E. Saalfeld.
55 Nucleated Red Corpuscles.—Ueber kernhaltige rote Blutkörperchen und deren Entwicklung. C. S. Engel.

48. **Inflammation of Extradural tissue in Meningitis.**—Peters discusses this subject from various standpoints and expresses his conviction that the lesions are induced by toxins in the blood. Direct propagation of the lesions is much less probable.

49. **Surgical Traumatism and Facial Paralysis.**—Jacobsohn states that in the 6 cases of traumatic peripheral facial paralysis which he has encountered in the last few years, there was a history of an operation on the head in every instance. Köster has also reported 6 similar histories in 8 cases of traumatic facial paralysis. Jacobsohn reviews the experience of other surgeons in this line, and gives the particulars of 2 cases in which resection of the trigeminus was followed by tardy paralysis. In one case, at least, he thinks that the paralysis might have been avoided by more cautious technic. Harvey Cushing's modification of the Hartley-Krause technic for removal of the Gasserian ganglion he accepts as a great advance, rendering consecutive paralysis much less probable. Better still would be the avoidance of any operation if equally good results can be obtained by stretching the nerve. This should be given a thorough trial. If an operation is considered necessary, the surgeon should endeavor to refrain from cutting the branches of the facial nerve.

50. **Resection of Nasal Septum for Primary Tuberculosis.**—Onodi gives the particulars of a case of extensive primary tuberculous lesion in the nasal septum cured by radical excision. The clinical picture and exploratory excision spoke for cancer and the lesion was removed by opening the nasal cavity in the median line and turning back the soft parts, not attempting endonasal intervention. The patient shows no signs of recurrence or of a tuberculous affection elsewhere to date, more than a year since the intervention.

53. **Menstruation as Source of Infections and Intoxications.**—Riebold has been making a special study of various morbid manifestations liable to accompany menstruation. He regards it as extremely important in the pathogenesis of numerous febrile affections. He thinks that there is no doubt that the menstruating uterus may occasionally prove the source of infection for actual septic affections. Fever accompanying menstruation is by no means uncommon, and is the result of absorption of bacterial toxins or of products of decomposition through the menstruating genitalia. The action of toxins is also evident in the numerous affections of the skin and nerves which may be observed accompanying menstruation, such as erythema, urticaria, herpes zoster and neuralgias. Still more important is the fact that infection or intoxication from the menstruating genital organs is liable to induce various forms of rheumatic affections, including actual polyarthritis and cardiac affections of a rheumatic nature. The course of the acute menstrual articular rheumatism does not differ in any respect from the classic type except, possibly, in its unusual mildness in some cases. In 8 of the 15 cases observed only the joints of the feet were swollen and painful, and the rise in temperature was slight and transient. The heart was not perfectly sound in any of these 15 girls; in all a valvular defect was apparent, quite serious in some. The changes in the heart were severe, out of all proportion to the mildness of the rheumatic involvement of the joints. The experiences related, Riebold thinks, establish the fact that menstrual infection or intoxication of a rheumatic nature may be the insidious and unrecognized origin of a valvular affection. Some typical examples of this febrile menstrual rheumatoid affection and of septic menstrual fever are related in detail. The only source for the staphylococci found in the blood in one case reported must have been the menstruating uterus. As menstruation ceased the symptoms subsided. In such cases there was none of the usual leucocytosis during menstruation. These septic cases are rare but undoubtedly exist and may explain certain cases of "cryptogenic sepsis." Patients who have had two, three or more recurrences of the menstrual rheumatoid affection have been free from them in his experience when the vagina was regularly rinsed twice a day at least with some antiseptic fluid. This is especially necessary when an odor suggests a putrefactive process. Frequent careful cleansing of the external genitals is important in prophylaxis of all these morbid menstrual phenomena.

Gazzetta degli Ospedali, Milan.

Last indexed, page 814.

56 (XXVII. No. 82.) Negro's Eyeball Sign of Facial Paralysis.—Di un fenomeno non ancora descritto, che si verifica durante la rotazione volontaria massima verso l'alto del globo oculare nei casi di paralisi periferica del N. facciale. C. Negro (Turin).
57 (No. 84.) Sulla genesi della opalescenza nei versamenti pseudochilosi (pseudo-chylous effusions). G. Ghedini.
58 Perforating Ulcer of Foot Cured by Stretching the Plantar Nerve.—La cura dell' ulcera perforante del piede collo stiramento dei nervi plantari. G. Baroni.
59 Changes in Kidney after Injury of Spinal Cord.—Sulle alterazioni funzionali ed anatomo-patologiche del rene, in seguito a lesioni traumatiche del midollo spinale. S. Diez.
60 (No. 87.) The Sucking Reflex in Infants, in the Senile and in the Insane.—Reflesso boccale. A. Perugia and A. Bagolan.
61 Removal of Adenoids in Treatment of Whooping Cough.—Patogenesi e terapia della pertosse. L. Chierici.
62 Unilateral Secretion, Obstruction and Pain in Case of Foreign Body in the Nose.—La diagnosi di corpo estraneo nel naso. V. de Cigna.
63 Note di medicina pratica per la diffusione dell' ipodermoclisi. G. Zanoni.
64 (No. 90.) *Infezione tubercolare primitiva delle tonsille—dei vel palatini—dei testicoli—delle articolazioni. Sua evoluzione ed esiti. G. Ghedini.
65 Le scosse ritmiche del capo nel morbo di Flajani-Basedow (rhythmic jerking of head). O. Bellucci.
66 Il delirio e gli altri sintomi nervosi nella pneumonite crupale. E. Bracchi.
67 (No. 93.) *Action of Grippe on Course of Various Infections.—Sull' azione che l'influenza esercita sul decorso delle varie infezioni. S. Livierato.
68 2 casi di neurosi traumatica. A. Conti.
69 *Contributo alla sintomatologia del carcinoma gastrico. G. Fratti.
70 Tuberculosi della ghiandola mammaria. E. Delfino.
71 Opoterapia tiroidea nel morbo di Basedow. G. Baglioni.
72 (No 94.) Intorno a 2 casi di leucemia. Cura con i raggi Roentgen. E. De Renzi.

64. **Primary Tuberculous Infection in Monkeys.**—Ghedini reports various series of researches with experimental tuberculous infection of different organs in monkeys. In all the experiments the lymphatic system constantly played a predominant part in the diffusion of the infection from the primary focus throughout the organism, and especially to the lungs.

67. **Influence of Grippe on Other Infections.**—Livierato found that injection of the bacteria of grippe with other germs favored the proliferation of the latter. The toxins generated by the grippe bacteria lower the resisting powers or act in some other way that promotes the invasion and proliferation of other pathogenic micro-organisms. He found further that the toxins of grippe bacillus injected after the organism has already been invaded by an infection having usually a protracted course, has the effect of materially shortening the course of the latter.

69. **Cancer of the Stomach.**—In the first case described the only symptom to call attention to the stomach was occasional slight hematemesis. There were no digestive disturbances nor pains in the stomach and the appetite was good. The pyloric region was slightly tender on pressure. The patient was a man of 56 and he suddenly succumbed with signs of perforation. Autopsy revealed a perforated cancer of the pyloric region. In the second case a man of 40 had suffered for some time from dyspeptic disturbances and gastralgia when acute rapidly fatal ileus developed. Autopsy showed also in this case a cancer of the pyloric region which might have been successfully removed if the warning of the recurring gastralgia had been heeded in time. No tumor could be palpated in either of these cases.

Riforma Medica, Naples.

Last indexed, page 547.

73 (XXII, No. 27.) Azione della formaldeide sullo sviluppo del bacillo della tubercolosi e dello stafilococco piogeno aureo (action of formaldehyd). G. Martinotti.
74 (No. 28.) *Sopra il mio nuovo processo di amputazione della mammella (technic of amputation of breast). I. Tansini.
75 Blastomycetes' Soluble Products in Etiology of Cancer.—Azione dei prodotti solubili dei blastomiceti in rapporto alla etiologia dei tumori maligni. F. Sanfelice.
76 *Plastic Operations on Bladder.—Esperimenti sulla plastica della vescica urinaria. L. Baldassari.
77 Osservazioni cliniche sulle intossicazioni. F. Sarcinelli.
78 Azione del radio sull' eccitabilita elettrica dei muscoli (radium and the muscles). G. Muggia and B. Ohannesian.
79 2 casi di morbo di Pott nei quali si rinvenne il segno di Kernig. C. Pagani.
80 (No. 29.) Malattia di Glénard con cuore mobile (visceral ptosis and movable heart). G. Spagnollo.
81 Animal Tissues as Culture Medium for Tubercle Bacilli.—I tessuti animali come substrati nutritivi per il bacillo tubercolare. B. de Vecchi.
82 *Il delirio nella fase di guarigione di alcune occlusioni intestinali (delirium during recovery from ileus). P. Capasso.
83 *Resultati pratici dell' impiego del mio tifodiagnostico. G. de Rossi.
84 (No. 30.) Tumori del 4 ventricolo. C. Besta.
85 *Il trapianto tendineo nella cura dello strabismo (tendon grafting). G. Monzardo.

74. **Amputation of Breast.**—Tansini has modified the technic he recommended in 1895, to prevent necrosis of any part of the flap. By cutting the flap so as to include important arteries in the base, there is no danger of necrosis. The pedicle must be 6 or 7 cm. in diameter, and its center should coincide with a point 3 cm. from the posterior axillary line, 5 cm. from the spine of the scapula and 10 cm. from its angle. The flap is an elongated oval, slanting from above downward toward the median line of the back. The anterior margin of the flap starts at the end of the incision where it reaches the axilla, and this anterior margin is sutured to the anterior margin of the defect. The flap contains arteries which insure its nourishment. The technic is illustrated.

76. **Plastic Operations on Bladder.**—Baldassari advocates a technic which has proved very successful in experimental work on dogs. When a small defect in the bladder wall has to be covered he takes a corresponding flap from the bladder wall

itself near by. The flap contains a layer of serosa and a muscular layer, leaving the muscular layer exposed, but this gap can easily be covered by taking up a fold in the bladder wall, freshening the edges if necessary. The muscular layer is split where the flap is cut, leaving the half united with the mucosa intact, and cutting the pedunculated flap out of the other half of the muscular layer with the serosa on its outer side. The pedunculated flap is then drawn over the defect and sutured in place, and the omentum is caught lightly above with a few stitches.

82. **Delirium and Death During Convalescence from Ileus.**—In order to prevent absorption of toxins during recovery from intestinal occlusion, Capasso urges the necessity of purgatives, preferably oil, to free the intestine of foci of intoxication from retained fecal matter. Saline injections, intravenous or subcutaneous, should also be used to help cleanse the organism by "lavage of the blood."

83. **Typhoid Diagnosticum.**—De Rossi announced some time ago that the agglutination test is more sensitive if the cultures of the typhoid or other bacilli are first heated to 60 C. for an hour. A bouillon culture, kept for 24 to 48 hours at a temperature of 27 C., is distributed in test tubes which are fused and heated to 58 or 60 C.—no higher—and kept at this point for one hour. Bacilli thus treated keep perfectly for the agglutination test at any time, and the findings are more delicate than with live bacilli, either with the typhoid bacillus, *Bacillus subtilis*, *Bacillus pyocyaneus* or the *Staphylococcus albus*.

85. **Tendon Grafting for Strabismus.**—Monzardo describes his technic for correcting squint due to paralysis of one or more of the muscles of the eye. The principle is the same as in tendon transplantation in case of paralysis of the feet.

Hospitalstidende, Copenhagen.

Last indexed, page 813.

86 (XLIX, No. 26.) Studier over den saakaldte typiske Radiusfraktur. (Concluded.) K. Poulsen.
87 (Nos. 27-28.) *Om Blæretuberkulosens Betydning og om dens Helbredelighed (curability of tuberculosis of the bladder). T. Rovsing.
88. *Et Tilfælde af Trigeminus-neuralgi behandlet med Röntgenstraaler. K. Faber.
89 (No. 29.) Paralysen af Musc. Cricothyreoideus. H. Mygind.

87. **Bladder Tuberculosis and Its Cure.**—Rovsing gives illustrations of specimens from some of the 56 cases of tuberculosis of the bladder that have passed through his hands. He also gives in a large picture an outline view of the kidneys, ureters and bladder in each case in miniature, grouping them all on a single plate, the tuberculous portions shaded, and each set marked with the initial letter of "recovery," "extirpation" or "carbolic treatment" as the case may be. In the female cases the outline of the uterus and adnexa is added to each set. It is an effectual method for graphic portrayal of the various conditions, for comparison both of the lesions and of the final outcome under carbolic acid treatment. Primary genital tuberculosis only exceptionally involves the bladder, he says, and it is a still rarer occurrence for the bladder to be alone or primarily affected with tuberculosis. As a rule, the bladder lesions have spread from a tuberculous affection of one or both kidneys. The only certain means of determining the condition of the kidneys is by catheterization of the uterus, and only then when the urine from one or both kidneys is found free from evidences of tuberculosis. Rovsing's cases show that a tuberculous lesion in the bladder may spread upward into the second ureter, toward the sound kidney. The urine from this ureter will then show signs of pus and tubercle bacilli when in reality the kidney beyond is still sound. In such cases, instead of abandoning the patient to his fate, as necessarily doomed by a bilateral tuberculous affection of the kidneys, a double exploratory lumbar incision, with possibly ureterostomy, may reveal that one kidney is still sound, so that its mate can be safely removed, after which the tuberculous lesions in the bladder and ureters are liable to heal spontaneously, if not too advanced. In the advanced and extensive cases, he advises treatment with carbolic acid, which he has found very effectual, having completely cured 13 patients by this means. After the bladder has been cleansed of pus he injects 50 c.c. of a 6 per cent. solution of carbolic acid, warmed to about 35 C. The fluid is retained for three or four minutes and then evacuated, when it flows out, muddy or milky. This procedure is repeated three or four times until the fluid comes away somewhat clear. The whole procedure requires only about ten or twelve minutes. The carbolic acid solution is drawn out from the bladder through a catheter, but the bladder is not rinsed afterward. A suppository containing 2 cg. of morphin is introduced into the rectum immediately after the injection, to deaden the pain which is liable to be quite severe for two or three hours after the treatment. Treatment at first—until the urine of the intervening day becomes nearly clear—is repeated every second day, later with longer intervals, and the cystoscopic findings are compared with the previous findings at first every week, then every fortnight and then each month. The results in his cases were that the tubercles subsided and the lesions healed, leaving a smooth white surface with a mother-of-pearl sheen. Rovsing thinks that the carbolic acid penetrates into the cells and interstices, following the same paths the tubercle bacilli have taken after their toxins have irritated the hyperemic mucosa of the bladder and thus produced conditions favoring the entrance of the bacilli into the bladder wall. A 6 per cent. aqueous solution of carbolic acid soon kills tubercle bacilli in the test tube, and its action in the bladder is probably enhanced by the hyperemia and phagocytosis which it induces. Be this as it may, one thing is certain, he says, namely, that for the first time a local treatment has shown itself capable of curing even very extensive and virulent tuberculosis of the bladder. He has never witnessed any serious by-effects. The urine was slightly discolored in some cases, and two little girls vomited a few times the next day. The only drawback is the pain liable to follow the injection, but this can be kept under control with a little morphin. The length of treatment varied from one to six months, according to the severity of the case. A radical cure is possible only when the bladder process is primary or when the primary focus in the kidney has been removed.

88. **Roentgen Treatment of Neuralgia.**—For four years Faber's patient had suffered from trigeminal neuralgia with two intervals of a few months' freedom from pain after resection of the inferior alveolar nerve and later of the mandibular nerve. As the neuralgia recurred with increased intensity and frequency, ten Roentgen exposures of ten minutes each were made of the upper half of the face within sixteen days. Improvement was evident at once and the patient was soon entirely free from pain. There has been no recurrence during the few months since. Faber remarks that it seems incredible that such an old and agonizing affection could be cured with merely five ten-minute exposures of the upper half of the patient's face, but such was the case.

Hygiea, Stockholm.

Last indexed, page 813.

90 (LXVII, No. 1.) Clinical Training in Surgery.—Om klinisk undervisning i kirurgi förr ach nu, med särskild hänsyn till vårt land. J. Borelius.
91 *Om hudepiteliom och deras behandling med Finsenljus (superficial epithelioma). H. I. Schlasberg.
92 Om osteitis deformans. N. A. Ahlberg.
93 Om lefverabscess och dess förekomst i Sverige (liver abscess in Sweden). B. Carlson.
94 (No. 2.) Pawlow's Research on Digestive Processes.—Om betydelsen af Pawlow's arbeten för läran om matsmältningsorganens fysiologi och patologi. L. Wolff.
95 *Influence of Goiter on Growth of Children.—Inflytandet af struma, särskildt Basedowstruma, under pubertetsåldern på längdtillväxt och förbeningsprocesser. I. Holmgren.
96 *Simple Test for Chlorids in Urine.—Ett enkelt förfarande för approximativ bestämning af klormängden i urin. G. Ekehorn.
97 *Till frågan om traumatiskt glaukom. K. Stalberg.
98 "En svensk medicinisk folkskriftsförfattare på 1600—talet." Historical sketch. V. Djurberg.
99. (No. 3.) *Den habituella skoliosen och dess förhållande till asymmetrisk tillväxt. P. Silfverskiöld.
100 *Fall af motoriska neuroser behandlade med hypnotism. E. af Geijerstam.
101 "Nyststjärna" för Katgut (star winding reel). A. Reuterskjöld.
102 N. Rosen von Rosenstein, 1706-1773. O. Medin.

91. **Treatment of Epithelioma with Finsen Phototherapy.**—Schlasberg reviews his experience with 19 cases of cutaneous epithelioma treated by the Finsen technic with eminently favorable outcome. The results were much better and prompter when the growth was thoroughly curetted beforehand, and this

combination of curettement and Finsen phototherapy he regards as a distinct advance. It is free from the possible unpleasant by-effects of Roentgen treatment, while it seems to be fully as effectual at least. The prospects are better the less extensive and the more circumscribed and superficial the growth. If the glands in the region are swollen, the epithelioma has probably burrowed too deep for its ramifications to be reached by the rays. The variety of the epithelioma does not seem to influence the results of treatment, with the possible exception of nevus epithelioma. The cure was complete in 14 out of the 19 cases, although a repetition of the treatment for recurrence was required in 2 cases. From 2 to 30 or more exposures were given, but the number was much smaller in the cases with the preliminary curettement. He has not been able to find any record that Finsen or others adopted this combination.

95. **Influence of Goiter on Growth.**—Holmgren examined 17 patients with goiter, mostly of the exophthalmic type, and noticed that all were above the average height for their years. He found further that the epiphyseal cartilage became united at an earlier age than customary, and yet the body grew so rapidly that such persons were unusually tall. He has never heard this fact mentioned, and yet it completes the modern assumption of the functions of the thyroid gland, especially the hyperfunctioning in exophthalmic goiter.

96. **Simple Test for Chlorids in Urine.**—Ekehorn has devised a chlorometer which he has found very simple and practical for daily use by the busy physician. A test-tube about 14 mm. in diameter and 23 cm. long is graduated as follows: The bottom of the tube is marked off for a space to hold 2 c.c. This is labeled U and contains the urine. A space of 1 c.c. above is labeled I for the indicator. The third line corresponds to another c.c. and is marked zero. Above this the tube is graduated to correspond to each additional c.c. up to 15 c.c. He has two reagents, similar to Volhard's method. The first reagent is a solution of iron sulphocyanid; the second is a solution of silver nitrate. The formula for the sulphocyanid is 0.332 gm. potassium sulphocyanid in 40 c.c. distilled water with a saturated solution of sulphate of iron, free from chlorin, to make 100 c.c. The formula for the silver solution is 5.815 gm. silver nitrate; 50 c.c. of nitric acid, free from chlorin, and of a specific gravity of 1.2, and distilled water to make 1,000 c.c. The amounts of the sulphocyanid and of the silver must be equivalent in the quantities taken. Urine to the 2 cm. mark is first dropped into the test-tube from a pipette. The sulphocyanid reagent is then added to the line I, then the silver solution is added, and the tube is corked and shaken from time to time, until the color reaction occurs. The fluid assumes a grayish-white aspect as it loses the tint of the sulphocyanid. When this has happened, the line corresponding to the upper limit of the fluid represents the proportion of sodium chlorid per thousand. Albumin in the urine must first be coagulated by heating. The method is similar to Volhard's, only the nitrate of silver solution is five times weaker than with the Volhard technic.

97. **Traumatic Glaucoma.**—Stalberg reviews 6 cases from the literature and reports one personally observed in which glaucoma developed after an accident accompanied by considerable emotion or nervous strain.

99. **Scoliosis the Result of Asymmetrical Growth.**—Silfverskiöld has had occasion to examine 3,234 girls in the Gothenburg schools and found scoliosis in 416, that is, in 12.8 per cent. To his surprise, none of the factors usually incriminated in the etiology of scoliosis could be detected in many of the cases, and none common to all. The largest proportion of cases occurred in apparently robust girls of 15 and 16. More careful physical examination of 50 girls with scoliosis revealed an unsuspected asymmetry in development which, he thinks, is probably responsible in large measure for the scoliosis. The right leg was found a little longer than its mate in 37 out of the 50 girls, and the left leg longer in 8; that is, in 90 per cent. of the 50 girls inspected one leg was appreciably longer than the other. The difference varied in different children, being seldom more than 1 cm. In one child the left femur was found to be 0.5 cm. and the left tibia 1 cm. longer than the right. As the children developed into symmetrical growth the scoliosis vanished as a rule. His findings suggest the importance of early detection of asymmetry in development and its correction by extra thick soles and heels, as a means of warding off or curing scoliosis. Orthopedic measures may prove useful as adjuvants, but correction of the asymmetry is the main point in treatment in the majority of cases if not in all. It is possible, he adds, that there may be asymmetry in internal structures beyond our power to detect at present.

100. **Motor Neuroses Treated with Hypnotism.**—Six cases of convulsions or tics are described, not relieved by any treatment until daily seances of hypnotism were inaugurated, when improvement promptly followed. The patients were girls between 11 and 17. In the first case the spasmodic contractions occurred in the face, but in different groups of muscles at different times. They were first noticed in infancy and had always been severe, not choreiform. After ten daily seances of hypnotism, in 1902, the tic was much reduced and had entirely subsided by the eighteenth sitting. The contractions recurred several times afterward in a mild form, but were promptly met with renewed treatment, and after several brief courses the patient has been permanently free from serious trouble since January, 1905, although a slight tendency to the tic still persists and will probably never be entirely eradicated. The father had been mentally unsound and the mother showed signs of tabes. The patient in the second case was a feeble-minded girl of 17, who stammered very much, blushed deeply at the slightest cause, and made involuntary movements with the right arm and leg—an actual and severe tic—whenever she began to speak. The effect of some brief courses of hypnotism was striking, especially as there were no indications of hysteria. In the other cases there was a suspicion of hysteria or of chorea minor. The benefit in a case of chronic chorea was so pronounced that a trial of hypnotism in all chronic cases is urged by Geijerstam. Five seances induced great improvement, and a complete cure was realized after 20 more, with no recurrence during the four years since. One patient was a woman of 27 with severe neurasthenic tremor from childhood, a brother also presenting the same tremor. She improved very much after 25 seances, the improvement progressing after 25 more, although slight traces of the tremor still persist. The hypnosis was applied in the different cases until profound hypotaxis was induced, occasionally with amnesia.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

American Practice of Surgery. A Complete System of the Science and Art of Surgery by Representative Surgeons of the United States and Canada. Editors, J. D. Bryant, M.D., and A. H. Buck, M.D., New York City. Complete in Eight Volumes. Illustrated. Vol. I. Cloth. Pp. 818. Price, $7.00. New York: William Wood & Co., 1906.

Clinical Diagnosis. A Text-Book of Clinical Microscopy and Clinical Chemistry for Medical Students, Laboratory Workers, and Practitioners of Medicine. By C. P. Emerson, A.B., M.D., Resident Physician the Johns Hopkins Hospital, Associate in Medicine the Johns Hopkins University. Cloth. Pp. 641. Philadelphia: J. B. Lippincott Company.

I. Maternal Transmission of Immunity to Diphtheria Toxin. II. Maternal Transmission of Immunity to Diphtheria Toxin and Hypersusceptibility to Horse Serum in the Same Animal. By J. F. Anderson, Hygienic Laboratory—Bulletin No. 30. Paper. Pp. 19. Washington: Government Printing Office, 1906.

Outlines of Practical Sanitation For Students, Physicians and Sanitarians. By H. B. Bashore, M.D., Inspector for Pennsylvania Department of Health. First edition, with forty-two Illustrations. Cloth. Pp. 208. Price, $1.25 net. New York: John Wiley & Sons, 1906.

Ueber Blinddarmentzündung. Wann soll operiert werden? By Med.-Rat Dr. J. Baumgartner, Oeffentlicher Vortrag mit Projektionsbildern. Mit. 32 abbildungen im Text. Paper. Pp. 41. Munich: Verlag der Aerztlichen Rundschau (Otto Gmelin).

Annual Report of the Bureau of Health for the Philippine Islands, Period from Sept. 1, 1904, to Aug. 31, 1905. Paper. Pp. 192. Manila: Bureau of Printing, 1906.

Spencer Microscopes and Accessories, Microtomes, Bacteriological Apparatus and Laboratory Supplies. Paper. Pp. 198. Spencer Lens Company, Buffalo, New York.

Annual Report of the Library Committee of the College of Physicians of Philadelphia, for the Year 1905. Paper. Pp. 6.

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Original Articles

GALLSTONES AND GALL-BLADDER DISEASES FROM THE STANDPOINT OF THE PHYSICIAN.

NORMAN BRIDGE, M.D.
LOS ANGELES, CAL.

These diseases are common, and they usually come first to the knowledge of the physician. He first prescribes for them and sometimes studies them; frequently he makes a diagnosis.

Whether or not he appreciates their character, he has for them a large measure of responsibility which he can not escape. If he believes a given case has become a subject for surgery, he is responsible to the patient that the consultant shall be capable, that he has the skill in surgical technic to do successfully the several steps of an operation; and, far more important, that he has the knowledge of pathology that fits one to deal with unexpected surgical conditions. The physician may recall cases in which a surgeon has found such conditions and, never having considered their possibility, has blundered in a nonchalant sort of way, to the harm of the patient and the regret of all concerned.

Then occasionally the physician finds the surgeon timid and unwilling to do an operation which, the former thinks, is demanded. This is not a fanciful picture, but actually occurs, and it is a very grave, as well as an embarrassing situation. Equally with the surgeon, even more than he, the physician is responsible both for the diagnosis and treatment of these cases. He can not hide behind his ignorance of their pathology and surgery by pleading that the surgeon knows about them better than he. Such a plea deserves opprobrium.

Further, the physician can often present the urgency of an operation to the patient better than the surgeon. Most people dread operations, and many suspect the surgeons of having undue enjoyment in operating and of being biased by visions of money. For these reasons the physician is a more acceptable counselor; but even he, in these days, is not free from the suspicion of seeking a part of the surgeon's fee.

SYMPTOMATOLOGY.

Every case must have initial medical consideration, as every one requires medical treatment, whether or not it ever comes to operation. Although the symptomatology is now fairly well understood, conditions arise now and then that are decidedly puzzling.

No doubt the chief beginning symptoms of gall-tract trouble have for long been attributed to the stomach. Gastralgia was formerly a very common disorder; now it is properly passing as a frequent pathologic entity. Most cases of pain in the bile tracts are still called gastralgia by a majority of medical men. It is only the sudden, awful colic in the right episgastric region (usually so intense as to require morphin) that is yet widely regarded as true hepatic colic, but the attacks of milder pain occurring periodically are nearly as certain to be in the hepatic structures.

It is substantially true that colic is always the result of muscular spasm, and in the bile tracts it is generally due to the grasp of a stone, the colic ceasing when the spasm relaxes, and the stone perhaps falls back or forward into a larger cavity. Stones not in the grasp of contracting fibers rarely, if ever, cause true colic. Pains from the ulceration of stones are usually long continued and rarely attended with spasm, while they are often attended with fever and other evidences of sepsis.

But colic may be due to spasm of other muscles besides those in the gall tracts, and we are in danger of going too far in the current generalization, for we must remember that there are gastric pains from ulcer, irritation by stomach contents, and even from distension. These may cause pains closely simulating the hepatic colic. The following case is illustrative:

Case 1.—A girl, aged 25, was seized with sudden intense epigastric pain, closely resembling gallstone spasm. It fluctuated, was worse and better every few minutes. She had been treated for stomach trouble and had lived on a restricted diet for some time. She had eaten a rather hearty meal three hours before, the pains having begun two hours after the meal. The stomach was found globular, and distinctly palpable at the moment of severest pain, less so as the suffering grew less. The pulse and temperature were normal. An attempt to pass the stomach tube led to prompt vomiting of a large quantity of undigested food, consisting mostly of prunes. The pain ceased immediately and did not return for two months, during which time the patient was under observation.

This was undoubtedly a pure case of gastric pain, due to spasmodic contractions of the stomach in its effort to evacuate its irritating contents through a spasmodically closed pylorus. Yet, in the absence of palpation, it strongly simulated the common gallstone colic.

But a similar experience of relief of epigastric pain from evacuation of the stomach contents obtains in true hepatic colic, and a lull in the suffering is, therefore, no proof of the disappearance of the whole cause of the pain. The causation of hepatic colic by overloading the stomach or by sudden indigestion is so common that prompt evacuation of the stomach is usually in order. The following case is in point:

Case 2.—Mrs. B., aged 50, had for 4 days occasional slight discomfort in the epigastric region. It had once or twice awakened her at night and kept her awake for half an hour. Then severe pain came on with little or no tenderness and no fever. The pain fluctuated but little. Zinc sulphate, 20 grains, promptly brought up a lot of spinach and liquids, with marked although not complete, relief. Then a dose of morphin gave absolute relief, which continued three days. No fever followed, and after a restricted diet for two days she began to eat more freely, when pain of a severe, although not a terrible character, came on, which was nearly continuous for a day, when she vomited a large amount of macerated asparagus tips with prompt relief of pain. But the pain soon returned, lasting another day, when it suddenly ceased. A single small gallstone was found in the stools a day after the subsidence of the pain. During this last attack there appeared slight but distinct tenderness over the gall bladder and a little jaundice the last day or two. Temperature was 101 at times. There was a slight leucocytosis (8,000 whites) at the height of the pain.

Pains below the scapula (right most often) and about the sternum probably do result from irritation of the bile ducts due to stones and otherwise, but, to my mind, they are unreliable as a guiding symptom; at best they corroborate other and more positive indications of biliary trouble. Many a physician has been led by ordinary chest-wall neuralgias, when unsupported by other evidence, to a false diagnosis of hepatic disease. Probably, too, some have ignored these pains when they have been reflex and due to gall-tract trouble.

After the pain, the most important symptom is tenderness over the gall bladder, found best by deep steady pressure, while the respirations move the organ against the fingers, and by sharp percussion over this region at the moment of full inspiration. Then come chills and fever, perhaps very irreguarly, and leucocytosis, with possible jaundice, although this last is never proof of infection. Palpability of the gall bladder and enlargement of the liver may be urgent evidence, and local peritonitis is most urgent of all. The evident peril of the patient depends on the degree of these signs and symptoms; that is, the general evidence of infection from the hepatic region. The hidden peril depends on the uncertainty as to exactly what may be going on behind the wall of the abdomen. Pain is not *per se* evidence of peril, infection is, and this often comes indirectly from the thing that provokes the pain. As to some of these perils we may profitably review our past experiences for instructive, as well as surprising, lessons, particularly our work during the years when we were not thinking of the gall bladder as a large factor in the pathology of the abdomen.

There is certainly one class of gall-bladder affections that has been almost universally misunderstood. Such are certain chronic ones, with profound chills and fever, occurring in an irregular, erratic manner, extending over years of time, often with long intervals of quiescence and with almost no local or focal signs. The following remarkable case[1] illustrates what is meant:

Case 3.—Mr. C., widower, aged 77, well preserved and plump, had lived a regular and moderate life of office business. For fifteen years he had had an occasional sudden attack of chill and high fever. A profound chill would be followed by high temperature for a few hours; then a profuse perspiration. The next day he would feel well and might so continue for six months before another attack. Sometimes he thought the attacks were provoked by slight indiscretions in diet; he was never guilty of a great indiscretion. They grew more frequent with the years.

Course of Disease.—During the winter of 1900-1901, while sojourning in California, these attacks had become rather frequent, coming as often as once a week, then two or three times a week. In some of them he was slightly delirious. An attack lasted about 6 hours and the temperature often reached 104. He now began to feel greatly prostrated for some hours after an attack. The chill would come without any regularity as to time, although it came oftener in the afternoon or evening. There was no pain or tenderness, that he was conscious of, in any part of the body, either during the attacks or between them. The intervals were without fever.

He lost 20 to 30 pounds in weight within 6 months and was growing progressively weak. There was very trifling tenderness beneath the right costal arch, elicited by deep pressure and manipulation, and no other sign of disease. Digestion was fair, bowels were regular, or a trifle constipated, and the urine contained a few hyaline casts, but no albumin, and the solid output was nearly up to the normal. The blood showed no malarial organisms during an attack and there was slight leucocytosis (8,500 whites).

Operation.—Operation revealed a gall bladder contracted to the size of the end of a small finger and, of course, situated deep in the abdomen. Its walls were very thick and the gall-bladder site of the liver was covered with considerable fibrous tissue, evidently the result of chronic inflammation. The viscus itself was found filled with a mucoid material, without a stone. A drainage tube was fastened at the opening of the gall bladder and kept there for several weeks, when it was forced out by the healing of the sinus from the bottom.

The first week after the operations there were two slight chills, followed by a temperature of 101, lasting but a short time. Thereafter, and up to last report, which was April, 1906, no symptoms of his old trouble have appeared. The operation seems to have effected a complete cure. Unfortunately, it was not possible to make a bacteriologic culture from the contents of the gall bladder.

Another case had a similarly contracted gall bladder, without chills and fever, but with years of frequent sharp attacks of diarrhea:

Case 4.—Miss M., aged 26, gave a history of several severe paroxysms of epigastric colic, some 5 or 6 years before. They were without known fever or jaundice, and left no symptoms the patient was conscious of. Later she had periodic attacks of diarrhea that was substantially rebellious to all treatment. This trouble lasted three years or more. Then developed suddenly a localized peritonitis about the gall bladder, with fever and great tenderness. Under medical treatment the acute symptoms subsided, but there was deep tenderness and slight fever remaining a month later, when the case was operated on by Dr. Murphy. A gall bladder, much contracted, thickened and retracted, was found full of pus, and without a stone. It was drained; and it recovered with a complete subsidence of the attacks of diarrhea.

In this case, like the previous one, there was fibrosis about the gall bladder and about its usual place against the liver, showing chronic inflammation to have existed for a long time. In this case diarrhea was as mysterious as the chills and fever in the previous one. Both were clearly produced by gall-bladder disease.

That such cases as these must come to be better studied and given surgical relief earlier goes without saying, and the responsibility lies almost solely with the physician. They constitute his opportunity and his duty. Such cases are numerous in every community, and every physician of large experience has the dubious pleasure of recalling instances of temporizing neglect or complete failure to appreciate what, in the light of present-day knowledge, were very evident gall-bladder cases that projected themselves before him with proof that now seems as plain as day. But he was blind and deaf.

I must mention another case that vividly illustrates the long continuance of gall-bladder symptoms without recognition:

Case 5.—Mr. A., aged about 54, had had for about a dozen years, occasional seizures of intense epigastric pain, lasting one to six hours, and often ending in vomiting. Morphin injections were often required. The attacks nearly always followed a hearty meal of rather indigestible food. Many times the pain was distinctly to the right of the mesial line. Sometimes there was tenderness for some days after an attack. Only once or twice had there been jaundice and then only for a brief time.

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[1] This case has already been partially reported by Dr. J. B. Murphy who preformed the operation.

I saw the patient, in consultation with a friend (to whom the case was also new), a day after an attack began. Then a localized peritonitis about and below the gall bladder was demonstrable. Fever, tenderness, and constant pain were present, with rapid, weak pulse, and general evidence of desperate sickness. There was no jaundice. It was supposable that a rupture of the gall bladder (or of the stomach at the site of an ulcer), had occurred to produce the peritonitis. The situation precluded the possibility of even an effort at surgical relief and the man died the next day. The postmortem showed a normal stomach, a large gall bladder, partially collapsed, a half inch of its fundus being folded over on itself, and a plastic peritonitis over a space about and below it of 6 by 8 inches. This region was slightly bile-stained near the gall bladder. The gall bladder had evidently leaked from distension, but no gross rupture was discoverable. The contents consisted of mucoid material and a little bile. The cystic duct was not patulous. There can be no doubt that for many days before this attack, the enlarged gall bladder and the urgent need of surgery could have been easily discovered by the most casual examination.

The true significance of enlarged or distended gall bladder is often missed, especially in the presence of jaundice. Long-continued jaundice with large gall bladder rarely means stone, while such jaundice with no distension of the gall bladder means stone with probably more than 80 per cent. of certainty. Long-continued jaundice with distended gall bladder signifies, with a very large percentage of certainty, some tumor obstructing the common duct. Such tumor may be in the pancreas, liver or intestine, and is likely to be malignant. With the distension of gall bladder may come also considerable enlargement of the liver as a whole, without pain or tenderness and without irregularity of its surface such as is often present in carcinoma.

SURGICAL TREATMENT.

Whether operation ought to be done in all cases of proven gallstones or of suppuration or distension of the gall bladder is the same question over again of the misfortunes of the appendix. Patients recover or become quiescent, remain so for years (even with gallstones), and die of other diseases or of old age. Hence one camp of doctors contends that in all such cases we should not operate until forced to by the most exigent conditions. The other camp says that, for the sake of safety, operating should always be done and usually done promptly, since the next attack might be fatal. Both are in part right; neither can prove the other wholly wrong. The unknowable elements of the subject, which are of the nature of a game of chance, that permit so many patients to wait and never come to great harm and that tempt doubters to say, as to some patients operated on, that possibly they might have recovered or become quiescent without operation if they had waited; and that send so many waiting patients to death in surprising ways, who apparently might have been saved by timely and proper operations; these uncertainties put off, and will continue to put off, the day of final, complete agreement among the profession about this class of cases.

One of the elements referred to is the utter impossibility of ever knowing the exact pathologic state until the body is opened; another is the indeterminate measure of the physiologic resisting power of the particular patient until after he is dead.

The fact is that, with gall-bladder infection proved, whoever waits for an operation takes some risk of his life, for he can not know that a hidden avenue of fatal infection is not being formed. It is the right of any responsible person to take that risk if he likes, whatever the hazard may be; and in some cases the hazard does not seem to be much. Certainly the mere presence of stones without infection is not dangerous *per se;* it is the uncertainty as to when the stones may start an infection that constitutes the menace. But a sudden profound chill followed by high fever of short duration, and then by profuse perspiration, are not necessarily proof of an infection that puts life in imminent peril, unless there are also the local signs of a severe character, such as great tenderness, pain and swelling. Case 3 is proof of this proposition.

People are taking great personal risks in manifold ways all their lives and with the lightest thought. But if one suffering from cholelithiasis, to the extent of producing marked symptoms, would minimize to the lowest point his danger of death from it, he probably will have it dealt with surgically; always provided he has a surgeon who is wise in pathology and procedure, as well as expert in technic, and provided he, the patient, has good vital organs. That general statement is still true of the diseased appendix; it is true of gallstones and gall-bladder infection as well.

All cases of chronic cholelithiasis in which the suffering has led to the opium habit should be operated on. Every case of known distension of the gall bladder by fluid of any sort is in constant peril and should be operated on if possible. If there is reason to believe that the bladder contains pus, operation is urgently demanded. And in all cases in which frequent recurrences or the persistence of symptoms indicate the progressive contraction and fibrosis of the gall bladder operation should be insisted on, for in these there is some danger of an explosion of infection that may destroy life and a certainty of the disease getting worse and not better. An operation in the absence of urgent infection (after an attack is over, the so-called "interval"), supposing good vital organs and a good surgeon, is almost devoid of danger; a small fraction of 1 per cent. of mortality.

MEDICAL TREATMENT.

All cases of proven gallstone or gall-bladder trouble are proper subjects for surgical consideration, whether they are to be regarded as surgical cases or ever come to operation. Whether operation is to be done or not, when conditions do not sound the insistent need of an operation, or the patient declines, or the physician sees reasons against an operation, proper medical treatment should be instituted always, and persistently carried out. This is as true of the gallstone troubles as it is of those of the appendix.

What are such measures? In the acute cases there should be absolute rest of the body. Rest of the stomach and bowels to the extent of starvation for some days is best, especially where peritonitis is present or threatened. Nutrient enemas may be allowed tentatively, but never nutrition by the stomach in such cases. The upper abdominal organs must be kept still; not shaken about by peristaltic movements. During the initial pain it is always best to evacuate the stomach promptly, and for this purpose an emetic of sulphate of zinc is perhaps better than the stomach tube, since it tends to relax spasm and often evacuates food contents that could not pass through a tube. Enemas are best to evacuate the bowels in the acute cases. After starvation begins, the bowels accumulate little fecal matter and give little trouble. General measures to sustain the powers of life, as nutrient enemas and perhaps hypodermics of strychnin, are always in order after a few days of the starvation. Perhaps there is some benefit to be expected from hot poultices or ice bags over the epigastrium. It is much to be regretted that our views of the exact effect and value of these measures should not be more settled and unanimous than they are; some of us prize the hot applications, some use the cold, while others deny the value of either.

In the subacute and chronic cases the daily full flushing of the bowels by alkaline laxative waters is useful, but it is irrational to suppose that gallstones are thus washed away. Nor do olive oil or any other of the pretended expulsive agents have the smallest effect. The thing that happens is probably merely the elimination of effete matter from the body, thus increasing the physiologic resisting power. This process is aided by a restricted diet of the most proper foods and by general good hygiene. It is the custom in Europe to send patients with chronic gall-tract diseases to some of the spas (mostly to Carlsbad) for a course of the waters, to see if an operation can be avoided by the appearances of recovery. These measures are all useful, for the patient gets the benefit of an abstemious regimen, for a time at least, in addition to the waters, and thus is frequently able to improve in a marked manner.

To go to the springs, drink freely of water and live on a low diet, be much out of doors, and rest from work and perhaps from cares is always wholesome for these cases. Such a vacation can be taken once or twice a year with great propriety, but it has little power to postpone the day of a final surgical operation or death, if, on returning home, the patient goes back to his former habits of overfeeding, irritation of stomach, lack of depuration, and generally unhygienic life. This latter is just what a large number of patients are constantly doing. By this course they invite infection from irritating things in their gall tracts and so hasten surgical intervention. This last is no misfortune if the surgery can be done at the right time and under the best conditions; but they usually regard it as a misfortune and think they are fighting it off by their occasional water cures.

The only proper course for such patients, who would be fairly well and avoid surgery, is to live lives of absolute regularity and abstemiousness, rigidly temperate in everything except the use of water, and hygienic and moderate in every day's living. One day of overdoing, overeating or overdrinking, or of severe chilling of the body, may start an infection and precipitate an acute attack that will destroy life unless prevented by timely surgery.

If a chronic gallstone patient who refuses surgery wishes to manage his health in the usual erratic manner and so make an operation or death certain, it is perhaps his privilege as a citizen to do so. But it is only common fairness that he should know the inevitable tendency of his ways, and it is for the physician to show him this and to point out a wiser course, and then leave the responsibility with the patient, where it really belongs.

Operative Treatment of Lung Cavities.—According to J. Berry, in the *Clinical Journal*, June 6, 1906, incision and drainage constitute the only operation on lung cavities that is of practical importance. This is more feasible in cavities at the base than at the apex or deep seated in the lung. It is indicated in abscess where the results are good (mortality 20 per cent.) and in gangrene (mortality 35 per cent.). In bronchiectasis and tuberculosis the results are not encouraging. A patient with abscess due probably to the bursting of a liver abscess into the lung made a good recovery after operation.

NEPHROLITHIASIS.

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In the searchlight of that greatest of all beacons, pathologic and surgical experience, new territory is being invaded and taken possession of by modern surgery, and fewer and less debatable grounds remain along the border line of internal medicine. In no locality is this better settled than in nephrolithiasis. Stones in the pelvis of the kidney or ureter, when known to exist, are looked on as dangerous foreign bodies and dealt with accordingly. Occupation, locality, or age does not, in my opinion, have any direct etiologic bearing on these cases. As a matter of fact, we do find more cases in persons between the ages of 20 and 50 years, but we find more people between these periods. I have found this condition to exist about equally in the two sexes. High living and sedentary habits are said to predispose to the formation of stones in the kidney, but my experience does not sustain this claim. The separation of the solids from the urine in the pelvis of the kidney gives rise to the condition known to the layman as "gravel" and produces only mild symptoms of mechanical irritation of the ureter, bladder and urethra. This condition may be transient, or it may lead to more serious stone formation by these little particles becoming agglutinated, by the presence of an infection, blood, mucus or pus, yet it is possible for a stone to form without the evidence of bacterial invasion or structural changes in the kidney. The nucleus of a stone may be composed of one salt of calcium, or uric acid, while the body of the calculus is made up of another. Carbonate of calcium stones are rare in man, and are deposited in alkaline urine, while the uric acid and oxalate of calcium are found to have their origin in acid urine. The chemistry of these cases, while very valuable and interesting from a scientific standpoint, is overshadowed by the diagnostic and surgical phases, to the busy practitioner and surgeon.

Oxalate of lime calculi are found most frequently, and usually produce the severer types of symptoms and pathology.

The right kidney, like other structures on the right side of the median line in the abdomen, is the one most frequently affected by stone, yet in rare instances both organs have calculi.

VALUE OF EARLY SURGERY.

To appreciate thoroughly the value of early surgery in these cases, one must understand the pathologic changes wrought by time in the ureter and kidney.

It is only a question of time in every case of renal calculi until an infection is developed, and, when once started, a nephritis is the result; if the ureter is occluded, dilatation of the pelvis takes place, and a pressure obliteration of the parenchyma is sure to follow unless quickly relieved. Perinephritic abscess, with extensive burrowing of the escaped fluids, takes place in some cases. The source of the infection may be from the bacteria in the blood, but usually is from an ascending ureteritis. A surprising number of infectious cases have their origin from the *Bacillus coli communis*, probably by direct invasion through an aseptic adhesion of the kidney to the ascending colon.

The number of stones and their sizes present a wide range, from one to dozens, from a mere speck of sand to a stone weighing many ounces.

I have found that the cases of uric acid stones, as a rule, have only one small, irregular, angular, speculated stone, while the oxalate of lime stones have been large, multiple stones, with roughened surfaces, taking the shape of the kidney pelvis and calices. The phosphatic variety is usually an irregular, friable, semi-mushy stone found in old suppurative cases (Fig. 1). The carbonate of calcium stone, a rare variety, is smooth, multiple, irregular and very hard, producing kidney structural changes only slowly.

The range in weight of stones removed in my own work has been from a few grains to nearly four ounces. The calculus, as a rule, is found in the pelvis of the kidney or in one of the calices, yet it is of no uncommon occurrence to find a good-sized stone imbedded in the parenchyma. These are the cases that so often give rise to postnephritic abscess. These imbedded stones are often overlooked at the time of the operation.

Morris estimates that both kidneys are affected in about 10 per cent. of the cases. In none of my cases have I found both organs with stones in them.

The uric acid and oxalate of calcium stones form more easily than the pasty, semi-solid, phosphatic deposits.

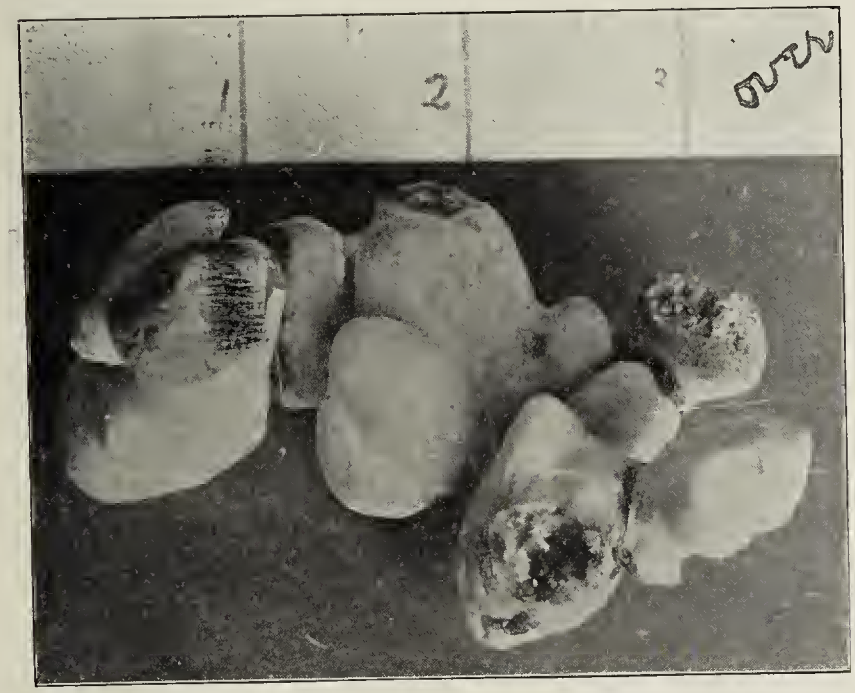

Fig. 1.—Nephritic calculi, carbonate of calcium. Weight, 1,540 grains.

A small stone may pass from the kidney and give rise to no symptoms, and a very large calculus may be found as a surprise in the pelvis of the kidney at a postmortem. Several subjective symptoms may be absent in the presence of a stone easily palpable externally.

A healthy kidney is sooner or later converted into a diseased one by harboring these foreign bodies. This change usually takes one of the three courses: Interstitial sclerosis, atrophic changes in parenchyma due to calculous hydronephrotic pressure or suppurative pyelonephritis, and rarely carcinoma or sarcoma as the result of chronic mechanical irritation. These pathologic changes have all shades of variation from a mild microscopic change to a complete destruction of the kidney with death of the patient from coma, amyloid changes in other organs, with a hectic accompaniment and death. While a stone remaining in the kidney is of much danger to that organ, the hazzard is materially increased if the calculus, in its endeavors to reach the bladder, becomes lodged in the ureter. A stone thus situated may cut its way out of the ureter and lead to urinary infiltration, or completely block the flow of urine from that kidney and destroy the functions of the organ by pressure of retained urine, or it may be the source of a calculous anuria by interfering with the function of the opposite organ. The persistence of pain is a matter of no small consequence in such a case.

DIAGNOSIS.

In making a diagnosis of stone in the kidney, it might be well for us always to remember that there are a number of other maladies producing symptoms misleading in character, and, again, a stone may exist without producing the typical stone history, or the symptoms may be manifested in a remote locality. We know that many obscure febrile symptoms are produced by a stone in the gall bladder; the same is true of nephrolithiasis. A stone that disturbs the surface epithelium and permits absorption may give rise to a urinary (septic) chill, the source of which may puzzle the diagnostician. I have seen a number of such cases.

If at a nephrolithotomy a large stone is found and there is a short symptomatic history, we all know that the stone was a long time forming; hence must have had a long quiescent period. I am firmly of the opinion that in such a case symptoms were present, but not correctly interpreted. The use of the microscope and the sifting of obscure evidence will often lead us to make a correct diagnosis where others have failed. Lumbago, a pain referred to the glans penis, or clitoris, increased desire to urinate, retraction of testicle, etc., all, as a rule, are sympathetic manifestations. A carefully compiled clinical history extending over a period of years will often clear the way to a correct deduction. An attack of pain in the side, or back, ten or fifteen years ago, may have been an attempt to expel a calculus that has remained quiescent in pelvis or kidney ever since, the patient being in danger all the time of the development of a suppurative process. Tenderness, as a symptom of renal calculi, is often absent, and too much reliance should not be placed on it. Tenderness, as a rule, is found only in those cases in which there exists a marked enlargement from inflammatory involvement of the kidney. Pain is present in the great majority of these cases. Of much diagnostic value is hematuria, as with few exceptions blood can be detected in the urine unless the ureter is completely occluded. In that event the presence of renal colic or pain, with an enlargement of the kidney, would aid in the diagnosis. The referred pains are often present during the passage of the stone along the ureter. The ilioinguinal, iliohypogastric and genitocrural are the nerves most frequently affected.

In renal colic the typical diagnostic symptoms will depend on the size and shape of the stone, as well as on its consistency and surface condition and on the elimination and nature of the attack, which lasts from a few minutes to several days, and disappears as suddenly as it appeared, the stones reaching the bladder or dropping back into the dilated pelvis of the kidney. These attacks may recur at any time, depending on the number of stones or the ability of any stone to block the ureter.

A feature that is noticeable in many cases is the increase of the pain and colicky spells from riding on a rough road. The pain during the passage of the stone is the most intense of any suffering and is usually accompanied by vomiting and profuse diaphoresis. If much blood or pus is present, a chemical test for albumin may be misleading unless the microscope be used also. Hyaline casts are found in a certain percentage of these cases and are evidence of stone irritation to kidney structure.

Rigidity of muscles on the affected side is often present, while in some cases, if the stone is large, it may be palpated. The *x*-ray, while a valuable adjunct, must not be relied on too much. The negative findings especially should be given little weight, as the thickness of the body and the comparative density of the stones presents such a wide range of resistance to the rays that their use may be misleading instead of an assistance. In doubtful cases, however, I would advise the use of the *x*-ray, and if the clinical history were stronger than the radiographic findings I would rely on the former.

Oxalate of calcium stones (Fig. 2) throw a dense shadow. The same may be said of the phosphate, with a nucleus of some one of the other urinary deposits. The uric acid stone presents the least resistance to the rays, as has been demonstrated by the radiograms recently made by myself and Dr. McCandless.

In arriving at a diagnosis of nephrolithiasis, a number of other conditions presenting very similar symptoms must be eliminated. With blood in the urine increased by exercise, pain along the ureter and severe colicky spells and a history of passing one or more stones, a diagnosis of stone is easy.

DIFFERENTIAL DIAGNOSIS.

The various diseases affecting the structures in the vicinity of the kidney may mislead one, but, as a rule, the symptoms of these affections are such as to point to an easy diagnosis.

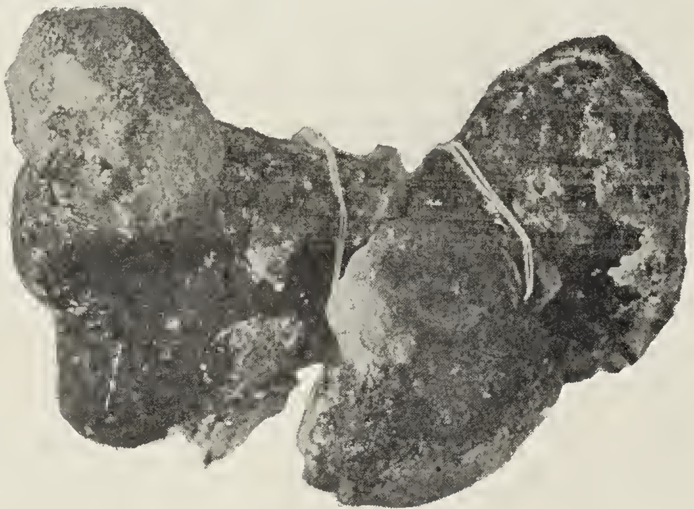

Fig. 2.—Oxalate of calcium stone. Weight, 1,100 grains.

Neuralgia and muscular rheumatism, while often found in the vicinity of the kidneys, are usually of a transient character and have symptomatic traits peculiar to themselves, as a bilateral tenderness and a stiffness of muscles, either from pressure or movements of the body. If the diagnosis can not be made otherwise, a course of antirheumatic treatment may assist. Spinal caries and other diseases of the vertebra, in their early history, are confusing when compared to the masked cases of stone in the kidney, but a resort to the microscope and a little time will usually eliminate the simulated diseases.

Neuralgia due to vasomotor disturbances in the kidney has led to a number of mistakes, and many patients have been operated on and no stone found; but, thanks to the splitting of the capsule and relief of the tension, most of these individuals are cured by operation. Patients who pass large quantities of oxalate of calcium crystals form a class of cases under the general head of neurasthenics and present many symptoms of early nephrolithiasis, the so-called "gravel" cases. In these cases it will often be hard to determine the exact extent of the pathology. Displacements of the kidney, presenting a "Deitel's Crises," are usually easily diagnosed.

While the late symptoms of tuberculosis of the kidney are very typical, the early manifestations are equally misleading. With pus in the urine, frequent micturition, some hematuria and pain in the back, with colicky spells due to the passage of cheesy débris, the history certainly simulates stone.

A close scrutiny of other organs of the body should be made for tubercular foci, as the testicle, bladder, lungs, prostate and seminal vesicles, and tubercle bacilli in the urine should always be looked for. Hectic symptoms may exist in both conditions as a late manifestation. The presence of stones in a tuberculous kidney is not unusual, the phosphatic stones predominating. In most of my cases the right kidney has been the one affected, and the symptoms have been of such a character as to point definitely to the organ diseased, yet in some cases it has been rather perplexing to determine not only which kidney was diseased, but whether or not the other was affected also.

The knowledge of the exact location of the stone prior to operation is of value only in as far as it concerns the position of the incision, yet this is not of much value, as the kidney should be explored in all cases, even though the stone producing the symptoms is located in the ureter, the possible exception to this being in female patients in whom the stone can be removed through the vagina or directly by the bladder route. The cystoscope, while of great aid in diagnosing diseases confined to the bladder, has been found of little value in doubtful cases of stone in the kidney. However, it has its use as an aid to the introduction of the ureteral catheter in investigating some extremely obscure ureteral and kidney symptoms. The collection of urine from one or both kidneys separately is often necessary to determine the source of abnormal constituents found in that fluid.

Kelly and others, by the aid of wax-tipped ureteral catheters, have detected stones in the pelvis of the kidney. This procedure is one that requires much skill and will rarely be resorted to as an aid to diagnosis of stone in the pelvis of the kidney. The condition of the opposite kidney, or even its presence, should be demonstrated in every case in which the question of a nephrectomy is being considered. Palpation of the opposite kidney can often be accomplished, and the study of the character of the urine and the amount and ureteral catheterization will aid in making a diagnosis. The history of one kidney being hydronephrotic, while normal urine is being passed from the other, will point to one healthy kidney.

PROPHYLAXIS AND MEDICAL TREATMENT.

The function of the kidney being essential to life, it behooves the physician to preserve this organ by every possible and safe means. A crippled kidney from stone injury regains its function in a surprisingly short time if the source of the injury is removed, the rapidity of this recuperation depending on the length of time, the size of the stone, its location and the extent of the destruction of the pelvis and parenchyma. A recognition of these truths should admonish us to resort to early surgical interference when once the diagnosis is made.

Nephrolithotomy is considered one of the safest operations in surgery, unless by delays the case has assumed a grave character by the destruction of the urine-manufacturing portions of the organs.

No case should be permitted to go on until abscess in perirenal structures has developed or until urinary fistulæ have formed, obliterating all normal structures surrounding the organs. Conditions such as mentioned above add very materially to the difficulties and dangers of the operation, preclude in many cases the possibilities of saving the kidney, and make the convalescence a very unpleasant and tedious one, marked by suppuration, urinary fistulæ and more surgery.

A healthy kidney, when incised, heals as readily as any tissue in the body.

I have much faith in the prophylactic management of these threatened stone cases, but no reliance should be placed on methods advocated to dissolve and to remove stones when once formed. It is true that Nature in many cases will cause the passage of small stones, but we should not deceive our patients and delude ourselves in the belief that our efforts are of much avail in her behalf.

In a patient known to be suffering from "gravel" (passage of large amounts of oxalate of calcium or other crystals) the regulation of this diet, drinking of much water and the administration of the alkalies, potash, soda and benzoate of lithium, to prevent the deposit of these crystals, will be of much benefit. Piperazin, in from five to twelve grain doses, given three times a day, is highly extolled.

Urotropin (hexamethylenamin) is another remedy much used, as it does not derange the digestive organs and is a good urinary antiseptic.

The unfortunate feature of medication in these cases is the fact that only too often an incorrect diagnosis is made, and the medical treatment is persisted in to the extent that the very dangers we wish to avoid are permitted slowly to take place—that is, extensive injury to the kidney structure and the crippling of its function.

A patient suffering from an attack of renal colic will require large doses of morphin to relieve his pain, but it might be well to recall the fact that pain produces a tolerance of this drug, that the kidneys are one of the main sources of its elimination, and that the pain often ceases suddenly, leaving the patient in a condition of profound stupor from the cumulative action of the repeated doses of the drug at short intervals.

The medical treatment in these cases, of course, is palliative only, but must be resorted to, as in many cases while we are making the patients comfortable the calculus may pass, and with proper after-care another may never develop.

The operative indications in nephrolithiasis are fairly well marked in most cases, yet in some the case may assume a borderline position and require very careful analytic consideration as to its proper management.

OPERATIVE TREATMENT.

Hematuria of long duration or oft repeated may demand operation. Renal colic recurring often and severe would also indicate an operation. The presence of a stone in the pelvis of the kidney, whether producing colic or bloody urine, is a source of danger and should be removed. Chronic invalidism, when due to the presence of a stone, is often cured by the removal of a stone in the kidney that was not producing any local symptoms of a grave character.

When it is possible (and this is usually the case) a nephrotomy should be the operation of choice. The same incision is made for a nephrotomy as for a nephrectomy, that usually preferred being the oblique incision extending from an inch below the border of the last rib in front of the erector spinæ, downward the distance necessary. A few branches of the intercostal and lumbar vessels may require ligating; the nerves of the same name will also be encountered and should be shoved aside when possible. The costoiliac space of the diseased side may be increased by a good-sized sand bag or roll of sheets placed on the opposite side, the patient being practically in the Sims position.

The kidney can usually be delivered into the wound, and an exploration by palpation or otherwise made. In those cases in which the perirenal structures have been inflamed and converted into a vascular dense mass the delivery of the kidney is in most cases impracticable owing to the profuse bleeding when this vascular capsule is torn. The organ can then be explored by needling in all directions, taking care to avoid the larger vessels at their entrance into the hilum. While one may miss a small stone by this process, it will be the exception. If the presence of a stone is strongly suspected and the needle fails to find it, an incision on the convex surface of the kidney should be made, and the pelvis explored carefully with the finger. A stone with only the thickness of the ureter or pelvic structures can usually be detected by palpation, but small stone attached in the parenchymatous crater may be overlooked. If the stone is not found by needling or digital exploration, a metallic ureteral catheter should be gently introduced and the ureter sounded. This failing, I have for a number of years resorted to hydrostatic pressure to test the patency of the ureter, and in two instances have succeeded in forcing stones into the bladder from the lower portion of the ureter. This procedure I always resort to after clearing the pelvis of stones as a precautionary routine to test the condition of the ureter.

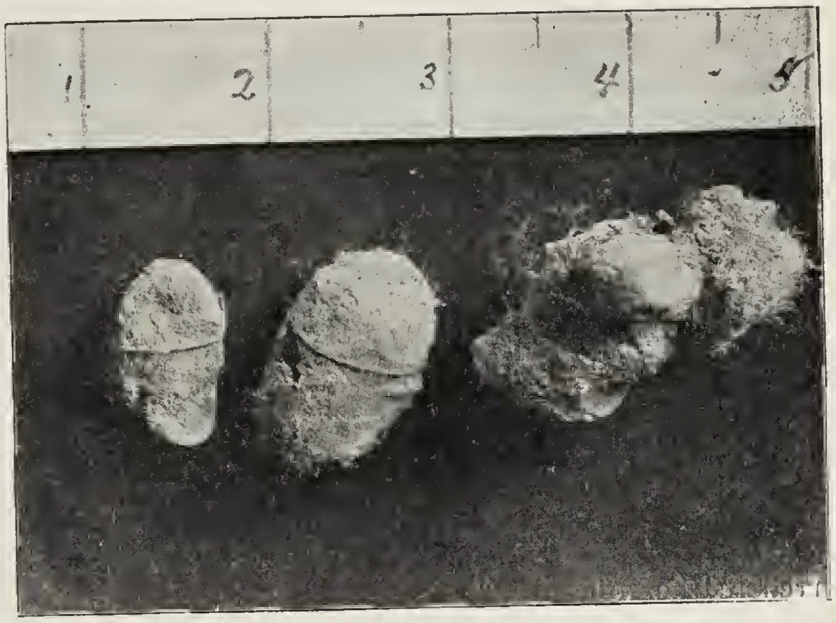

Fig. 3.—Phosphatic stones.

The hemorrhage, on introducing the needle, is often quite profuse, but always stops of its own accord within a short time. The flow of blood from an incision into the kidney is alarming, but is quickly controlled by the pressure of the exploring finger, and if the kidney can be stitched at the completion of the operation the flow of blood can be checked. If a stone is detected its removal should be carried out with the utmost care lest it be crushed and small particles escape into the ureter or remain as a nucleus for the development of more stones.

If small particles have unavoidably been detached, or if there exist many small stones, the assistant should compress the ureter or twist the pedicle. A good gauze pack against the ureter will prevent any small particles getting beyond easy reach of the operator or his irrigating fluid. A gauze pack beneath the delivered kidney will also aid in controlling the bleeding during the operation. On two or three occasions I have resorted to the use of rubber tubing carefully tightened about the pedicle of the kidney to limit the loss of blood. This will rarely be necessary.

After the stones have been removed, the kidney irrigated and the patency of the ureter established (if the case was not one of severe infection), the kidney may be closed as with any other wound, using chromicised gut for that purpose, taking care that the sutures do not go through the pelvis and thus act as a nucleus for further stone involvement. If it is a suppurating case the pelvis should be packed with gauze and a rubber drain put in. The gauze will aid in controlling the bleeding, especially if good firm pieces of gauze packing are put in around the kidney also. The wound is dressed in the usual way. This gauze should remain in place for several days, as a too early removal will induce a troublesome hemorrhage. Do not become discouraged at the duration of the drainage, as many of these old cases will drain for months, ultimately closing for good.

The removal of the kidney in any case is a matter that should receive very careful consideration. The indications for a nephrectomy are becoming fewer and rarer, as we understand the dangers of such a removal, and the recuperative powers of a crippled kidney if the source of irritation is removed.

When possible, the stone should always be removed through the parenchyma, as an incision into the upper ureter or pelvis will incur more risk in the development of an unhealed urinary fistula.

CONCLUSIONS.

1. Nephrolithiasis is more prevalent than is generally supposed.

2. A stone having formed in the pelvis of the kidney, if too large to pass, will sooner or later produce symptoms demanding its removal.

3. Suppuration in stone cases as a rule is a late process, and should be prevented by early surgical treatment.

4. There exists a special cause for stone development in the right kidney; 80 per cent. of my cases have occurred in the right kidney.

5. With a carefully obtained clinical history, the diagnosis of stone in the kidney is easy.

6. Obscure, persistent pains in the region of the kidney, in a patient who had a renal colic years ago, should lead to an exploration of the organ.

7. A wound in a healthy kidney heals quickly.

8. The operation of nephrolithotomy has a very low mortality.

9. Hemorrhage from a kidney is generally easily controlled.

10. At time of operation, the patency of the ureter should be established.

11. The kidney should not be removed if it has a patent ureter or unless it be practically destroyed by the disease.

12. Postoperative patience and faithful effort on the part of the surgeon, will result in the saving of many organs; otherwise removal will be necessary.

Typhoid Strumitis.—Inflammation of the goiter is described by Baradulin in a man 36 years of age who had had a goiter for 29 years. During the fourth week of typhoid fever an abscess developed in the right half of the goiter, which was opened, and bacteriologic examination revealed typhoid bacilli. —*Russky Vrach*, No. 14, 1906.

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND ITS RESULTS.*

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The contributions to the literature of ulcer of the stomach and duodenum have become so numerous that it will be impossible in a paper of this character to give credit for the many valuable advances which have been brought out by individual workers. I wish in this connection, however, to express my appreciation of their labors.

For more than twenty years the complications of this malady have received attention. Operations for benign stenosis of the pylorus and some acute secondary manifestations have occasionally been performed, but not until the last five years has there been a surgical invasion into the field of unhealed ulcers with a view of giving relief from pain, under-feeding and chronic disability which so frequently accompany the disease.

Acute ulcer of the stomach and duodenum properly belong to the domain of internal medicine, and surgery has to do only with the complications such as perforation, hemorrhage and obstruction.

The surgical treatment of acute perforations of the stomach and duodenum is now on a sound footing, the results depending on speedy diagnosis and prompt operative relief. Patients operated on within the first five hours usually recover; after ten hours the majority die. We have had 7 gastric with 2 deaths and 9 duodenal with 3 deaths.

Suture of the perforation and pelvic drainage with or without irrigation, the patient being subsequently maintained in the semi-sitting posture (exaggerated Fowler's) for several days, gives the best results.

One mooted point concerns whether or not a gastrojejunostomy shall be done at the same time, as a considerable percentage of patients following perforation will develop stricture, adhesion, or other deformity in the healing process. If the perforation lies in the duodenum or close to the pylorus it should be sutured transversely to avoid interference with the lumen of the part involved. Generally speaking, if it seems probable that stricture or other secondary condition will result and the patient is in good condition, gastrojejunostomy should be performed providing it can be done without spreading the already present infection. If in doubt, a living patient is better than a completed operation at a greatly enhanced risk.

Hemorrhage from the stomach occurs in two forms, acute and chronic. Recurring acute hemorrhages are best treated by opening up the stomach or duodenum, locating the bleeding point and suturing the part firmly with catgut on a curved needle from the inner (mucous) side. The outer surface is then exposed and protected over this area by a few mattress musculoperitoneal sutures of linen (modified Andrews method). We have not found gastrojejunostomy for acute hemorrhage a reliable procedure. Out of 6 cases we have had 1 patient bleed to death within two weeks after gastrojejunostomy and a second saved by opening up and securing the bleeding vessel, while 5 who have been treated by primary operation on the bleeding point with or without excision of the ulcer; all recovered.

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* Read in the joint session of the Sections on Practice of Medicine and Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Chronic hemorrhages, on the contrary, can be cared for by gastrojejunostomy, especially if the ulcer is situated in the duodenum or near the pylorus. In a number of instances we have, however, excised the ulcer and closed the defect by plastic operation planned in such way as not to interfere with drainage by subsequent contraction. Several of these cases amounted to gastric resections with end-to-end suture.

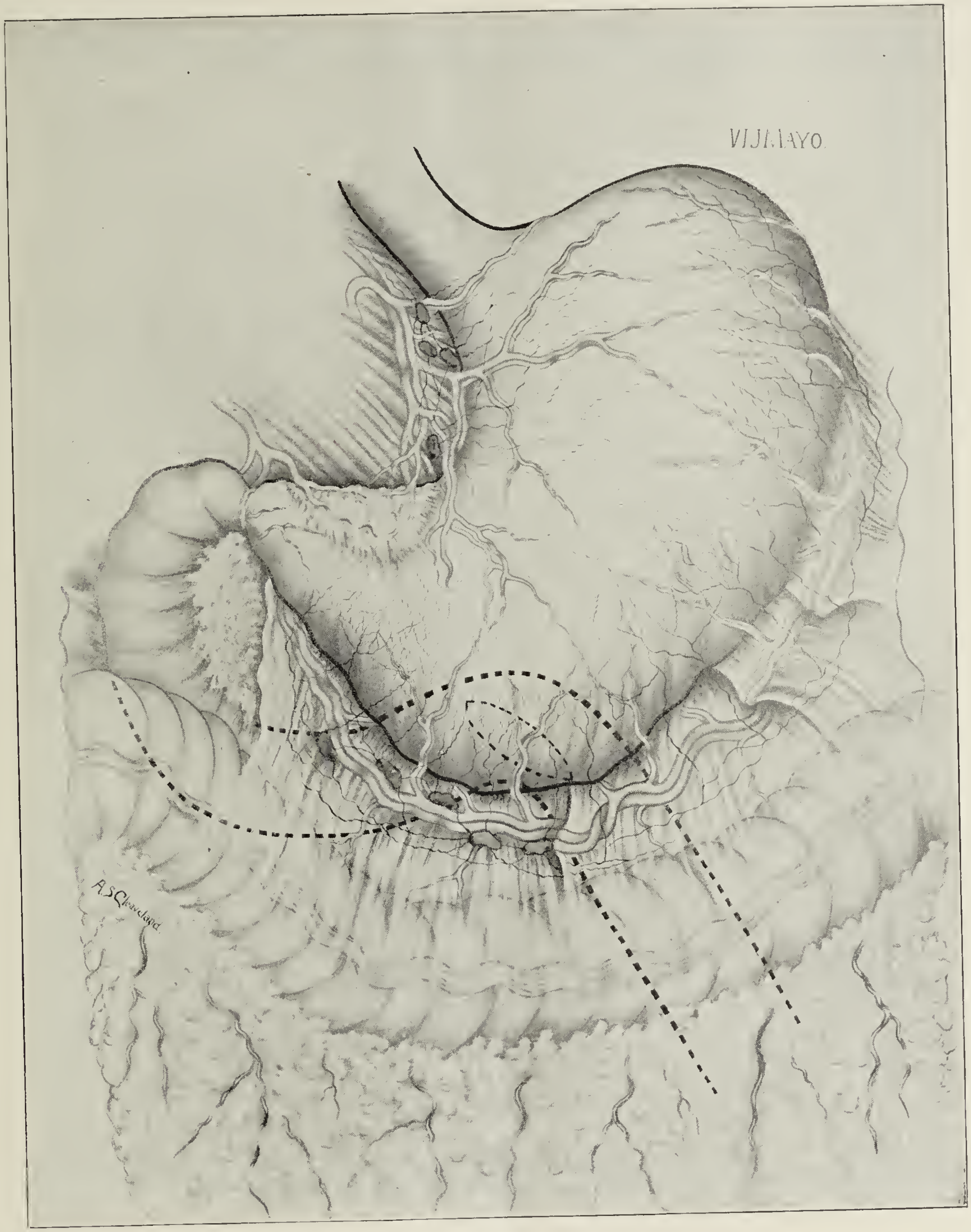

Fig. 1.—Dotted lines show posterior "no loop" gastrojejunostomy.

CHRONIC ULCER.

Chronic ulcer of the stomach and duodenum is most common in men and is essentially a disease of adult life. It entails years of invalidism on the victim and in fully 25 per cent. is the direct cause of death, while indirectly through anemia it permits of general infections, tubercular or otherwise, and thus doubles the mortality. Surgical interference should be considered when the failure of medical treatment is made manifest by a continuance of the symptoms or frequent relapses.

Our experience (W. J. and C. H. Mayo) covers 600 operated cases up to May 1, 1906, 436 stomach, 135 duodenal and 28 stomach and duodenum. In 46 classified as duodenal the duodenum was primarily at fault, the stomach being involved only at the pyloric ring. It was rare that a gastric ulcer did not stop abruptly at the pylorus.

Gastric ulcers were multiple in less than 15 per cent. of the indurated and estimated at about 20 per cent. of the mucous lesions. The most common form is the saddle ulcer of the lesser curvature above the pylorus extending flap-like down the anterior and posterior wall (prepyloric).

Duodenal ulcers involve the two inches immediately below the pylorus and extend up to within at least three-fourths of an inch of it. In all but 5 cases the bowel lesion was single.

Of the 163 duodenal ulcers, 77 per cent. were males and 23 per cent. females and in all but 7 cases the site of the ulceration was indurated, the thin intestinal wall enabling ready identification. In the stomach, on the contrary, the thick tissues sometimes prevented accurate localization of a mucous lesion, the proportion being 70 per cent. indurated and 30 per cent. non-indurated. Three of the acute hemorrhagic cases were of the mucous variety, while all but one of the acute perforations occurred through the scar of a partially healed ulceration.

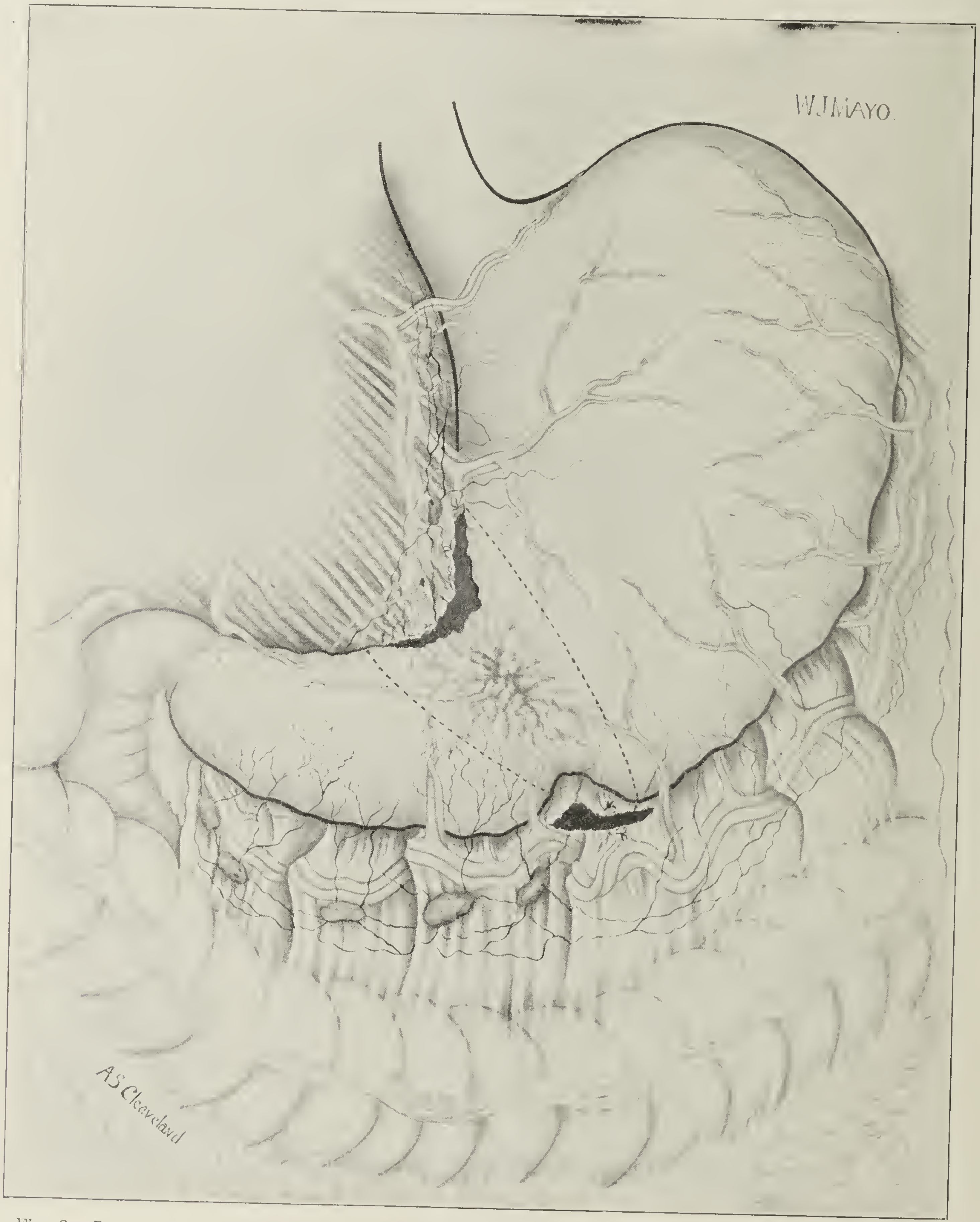

Fig. 2.—Resection of hour-glass stomach with fields in gastrohepatic and gastrocolic omenta ligated. Dotted lines show site of proposed resection.

The predominence of the indurated over the non-indurated is even greater than would appear from these percentages. During the past year more experienced surgical examination has shown that over 85 per cent. of the stomach ulcers coming to operation have been indurated and less than 15 per cent. non-indurated. There is no question but that the frequency of non-indurated mucous lesions in the stomachand duodenum has been and still are greatly exaggerated. The very large majority involve all of the gastric coats and are capable of demonstration at the operating table. Gastric ulcers were found with nearly the same frequency in males and females. In this connection I would again call attention to the fact that ulcer of the duodenum is nearly as common as in the whole of the stomach and as more than three-fourths are in males the increased frequency of occurrence of gastric and duodenal ulcer in the male sex is accounted for. In our earlier work duodenal ulcers in the vicinity of the pylorus were classed as pyloric and added to the gastric group. In the past two years we have learned to differentiate more accurately and in the last 100 gastric and duodenal ulcers operated on, 47 were duodenal, 44 gastric and 9 had an independent ulcer of each organ.; 62 were males and 38 females; 87 out of the 100 were of the indurated variety.

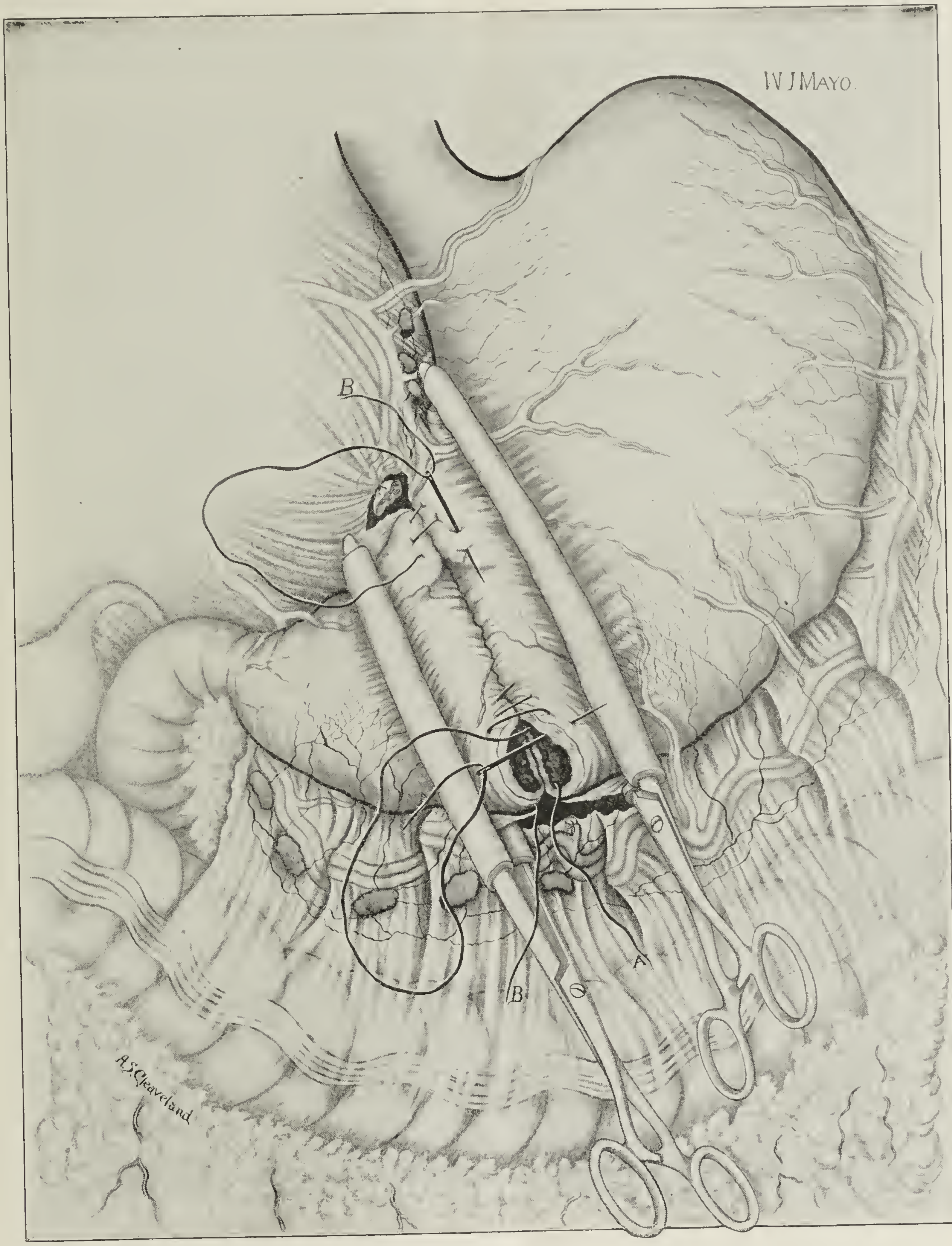

Fig. 3.—Resection of hour-glass stomach, inner row of sutures nearly completed (catgut), outer row completed on posterior surface and beginning on upper anterior surface (linen).

That a very large proportion of chronic ulcers are medically incurable is recognized by the majority of unprejudiced investigators. It now remains to be shown whether operative treatment is justified by its results.

GASTROJEJUNOSTOMY.

Gastrojejunostomy is the operation which has justly earned the most prominence in the treatment of gastric and duodenal ulcers. It is based on the common sense principle of giving rest to the diseased part by diverting the food and gastric secretions to a new outlet which should be on the storage side of the stomach at its lowest point under the cardiac orifice. The method of choice is the one without a loop made on the posterior surface through an opening in the transverse meso-colon. The distal end of the jejunum is attached to the lowest point and to the left, the proximal part to the right three-

(*Continued on page 931.*)

SOME PATHOLOGIC FEATURES OF THE PULP.*

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In offering for consideration a few ideas on the diseases of the pulp, I do not mean to infer that its pathology is different from that of any other part of the body. As a general rule, inflammation presents the same set of phenomena wherever it is situated, subject to the variations peculiar to the organ in its especial location. We must never forget that disease of an organ is seldom or never a local affair; in other words, its effects are far-reaching and other structures must always become involved. In teaching the subject, this point is one that is very difficult to impress on a student's mind, for collateral anatomy, physiology and pathology seem to be forgotten in studies in the special structure under consideration. A simple carious cavity is not the only thing by which to diagnosticate a patient's suffering.

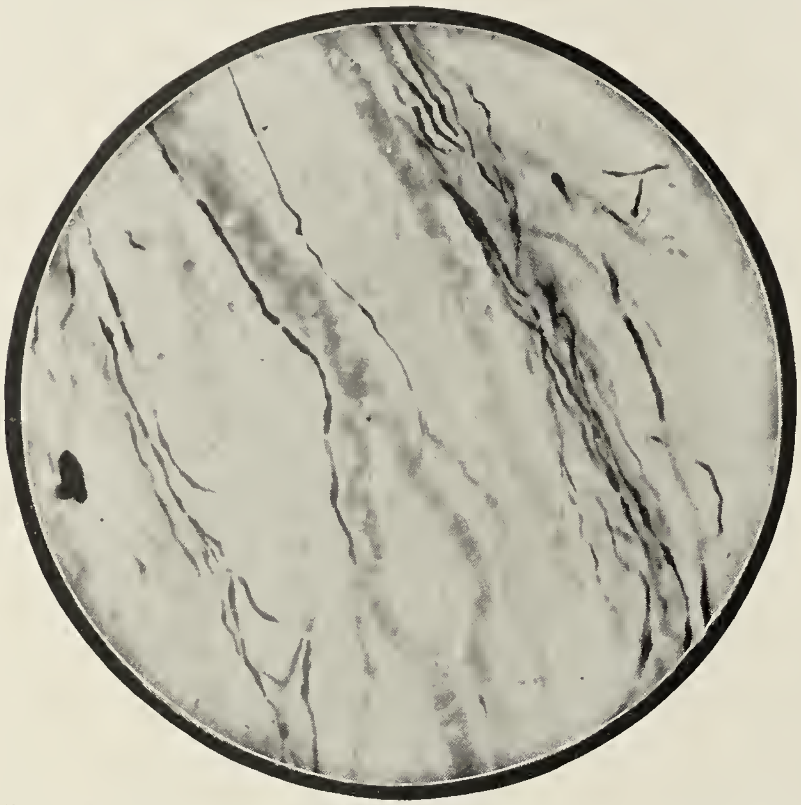

Fig. 1.—Hyperemia of pulp. Stasis in vessels. Cells just trying to escape through walls. Note nodes of Ranvier in nerve fiber bundles. Myelin collecting in masses and degenerating.

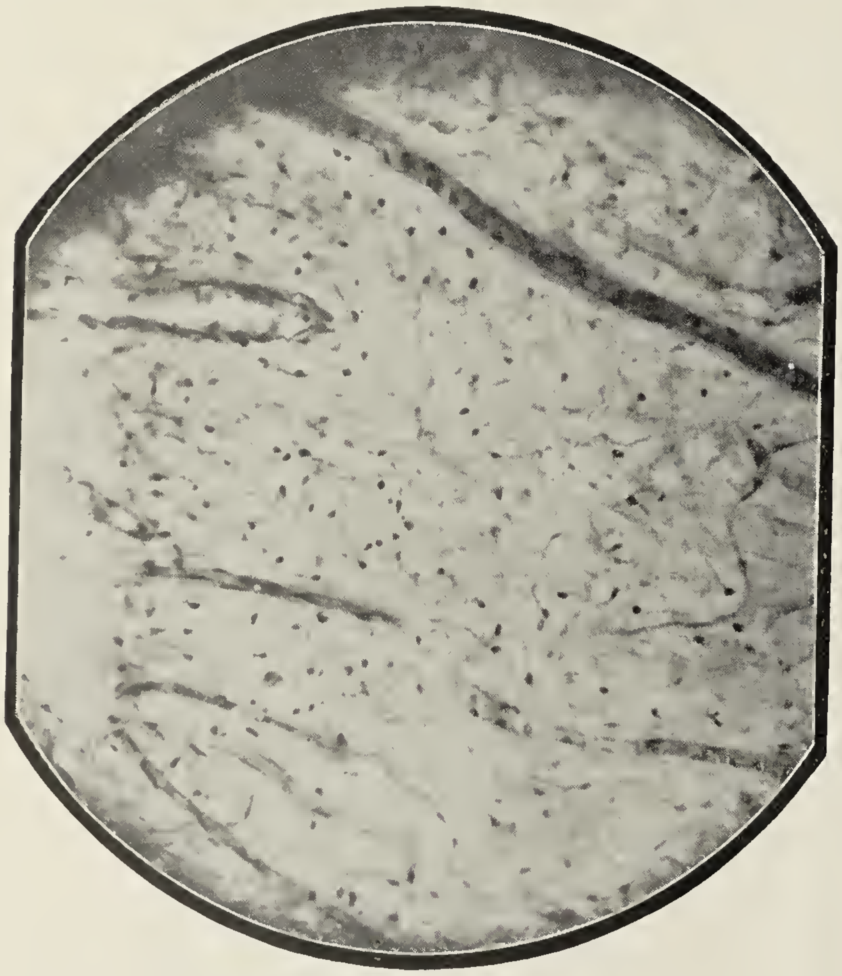

Fig. 2.—Hyperemia and early resolution.

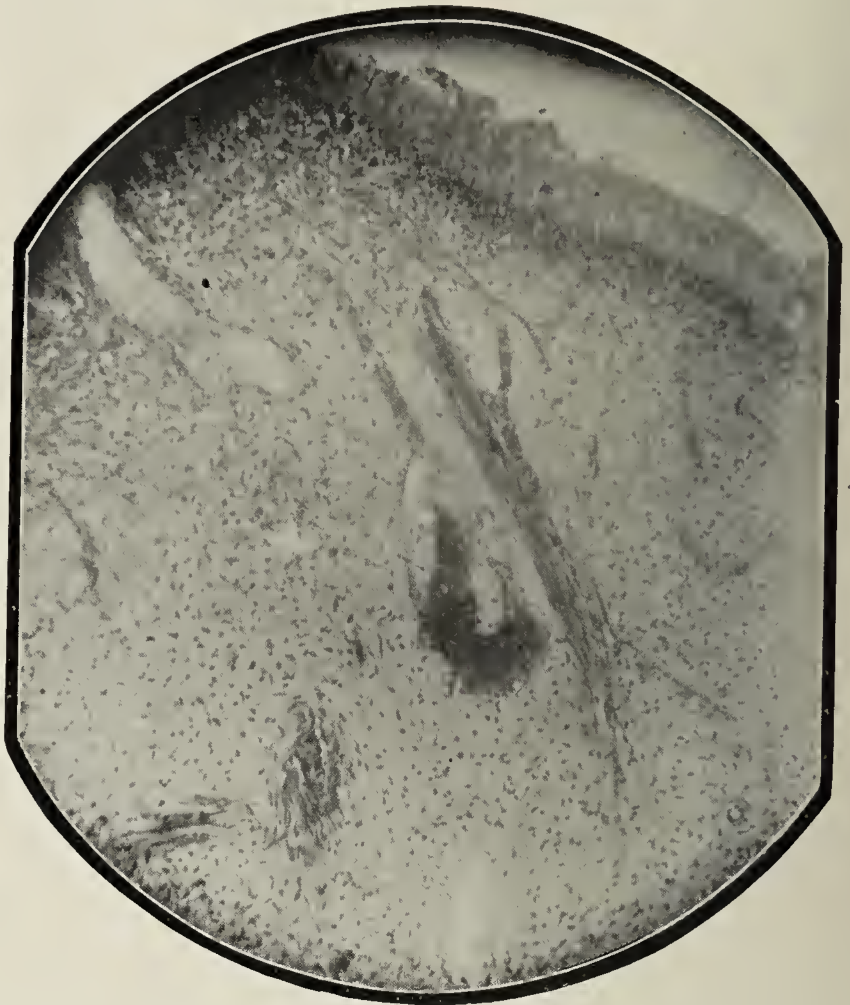

Fig. 3.—Rhexis. Extravasation from vessels; edema; cell proliferation. Early pulpitis.

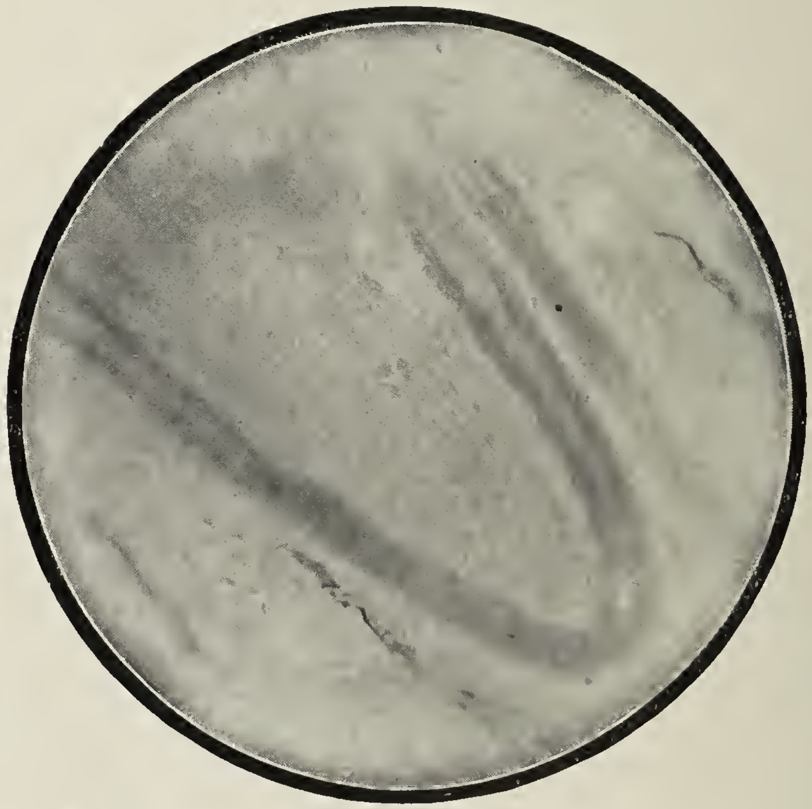

Fig. 4.—Tortuous vessel of pulp; showing danger if interfered with. Edema. Cloudy swelling among the cells and badly staining reaction.

HISTOLOGY OF THE PULP.

In former papers given in this Section[1] will be found a general résumé or compilation of both the histology and the bibliography of the pulp. It will be noted that as yet very little, if anything, is absolutely proved in its structure, and it is essential for our science that more work should be done along these lines of research. The histology and pathology of the pulp are simple, in some ways, yet at the same time very difficult. The structure of the pulp is not analogous to any other permanent tissue of the body. It has been likened to the umbilical cord or Wharton's jelly. Certainly the varieties of cells are many and their anastomosing processes are very difficult to demonstrate with the ordinary stains. If they are true connective tissue, Van Gieson's method should give the red reaction, but it does not, even with the coarser fibers for which it is best applicable.

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* Read in the Section on Stomatology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] The Journal A. M. A., 1901, 1902, 1903. Especially "Résumé of the Histology of the Pulp." The Journal, July 12, 1902

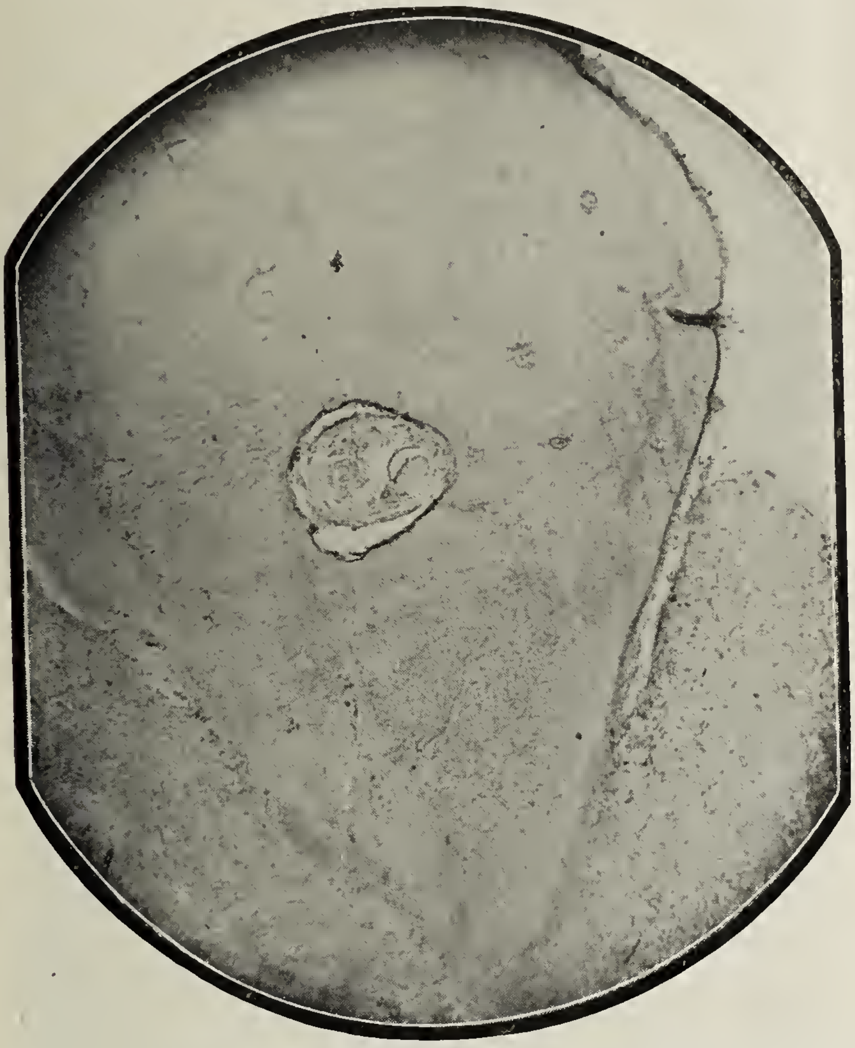

Fig. 5.—Pulp and peridental membrane, showing calcification around pulp or nerve. Note the many minute canals in same section often a cause of repeated attacks of pain after so-called pulp extraction in pyorrheal teeth.

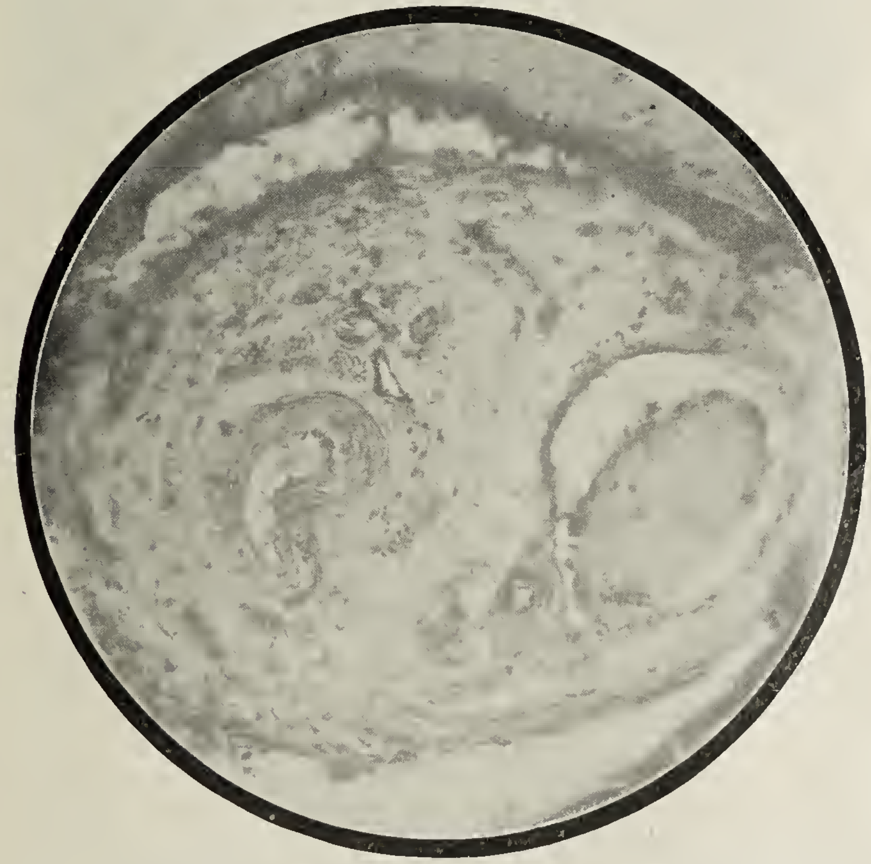

Fig. 6.—Same as Fig. 5, but magnified to show the condition of the pulp vessels. Arteriosclerosis. Venous thrombus.

In some special cases in which the pulp is of a more firm structure, almost fibroid, it is excellent. In earlier cases, as in the growing pulp, I have had better results with Ribbert's phosphomolybdic-acid-hematoxylin stain after alcoholic fixation which shows the finest fibers of connective tissue, if present. In fetal sections, the method of staining with sulph-indigotate of sodium and carmine is excellent.

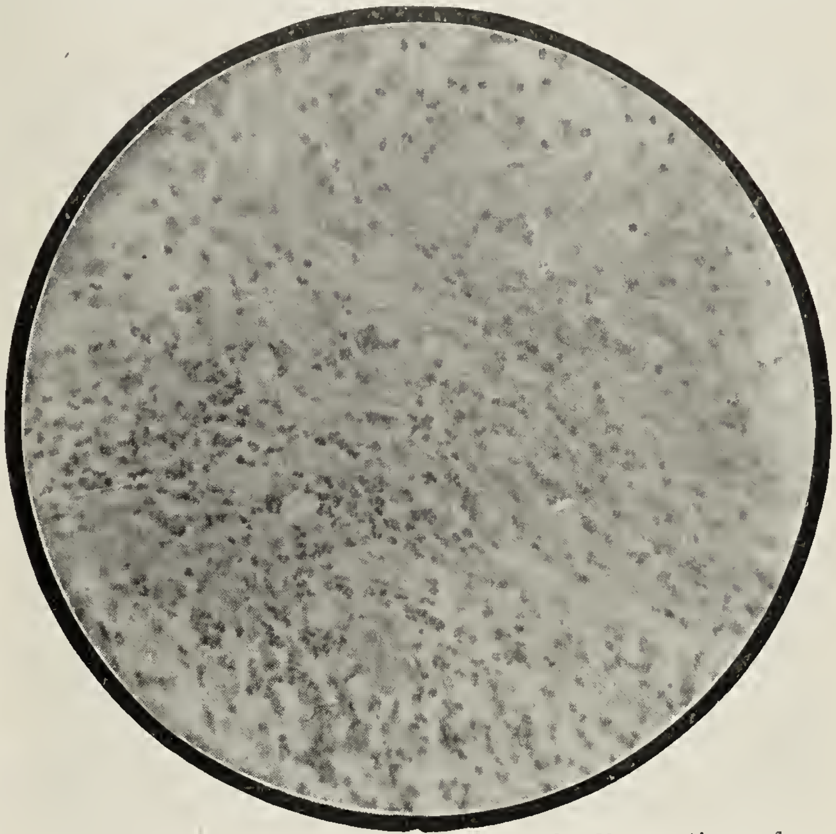

Fig. 7.—Proliferation of round cells; early fibrous tissue formation; resolution of pulpitis.

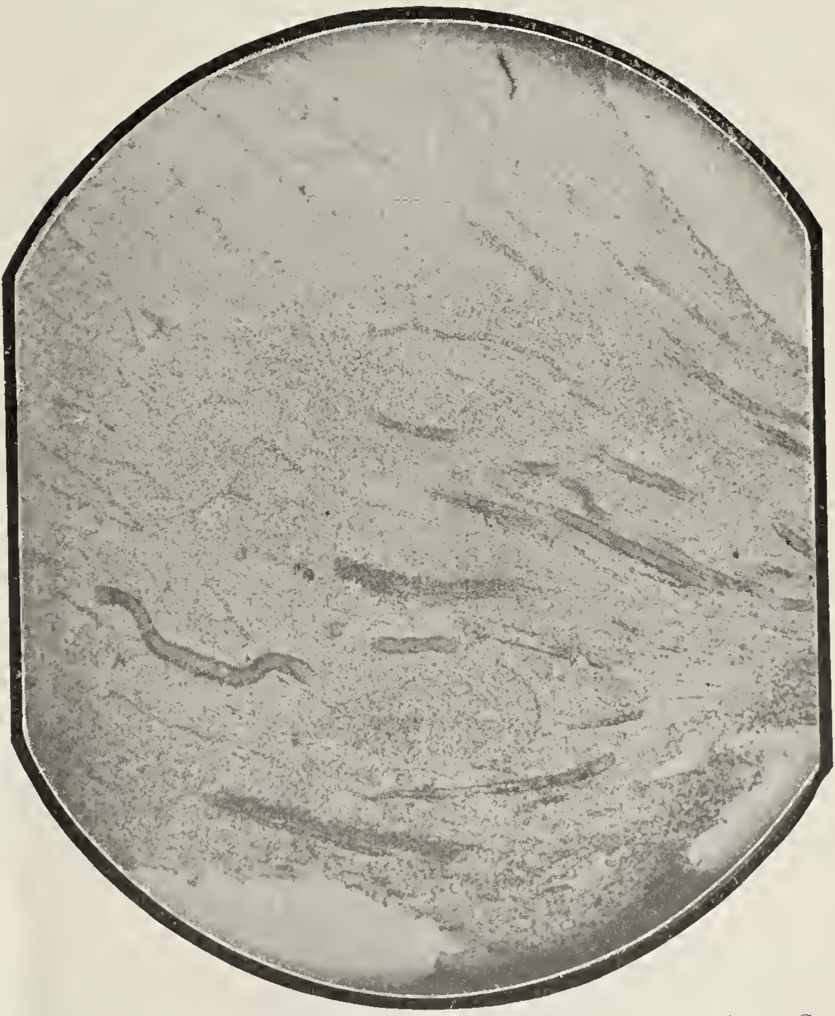

Fig. 8.—Coagulation necrosis. Areas of early suppuration. Capillary embolism.

The great difficulty that I have encountered in my work has been to determine what comprises a normal pulp. As yet the histology is incomplete, and if we compare structures in sections taken at different periods of life we find a difference in them, especially in the first molars, which have non-striped muscle fibers. So far it has not been easy to obtain freshly extracted teeth at stated periods so to make a study from an average of a number of cases of healthy persons. According to Dentz, those extracted for irregularities are abnormal in many cases. From this it will be seen that it is sometimes difficult to find a particular pulp showing some early pathologic condition, and nowhere is this more true than in the different forms of pulpitis as classified by Arkövy. Again, so little case-recording has been done in a systematic way that we are far from sure of clinical signs as yet given; certainly they do not agree with the pathologic findings.

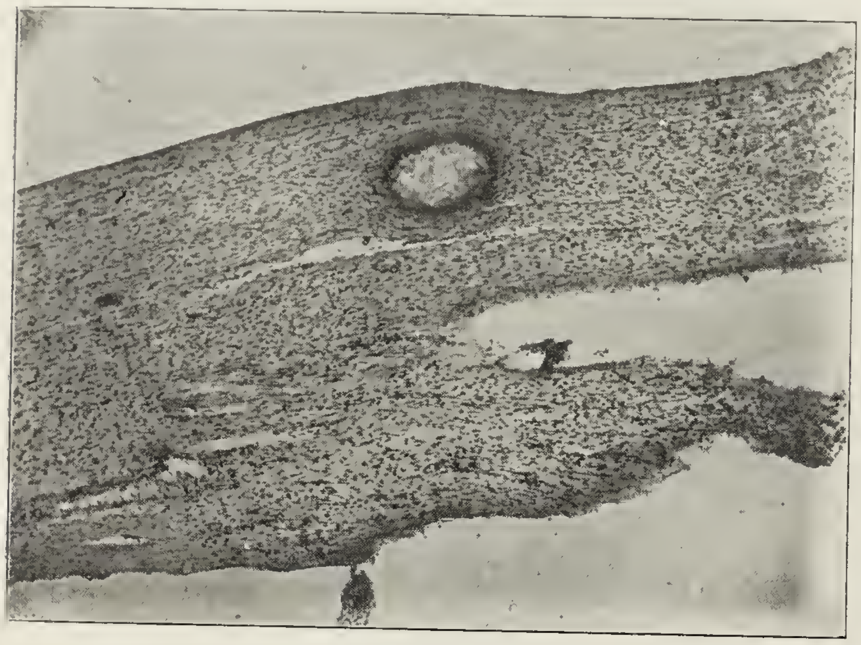

Fig. 9.—Interstitial pulpitis with pulp stone *in situ.*

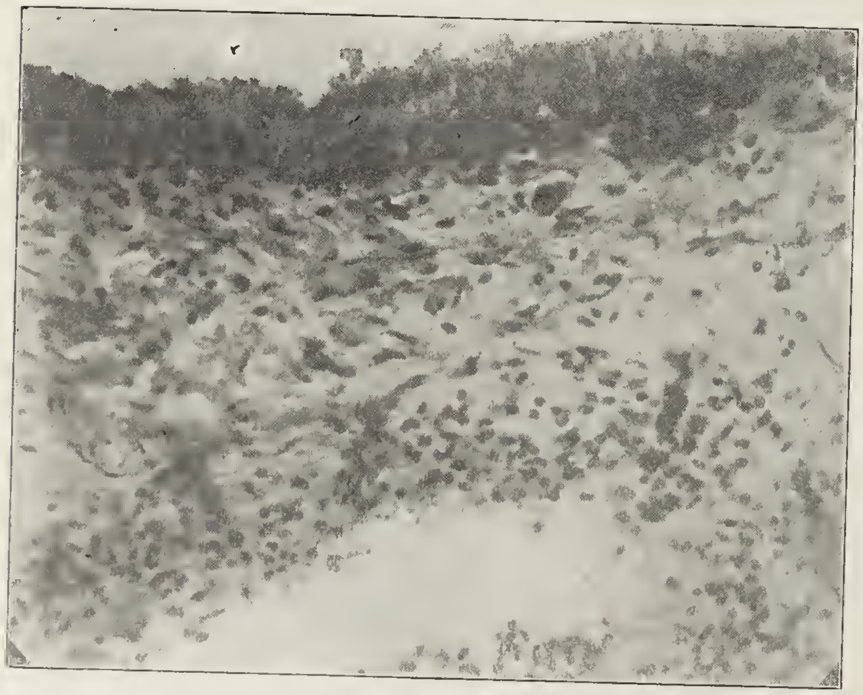

Fig. 10.—Abscess, limiting wall of round celled infiltration, or so-called pyogenic membrane ulceration. Gangrene. Odontoblastic layer.

SYMPTOMS OF PULP DISEASES.

Our text-books show that a whole series of diverse diseases of the pulp produce like symptoms, and that a whole series of diverse symptoms have for their basis a like pathologic picture. The location, the physiologic disturbances and the diseases to which the pulp is subject are more destructive and far reaching than in any other organ of the body where we have an outlet by the anastomoses present. The only method of relief in many cases lies in lessening the circulation through the vasomotor system and depletion through the excretory organs so often evidenced by the sudden stoppage of the pain when a patient is frightened on reaching a dentist's office.

CHANGES IN THE PULP.

In the case of the pulp we must consider the following facts: a. The delicate structure of the pulp is apt to undergo rapid secondary changes after an inflammatory attack whether from a constitutional or a local cause. b. Its location and poor methods of egress for exudations and dangers from compression. c. Fissures and lesions of dentine and enamel are not always able to recuperate for perfect repair. d. If a pulp has been exposed it is difficult to disinfect and hermatically to seal it under artificial methods, for chemicals act differently in different teeth and individuals. e. The small surface, the many enemies of both a bacteriologic and anatomic nature, together with almost invisible cracks in the enamel (only seen when the teeth are dry) render the occurrence of inflammation, even before decay has apparently reached the surface of the pulp, almost a sure occurrence. (f) The position and relation of the pulp, for in ill-developed teeth the pulp chamber may extend by minute processes abnormally near to the surface or even to the enamel. In such teeth many interlobular spaces are usually seen in the dentine, and the ready absorption of oral fluids and growths of yeast organisms soon cause caries. This is especially the case in the temporary incisors and the first permanent molars in early childhood and after infectious or gastrointestinal diseases followed by chemical abrasion and erosion and hyperemia of the pulp due to irritation of the nerve mechanism of the pulp. g. The question of whether lymph spaces are in the pulp or if the dentine may not act as an analogue through the tubules is still under discussion. The lymphatic supply of the jaws and teeth has not yet been determined.

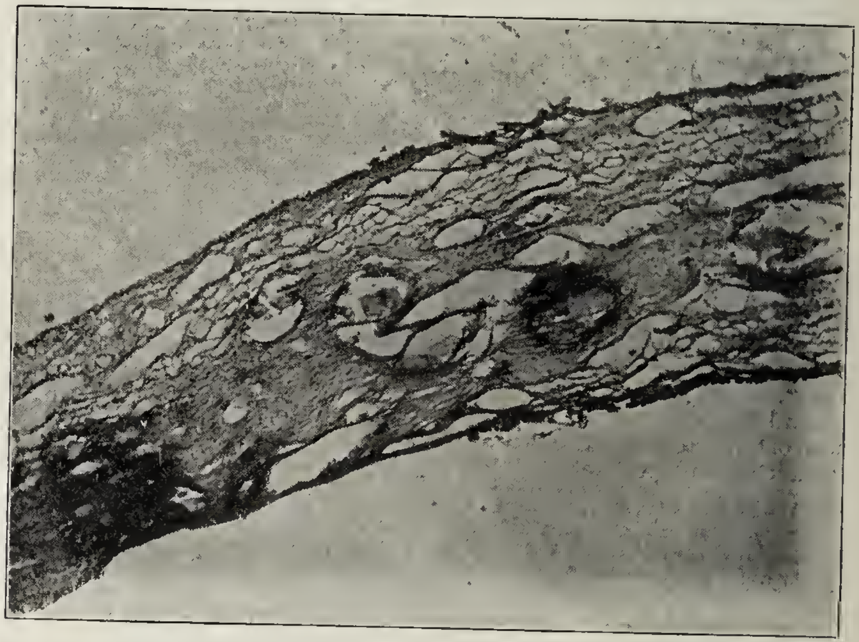

Fig. 11.—Reticular atrophy of the pulp (fibroid). Myxomatous reticulum nuclei at points of intersection and calcareous degeneration.

PULPITIS.

Let us now review the most common disease of the organ, viz., inflammation, and follow the stages.

Definition.—The definition given by the late Sir John Burdon-Sanderson is perhaps one of the best to cover so many processes and variations in different cases. "Inflammation is the succession of changes which occur in a living tissue when it is injured, provided that the injury is not of such a degree as to destroy at once its structure and vitality." To follow the pathologic changes Podwyssozki's definition is good. "Inflammation is a local reaction of the living tissues against the irritating substance. This reaction is chiefly produced by a phagocytic activity of the mesodermic cells, and it may precipitate not only changes in the vascular system, but also the chemical action of the blood plasma and tissue fluids in liquefying and dissolving the irritant agent."

Etiology.—The causes of inflammation are usually:

A. Predisposing:
1. Deficient blood supply through walls.
   (a) bad air, (b) food,
   (c) hemorrhage, (d) anemia,
   (e) heart disease, etc.
2. Presence of impurities or poisons in the blood, as in:
   (a) chronic alcoholism, (b) Bright's disease,
   (c) diabetes, (d) gout,
   (e) syphilis, (f) lead, phosphorus and mercury poisoning.
3. Deprivation of healthy nerve influence by injury of a nerve center or trunk.
4. Strumous diathesis.
5. Old age.

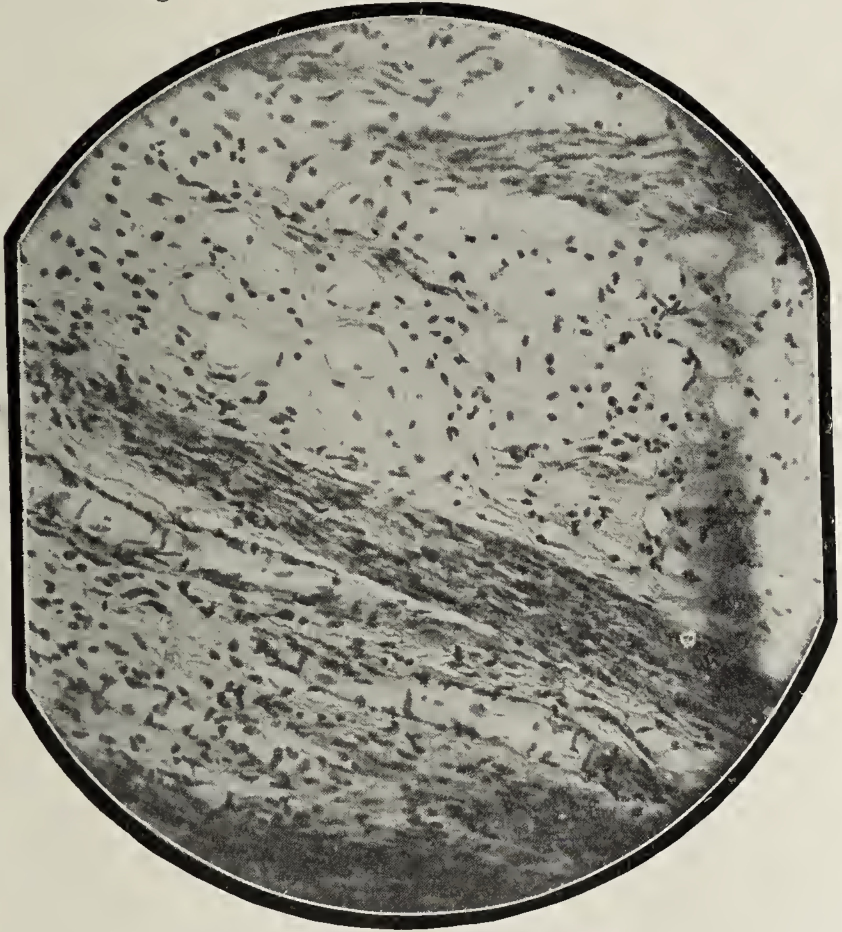

Fig. 12.—Fatty generation of pulp. Sclerosis of nerve bundle. Interstitial pulpitis.

B. The exciting cause is always an irritant, which may be:
   (a) *traumatic,* direct violence.
   (b) *chemicals,* acids, alkalies, caustics, vesicants.
   (c) *bacterial* fermentation, irritants, putrefactional, ptomains, leucomains.
   (d) *electric,* battery, lightning, non-insulated wires.
   (e) *thermic,* heat and cold.

Symptoms and Signs.—These may be:

1. Irritant.
2. Granulation.
3. Determination or active hyperemia.
4. Disturbance of circulation.
5. Increased motion, oscillation, retardation.
6. Stasis (partial or complete).
7. Vascular dilatation.
8. Exudation—migration, diapedesis, rhexis, etc.
9. Swellings, edema.
10. Terminations and sequelæ.
    (a) Resolution, absorption, or organization.
        1. Vascularization,
        2. Granulation.
        3. Scar tissue (cicatrix).
    (b) Chronic inflammation or sclerosis, fibroid thickening, interstitial pulpitis, cirrhosis.
        1. Hyperplasia,
        2. New formations (neoplasm).
    (c) Suppuration.
    (d) Abscess, necrosis.
    (e) Ulceration.
    (f) Gangrene.

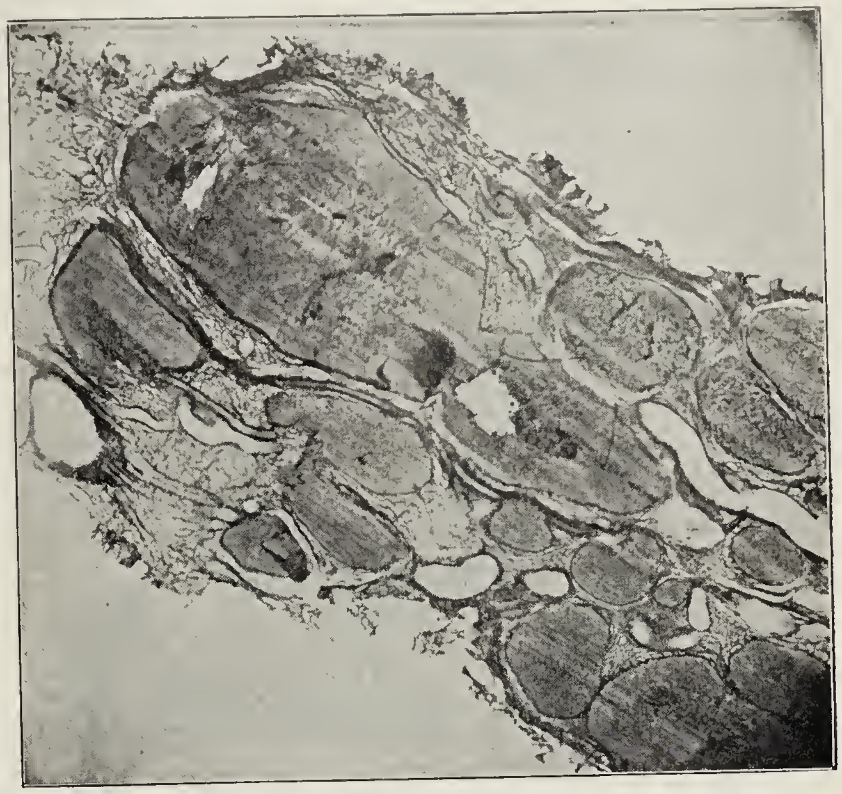

Fig. 13.—Colloid degeneration. Calcification not present of reticular or fibroid degeneration.

Chemical products of putrefaction are the chief agents in producing spreading inflammations. For fermentation or putrefaction (sepsis) there must be (a) dead animal matter, (b) some water, (c) oxygen, (d) a certain temperature, (e) presence of a ferment, which is the product of living micro-organisms. Species *Schizomycetes* (bacterial) known as saprophytes.

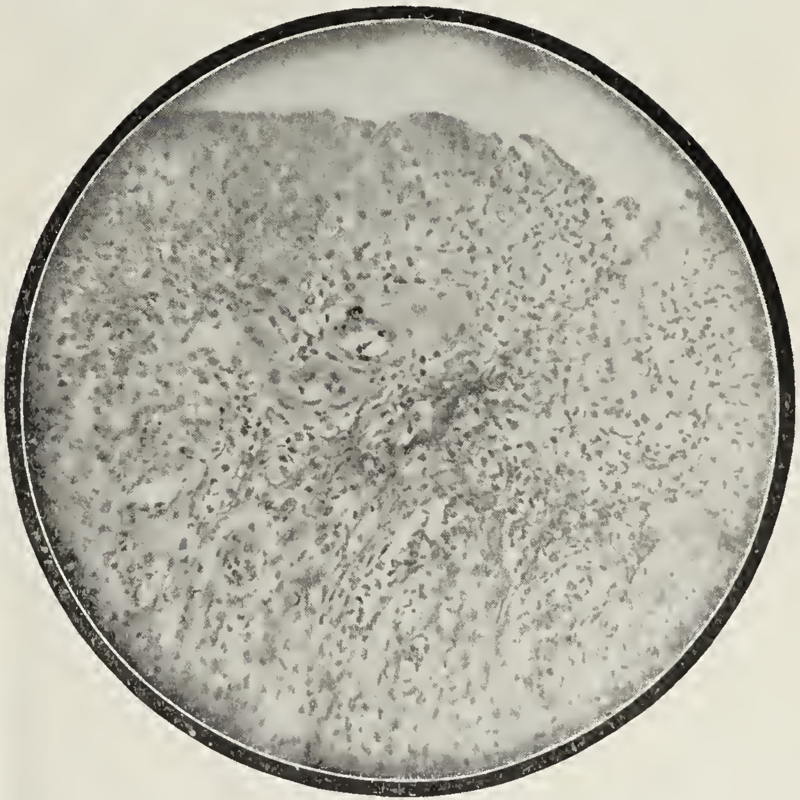

Fig. 14.—Cicatrix of pulp. Dense hyaline cell areas simulating granulation of epithelium.

The inflammation is caused not by the bacteria, but by the chemical products (sepsin and ptomains) which form in putrefactive processes, soak all the tissues and act like any irritant fluid or poisonous alkaloid.

The Bacteria of Inflammation.—Infective micro-organisms are important in cryptogenic or so-called idiopathic inflammations. Erysipelas and some forms of periostitis, pulpitis, periodontitis seem to depend on these germs and malignant pustule is proven to do so. These bacteria multiply and produce irritating products called ptomains which set up inflammation. Saprophytic bacteria live only on dead animal matter and are incapable of existing in live tissues. Some species by protoplastic activity obtain food from dead organic material, multiply and cause changes in the fluids in contact with their surface, known as fermentation. To this process are due: (a) Decomposition of serum and pus in a wound; (b) conversion of milk sugar into lactic acid in souring of milk in the stomach; (c) conversion of urea into ammonium carbonate, and so formation of ammoniacal urine in the bladder, causing cystitis, etc.

Albumin of dead organic matter in contact with these bacteria decomposes into peptones, then into ptomains and so into alkaloids.

Mode of Entrance of Bacteria.—Bacteria may effect an entrance (1) by a wound, thus producing local inflammation; (2) by lymphatics, whence they proceed to the nearest lymphatic glands, where they may be arrested; (3) by the circulation; (4) they may get into small veins and so gain the circulation at once and lodge in capillaries of the various organs; (5) from mucous membranes, as in gingivitis and diphtheria; (6) by migration from one point to another, as by extension of pulpitis gangrenosa to the submaxillary glands, as phthisis spreads from the larynx to the intestines or bronchial glands to lungs and so into the circulation. Influenza is often a cause of otitis media, oral infection and death of a pulp; (7) diseased tissue produced by one kind of bacteria may be secondarily infected by another kind. For example, croupous pneumonia is frequently infected by the tubercle bacillus and the tuberculous tissue by the pyogenic micrococcus (mixed infection). Influenza bacilli in the blood reach the pulp and cause pulpitis, ending in gangrene and cellulitis.

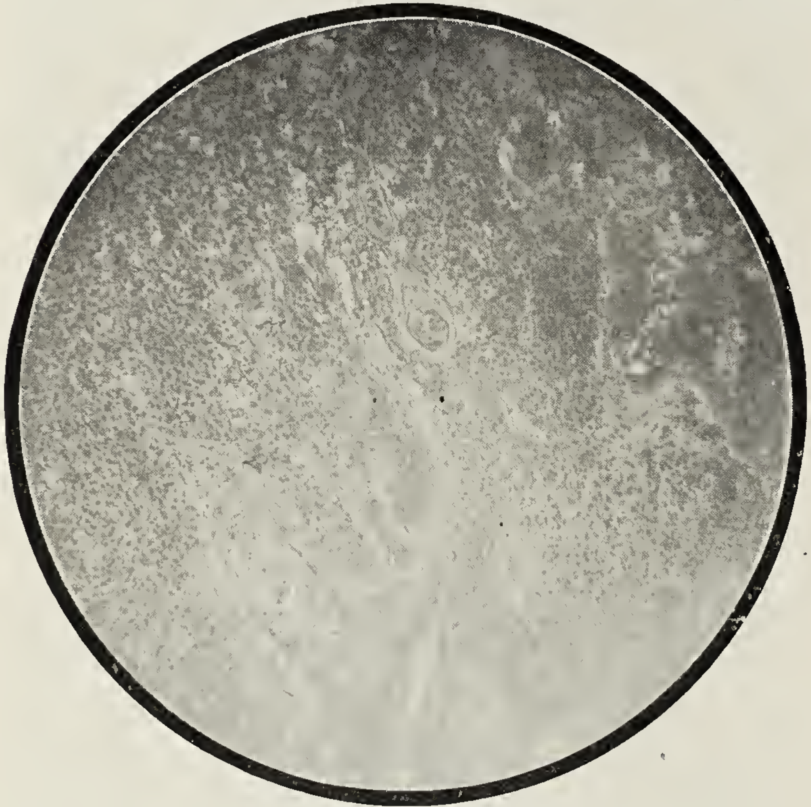

Fig. 15.—(Neoplasm). Epithelioma of pulp.

PROTECTION OF TISSUES AGAINST BACTERIA.

The tissues may be protected against bacteria (1) by exhaustion of the soil or acquired immunity, as one attack usually exempts from a second (example, variola); (2) by chemical products formed, *pari passu*, with the bacteria acting as a poison to the bacteria and preventing their development (chemotaxis). Toxins are repellant, producing a "negative chemotaxis:" (3) By tissue cells collecting around the bacteria and so killing them; (4) by phagocytosis, the cells absorbing and destroying bacteria.

Reaching the Pulp.—The irritant may reach the pulp in several ways: (1) By direct exposure as a sequel to caries, erosion, abrasion, fracture, etc. (2) Exposure of the dentinal tubules through trauma, filling, etc., and transmission by the fibrils of irritating stimuli as acids, metal fillings too close to the pulp. (3) Through the apical foramen as sympathetic depressions which may pass from the seat of injury in one part of a nerve tract and produce symptoms at a different terminal. For example, irritation by pulp stones in the third molar may cause hyperemia of the pulp in a premolar. Pulp stones in a third or second molar may cause a neuritis in the infraorbital nerve at its foramen of such a character as almost to indicate antral involvement. (4) By contact with the periodontium, especially in connection with constitutional effects as infectious diseases, mercurialism, rheumatism, malaria and especially when much arteriosclerosis is present.

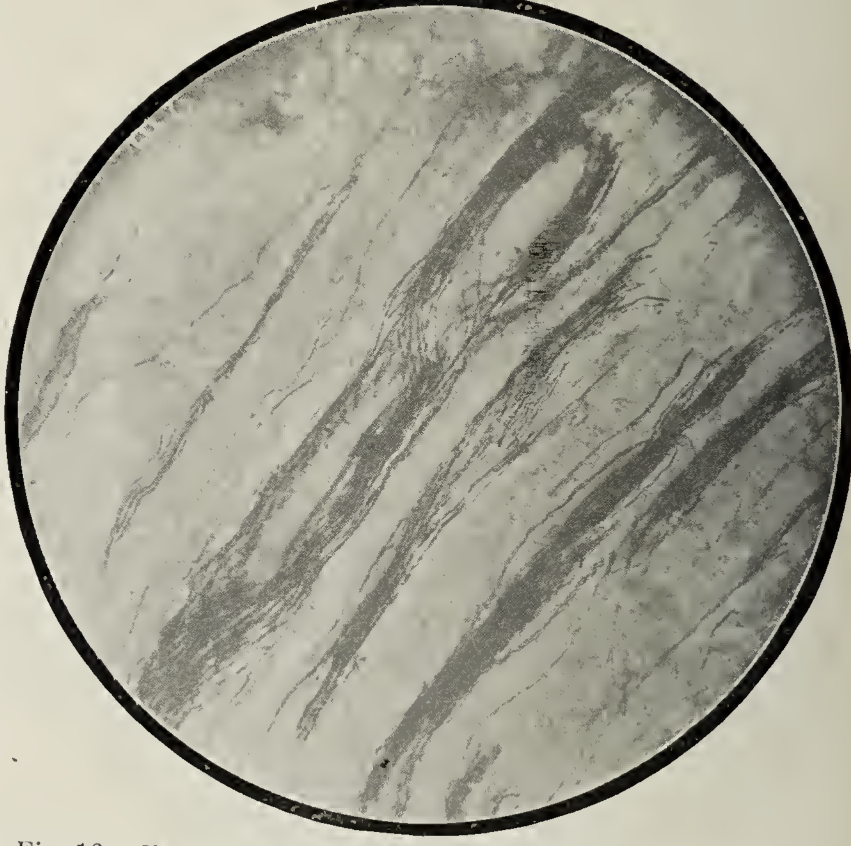

Fig. 16.—Vasomotor system, pulp, nerve degeneration slight, myelin, nodes of Ranvier.

PATHOLOGY.

When any sufficient irritation is present an active hyperemia follows, partial or complete, as in one of the cornua or radicular portions or all (Fig. 1). The cause if quickly removed may result in the pathologic symptoms abating the leucocytic migration stops, the cells are reabsorbed and no evidence is left. This is the so-called, but erroneous, "irritation of the pulp," for irritation is not the actual disease, but the cause. So far as caries is a cause of hyperemia we must recall that clinically we have a difference in the signs as presented by the type of cavities. There is, first, the cavity as seen at the cervical margin due perhaps to chemical erosion or mechanical abrasion, being sensitive to touch and conveying sensations, and, second, the further advanced type of caries, insensitive, which hardly, if ever, admits the slightest impulses to the pulp. If we study the tooth structure in these two classes we shall find different changes as regards the pulp tissue, the odontoblasts and the dentinal-enamel region, with a possible increase of interglobular spaces, and in the odontoblastic zone, an excess of calcoglobulin about the germinal odontoblasts, which latter are increased in number in the hyperemic area. Some cell proliferation is also present, (Fig. 2), showing that Nature is trying to protect herself and to protect the pulp as long as she can, thus cutting off the trophic sensations by increasing the resistance to stimuli and filling in the cavity by new if imperfectly organized tissue. Whether the odontoblasts have more to do with the vasomotor system than with dentinification is as yet an open question, but clinically it would seem as if they have, or at least that they assist more materially.

Pulpitis is the common termination of hyperemia, and histologically the pulp shows very different degrees of interest. Cases should be taken from teeth, first, in which caries has not penetrated into the cavity and, second, in which there is exposure. We find in some specimens a well-marked cell infiltration, dilated vessels on account of the stasis of the circulation and evidences of edema which may be seen by the poor staining of the tissues which look water-logged (Fig. 3). This distension shows the clinical evidence of pain by pressure of the odontoblasts against the dentine and the constriction by the alveolar dental membrane through inflammation of the vasomotor nerves scattered through the pulp and constriction of the vessel walls (Fig. 4). The endothelial cells are easily lost by the dissolution of the cement substance, and with the cell changes we obtain clotting, thrombosis and embolism (Figs. 5 and 6). This condition I have often seen in teeth extracted for interstitial gingivitis or pyorrhea.

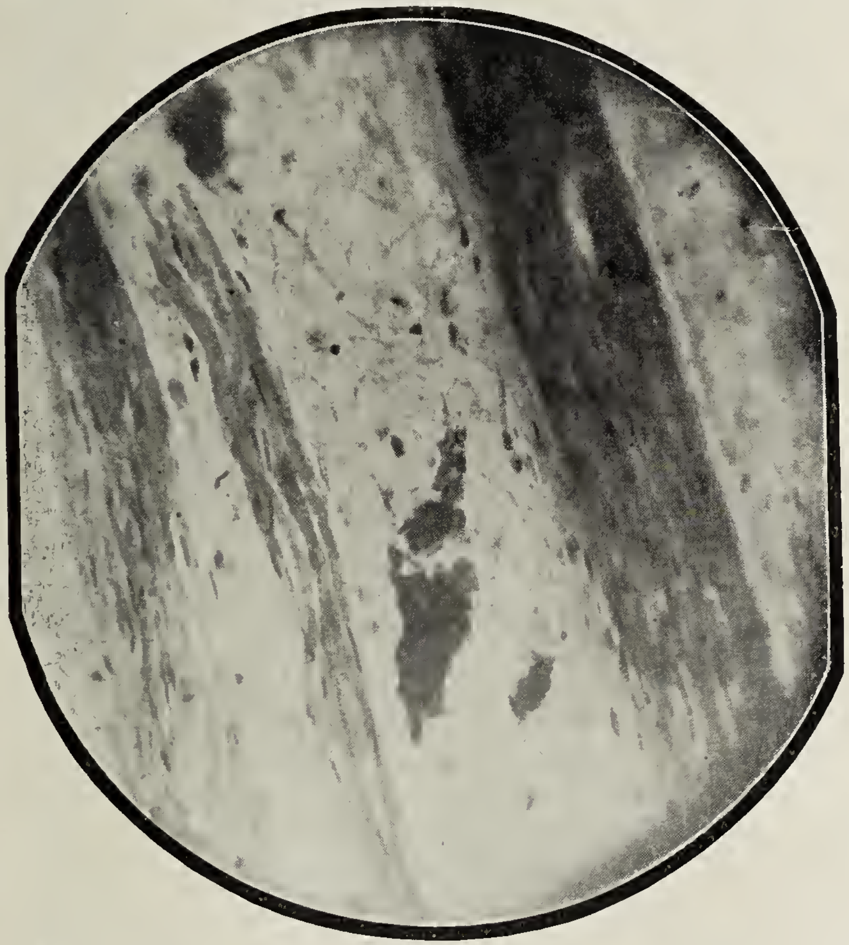

Fig. 17.—Nerve degeneration; thickened fibers. Nuclei well marked.

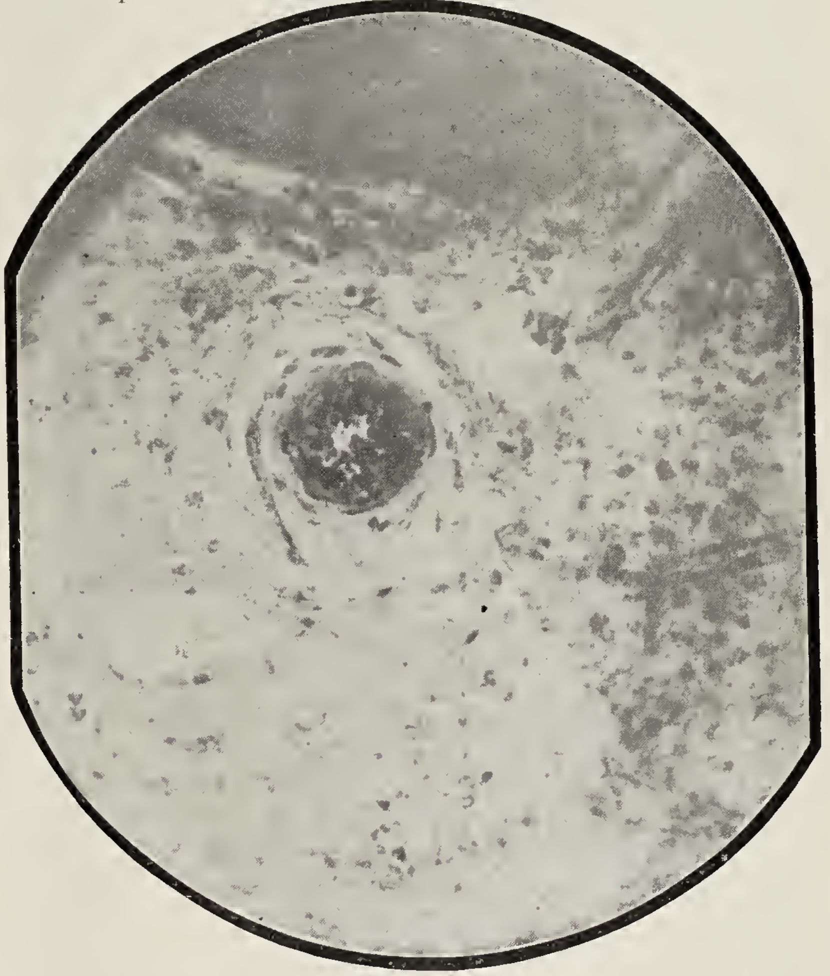

Fig. 18.—Arteritis obliterans of pulp. Parenchymatous degeneration. Thickened nerve bundles in pyorrheal tooth.

A CASE OF PULPITIS.

Let us take for examination a tooth which has been the subject of periodontitis followed by a pulpitis and then quieted down. Note, first, the thickened membrane and that at certain places there are absorption areas or excavations with large giant cells;[2] in another place in this root are older absorption spots and a layer of new tissue filling them up and increasing the size of the tooth (hypercementosis). The pulp cavity shows that there has been a change in the layer of odontoblasts which form the attachment and act as a source of nourishment from the pulp to the dentine. It is from this layer (the connecting link between the hard calcified dentine and pulp matter) that the so-called secondary dentine is formed, but under certain circumstances the characters of the cells forming this layer change both in size and shape (Fig. 5). If we have a hyperemic condition or slight pulpitis, a great amount of blood is brought to the pulp blood vessels. These cells lose their shape, swell up, the nuclei become active and new cells are rapidly formed by mitosis (Fig. 7). As these new cells proliferate, a thickened membrane-like layer is seen pressing on the dentine and so causing an absorption of the latter in order to gain more room for growth (Fig. 6). Just so long as we have an abnormal blood supply to the pulp, a long or short time of pressure on the hard walls, so long do we have few or many absorption areas which may be superficial or deep. If the tissue is imperfectly calcified around the pulp canal, the giant cells will more easily penetrate and pass out in all directions continuously or intermittingly, depending on what changes are going on externally on the tooth or in its cemental layer. If extracted about this period nothing is found of the pulp or only a thickened membrane on the pulp canal walls. These changes are produced by the odontoblast layer of the canal, and if not extracted we find the pulp congested, odontoblasts altered or destroyed and no connection with the tubuli (Fig. 8). In the dentine, giant cells are becoming formative agents, building a new tissue resembling a poor type of dentine, cement or bone-like material with its lacunæ and canaliculi in the enlarged pulp, developed from a membrane very similar to that of the periodontium. These same changes may be seen in the incisors of horses, cows and dogs. The vascular system returns to the normal. Clinically the tooth is tender to percussion almost as in periodontitis; this gradually subsides until another inflammatory attack recurs, then interstitial periodontitis with resorption and loosening of the tooth. If this continues we may have to extract the tooth, for through this calcific degeneration we may have many reflex conditions as well as gingivitis, even to suppuration (Figs. 10 and 11).

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[2] Coyne and Cavalié: Anat. Anzeig., 1905, vol. xxvii, p. 205.

In the more chronic cases we really see the influence of the defective ways of egress. Everything in the way of pathologic histology which belongs to the retrogressive disturbances of nutrition may occur, as interstitial pulpitis, suppuration, necrosis, gangrene and the various degenerations (Figs. 8 to 13). When a tissue is dead we never hear of its recovering. But just previous to death we may have a line of demarcation in the healthy tissue in the body, as in gangrene of the extremities, but this is a rare sequel in the pulp on account of the peculiar anatomy in the radicular part of the tooth, and because its apical entrance provides no way of egress or ingress. Cases do occur in which cicatrization has been seen both in so-called healed caries and in pulps in which punctures have been made intentionally for hyperemia, or accidentally (Figs. 7 and 14). I feel that as soon as we can secure aseptic or even antiseptic cavities, and tissues, especially in the dentinal tubules, and freedom from enamel fissures we may expect a greater number of pulp recoveries if the patient be in good general health.

As a termination by hyperplasia from a chronic pulpitis we need only note the so-called polypus of the pulp which has been ably studied by von Römer.[3] We all know the comparatively non-sensitive mass consisting of rather thick granular tissue in three layers, the outer having white blood or pus cells beginning to break down, the second the capillary vessel layer and endothelial cells almost like granulation tissue, and the third connective tissue with enlarged vessels and many round cells. He especially noted an entire absence of nerves or only a few nerve fibers. In the pulp cavity itself and in the canals numerous nerve bundles were seen degenerating. Such can be best seen in pulps which have been laid bare by fracture in attempts at extraction and in which the superficial pulp is cicatrizing. The differences between pulp hypertrophy and *pulpitis chronica hypertrophica granulomatosa* as quoted by Rothmund and Arkövy[4] may not exist, says Dr. von Römer. Certainly a growth which follows the type papilloma is usually different to the interstitial pulpitis or fibroid form by having a richer supply of blood vessels more dilated like an angioma and less fibrous tissue.

With regard to the other termination as a possible result of pulpitis, neoplasm or true tumor growth (Fig 15). I refer to my paper in which the literature and work has been discussed.[5] In order of frequency in a series of cases taken from the records of the Dental Hospital of Budapesth (Anton Kozma)[6] it was determined that acute periostitis is rarer than any other inflammatory disease, next maxillary affections, and then acute pulpitis, then follows chronic periostitis and, as borne out by my own histologic studies, chronic inflammation of the pulp, or, as I prefer to designate it, interstitial pulpitis. A peculiar circumstance is that the frequency of all inflammatory diseases in the upper jaw increases to the first molar and from thence decreases. The same order also occurs in the lower teeth. It may be said that in the first molar there is hardly any disease that one has not the opportunity of investigating.

If the teeth are considered individually, the inflammatory conditions in the upper premolars, incisors and cuspids occur more frequently than in the corresponding lower ones. But this is not so with the molars, the inferior of which suffer more than the superior, and this corresponds with the statements of Magitot and Kay, J. Tomes, S. Cartwright and Hitchcock.

In studying pulpitis there are specimens in which the most careful work by staining for bacteria does not show them to be present in the tissue of the pulp, more especially in the chronic or interstitial forms. Sections may show the dentinal tubes carrying some, and in others the pulp and odontoblast layers show them and also degenerative changes in the cells themselves. An interesting study could be made by examining sections of the pulp, especially stained to show the probable distribution of the micro-organisms, if they penetrate the basal layer of Weil and the probable routes of invasion into the pulp.

NERVE DEGENERATION.

Nerve degeneration so far has been little worked out in the pulp, but that it is present is evident. The degeneration of a severed nerve is well known in surgical practice, but it is not often remembered that simple contusion may have the same effect as severing the continuity of a nerve trunk. A contusion may abolish the function of a nerve for some hours, but if the function is not restored within a reasonably short time degeneration of the nerve may follow just as if it had been severely injured (Fig. 17). The peculiarity of nerve contusion is that it leads to neuritis and so may give what is really a pressure paralysis owing to the histologic structure.

As we know, a nerve trunk is made up of a number of bundles of nerves, each surrounded by a connective tissue sheath. This strong fibrous sheath plays an important rôle in the pathologic study of neuritis. The nerve has its own lymphatic, vascular supply and a special nerve supply to give it local sensibility. A contusion may, and in some cases does, set up a secondary neuritis, congestion, cloudy swelling, edema and distension of the nerve sheath which is an unyielding connective tissue, and if the inflammation is severe the compression of the nerve fibers gives us pressure paralysis and very soon the nerve degenerates. The symptoms may be obscured at the time of the pain and swelling. Micro-organisms may follow and infect the nerve fasciculi, as they usually arrange themselves along the blood vessel walls.

Whether the odontoblasts have a phagocytic function as suggested by Arkövy[7] is not proved yet. Figures 16 and 17, if compared, show degenerative changes in the ground work and very slight swelling at the nodes of Ranvier, some collection of the myelin substance, while Figure 12 shows a sclerosis, fatty degeneration and (Fig. 17) thickened fibers.[8]

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[3] von Römer: "Ueber Pulpapolypender Zahne." Correspondenzblatt für Zahnärtze, 1892, vol. xxxi, No. 1, Jan.

[4] Scheff's Handbuch, vol. ii, p. 297.

[5] Latham: "Neoplasm of the Pulp." THE JOURNAL A. M. A., Aug. 20, 1904.

[6] Reported by Prof. Arkövy.

[7] Arkövy: Jour. Brit. Dental Assoc., vol. xv, p. 602.

[8] In addition to writers cited in the text, the following were consulted in the preparation of this article: Andrews, "Calcoglobulin," Dental Digest, December, 1904; Dental Cosmos, November, 1904. Talbott, "Vasomotor System of the Pulp," THE JOURNAL A. M. A., Dec. 9, 1903; "Constitutional Causes of Tooth Decay," Dental Digest, December, 1903; "Pulp Degeneration," THE JOURNAL A. M. A., Aug. 6, 1904, p. 385; "Endarteritis Obliterans and Arteriosclerosis in the Alveolar Process," Dental Digest, 1904; Scheff's "Handbuch," No. 2, p. 297; "Ein Beitrag zur Statistik der Zahn Caries," Inaug. Dissert., Kiel, 1886; Rothman, "Patho-Histologie der Zahnpulpa und Wurzelhaut," 1889; Wedl, "Atlas zur Pathologie der Zahne," p. 68, 1893.

The loss of control of the vascular system of the pulp and obstruction in the vessels followed by inflammation are probably factors in interstitial gingivitis which may be a cause of the gingivæ losing their normal function and so aiding in the progress of the disease (Fig. 17). The interference with the vascularity of the bone, the arteritis obliterans in the pulp and peridental membrane (Fig. 18) producing venous hyperemia of the gums (acute or interstitial), changes in the mucous glandular structure and functions, and finally atrophy and osteomalacia.

DISCUSSION.

Dr. M. I. Schamberg, Philadelphia, said that for a long time dentists were prone to regard the pulp as merely a bundle of nerves. By the work of Dr. Latham we are made to believe forcibly that there are many pathologic conditions which are prevalent in other parts of the body and at the same time found to exist in the pulp. When he saw Dr. Latham's slides about a year ago he was much impressed with the fact that it would probably be best to remove all pulps which were even closely approximated by decay, if not entirely exposed. He was glad to hear Dr. Latham give evidence of the fact that some of these conditions might be alleviated or improved by the proper treatment, because the conservation of that organ prevents numerous complications which arise when we attempt to fill canals which are very minute and which are extremely important.

Dr. E. S. Talbot, Chicago, said that Dr. Latham held the opinion that it was difficult to say when a pulp is in a healthy condition, or to demonstrate a healthy pulp. It is a singular thing that in the evolution of a pulp from the lower vertebrates up to man, a general degeneration of the pulp occurs, and as we ascend from the lower vertebrates we find that the pulp gradually grows smaller and smaller, until in man the apical end of the root is almost entirely closed, so that we have a pulp mass consisting of blood vessels, nerves and connective tissue inside of the tooth. He believes that the pulp is at its highest physical development when it commences to form dentine. The mere fact of its growing smaller and smaller at that time would lead one to believe that degeneration was going on. Why we ever have a healthy pulp he did not understand. Dr. Latham had demonstrated almost every pathologic condition that is possible to be found in the human body. Ten years ago Ramón y Cajal of Madrid, Spain, found a stain by which he was able to show a nerve-end degeneration, and for the last eight or ten years the members of this Section have been using it along the line of research w rk. He, himself, had been studying the pulp for the last ten years with Dr. Latham, and some beautiful work had been done showing nerve-end degeneration in the pulp tissue. Arteriosclerosis, as well as fatty degeneration, had been noticed. The question naturally arises then, where so many primary diseases are found in the pulp, is it not better under most conditions to extract or to remove the pulp and to fill the root of the tooth, rather than to try to cap and to preserve it.

Dr. V. A. Latham added that one point was not made plain in regard to pain in teeth after pulp extraction. There are two photographs (Figures 5 and 6) which show the center pulp chamber being occluded by arteriosclerosis and beside that the amount of dentin forming around has practically obliterated the chamber. Six or eight exceedingly minute but distinct pulp canals are seen. This is a case in which one may extract the pulp and think the work is done, but on careful manipulation a condition will still be found to remain, and the patient will return day after day, saying: "Doctor, that tooth still hurts." Dr. Latham had another case in which the nerve, instead of going through the central chamber, actually came through the cemental surface into the peridental membrane. On passing a probe down at the side, pain was felt which nearly made the patient jump out of the chair. After extraction the nerve was found coming out at the lingual side of the tooth, to the gingival margin. It was not a case of hypersensitive cement or dentine as diagnosticated by several. The erratic position of the pulp and its terminal fibers is a matter of considerable importance to stomatologists and physicians in the matter of reflex disturbance.

CEREBRAL DECOMPRESSION.

PALLIATIVE OPERATIONS IN THE TREATMENT OF TUMORS OF THE BRAIN.

WILLIAM G. SPILLER, M.D.
AND
CHARLES H. FRAZIER, M.D.
PHILADELPHIA.

(*Concluded from page 853.*)

Case 11.—Tumor of cerebellum.

History.—F., aged 16, was referred to Dr. Spiller, July 16, 1904, by Dr. J. S. Baer and Dr. R. G. Curtin. The father of the patient possibly had had syphilis. The menses ceased about two years ago; having begun when she was 14, they had, therefore, been present only a short time. For about one year she had had a severe sensation of pressure at the back of the head, as though some one were pressing her brain out, but this sensation is not felt now. She has had headache, not localized to any one part of the head, and has had "neuralgia" in the left side of the forehead about a year. Before December, 1903, the headache was severe. About a year ago she began to have nausea and vomiting, at first about every six weeks, but these symptoms gradually became more frequent until they occurred every two or three days. The vomiting had no relation to eating. About a year ago she began to be dizzy, but has not been dizzy since February, 1904. Dr. Risley has recently discovered optic atrophy, secondary to choked discs. She has never been unconscious. She has had difficulty in lying on her right side, but this sign seems to have disappeared. Lying on the right side caused her head "to kind of draw." She has never had convulsions. Sight has been fail-

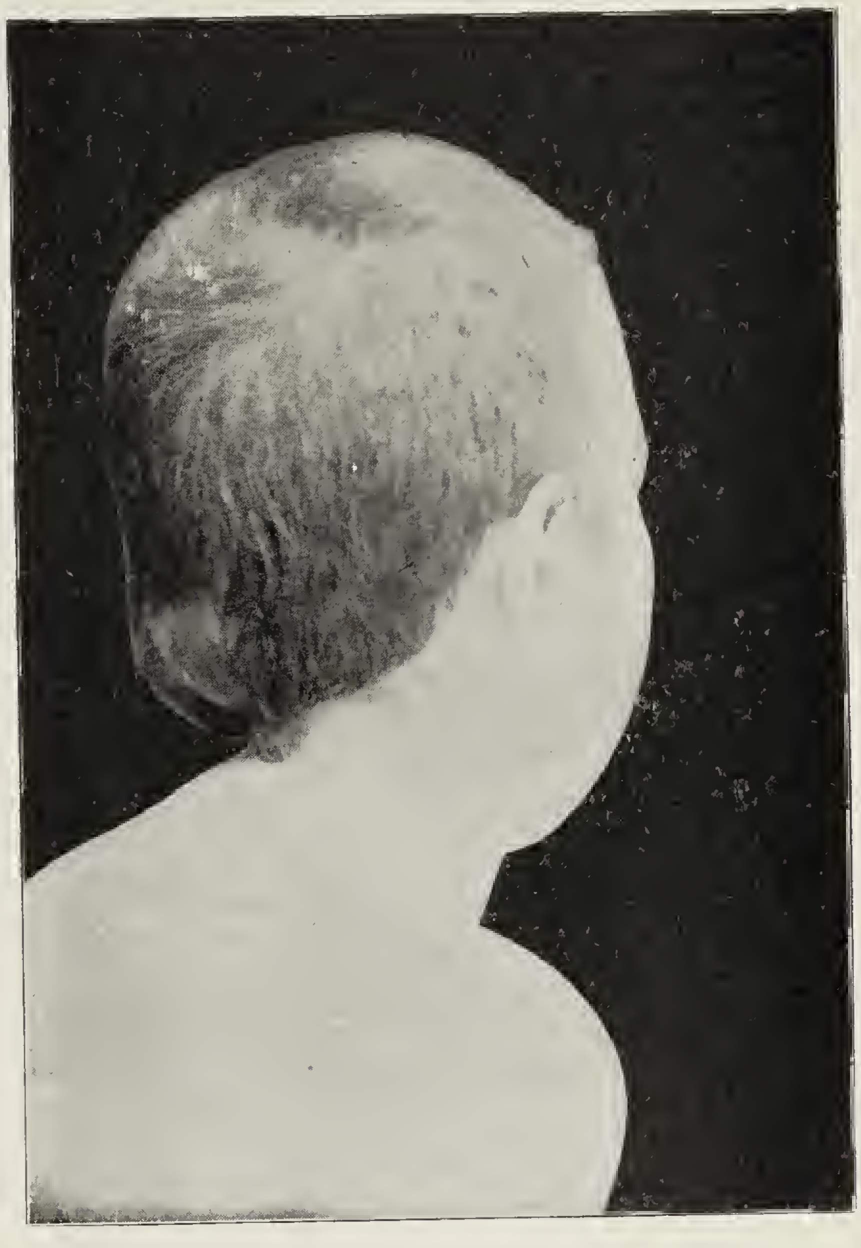

Fig. 4.—Showing a hernia cerebelli after a unilateral suboccipital craniectomy. The patient prior to the operation had been bedridden for over a year, is now able to be up and about and has been relieved almost entirely of her pressure symptoms (Case 11).

ing about two years. Difficulty in walking was noticed about November, 1903; she staggered, and the staggering seemed to be more to the left.

Present condition, July 16, 1904: There is no involvement of either seventh nerve masseter contracts well on each side, tongue protrudes straight, not atrophied and shows no fibrillary tremors. Movements of eyeballs are free in all directions, but distinct nystagmus is observed in turning the eyes far to the left or right, and probably is more intense in turning the eyes to the right. The right pupil may be a trifle larger than the left. The reaction of the pupil to light is preserved, also in convergence. Accommodation can not be tested because of poor sight. She can count fingers with either eye, but the sight is more impaired in the left eye. She hears a low-ticking watch one or two feet from either ear, and has not noticed any deafness. She has had buzzing in both ears, especially in the left, but Dr. Baer states that she has had accumulations of wax in the ears. The face is somewhat puffy and expressionless. The exit points of both fifth nerves are sensitive, but the left supraorbital foramen is more sensitive than the right. She now holds her head straight, but says she formerly inclined her head to the left. Sensations of touch and pain are normal in each side of the face.

Upper Limbs: All the movements are free; the grasp of each hand is normal. The biceps and triceps reflexes are not distinct on either side. Sensations of touch and pain are normal in each upper limb. The finger-to-nose test with eyes closed does not show distinct ataxia.

Lower Limbs: Voluntary power is normal. The patellar reflex may be a little prompter than normal on each side. She staggers a little when standing erect with eyes closed, and the gait is uncertain, with a tendency to stagger more to the left. The gait is cerebellar in type, but the staggering is not intense. The Achilles jerk is not distinct on either side, nor is the Babinski reflex. Sensations of touch and pain are normal in the lower limbs.

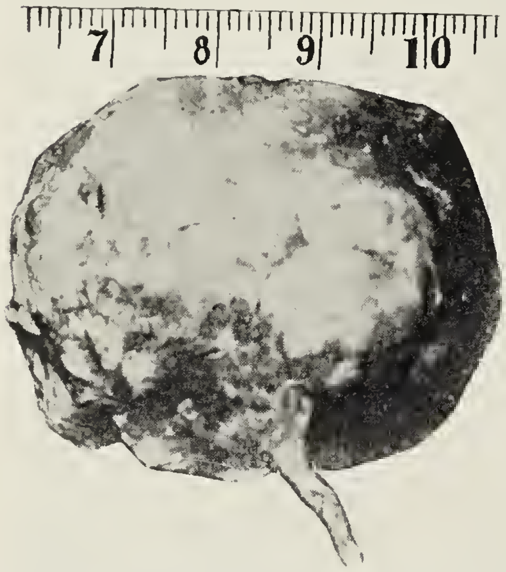

Fig. 5.—Fibroma removed at operation (Case 12). The patient lived five days after this operation.

Dr. W. H. Powell first examined the eyes in November, 1903. Vision of the right eye, 20/50; of the left eye, 20/50. Pupils react to light and accommodation. Peripheral vision normal, media clear, but fundus suggests a low grade of neuritis. In July, 1904, vision of the right eye was 20/100, of left eye 4/200, and she had optic atrophy and markedly contracted fields.

Chiefly because of the history of probable syphilis in the father I employed mercury and iodid, and by Aug. 16, 1904, her gait had become less ataxic. By May 5, 1905, headache had disappeared, but about once a month she still had a drawing sensation, as though the brain were being pulled out. Ataxia was slight. The patellar reflexes were about normal.

Feb. 22, 1906, Dr. de Schweinitz found typical postpapillitic atrophy.

Operation.—March 9, 1906, suboccipital craniectomy was performed by Dr. Frazier under ether anesthesia. The operation consisted in removing that portion of the occipital bone overlying the left cerebellar hemisphere.

Subsequent History.—March 28, 1906: Since the operation was performed the condition of the patient has improved, but only to a moderate degree. The pain referred to the arms has been very much less severe and at times she has had none at all. Her headaches also have been less severe and less frequent. Although confined to bed for the past year, she is now able to get up in a wheel chair. Although the dura was neither incised nor removed at the operation, there is quite marked bulging over the left cerebellar hemisphere, showing that the dura has yielded to the pressure from within and that it is possible for a hernia to develop without opening the dura.

Second Operation.—April 4, 1906: After consultation with Dr. Spiller it was decided that, owing to the fact that the headache and pain in the arms had not been entirely relieved, it would be advisable and afford greater relief to the increased tension to split the dura. Following an injection of 1-6 gr. of morphin, and under ether anesthesia, the left cerebellar hemisphere was exposed by a muscle-splitting operation. A

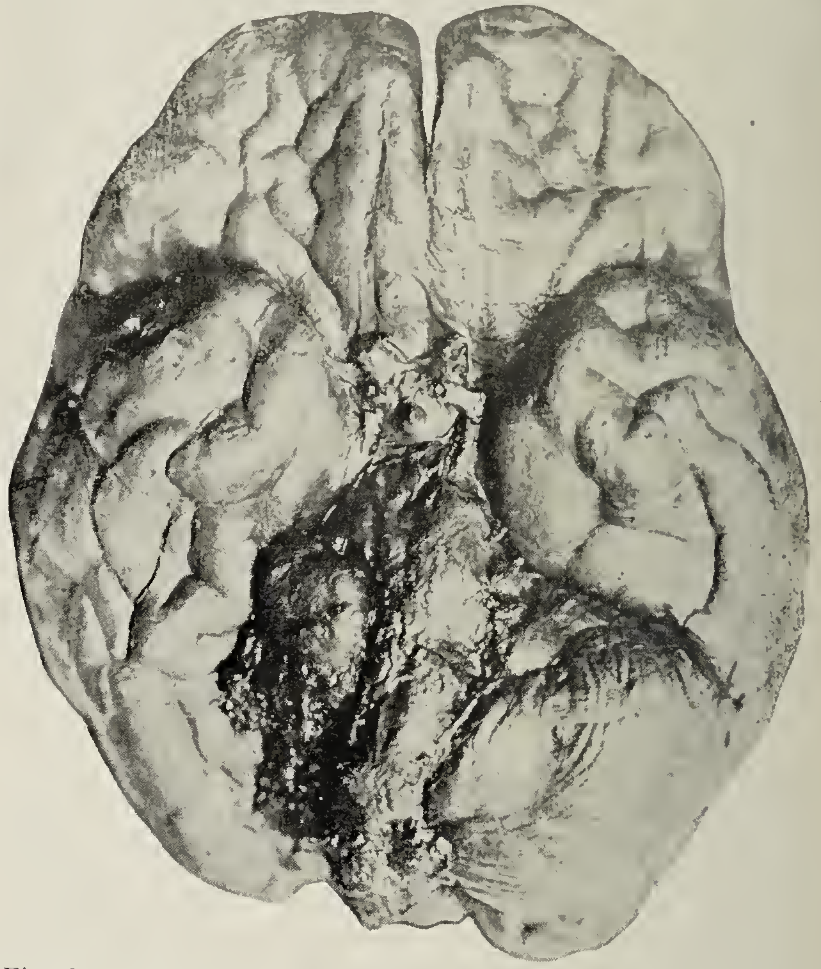

Fig. 6.—Brain from Case 12, showing portion of tumor in right cerebello-pontile angle not removed at the operation.

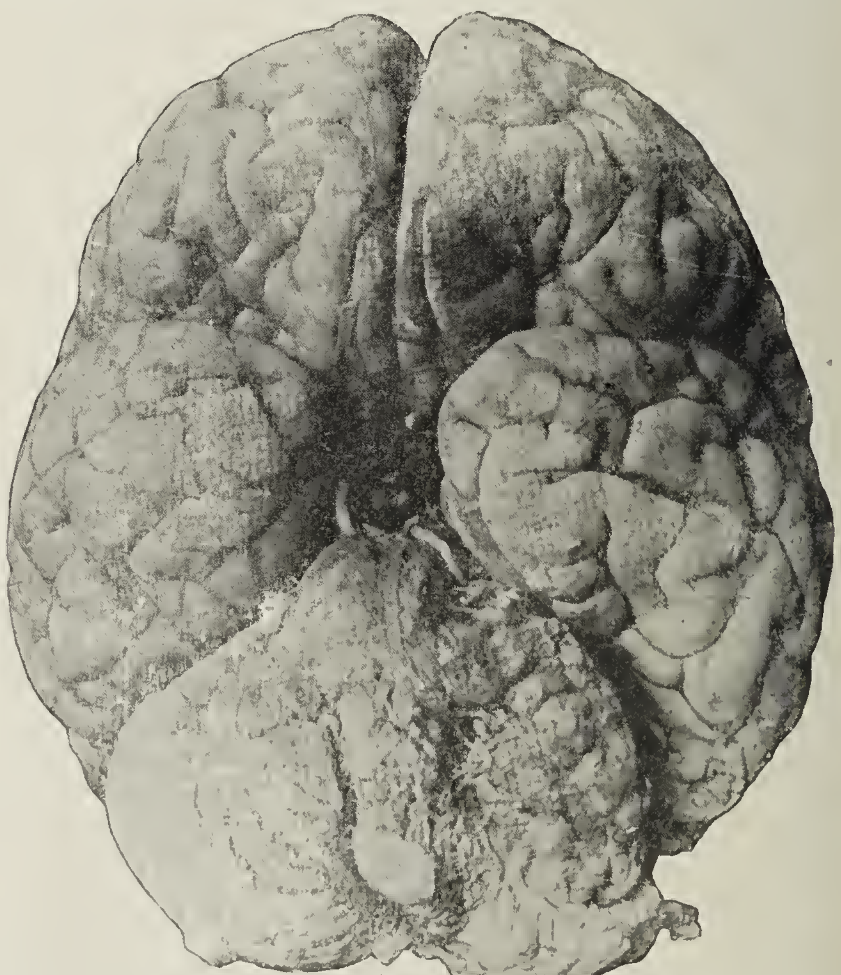

Fig. 7.—Tumor, probably a fibroma, of the left cerebello-pontile angle (Case 14).

vertical incision was made through the middle of the original flap, the edges of the wound retracted and a crucial incision made in the dura about 1½ inches in either direction. The cerebellar tissue bulged considerably through the opening, but the exposed tissue was normal in appearance. The musculoaponeurotic layers of the wound were closed with catgut sutures and the scalp with interrupted silkworm gut sutures.

April 16, 1906: The following notes were made by Dr. Spiller: The paralysis in the lower distribution of the right facial nerve supply is distinct, although the upper distribution of the nerve does not seem to be affected. She has light weakness of the right upper and lower limbs. The patellar reflex is prompt on each side, but more prompt on the right, and there is slight tendency to ankle clonus on the right side. The Babinski sign is present on the right side, but uncertain on the left side. There is no disturbance of sensation for touch or pain in any part of the body.

May 23: For the first few weeks after the second operation the patient had occasional headaches and pain in the upper extremities. For the past two weeks, however, she has been almost entirely free from both these symptoms. She has gained in strength and is able to be up a considerable portion of the day. A hernia cerebelli has increased somewhat since the second operation (Fig. 4). She has recovered sufficiently from the effects of the operation and is sufficiently relieved to warrant her being discharged from the hospital. Her gait is still ataxic. She menstruated in May, 1906, the first time within a period of four years.

Case 12.—Cerebellopontile tumor. Decompressive operation, followed by disappearance of headache, vomiting, and by subsidence of choked disc.

History.—E. D., aged 24, was referred to Dr. Frazier by Dr. Sherman Voorhees, of Elmira, N. Y. She was seen in consultation also by Dr. Spiller. About two years ago the patient noticed that her limbs were weak, that she would stagger in walking, although she did not feel dizzy. About one year ago she began to notice that her vision was failing. At this time she would have attacks, when for a few minutes everything before her would seem black; following the attacks she could see perfectly well again. At the same time she began to have attacks of nausea and vomiting, and noticed that she was becoming slightly deaf in her right ear. For the past three months she has had considerable headache, sometimes dull, at others sharp and shooting in character. At the time of her admission, Feb. 16, 1905, she is practically blind and unable to walk.

Examination.—February 17: It was noticed that in showing her teeth the right corner of the mouth is not drawn up nearly so well as the left, and in drawing up each corner separately the movements on the right side are distinctly less than the left. On closing her eyelids forcibly the resistance to passive movements is less on the left side than on the right side; the masseter muscle seems to contract equally well on one side as on the other. The ocular movements are normal and there is no distinct nystagmus. There is no disturbance of pain and tactile sensation in the face, although she complains of a "queer" feeling on the right side of the face and right side of the mouth and of the face feeling numb, as though it were asleep. Further examination gives the impression that both the left temporal and masseter muscles contract a little more than the right, although it was subsequently found that on both sides the muscles respond equally well to Faradic current. The tongue is protruded straight and there are no fibrillary tremors. The right eyelid seems to be slightly more prominent than the left.

In the upper extremities the grasp of each hand is normal. Biceps reflex is normal on each side; the triceps reflex and wrist reflexes are not distinct on either side. Sensations for touch and pain are normal on both sides. There is slight ataxia on each side, a little more on the right.

In the lower extremities the patellar reflex is a little prompter than normal on both sides. There is no ankle clonus. The Babinski sign is uncertain in each side, as she resents any attempt to irritate the sole of the foot. The Achilles jerk is absent on both sides; there is no hemiasynergy and no weakness of any of the limbs; gait is slightly ataxic, specially noticeable when she turns; in walking the patient staggers more to the left than to the right. She staggers when her feet are together almost as much when her eyes are open as when they are closed.

Examination of Ear: Dr. Randall finds little hearing in the right ear by air or bone, except for the Galton whistle. Tests are slightly contradictory, but indicate middle ear trouble on the right side, complicating semi-complete right acoustic paresis. Hearing on the left side is not impaired.

Ophthalmic Examination by Dr. Shumway: Pupils are dilated; right pupil responds when light is thrown in from the temporal side, in which position it is recognized. The left pupil does not respond to light and the eye is blind. There is choked disc on both sides; elevation on the right side is about 6 D. and on the left 7 D. The nerves are beginning to atrophy. The eye movements are carried out in a jerky manner, the muscles acting feebly, and the eyeballs return to primary position immediately. There is no paralysis of the ocular muscles.

Operation.—February 23: Under ether anesthesia Dr. Frazier performed a suboccipital craniectomy, removing the bone overlying the right cerebellar hemisphere. Owing to the fact that bleeding was so profuse, it was decided to discontinue the operation at this stage until the patient had fully recovered from its effects.

A radical operation was performed two months later and was followed by death within five days (Figs. 5 and 6). After the decompressive operation the choked disc subsided from 7 D. to 3 D., although, unfortunately, the optic atrophy was so advanced that it precluded the possibility of restoring the vision. The hearing improved somewhat after the operation and the nausea and vomiting ceased. Headaches disappeared almost entirely and the patient was able to get up and walk about the ward with but little assistance.

Case 13.—Inoperable tumor of brain. Decompressive operation, followed by little or no amelioration of the symptoms, although prolonging the patient's life.

Patient.—R. C., aged 30, was referred to Dr. Charles H. Frazier by Drs. Thomas O. Nock and Wharton Sinkler, March 15, 1906, the latter having seen the case in consultation.

History.—There was a history of the patient having had an attack of vertigo while walking about three months ago, and had she not been caught by her husband she would have fallen to the ground. At the same time she had some numbness in the left upper and lower limbs. Since that time she has had two attacks of numbness of the limbs, but no vertigo. She has had more or less persistent headache for the past year, occurring about three or four times a week, usually in the mornings. There have been no convulsions. Three weeks ago the symptoms became much more severe, headache more intense and numbness in the left extremities more marked. At this time it was noticed that the muscles of the left side of the face were gradually becoming weak, the muscles becoming paralyzed within a period of from four to five days. Up to this time there was no weakness in the extremities, but about a week after the involvement of the facial muscles was noticed the grasp of the left hand became weak, and about the same time weakness was noticed in the left lower limb. The upper extremity sometimes is flaccid, at other times spastic, but the lower extremity has never been spastic. The pulse has varied between 44 and 60. The respirations have been alternately shallow and moderately full, the respiratory rate ranging from 16 to 30 a minute. For the past four or five days her temperature has been subnormal. About eight days ago for the first time the patient became stuporous for variable periods of time. These periods of stupor have gradually increased, and during the past two days the patient has been almost comatose. This condition of mental hebetude was first noticed about two weeks ago.

Examination.—March 15, 1906, by Drs. Nock, Sinkler, Frazier and Spiller: Stupor is so great that the patient can be roused but slightly. She lies in bed with her head turned to the right, but there is no deviation of the eyeballs. There is no tenderness on percussion of the scalp. She is able to move the eyeballs well to the right, although there may be slight impairment of the left eyeball to the right, but probably not of the right eyeball to the left. The right pupil is larger than the left. Neither pupil reacts to light. It is impossible to tell whether there is any deviation of the tongue or to test the muscles of mastication.

Left Upper Extremity: The left extremity is very weak, although she has a little voluntary power in it and can flex the limb feebly at the elbow. She can not make a fist with the left hand. The biceps tendon and triceps tendon reflexes are present, but weak. Sensation is not disturbed.

Left Lower Extremity: The lower extremity is very weak, although she can move it slightly. The patellar reflex is present on the left side, but not very prompt. The Achilles tendon reflex is present on each side and about normal. There is no ankle clonus and the Babinski sign is very typical on the left side, as it is on the right, although not so pronounced. Pin prick is perceived in the left lower limb.

Examination of the Blood: Systolic pressure, 165; hemoglobin, 65 per cent.; white blood corpuscles, 21,240.

Urinalysis: There is slight albuminuria, no sugar and a few granular casts.

Ophthalmic Record by Dr. de Schweinitz: This examination was made a week or more before the patient came to the hospital and disclosed a moderate optic neuritis of each eye, most marked on the right side. There are also a few hemorrhages in the neighborhood of the optic disc. The neuritis appears to be in an early stage of its development; on the left side it is just beginning. The pupil reacts normally. There appears to be a divergent strabismus, usually more marked on the right side and probably dependent on paresis of the right internal rectus. Some examinations appear to indicate that there was failure in the movement of the eyeball upward, therefore some involvement of the right superior rectus. This was not certainly determined, as there did not appear to be much difference between the two sides; both lids droop to about an equal extent, but the droop is one probably due to weakness and not to paresis. The visual field, roughly taken by the hand, appeared to be undivided; at least there was no hemianopsia.

Operation.—March 15, 1906: The date the patient was admitted to the hospital an osteoplastic operation was performed, in which the motor region was exposed. It was noticed when the flap was reflected that there was some bulging of the dura at the lower and posterior angle of the opening. An exploratory incision about 1½ inches long was made at this point, at which the dura seemed very much thinner, as though undergoing atrophy from pressure. The brain contents bulged through the opening thus made, and an exploratory canula was introduced for about 1½ inches, as there was some reason for suspecting the presence of an abscess. It seemed as though the canula entered a cavity; at first some brownish fluid flowed from the canula and afterward pure blood. The exploratory incision was made about one-half inch behind the anterior margin of the opening and a small section of tissue removed for examination. Concluding the lesion was a subcortical one, we decided to discontinue any further exploration. A considerable portion of the bone in the flap was removed and the dural incisions and the incisions in the scalp closed.

From the date of the operation until the time the patient left the hospital, ten days later, the patient manifested but little, if any, improvement as a result of the operation. There were times when she seemed to be a good deal brighter than she had been in the immediate past, and also times when she had a little more movement in the left upper extremity. Mental condition, on the whole, was better, but apart from this there was very little, if any, change. It might be noted that the leucocytosis which existed before the operation continued afterward, and at one time the white-blood corpuscles numbered 36,000. In a differential count that was made March 25, 1906, there were 94 per cent. of polymorphonuclear cells. The persistent leucocytosis in the absence of any wound infection was strongly suggestive of the presence of an abscess.

Postoperative History.—May 24, 1906: A letter recently received from the patient's physician, Dr. Nock, says that her present condition is about the same. There is complete paralysis in the left upper and lower extremities, and now gradual weakening of the muscular power in the right arm and leg. When awake the patient talks intelligently and is interested in what is going on, although there is a tendency toward confusion of ideas at times. Her appetite is good and she takes enough food to maintain her nutrition. Her temperature varies from 99 to 99.3. Pulse is regular.

We include the following case, which was in the service of Dr. Mills and Dr. Martin and was studied also by us:

Case 14.—Stafford, male, aged 46, was under the care of Dr. C. K. Mills in the University Hospital in 1902. He was seen also by Dr. Potts and Dr. Spiller.

The patellar reflexes and Achilles tendon reflexes were lost; the gait was ataxic. Headache, dizziness, optic neuritis, nystagmus and paresthesia of the left side of the face were present among other symptoms. The diagnosis of cerebellar tumor was made. A palliative operation over the cerebellum was performed by Dr. Edward Martin in 1902. The patient's condition was much improved. He died in 1906 and a tumor was found in the left cerebellopontile angle (Fig. 7).

THE PRESENT STATUS OF BRAIN SURGERY.*

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It is twenty years since the first operations on the brain for the relief of tumors, epilepsy, and abscess were undertaken, and the data for final conclusions in regard to the propriety of such operations in various conditions are now available.

The enthusiasm with which these operations were performed at the outset has subsided and it is now possible to take a broader and calmer view of the entire subject; to realize the limitations of such operations; to appreciate their true value and to determine with considerable exactness the class of cases in which brain surgery promises success.

In this review I shall endeavor to present conclusions derived from an extensive experience in this field, and when statistics are cited too great stress will not be laid on them, as I realize that very many cases, both of a favorable and unfavorable kind, have not been published. I shall take up in succession the surgical treatment of epilepsy, of brain abscess, of brain tumor, of cerebral hemorrhage, and of operations for the relief of imbecility and idiocy.

I. SURGICAL TREATMENT OF EPILEPSY.

The cases of epilepsy which are open to surgical treatment are those in which it can be determined that there is a localized focus of disease in the brain, which acts as a starting point for irritation, and thus causes the epileptic attack. Such a local focus of irritation may be caused by an injury to the head, in some cases producing fracture of the skull, but in many cases not attended by external evidences of injury. It may also be produced by internal causes, such as the growth of small local inflammation of the meninges. A plaque of sclerosis in the brain, the origin of which may be wholly unknown, is capable of producing epilepsy and our experience in the treatment of abscess and tumor has shown that the necessary cutting of the brain for the relief of these diseases is liable to result in the production of gliomatous scar tissue which subsequently becomes a focus of irritation leading to epileptic attacks.

The essential difference between epilepsy produced by these local lesions and idiopathic epilepsy consists in the fact that in the cases open to operation the epileptic fit is uniformly preceded by a single kind of aura, either a sensation of numbness in one extremity, or an hallucination of sight, sound, smell, or taste, or by a sensation of muscular twitching, which is immediately followed by a localized spasm confined at first to one extremity, or to one side of the face, and extending (if it does extend) in a definite manner to the other parts of the body. The fit is rarely attended by a loss of consciousness. Such a localized epilepsy, generally recognized as Jacksonian epilepsy, is always due to a definite focus of disease in the brain. Furthermore, this disease is cortical, and hence accessible to the surgeon, and by following the well known guides to localization such diseases can be excised either from the meninges or from the cortex when these parts are laid bare.

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It must be distinctly stated that these are the only cases of epilepsy which are open to a cerebral operation. Epilepsy is a widespread disease among the community, one person in five hundred being affected. In my experience not more than 2 per cent. of the cases of epilepsy are in any way open to operation, the other 98 per cent. presenting none of the characteristic symptoms of localized disease in the brain. It is useless to trephine in idiopathic epilepsy, even though it may have been apparently caused by a fall or blow on the head, unless the attacks present the characteristics here named.

The prognosis in the cases of focal epilepsy open to operation is not so favorable as was at first anticipated. Even when a focus of disease can be excised from the brain, a cyst removed, or a plaque of adherent meninges loosened and taken away, some cicatrix is inevitably left, and this too often remains as an adequate focus for the recurrence of the epilepsy. In only about 20 per cent. of the patients operated on has permanent cure been the terminal result. In very many cases relief for a certain time has followed the operation, but after one, two, or three years these patients have returned with a renewal of the symptoms, and second and third operations have not been followed by permanent cure. Such unfavorable results might possibly lead to the conclusion that in the majority of these cases of focal epilepsy an operation should be refused. As a matter of fact, however, it is often found that the focal epilepsy is the first symptom of the growth of a tumor, or the development of a cyst in the cortex of the brain. And if the histories of cases of brain tumor are carefully studied it is surprising to see in how many cases focal epilepsy was the earliest sign of the development of this disease. It seems imperative, therefore, to operate in these cases of focal epilepsy as soon as the diagnosis is made: First, because of the possible relief of epilepsy, and, secondly, for the possible discovery of a more serious and fatal disease just beginning.

I have had operations performed for the relief of epilepsy of a focal nature in about 60 cases. In a few of these cases conditions have been met at the operation which rendered any relief impossible. In a few of the cases (about one-fifth), a permanent cure has been obtained. In the remainder the epilepsy has returned and has been in no way affected by the operation. I have seen many cases of ordinary idiopathic epilepsy, supposed to be due to a blow on the head, operated on, the blow having left some scar that has guided the surgeon. I have never seen in these cases any tangible disease in the brain when it was exposed, and I have never seen any improvement or relief from the epileptic attacks.

A review of this experience convinces me that the operation of trephining in epilepsy is of very limited application and is only to be recommended in a few selected cases which present the necessary guide to both physician and surgeon.

Case 1.—This is a good example of Jacksonian epilepsy in which the finding at the operation justified surgical treatment.

Patient.—A boy, aged 10, began to suffer from attacks consisting of tingling and numbness beginning in the right wrist and passing up the arm, invading the right side of the face. He then felt unable to speak, would feel weak in the arm and drop anything he was holding, and occasionally he would have some twitching of the entire arm. He did not lose consciousness and the entire attack was over within five minutes. Such attacks continued at frequent intervals until the age of 23, when at my suggestion an operation was undertaken by Dr. Hartley.

Operation.—On exposure of the brain a firm adhesion between the dura, pia and cortex about the junction of the middle and lower third of the anterior central convolution was found, and as the brain at this region was manifestly hard after the membrane had been stripped off a portion of the cortex, ½x⅝ in. in size was cut out. The Faradic current was applied to the cortex in this region and produced movements of the wrist, elbow and shoulder, and above the shoulder area it caused movements of flexion of the trunk and back towards the right side; this being a complete confirmation of Sherrington's localization of the trunk centers at the junction of the middle and upper thirds of the anterior central convolution in the orang. It was evident in this case that the localized sclerosis of the cortex and adhesion of the meninges to it, probably the result of some unrecorded fall in childhood, had for many years existed as a cause for the Jacksonian epilepsy, and it was also evident that nothing but an operation would have given radical relief. I had recommended the operation when the boy was 11 years old, but it took twelve years of useless medical treatment to convince the parents of its necessity.

II. THE SURGICAL TREATMENT OF ABSCESS OF THE BRAIN.

Abscesses of the brain of traumatic origin, following injuries or fracture of the skull when located in parts of the brain, diseases of which produce definite cerebral symptoms, can usually be diagnosticated without much difficulty, and should be operated on early. In cases of fractures of the skull or concussion of the head, followed within two or three weeks by the development of symptoms suggestive of abscess, it is imperative to trephine even though the indications are purely those of a surgical kind, there being no localized cerebral symptoms, for there are many districts in the brain, disease of which does not produce known effects. Patients with abscess of the brain developing subsequently to chronic otitis media, should be operated on as early as it is possible to make the diagnosis.

The diagnosis of abscess of the brain is comparatively simple in cases in which the usual causes have preceded the development of cerebral symptoms. Headache, vertigo, vomiting, slow pulse, marked change in the mental state, sensations of dullness and hebetude, slowness of thought, irritability of temper, defective memory and depression, tenderness of the head to percussion, irregular pupils and optic neuritis, constitute sufficient evidence of a cerebral complication. When meningitis occurs, as a rule, lumbar puncture will reveal an increased number of leucocytes in the cerebral spinal fluid, and the existence of micro-organisms in that fluid. Lumbar puncture, therefore, is an important means of differential diagnosis between meningitis and cerebral abscess. Examination of the blood is also a means of diagnosis, for a sudden and great increase in the leucocytes is an indication of a cerebral complication, and the leucocyte count in meningitis is usually higher than that in abscess. As soon as the diagnosis of a cerebral abscess is made, under any circumstances it is imperative to operate. And while the percentage of recoveries from the nature of the case is at present only about 60 per cent. in statistics I have collected[1] covering about 500 cases, yet there is every reason to believe that in cases that are diagnosticated early and the operation is undertaken as soon as the diagnosis is made, the percentage of recoveries will be much greater.

III. THE SURGICAL TREATMENT OF TUMORS OF THE BRAIN.

The diagnosis of brain tumor is usually easy from the combined presence of headache, worse on waking, vomiting of a projectile type, not connected with the taking of food, and worse on waking, vertigo developing on change of position, optic neuritis and mental dullness. When to these symptoms there are added either Jacksonian epilepsy, paralysis at first limited to one limb and extending to other parts, some form of aphasia, hemianopsia, astereognosis, cerebellar staggering and sudden loss of balancing power, or the combination of cranial nerve symptoms due to involvement of the tissues on the base of the brain, the diagnosis of the position of the tumor is reasonably certain. In these cases operative interference may be warranted. In the far larger number of cases in which localizing signs are absent operation promises nothing.

A careful review of a large number of cases of brain tumor, examined postmortem, shows that about 10 per cent. of tumors are open to surgical treatment. The most recent statistics of results in such cases have been published by Dr. Philip Coombes Knapp,[2] whose tables I reproduce, as they are most instructive. Of 828 tumors operated on up to July, 1905, it was found that in 471 cases the tumor was found and removed; in 189 cases the tumor was not found, in 104 cases the operation was a palliative one only, and in 64 cases the tumor, though found, could not be safely removed. Further analysis of the cases, 471 in number, in which the tumor was removed, shows that the diagnosis was correct, the removal easy, and the recovery or improvement most satisfactory in those cases in which the tumor lay near the Rolandic or Sylvian fissures, while the mortality was greatest in the cerebellar cases.

RESULTS IN OPERATIONS FOR TUMORS OF THE BRAIN.

	Recovered.	Improved.	Not improved.	Died.	Result not stated.	Total.
Removed	112	122	78	123	36	471
Not found	4	24	61	87	13	189
Impossible	0	11	11	40	2	64
Palliative	0	48	36	15	5	104
Total.	116	205	186	265	56	828
Frontal	15	6	3	8	2	34
Central	52	82	43	54	5	236
Parietal	7	5	5	12	0	29
Temp.	2	4	6	5	1	18
Occip.	3	3	2	2	1	11
Cerebellum	7	16	8	23	1	55
Not stated	26	6	11	19	26	88

These statistics are quite in accord with my own experience. It is evident then that out of 100 brain tumors we may expect success in surgical treatment in but five only. Yet there is no doubt that even if the number of lives saved is small it is our duty to study every case with our minds fixed on the question of possible surgical relief.

It has been proposed by Horsley and recently urged by Cushing, that in inaccessible tumors some relief of symptoms may be attained by making a large opening in the skull for the relief of pressure. In one of my patients recently operated on by Cushing the removal of two portions of bone over both lobes of the cerebellum, has apparently cured the child, the blindness has subsided, the headaches have ceased, and although he staggers some still in walking, he lives in comfort and is able to go to school, while at the time of operation in July, 1905, he was at the point of death. Such cases encourage one to believe that palliative operations are justifiable. It is only right to state that I have seen two other cases in which they did not succeed.

Case 2.—This case shows the importance of early operation in brain tumor.

Patient.—In January, 1905, a healthy business man began to suffer from severe frontal headaches, sometimes attended by vomiting, and it was soon noticed that he misplaced words and had difficulty in expressing his ideas. These symptoms increased steadily during February, and early in March he had a temporary attack of right hemiplegia and aphasia, which, however, passed off entirely in two days, but left his speech more defective. This was followed by recurring attacks of twitching in the right hand and in the right side of the face, attended and followed by numbness in these parts. By the middle of March his speech defect had become constant and he could no longer write, though he could read; and he had become very dull and drowsy.

Examination.—On March 25 he went into a semi-stuporous state in which I first saw him. I found an extreme choked disc in both eyes, worse in the left; no paralysis, but a flatness of the right side of the face and increased reflexes in the right limbs. I concurred in the diagnosis of brain tumor made by his physician, Dr. Rutz, and located the tumor in the left third frontal convolution, and recommended operation.

Operation.—On March 27 Dr. Hartley operated, making a large bony flap over the left ear four inches in diameter. When the dura was opened the tumor was visible, lying in the middle of the third frontal convolution. It was easily shelled out by a spoon, and some small discolored parts of the white matter of the brain about it were also taken out, leaving a clean cavity.

His recovery was rapid. The day after the operation he was still speechless, but within a week he had regained his speech, could read aloud, and could write, and had no paralysis. On April 16 he was up and the wound had healed. On May 16 he went back to business in apparently good health. In November, 1905, he had had no return of brain symptoms.

IV. SURGICAL TREATMENT OF CEREBRAL HEMORRHAGE.

In cases of extradural hemorrhage following contusions or fracture of the skull the slow development of symptoms of intracranial pressure, slow pulse, steady rise in the blood pressure, deepening coma, Cheyne-Stokes respiration, and increasing hemiplegia, afford sufficiently clear indications for trephining. The symptoms develop within six hours of the injury. It is usually from the middle meningeal artery that the hemorrhage occurs; hence it is the area just above the ear which is to be exposed, a large trephine opening or a large bony flap being made. All surgeons of experience have treated such cases successfully, and the literature is full of reports of clots removed, with recovery.

It requires much courage to suggest an operation in the head in a patient who is comatose from an apoplexy. A considerable number of these patients recover, at least in part, when left alone, and the depth of the coma, or the degree of the paralysis affords no indication during the first twenty-four hours, of the eventual result. It is due to Harvey Cushing to state that he has applied successfully in hospital cases the test of the condition of the pulse tension in determining the need of surgical intervention to prevent death. When the blood pressure rises steadily to 250 mm., measured on the Riva Rocci apparatus, in a case of apoplexy, and coincidently with this rise there is a slow pulse falling to 50 a minute, we may say that the case will be fatal. It is in such a case that we are justified in resorting to surgery.[3] The object in view is to relieve the intracranial pressure. This is to be done by turning down a large bony flap or making a large fenestrum in the skull, irrespective of any attempt to find or to remove the clot. The best place to open is over the motor area on the side opposite to the paralysis, for in some cases the clot may be found there. The dura is to be exposed and divided. If the clot is on the surface it will then be seen. If the clot is within the brain the brain will bulge and division in the depth of a fissure may succeed in reaching and evacuating the clot. Even if the clot is not found and removed the relief of the intracranial pressure stops the alarming symptoms and recovery is much hastened, as Cushing's cases have proved. The pulse tension falls as soon as the skull is opened. The pulse becomes more rapid, Cheyne-Stokes respiration ceases, and consciousness soon returns. The operation thus saves life in a formerly hopeless condition.

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[1] N. Y. Med. Rec., March 10, 1906.

[2] Knapp: Boston Med. and Surg. Jour., Feb. 1, 1906.

There is another class of cases of cerebral hemorrhage in which Cushing has also operated successfully. A certain number of infants are born in a state of asphyxiation, and it is evident that the delayed or difficult labor has caused not only a large caput succedaneum, but an intracranial hemorrhage, either extradural or intradural. Lumbar puncture usually shows a bloody cerebrospinal fluid in these cases. These infants usually die, or if they live they will remain hemiplegic, idiotic, or epileptic all their lives, a burden to their families or to the community. Any measure for their relief is justifiable. It is comparatively easy in a newborn infant to expose the brain by opening the sutures of the parietal bone with scissors. This operation has been done in asphyxiated paralyzed infants, when the ordinary methods of resuscitation have been applied in vain; large clots, both extradural and intradural, have been found and removed, and recovery has followed. The child's life is saved and the brain in its gradual development throws off the effects of the temporary pressure.[4] It seems true that the success of Cushing in these cases warrants us in urging on obstetricians their duty to consider this operation in asphyxiated infants. It is they who see these cases, and if they can be persuaded that delay in them is dangerous, and the prospect of relief is good, the percentage of idiocy and hemiplegic epilepsy will surely be reduced.

The last class of cases of cerebral hemorrhage open to trephining is the class in which the hemiplegia or aphasia or hemianopsia develops slowly after an injury and does not come to its height for three or four days. In these cases it is probable that a surface hemorrhage has been due to the injury of a vein of the pia mater. A lumbar puncture will reveal bloody cerebrospinal fluid. The symptoms may increase and threaten life, as shown by the slow pulse, Cheyne-Stokes respiration, and increasing blood pressure, or they may come to a standstill, leaving the patient permanently incapacitated. In either case surgical treatment is indicated. I believe the case reported by Dr. McBurney and myself in 1889,[5] of the successful removal of a clot from the lower third of the fissure of Rolando, was one of the first of this character. The man was a physician who was thrown from his buggy, and in the course of three days after developed a motor aphasia and right hemiplegia. The operation was done four months after the injury. The clot was found semifluid and organized, and was easily taken out. His recovery was progressive, and he eventually returned to his practice, though he remained slightly hemiplegic until his death in 1897. I could cite many other cases equally successful.

V. SURGICAL TREATMENT OF IMBECILITY.

It will be remembered that much interest was excited as far back as 1891 by some results reported by Lannelongue in which he had attempted to cure imbecility due to microcephalus by making large exsections in the skull and thus allowing for an increased expansion of the brain. A wide segment of bone was cut from the frontal through the parietal to the occipital region on both sides, and in some cases the parietal bones were pried out a little, thus giving ample space for the brain to grow. Lannelongue reported these cases from the surgical standpoint as recoveries, intending to imply that the children had survived the operation. It was mistakenly supposed that he had implied an improvement or recovery from the condition of imbecility, and hence his operation was repeated by many surgeons in many lands—Dr. Keen in this country and Dr. McBurney and I having done a number of such operations. The subsequent histories of these cases, however, has demonstrated conclusively that no marked mental improvement ever follows this operation. It is evident that the microcephalus is not the cause of the imbecility, but that the imperfect and rudimentary development of the brain, which does not grow in proportion to the rest of the body, prevents the normal expansion of the skull over a normally growing brain and leads to an early closure of the fontanelles, though, as is well known, such a closure in no way affects the growth of the size of the head in a normal infant, granting that the brain within it be normal. All imbeciles improve gradually under proper instruction as they grow older. In some cases they even develop rudimentary speech spontaneously, hence the slight improvement which in some cases has appeared to follow the operation in no way differs from a corresponding improvement in patients equally affected but equally trained, who have not been operated on.[6] For this reason I no longer recommend any operation on the head in cases of idiocy, imbecility, hemiplegia and epilepsy dating from childhood, and it may be stated incidentally that these operations have no effect whatever on the painful condition so often associated with these conditions, namely, athetosis.

I may record one case in particular in which a hemiplegic child with very extreme athetoid movements in the paralyzed limbs was operated on by Dr. McCosh at my suggestion, and a thick organized clot, more of the nature of a thin connective tissue membrane was stripped off from the motor-centers of the arm and leg without any subsequent benefit either to the hemiplegia or to the athetosis. In two other cases of the same nature in which operation was performed, a peculiar connective tissue structure was found occupying the motor zone of the cortex, which resembled in appearance honeycomb, the interstices being filled with serum. The removal of this structure which was regarded as the terminal organized relic of an early hemorrhage, produced absolutely no permanent cure in the child's condition.

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[3] Amer. Jour. Med. Sci., 1903, p. 1017.
[4] Amer. Jour. Med. Sci., 1905, p. 563.
[5] "Brain Surgery," Case 18, Wm. Wood & Co., 1893.
[6] Marten Marten's recent novel: "The Healers," has added interest in this subject.

DISCUSSION

ON PAPERS OF DRS. SPILLER AND FRAZIER AND STARR.

Dr. Charles K. Mills, Philadelphia, said he was so firmly impressed with the importance of palliative operations, both from the standpoint of the neurologic observer and from that of the neurologist personally interested in what the surgeon is doing in a case of his own, that he believes that in every case of brain tumor operation should be performed, provided the case is operated on at the right time, and provided also that the surgeon does not do too much. In the case of a tumor the operation should always be for removal, if it is possible to localize the tumor, or to say with any certainty that the tumor is of a size and in a position that will allow of its removal. If removal can not be accomplished palliation will result if the surgeon stops his hand at the proper time. In some cases the surgeon should not even make a dural flap; in some cases he should, for the purpose of exploration. If a tumor is not present in the opening he should, as a rule, stop with the dural flap, and not make any subcortical exploration. Dr. Mills held that subcortical exploration should be made only when there is at least some actual evidence that a tumor may be present below and not far from the surface.

Concerning palliative operations and medicinal treatment, he believed that in the vast majority of cases better results will be obtained if operation, either radical or palliative, is resorted to without waiting too long for the effects of treatment with mercury and iodids. In many cases it is better to do the operation and then to continue the medication. Operation is frequently postponed too long. This is probably because of several reasons. In the first place because the diagnosis is not made with certainty soon enough; secondly, because of the lack of support of those who are too conservative, both in the profession and among the laity; and, thirdly, because of the idea which is prevalent, that in every case of cerebral neoplasm, especially if there seems to be any evidence that syphilis is present, the patient is given iodid or mercury indefinitely. He recalled case after case, some included in the paper of Drs. Spiller and Frazier, in which relief occurred after palliative operations. The relief obtained in cases of optic neuritis is particularly noticeable.

Dr. Mills would not go as far as Dr. Starr in saying that in almost every case of Jacksonian epilepsy the lesion was probably a focal one, and in almost every case of that kind operation should be performed. There is need of studying with the greatest care every case of Jacksonian epilepsy. In a paper in the *Boston Medical and Surgical Journal*, Dr. Mills said, he went fully into the subject and showed any number of cases of Jacksonian epilepsy that were not due to tumors, and many not to other focal lesions.

Dr. Mills believes that there should be operation in every case of brain tumor of which the diagnosis is fairly sure. He thought the percentage of cures should be placed a little higher than that given by Drs. Walton and Paul. It should be more than five and perhaps a little less than ten per cent. The conclusions drawn there were from autopsy results.

The greatest accuracy and the greatest care should be taken in the craniometrical preparation of the case for operation. He said this because he has heard surgeons practically argue in favor of a rule of thumb procedure. Even with the great care taken at the University Hospital the best opening possible is sometimes not made.

He agreed with Dr. Starr that dural hemorrhages should be operated on when encountered. The operation should not be performed immediately, nor should it be delayed too long.

With reference to hemorrhages at birth, he had never seen an operation for hemorrhage at birth, but has held several postmortem examinations on children who died immediately after birth; two cases in one family showed diffused destruction of the cerebral substance, indicating that successful operation would have been impossible. In a certain percentage of the cases, however, the operation would doubtless be of value. The chances of success are greater in cases of hemorrhage of early childhood, as Dr. Frazier had shown in a recent paper before the American Surgical Association.

Dr. C. B. Burr, Flint, Mich., asked Dr. Starr what percentage of the presumably operable sixty cases, mentioned in his paper came to operation, and of those operated on in how many there were found palpable lesions to account for the conditions? He enquired because of recent experience in a case offering every diagnostic sign of operable focal epilepsy. The case was operated on very skilfully by Dr. Cushing, but to Dr. Burr's great disappointment nothing was found which would account for the symptoms.

Dr. Wm. C. Krauss, Buffalo, N. Y., spoke on the point whether or not the dura should be opened, if there is no bulging of the dura, and when there is a wide opening which would allow for increase in pressure. He had had four or five cases with Dr. Park, in which after a large opening and no bulging, Dr. Park was on the point of closing the wound and sending the patient back to the wards, without having disclosed any lesion. In one case where there was a very large cyst of the frontal lobe without bulging of the dura and just as soon as the dura was opened a large amount of fluid escaped. The wound was then closed, and the patient made a good recovery for a short time. In another case, Dr. Park operated for Jacksonian epilepsy; there were absolutely no symptoms, except Jacksonian movement of the left arm. On trephining and opening the dura, which was not bulging, a fibroma, the size of a hickory nut, showed itself, which was easily removed and the man made a good recovery. In another case there was a large infiltrating tumor of the left frontal lobe, the size of a pullet's egg, and yet there was not the slightest indication of any bulging, or of there being anything abnormal under the dura. This has been his experience in many cases and he never hesitates to urge the dura being widely opened in all cases pointing to cerebral growth of some kind. This is especially important in infiltrating tumors and brain cysts when no increased intracranial pressure is made manifest at the trephine opening. His advice is to open widely the dura in every case of trephining for intracranial growths.

Dr. F. X. Dercum, Philadelphia, asked Dr. Starr the significance of the presence or absence of cerebral pulsation. In many cases after the bone is removed, there is no pulsation, while there are other cases in which pulsation exists. In his experience, the absence of cerebral pulsation is in keeping with increased intracranial tension. On the other hand, the presence of pulsation does not, of course, negative the existence of a tumor.

Dr. M. Allen Starr, New York City, agreed with Dr. Mills that Jacksonian epilepsy may not be the evidence of local lesion, but that it may be one of the symptoms of general epilepsy. Careful study of such cases will, however, show the epileptic stigmata, and will determine that the symptom is a part of a general epilepsy. In these cases, he did not consider the patient a subject for operation. If Jacksonian epilepsy is the only epileptic symptom he would say, operate. In regard to the palliative operation and the question raised by Dr. Knapp, he said that, in several cases which he had operated on, the operation had not benefited the patient. Yet in giving space to the brain and relieving the pressure, a chance had been given to arrest the increasing optic neuritis and developing blindness and to relieve the distressing symptoms. He agreed thoroughly with the statements of Dr. Frazier, Dr. Spiller and Dr. Mills, that the skull should be opened in every case of tumor of the brain, whether it is expected to get the tumor out or not. It may do good or it may not, but the patient has the benefit of the chance that it may.

Replying to Dr. Knapp, he said it may be true that in many of these cases the results obtained are not cures. But he had two patients now, one operated on twelve years ago, and the other nine years ago for brain tumor, and they are going about living their lives with a great degree of comfort, and without the operation they would probably have died several years ago.

As to the condition inquired after by Dr. Burr, he said he could only reply in an off-hand manner and could not give statistics. In at least two-thirds of the cases operated on for focal epilepsy, some abnormal condition was discovered; cysts, small or large, adhesions of the meninges and the cortex, sclerosis of the cortex, spicula of bone sticking into the brain and so on. In his book on "Brain Surgery," published in 1893, he gave a number of illustrations of conditions which he had observed, drawn from a microscopic study made after excision of the cortex. As to the exact percentage, he hardly ventured to say that there were more than two-thirds in which any lesion was found. He did not consider this anything against the operation. The dura should be opened in every case of operation for brain tumor, even if the tumor does not produce bulging, because certainly the tumors do not always give bulging. Many infiltrating tumors and many gliomatous tumors replace the brain substance, without increasing the brain contents. Even if no tumor is discovered, very often the symptoms are relieved, and he agreed with Dr. Mills that every case of brain tumor should be operated on.

Replying to Dr. Spiller's question in regard to operation in cases of glioma, he said he had operated on several cases of gliomatous tumor. In one case which he saw with Dr. Hartley, he excised a glioma from the third frontal convolution. The tumor recurred. Dr. Hartley afterward operated again, and found that the cavity had filled up and he took out a tumor as large as the first. The patient recovered but before a year had the third recurrence. The third operation resulted in the dissection of an enormous infiltrated tumor, and the patient succumbed, yet that patient certainly had a year and nine months of life added to him. Therefore, the absence of bulging is no indication that the patient ought not to be given the benefit of the doubt and operated on.

The absence of pulsation is very interesting. He did not fully agree with Dr. Dercum that the absence of pulsation is due to increased intracranial tension. He has seen cases in which there was absolutely no pulsation of the brain over the tumor and in which the pulsation was around the edges of the tumor. This was the very best indication that the tumor was there. In one case there was a subcortical tumor two or three inches deep, and there was the absence of pulsation, which was an indication that there was a tumor below the cortex. On the other hand, sometimes there is normal pulsation of the brain, in, around and above the tumor. Therefore, tumors may exist with pulsation, and they may exist without pulsation, and it is not possible to make any definite statement with regard to the presence or absence of tumors from the condition of pulsation of the brain in operations.

Dr. W. G. Spiller, Philadelphia, said, in regard to Dr. Mills' statement that the location should be accurately determined and the skull carefully measured, that he knew of an instance in which the tumor was missed by a quarter of an inch, owing to its being inaccurately localized. He was rather doubtful of the value of operation for removal in cases of glioma. He doubted if there is much benefit to be expected from the attempted removal of glioma, and whether the patient would not have lived as long, if not longer, without radical operation, as he believes there is a tendency of the glioma to grow faster after partial removal, for it becomes congested, better supplied with blood, and space is afforded for its growth. In one of the cases under his own observation, relief for a time was obtained by repeated operation. It is, however, almost impossible to distinguish at operation a glioma from a sarcoma. The former is infiltrating and it is probably impossible to remove the whole of the tumor. In one of the cases reported in which symptoms suggestive of brain tumor were present, a sudden gush of fluid occurred from the nostrils, possibly through the cribriform plate of the ethmoid bone, and afforded great relief. It seemed to be a palliative treatment by natural means. Dr. Knapp spoke of his very hopeful views. He tried to be conservative; if he was hopeful, it was because in the majority of cases palliative operation had been of benefit. By no means, did he believe that in every case there will be marked improvement. He is in favor of the dura being opened in every case of palliative operation. It should not be left open, nor should it be cut away, but it should be opened and the brain examined to see if there is any tumor. Recently he had seen a small tumor, half an inch in diameter, that could easily have escaped detection.

Meteorism of Typhoid.—Anders recommends turpentine stupes over the abdomen, or turpentine enemata, or the passage of a long rectal tube; also the change from milk diet to peptonized food, meat juices and albumin water.—*Denver Medical Times.*

THE SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCER AND ITS RESULTS.

WILLIAM J. MAYO, A.M., M.D.

(Concluded from page 915.)

quarters of an inch above the greater curvature, giving an opening somewhat oblique from above down, right to left not less than two inches in length (Fig. 1). The torn edges of the transverse meso-colon are attached to the suture line by three mattress sutures in such manner as to leave a perfectly smooth peritoneal border, the ragged and fatty margins being tucked up underneath so as not to cause adhesions. It is important that the distal end of the jejunum be attached as it naturally lies that it may at once drop to the left and posteriorly in its normal anatomical position.

The operation thus briefly outlined has a nominal mortality. We had but 1 death in 135 "no loop" operations. The anterior method preferably with a Murphy button or McGraw ligature, is occasionally demanded by reason of posterior adhesions or abnormalities in the meso-colon or duodeno-jejunal juncture; but as it sacrifices 18 to 20 inches of the most important part of the upper jejunum it can not be considered a close rival to the posterior operation. We have for the past year and a half abandoned all "loop" operations unless forced to them and in no case practice enteroanastomosis as a primary procedure. Of the total 600 gastric and duodenal ulcers 383 were subjected to gastrojejunostomy (64 per cent.).

The question arises—What results can be expected from gastrojejunostomy? In the early stages of any subject certain procedures gain a great reputation which later experience does not always bear out. While gastrojejunostomy is by all odds the most useful means of relief it is not a cure-all. It is purely a drainage operation and as in a large majority of cases the ulcers are situated in the grinding pyloric end of the stomach or upper duodenum, the alleviation afforded is certain and speedy. But if the lesion does not involve permanent interference with natural drainage the food will eventually pass out the normal opening rather than the gastrojejunostomy and a certain amount of shrinking of the anastomotic stoma or angulation may follow.

The dangers from this source are reduced to a minimum with a "no-loop" operation. The more serious the interference with the normal motility the greater the relief afforded by gastrojejunostomy, so that for indurated ulcer it is the method "par excellence." On the contrary in mucous lesions where the interference with gastric drainage is intermittent and due to muscular spasm the results are less certain.

GASTRODUODENOSTOMY.

The only operation on the stomach of any consequence which involves a new principle in surgery since the time of Billroth is that of Finney. It leaves the opening at the natural situation and the enlargement is downward along the greater curvature away from the ulcer area. Gastroduodenostomy is especially applicable to those mucous lesions which interfere with drainage through spasm. It supplements gastrojejunostomy admirably as its scope includes those cases in which the latter method has been less certain of cure and it has superseded pyloroplasty. We have had 72 cases with 4 deaths and the very large majority of those who recovered have remained well.

EXCISION OF THE ULCER.

Theoretically, excision of the ulcer is the logical procedure but it must be shown by careful examination that the one excised is the only one present.

The saddle ulcer of the lesser curvature, if it does not interfere with drainage, should be excised if practicable because, as has been pointed out, if the stomach is not dilated and the pylorus is open, muscular action will continue to force the food along the normal channel rather than out of the artificial stoma. Therefore, a direct attack on the diseased area under such circumstances, especially when the margins of the ulceration are hard and calloused, would seem to be sound practice. We have excised ulcers 14 times, 6 times of the lesser curvature and 8 times in connection with pyloroplasty and gastroduodenostomy, with no deaths.

RODMAN'S OPERATION.

Some four years ago it was suggested by Dr. William L. Rodman that as ulcer of the stomach in the large majority of instances was in the pyloric portion it would be wise to resect as one would do for cancer, closing both duodenal and stomach ends completely and reestablish the gastrointestinal canal by an independent gastrojejunostomy. We have performed this operation nine times with great satisfaction. All of the cases recovered and have remained well. It has its chief indication in indurated lesions in the vicinity of the pylorus.

RESECTION OF THE STOMACH.

The treatment of hour-glass stomach by some form of plastic gastrogastrostomy has been a popular operation but in the majority of instances the ultimate results are unsatisfactory as it leaves a large amount of scar tissue and if it happen that the pylorus is involved to any extent adequate drainage is difficult to secure.

Gastrojejunostomy on the proximal pouch does not prevent a certain amount of food passing into the distal loculus where it stagnates on account of loss of motility. Multiple gastrojejunostomies, one for each loculus with enteroanastomosis beyond, is an unnecessarily complicated procedure, especially if more than two loculi are present.

We have in 12 cases without a death resected the affected portion of the stomach in the following manner (Figs. 2 and 3): The gastrohepatic and gastrocolic omenta are divided and separated from the diseased area, a straight elastic holding clamp is placed on the proximal side across from the greater to the lesser curvature about one inch back from the proposed line of resection. On the distal side the clamp is applied obliquely from above down, right to left, to increase the diameter of the cut surface, saving from the greater curvature. In this way we have been able to secure on the distal side an opening two-thirds the size of the proximal one for suturing. By having one inch or more of the tissue projecting beyond the clamps the slack on the large or proximal side is taken up with each suture, the bite of the thread taking only two-thirds of the amount of tissue on the distal portion, a difference of diameter of one-third being disposed of in this manner without seam or noticeable pucker.

If the ulcer is situated close to the pylorus an end-to-end union is quite easy to obtain. In two cases we have been able to excise an ulcer of the duodenum close to the pylorus with direct union of the amputated end of the duodenum to the stomach, the pylorus being removed in both instances.

The last word on ulcer of the stomach has not been written and it is evident that no one operation will be applicable to all varieties. At the present time it would seem that gastrojejunostomy has the largest field of usefulness, especially in those cases in which there is permanent interference with gastric mobility by reason of obstructive lesions in the pyloric end.

For those cases in which obstruction is due to spasm or other non-mechanical cause the gastroduodenostomy of Finney is the operation of choice. In connection with this latter procedure the excision of an ulcer of either the stomach or duodenum in close proximity to the pylorus may be done with great satisfaction.

Gastric ulcers which do not interfere with drainage and in which there is no loss of motility should be directly excised if possible.

Calloused ulcers of large size and thick hard margins whether hour-glass or not, are best treated by some form of gastric resection as we have frequently found carcinomatous degeneration taking place.

The large majority of duodenal ulcers give indication for gastrojejunostomy. There are few exceptions in which excision or resection will give better results.

It can be shown that more than 90 per cent. of patients suffering from gastric and duodenal ulcer who have been subjected to operation have been cured. Failures are more often due to technical errors resulting in bad mechanics than to the inability of a properly executed operation to cure the disease.

To one who expects to practice surgery of the stomach we would strongly recommend a close study of the gastric manifestations of the neurasthenic state. Atonic dilatations, prolapse of the stomach and the various gastric neuroses may simulate ulcer very closely and a careful differentiation is absolutely essential for all of these latter conditions are unimproved and often accentuated by operation, bringing discredit on surgery as a whole.

DISCUSSION

ON PAPERS OF BILLINGS, LAMBERT, RODMAN AND MAYO

DR. JOHN C. HEMMETER, Baltimore, stated that the recognition of gastric ulcer depends very largely on the exercise of the sixth sense. It is largely a diagnosis by exclusion. Recently he reported before the American Gastroenterological Association a method of diagnosing gastric ulcer which he hopes to be able to lift out of the sphere of speculation into that of absolute recognition and surety. He had a number of surgeons make experimental ulcers in dogs by removing the gastric mucosa. The incision was allowed to heal, and a suspension of bismuth subnitrate in 500 c.c. of water was placed in the dog's stomach, the dog being placed in the posterior position. He found that eight to ten hours afterward the bismuth could be recognized by means of the x-ray and the fluoroscope. In a case of very severe gastric hemorrhage in a human patient, whose stomach had been washed out with bismuth subnitrate and ice water, it was found at the necropsy by Recklinghausen that the bismuth had everywhere disappeared, except from the site of the gastric ulcer. There seems to be a peculiar form of exudate in ulcer which holds the bismuth, and the latter is shown plainly by the x-ray. In three instances he succeeded in diagnosing ulcer by this means. The patients were operated on and the ulcers were found. If the ulcer is located behind a rib, the rib will obscure the ulcer. Dr. Hemmeter stated that at times it is very difficult to differentiate between gastric ulcer and gallstones. There is not one symptom of cholelithiasis that does not occur also in gastric ulcer. The patient may even have jaundice in gastric ulcer and hemorrhages in gallstones when there is no ulcer present. To narrow down the diagnosis between gastric ulcer and gallstones, he advised giving eight grains of orthoform in one ounce of hot water. It will arrest the pain if it is due to gastric ulcer, but not if it is due to gallstones. As to the treatment, Dr. Hemmeter is convinced that the uncomplicated gastric ulcer is no object for surgical treatment. It is only when complications arise that more strenuous measures in the way of surgical intervention are indicated. When there is a perigastritis, or a stricture due to a cicatrix, a perforation, an intractable hemorrhage, in cases of persistent excess of hydrochloric acid, when there is a progressive atony of the stomach, then the patient should be operated on because there is something at the pylorus that is preventing the exit of food.

Dr. Max Einhorn, New York, thought at one time that all cases of pyloric obstruction had to be operated on. Among eight of his first patients operated on, four had to be treated medicinally for quite a while after the operation, and two died. This made him a little backward about recommending the operation; because the patient can get along tolerably well without operation, this procedure should not be recommended until the stage is reached where there is nothing else to be done. If the operation could be done without danger, with no mortality at all, then he would urge that all cases of pyloric obstruction be operated on, but not otherwise. As a matter of fact, benign pyloric obstruction, if not too far advanced, can be greatly ameliorated, and sometimes cured, by rational medical treatment.

Dr. A. P. Francine, Philadelphia, has been particularly interested in the incidence of gastric ulcer as found at autopsy. From the analysis of over 3,800 consecutive postmortems held at the Philadelphia Hospital, he found that chronic gastric ulcer occurred in 1.35 per cent. of the cases. This figure is almost identical with that obtained by Dr. Campbell Howard, of Baltimore, from a similar study. But Dr. Francine is inclined to believe that there may be error in figures gleaned even from this source, and this percentage is, if anything, too small. This comes about from the fact that a certain number of chronic ulcers heal and leave no scars, or the scars are so slight as to be overlooked in routine work. It is also true that small ulcers with minute openings on the gastric mucous membrane, which might during life have given rise to very definite symptoms, may in a similar manner be overlooked unless careful search is made for them. The great majority of acute ulcers heal and the diagnosis of acute ulcer rests with the clinician. Chronic ulcer is, as a rule, chronic from its inception. For the above reasons he feels that a fairer percentage, even for chronic ulcer, would be 1.50 per cent., or about three in every two hundred autopsies.

From the above studies Dr. Francine was much struck by the presence of tuberculosis and nephritis in these cases. In 76 per cent. of the autopsies these conditions were associated, and he was inclined to feel that in some way, possibly by reducing the general nutrition, and particularly the nutrition of the stomach, thereby creating a more favorable nidus for the action of the more direct or exciting causes of ulcers, tuberculosis and nephritis might be indirect factors in the etiology. With a larger experience, however, he has come to modify this view and to look on them as playing little, if any, part in the etiology. For of one hundred and forty-three cases of advanced pulmonary tuberculosis dying at the Phipp's Institute, in Philadelphia, there was not a single case of true gastric ulcer. In one case there was multiple, superficial ulcerations, evidently tuberculous.

As to why tuberculosis does not more frequently affect the stomach, Dr. Francine thinks it possibly owing to the powerful motor action of the stomach in rapidly passing on the contaminated food and sputum mass, and it is probable, too, that the glandular action of the stomach plays an important rôle in both hydrochloric acid and pepsin secretion. Clinical records of the incidence of gastric ulcer are, in general, subject to such error in diagnosis that he considers them of comparatively little value in estimating its true frequency. One condition which has come under his observation and which may lead to confusion is the hemorrhagic tendency or diathesis manifest in certain chronic dyscrasic diseases. He has known this to lead to error in cases of chronic nephritis, where antemortem there were definite symptoms simulating gastric ulcer, associated with the vomiting of pure blood, and yet at autopsy no sign of ulcer was found. Discounting, however, errors in diagnosis, he thinks that gastric ulcer is much more common clinically than pathologically.

Dr. Stanley P. Black, Pasadena, Cal., said that there is one test used extensively in the past, but which has been given up largely at present, and unjustly so, and that is the occurrence of peptonuria or albumosuria. Albumoses occur in the urine from ulcer in any part of the intestinal tract. In certain cases this may be of importance in arriving at a diagnosis, especially in obscure cases of gastric ulcer. He differed with Dr. Billings as to the advisability of putting the test for occult blood last. He would put it first, because it is a most important test; it is the test of last resort. Therefore, it is better to make that test first. The presence of occult blood in the stomach contents or feces does not mean necessarily gastric ulcer, but it is one found present almost invariably in gastric ulcer.

With reference to the treatment of this condition. Dr. Black would do as in any other case of ulcer, place it absolutely at rest; that is, keeping the stomach in an empty condition, excluding even ice, and relying entirely on rectal injections for nourishment. The physician ought to have a competent surgeon in consultation in every case to share the responsibility and to decide when surgical intervention is necessary. He believes with Dr. Rodman that excision is the ideal operation, but the technic of the surgeon is not perfect enough to avoid the great risk. However, the ideal operation of the future, the operation of the coming surgeon, will be complete excision of the ulcer and the entire ulcer-bearing surface.

Dr. John C. Munro, Boston, referred to 250 cases operated on at the Carney Hospital. Of these, approximately 70 were malignant, a half dozen only coming early enough for radical operation. The remaining cases were benign, and for these different types of operation were performed. In the typical gross ulcers the results have been so satisfactory that there is no longer any question in his mind as to the advisability of surgical treatment. Occasionally there occurs a disappointing result, the reason for which is not yet clear. For instance, in two cases of duodenal ulcers for which he performed a posterior anastomosis, there followed a perfect, immediate and persistent relief of all symptoms. Suddenly, at nine and fifteen months respectively, a sudden hemorrhage took place, from which one of the patients died. The fatal case was operated on by Roux's method; the other by Moynihan's. Progress up to the time of the recurrent attack was all that could be desired. It is only possible to speculate as to the true pathologic cause. Peptic ulcer comes to one's mind, first of all.

As to the type of operation. In the gross lesions Dr. Munro prefers the no-loop operation, as recently described by Mayo, and as used by him before Mayo established its logical value. These cases have remained complete successes, one of them being a congenital pyloric stenosis. Moynihan's method has proven far less satisfactory than either Finney's or Mayo's. The results from Finney's operation, when used judiciously, have been good, although the immediate benefit is slow to show itself, and for a while may lead to disappointment. Later reports from patients are reassuring and he has returned to this method for certain cases.

Dr. Munro has tried every type of operation on about 20 so-called neurotics, with, for the most part, visible, but insignificant evidences of past lesions, but without definite mechanical interference with the stomach functions. Almost without exception the results of drainage, no matter what method was used, have been disappointing or even fatal. The pathology of those cases is obscure. He thinks some are probably types of hysteria. Others are not wholly explainable on that hypothesis. The pathologic department of Harvard is working in conjunction with the hospital staff on these and other cases, and they hope soon to obtain some definite data that will help to clear up the confusion that surrounds this class of sufferers. Careful preliminary analyses and examinations do not clear up the diagnosis in many of them. If, at exploration, no sufficient cause for the symptoms is found, even though the relics of old-healed ulcers are discovered, he abstains from doing anything to modify the drainage of the stomach. Dr.

Munro is inclined to believe that it is this type of case, pathologically speaking, which gives the brilliant results obtained by medical treatment. He questions whether similar results are ever obtained in the medical treatment of gross infiltrated ulcers.

Dr. John M. Finney, Baltimore, referred to a surgical procedure suggested by him a few years ago, namely, pyloroplasty, a term to which some objection has been raised. The operation is essentially a gastroduodenostomy, but it has to do really with the enlargement of the pylorus. There are other methods of gastroduodenostomy, e. g., Kocher's subpyloric method, but the essential principle in Finney's operation is the enlargement of the pylorus itself. The proper term would be gastro-pyloro-duodenostomy. But on account of the length of the name he decided to retain pyloroplasty. His experience with this operation in the four years since he first performed it has been confined to thirty-five cases. He has used the method in all cases that have come under his care in which he felt justified in using it. In many cases he made use of other procedures. Of these thirty-five cases, two are of such recent occurrence, being still in the hospital, that he has eliminated them from the statistics. Therefore, only 33 cases are cited. Of these, four patients died. Autopsies were secured in these four cases, and in none of them could death be attributed to the operation. The first patient was a diabetic, who died on the fifth day after the operation from diabetic coma. The next patient was tuberculous, and in the fourth week after the stomach symptoms had been relieved by the operation, died of pneumothorax, developed while still in the hospital. The third case was one of those interesting cases of gastromesenteric ileus. The fourth patient was pregnant. Some days after the operation she developed a grave toxemia from which she died. Autopsy showed no peritonitis, but an intensely fatty liver.

The results, so far as the operation itself is concerned, in all the cases shown by the autopsy, were entirely satisfactory. Those cases in which Dr. Finney performed the operation cover practically all the conditions which one meets with in connection with acute and chronic ulcer. Of acute ulcers there were five cases: three were bleeding at the time. Four recovered and are well. One he has not heard from. The end results have been traced in all but two of the cases. Of healed ulcers, where there was simply a stenosis, he had sixteen cases. Of these he has heard from all but one. The others are all well.

Of dyspeptics there were nine cases; four well; one improved; two died; one not heard from, and one too early to report on. Of the obstructions where gastrosuccorrhea was present, there were two cases. Both patients are improved. In the large class of neurotic cases Finney performed six operations, against his protest in four cases. Three were unimproved. One has been improved up to the point where she is able to live in comfort.

Dr. D. S. Fairchild, Clinton, Ia., thought that the history of ulcer of the stomach in the future must be somewhat different from what it has been in the past. The early diagnosis of ulcer of the stomach has been shown to be difficult, only those who are skilled in diagnosis are able to determine with any degree of accuracy the existence of ulcer until certain organic changes have taken place in the stomach, such as contraction of the pylorus. In the future, when the diagnosis is made earlier, the statistics will be changed on account of the fact that a large number of cases will be distinctively medical. In the West the cases have not been regarded as ulcers of the stomach until the disease has become chronic, and then it has been too late for medical consideration. A very large percentage of these cases must be surgical in their character. Therefore, with earlier diagnosis in the future more of these cases will be medical ones. The fact of surgeons accepting medical treatment of ulcer of the stomach is based on the failure to find anything pointing toward chronicity or any considerable degree of contraction of the pylorus. When the stage of chronic ulcer of pyloric contraction is reached, then surgery must be resorted to.

Dr. Fairchild believes that ulcer of the duodenum is more distinctively a surgical condition than is ulcer of the stomach, because the walls of the duodenum are thin, and it often happens that symptoms are not very distinctive until the very dangerous condition of perforation has arisen. Therefore, it seems that the rule in the treatment of ulcer of the duodenum should be different from the rule in the treatment of ulcer of the stomach on account of these serious dangers arising in an unexpected manner.

Dr. C. S. Williamson, Chicago, called attention to the fact that a considerable number of ulcer cases run their entire course with almost the precise symptoms of the most frequent neurosis of the stomach, namely, hyperchlorhydria. In this group of cases there is no pain after eating, but, on the contrary, a sense of discomfort one or two hours after eating, often relieved on taking food or some alkali. Again, the tender spot so characteristic of ulcer may be lacking. There is instead a diffuse hyperesthesia over the entire stomach area. The dorsal pain point also is lacking. In fact, a considerable number of cases of ulcer of the stomach may run their entire course without any symptoms, except those of hyperchlorhydria. This is important because there is absolutely no way of making a diagnosis in the early stage in these cases, excepting by the presence of blood in the stool, the presence of blood in the gastric contents being of much less importance owing to the possibility of trauma from the stomach tube. Dr. Williamson urged that in this group of cases one should never omit to examine by means of the Weber test for occult hemorrhages. The persistent presence of occult hemorrhages, coupled with the symptoms already mentioned, make a diagnosis of ulcer of the stomach in the highest degree probable, although by no means certain. Occult hemorrhage is not a pathognomonic symptom, but simply one which adds greatly to the probable correctness of the diagnosis. A case coming under observation early, with persistent symptoms of hyperacidity and the repeated occurrence of blood in minute quantities in the feces makes the diagnosis of ulcer highly probable.

As to the negative significance of occult hemorrhages, almost no number of examinations for occult blood justifies a positive conclusion. On more than one occasion examinations were made repeatedly, two or three times a week, without finding any blood, and yet ulcer was present. In one case seventeen negative examinations were made, and the eighteenth was strongly positive. So that it is clear that every ulcer does not bleed, at least not at all times. If it does bleed, then it is a distinctively positive sign. If, on the other hand, occult hemorrhages are not found, then we should not jump at the conclusion that ulcer is absent. We should examine repeatedly and continuously. The situation is exactly the same as for examination of tubercle bacilli in the sputum. No number of negative examinations have any great weight, unless they are made with the greatest care and thoroughness and under the most favorable conditions, and even then the examination is never conclusive. There are a few cases where the Weber test, a very reliable test, will leave one in doubt. Under those circumstances one should never fail to make a corroborative test. The best corroborative test in Dr. Williams' judgment is the modified hemin crystal test of Strzyzowski.

Dr. A. J. Spivak, Denver, speaking of the treatment of gastric ulcer, especially the test treatment, said that not even water should be allowed, because water is also expelled from the stomach by peristaltic action, and, therefore, the ulcerations will not be benefited. In fact, to secure absolute rest of the stomach not even nutrient enemata should be given because they also produce peristalsis of the intestines, if not of the stomach, and peristaltic movements of the intestines produce a certain vibratory movement of the stomach, and, therefore, absolute rest of the stomach is not secured. Dr. Spivak does not understand why we should try to give these patients food. It has been seen from Dr. Ochsner's treatment of appendicitis that a patient can live ten or even twenty days without a particle of food. Why then should we want to give these acute ulcer cases food or anything at all that will irritate the whole or any part of the gastrointestinal tract of the patient. He is positive that we should have had greater and better results if the appendicitis treatment of Dr. Ochsner would be carried out, not only by not giving food by stomach, but also not by the intestines, in any case of acute gastrointestinal disorder.

Dr. George W. McCaskey, Fort Wayne, Ind., stated that he considered the work of Dr. F. B. Turck to be the greatest advance yet made in working out the pathology of gastric ulcer. Not only that Dr. Turck succeeded in producing typical ulcers by the feeding of colon bacillus cultures to dogs, but he has obtained this result not as an exception, but with remarkable uniformity in a large number of instances. If the histologic changes which Dr. Turck showed are to be credited, then we must minimize the importance of the gastric juice as an early factor in the production of gastric ulcer, because his examinations showed that the initial process is not one of self-digestion, but that it is one of autocytolysis. Dr. McCaskey has no doubt of the correctness of Dr. Billings' conclusion that the gastric juice is one of the principal factors in the grosser and later changes of gastric ulcer, but in the early changes it seems probable that the process is one of autocytolysis and not one of digestion.

He does not believe that it is safe to lay down a hard and fast rule in the matter of early feeding in gastric ulcer. He referred to two series of cases occurring in the Massachusetts General Hospital. In one series no food was given for some time. In the other series feeding was started almost immediately, and the difference in results was very small, indeed. The proper thing to do, he said, is to individualize the cases; to discriminate; to study. Take, for instance, a patient suffering from repeated hemorrhages. The emaciation may be extreme; the nutritive processes at the lowest ebb, and reparative processes can not go on in ulcer anywhere under such circumstances. Therefore, he believes, that in many cases we ought to feed these patients at once in order to restore those properties and constituents of the blood which permit the reparative processes to go on. He is generally in favor of the routine treatment of starvation for a limited period of time, with rectal feeding and the gradual use of stomach feeding later on, but in some cases the nutritive processes are so low that the patient should be fed even at some hazard.

With reference to the use of the stomach tube, he is highly in favor of its use in all cases where there is persistent débris in the stomach. It is absurd to talk about giving rest to a stomach that is full of débris and irritating secretions. Every day or, at least every other day, we ought to cleanse the stomach; and then introduce a bismuth suspension. The mortality from gastroenterostomies, he thinks, does not express all of the hazard and injury incurred from such an operation. He is heartily in favor of operation in properly selected cases, but it seems among other things that objections to adhesions formed between the stomach and bowel must cripple the peristalsis of these organs ever afterward.

Dr. W. E. Anderson, Farmville, Va., referred to a case of acute gastric ulcer occurring in a young woman to show what rest can do. After persistently trying various remedies recommended and accomplishing but little, he determined to stop all medicines and to give the stomach complete rest. He allowed no food or water in the stomach for twenty-one days, but during that time saline enemata were given to supply the body with necessary liquids, and also nutrient enemata every eight hours. The patient began to improve promptly under this treatment. On the twenty-first day a little hot water was given by mouth, but it was returned promptly. Dr. Anderson then concluded to let the patient wash out her stomach herself with a quart of saline solution twice every twenty-four hours. After a day or two the fluid was returned clear and the patient is on the road to recovery.

Dr. William H. Wathen, Louisville, Ky., referred to the error in the statistics of gastroenterostomy by the internists who oppose the operation to the extent that the surgeons advise it. He said we are as yet too young in the work of gastroenterostomy to draw accurate conclusions as to what will be in the future the ultimate or final results from this operation. This operation was performed but relatively a few times until about five years ago, and the literature on the subject shows that there has been an entire change by the leading surgeons of this country and of Europe in the method and technic of gastroenterostomy during that time. In this country, until about one year ago, most surgeons were either making the anterior anastomosis with an entero-anastomosis between the afferent and efferent limbs of the loop, or a posterior retrocolic anastomosis with a loop, and also an entero-anastomosis, frequently with obstruction or division of the proximal end of the jejunum, or with obstruction or division of the pylorus. Now, no surgeon would be considered modern in his methods, who did not as an operation of election eliminate the loop and the entero-anastomosis. Dr. Wathen never believed in or practiced any other method, claiming that the numerous immediate and ultimate bad results were all caused by a faulty technic. In the practice of Moynihan and Robson it was first noted that these complications did not follow the operation when the anastomosis was made posterior near the duodenojejunal junction to the lowest part of the stomach.

Dr. Charles G. Stockton, Buffalo, N. Y., said that while there are cases in which there is hemorrhage and no ulcer, there are also cases with cachexia in which hemorrhage is profuse and repeated and in which no ulcer and no cancer is to be found, either at the operation or at the postmortem. That class of cases should be borne in mind as being a source of disappointment to the surgeon and to the internist.

Dr. J. M. Anders, Philadelphia, stated that the surgeons and postmortem records of large hospitals have taught the internist that many cases of both gastric and duodenal ulcer go unrecognized. This fact renders it clear that diagnostic methods must be improved. In this connection, a point of first importance is that the internist follow the individual case to the operating table, if surgical intervention is required, with a view to confirming or disapproving his previous opinion with reference to the question of diagnosis. This is a means of improving one's diagnostic powers, which has scarcely been appreciated to the extent it deserves. From the statements made by Hemmeter and others, he said, it is obvious that the profession should inform itself in certain directions; it needs to be enlightened on the relation of pain, vomiting and other symptoms to the particular site of the gastric ulcer; also on the effect of ulcer according to its site on the bodily weight, and finally, by the special location of an ulcer on the development and character of the complications and sequelæ. Until information on these points is forthcoming, the ability to recognize these conditions and discriminate them from other affections, which simulate them, must remain imperfect.

Dr. Anders heartily endorsed what was said with reference to the importance of periodic occult bleeding as a diagnostic symptom of gastric and duodenal ulcer, but called attention to the fact that this valuable feature is often overlooked for the reason that in chronic ulcer the stools are often passed into the modern water-closet, hence are never observed. It should be an invariable rule in cases of gastric and duodenal ulcer to employ a bed-pan or other vessel, and a systematic, routine examination of both the dejecta and vomitus should be carried out.

It must be admitted, he said, that there is a surgical treatment and also a clearly-defined medical treatment of gastric and duodenal ulcer, but he emphasized the fact that the combined medical and surgical treatment can not fail of giving the best results, and by that he means observation of cases by both physicians and surgeons. The majority of the cases first fall into the hands of the internist, who, he thought, is inclined to procrastinate, as a rule, in the matter of procuring surgical advice.

Dr. Frank Billings, Chicago, said that he was glad to hear Dr. Hemmeter say that the Roentgen ray will always reveal a gastric ulcer. That has not been his experience. The Roentgen ray, in his estimation, is an instrument more at fault in its interpretation than any other diagnostic aid in use. The instruments used and the ray itself are all right, but they are operated by individuals who do not know how to use them and who do not know how to interpret shadows. If he had to rely on the Roentgen ray to prove, finally, that a patient had an ulcer of the stomach, he fears he could not do it.

As to the use of orthoform as a differentiation between gastric ulcer and cholecystitis, he has found that orthoform does not always stop the pain of ulcer.

Concerning the treatment, Dr. Billings emphasized what Dr. McCaskey said, to study the individual case and treat it individually. There are two varieties of ulcer, the acute soft and the chronic indurated ulcer. Physicians all are of the opinion that the former may heal under rest, whereas the spontaneous healing of a chronic indurated ulcer is always in doubt. The physician who has such a patient in charge and attempts to cure by the use of medical treatment for six months, must test results of the treatment by constant attention to all the symptoms recognized as ulcer. The motility of the stomach, the presence of pain and the presence of occult blood must be considered. The continued loss of blood in the stool goes on many times in cases that are under the rest cure, and such patients have anemia and continued loss of weight in spite of all attempts at rectal or other forms of feeding. This, in his opinion, is one of the chief reasons why such people are surgical patients. In other words, chronic indurated ulcer of the stomach is a surgical disease. That does not mean that it is going to be a cutting treatment. It is a mechanical treatment, and if the rest treatment can heal these patients it should be done, but it must be proven that the ulcer is healed. His experience has been that a majority are not healed. They are simply latent and usually are finally referred to the surgeon.

As to the end results of surgical treatment. The last word has not yet been said, and it means that the physicians and surgeons are not to quarrel over this matter. They must work together. The surgeons will let the internist have the opportunity to examine and to attempt to cure these patients in any way at his command, but failing to accomplish this, the surgeon shall have the patient. The surgeon should keep a record for several years, so that in five years we may have valuable data.

Dr. Alexander Lambert, New York, said the question that seems to be the most disputed is whether the patient should have water and ice during the rest treatment. What he said was that they may have it. Dr. Black, he thinks, is perfectly right when he says that some patients will do better without it because they are nauseated by water or ice. But it is impossible to lay down any hard and fast rule in that regard. These patients must be treated as individuals and not as a class. Make rules for each patient and not for all cases of gastric ulcer. The importance of absolute peristaltic rest was, he thinks, overestimated. The stomach should have complete rest from digestion and the mere giving of rectal enemata will not seriously disturb that rest. Absolute starvation may be wise in some patients, but it is certainly very unwise to take a half-starved patient, one who is going to pieces from malnutrition, anemia and starvation, and try to help him further by starving him for a week. In some cases it may be wise, while in others it is absolutely contraindicated.

Dr. William L. Rodman, Philadelphia, said that he believes that medical treatment should be carried out for four weeks and that then, if not successful, it should be followed by surgery. Chronic ulcer rarely is cured by medical means. It seems to be a surgical condition, just as acute ulcer is strictly a medical condition. He was very much gratified that practically all the essayists were agreed that the direct method is preferable in the treatment of hemorrhage, where it is practicable. Gastroenterostomy is a makeshift. It will not arrest hemorrhage from a vessel of any considerable size, but only a capillary leak, and in the majority of instances the hemorrhage is from a vessel of importance. He believes that this is a further argument for radical measures. If, as Dr. Hemmeter said, it is possible with the bismuth test and the *x*-ray to diagnose the site of ulcers, surgeons certainly will be able to excise these ulcers better than they can at the present time and with far better results. The trend is increasingly toward excision.

Dr. W. J. Mayo, Rochester, Minn., said that Dr. Munro, in calling this "no-loop" gastroenterostomy method the "Mayo operation," is doing them too much honor. There are really but two men who can claim any great amount of credit, Woelfler and von Hacker. All operations devised since their time have been merely modifications made to meet certain conditions. As to the operation which the Drs. Mayo have advocated, the only claim that they have in the operation, said he, is that they have gathered up from different men certain points and ideas that seemed good, assembled them as a whole, tied a string around them, and all they own is the string.

Surgery, he said, has made mistakes in connection with stomach operations, and when these are all summed up, it is the non-indurated mucous ulcer that has failed to obtain surgical relief and in many of these cases the diagnosis is still in doubt as the ulcer was not demonstrated. When the surgeon opens up the abdomen and fails to find what he expected, a gastric or duodenal ulcer, that is, when he can not demonstrate the ulcer and can not show that there are mechanical conditions present, he is getting on dangerous ground. He may have one of the cases that will be a discredit to surgery.

Differential diagnosis between gastric and duodenal ulcer is immaterial to the patient; he does not come to the surgeon filled with pride that he has a gastric ulcer, but he wants relief, and he can be surgically relieved as easily from the one condition as he can from the other.

Dr. Mayo endorsed everything Dr. Billings said. These cases are medicinally relieved and temporarily benefited, but are not often cured. It is up to the surgeon to show whether he can do better than can the medical man. So far as the indurated and calloused ulcers are concerned, they are surgical conditions. Dr. Mayo facetiously put it this way. When he has been asked when he considered that a gastric ulcer should be operated on, he has said not until it has had nine medical cures. These cases relapse. The patient gets a rest cure and is better for a few months. The trouble returns and he goes to some other physician, until, finally, he gets so that he starves himself, because, after all, it is the starvation that relieves, unless the ulcer is dealt with radically.

It is the same old question that came up in regard to gallstones and appendicitis; each attack had a medical cure, so that one case might mean ten or fifteen such cures. These cases do relapse and the majority of the patients will be treated surgically, if we can demonstrate to fair-minded men that we can get better and more permanent results than can the internists.

Clinical Notes

A CASE OF PURPURA HEMORRHAGICA.

LOUIS A. LEVISON, M.D.
TOLEDO, OHIO.

Patient.—A white woman, aged 55, was admitted to the Lucas County Hospital, Toledo, March 26, 1906, complaining of weakness and expectoration of blood.

Family History.—The woman's parents died of "paralysis," aged 65 and 64, respectively. One sister died of typhoid fever. There was absolutely no tendency to bleeding in any member of the family, either immediate or collateral. The patient had five children, one of whom died in infancy. The other four children are alive, and with the exception of a low order of mentality in one son, show nothing of interest.

Personal History.—The climacteric was passed at the age of 43, and neither then nor at her confinements was bleeding excessive. Her past life has been free from pathologic incidents, and with the exception of measles, "muscular rheumatism" and what she calls "eczema," there are no diseases to be recorded. The woman had once or twice complained of night-sweats; she had no other symptoms of tuberculosis. She would lie in bed too weak to walk; one attempt at walking was followed by collapse. She almost continuously expectorated a thin bloody sputum which oozed from the gums, palate, pharynx and tongue. Epistaxis recurred at varying intervals, lasting from a few minutes to three or four hours.

Examination.—Temperature was normal; pulse varied from 62 to 98; respirations were 20. The "eczema" had left rather extensive scars over the flexor surfaces of both forearms and the left supraclavicular and infraclavicular fossæ. Syphilis was denied, and with the possible exception of these scars, there were no evidences of this disease. Nutrition was fair, and, despite the persistent hemorrhages, there was no great loss of weight. The face was very pale and the lips anemic. Lips, tongue, gums and palate were covered with a dark brown stain, consisting of dried blood. The tonsils were not enlarged. When bleeding from the mouth was free, small blebs containing blood could often be observed on the hard palate.

These varied from 5 to 10 mm. in diameter. The nostrils at times were covered with dried blood. The pupils were equal and responded to both reflexes. The glands of the body were not perceptibly enlarged. The skin was soft, moist and over the flexor surfaces of each forearm and the left clavicular were depressions, extensively scarred. These scars, particularly over the arms, had a peculiar network-like appearance. The thorax was of fair size, symmetrical with fair expansion. Palpation, percussion and auscultation showed normal lung findings. The apex impulse of the heart was ill-defined in the fifth interspace within the nipple line. The heart was normal in size. At the apex was a very soft, systolic murmur, not transmitted to the left side or back. The abdomen was apparently normal. There was no sensitiveness to pressure; the liver and spleen were not palpable and showed no increase or decrease in percussion boundaries. The ankles and feet were not edematous throughout the course of the disease, but became slightly so after the patient left the hospital. The genitalia and rectum were negative.

Hemorrhagic Eruption: Scattered over face, trunk, arms and legs were innumerable fine petechiæ, varying in size from 1 to 5 mm. By far the greatest number were very small, pinhead spots. They were most thickly placed over the extensor surfaces of the legs, between the knees and ankles. Here it was impossible to touch a spot with the end of the finger, where the skin was clear. Over the remaining parts of the body, the back, chest, face, arms, hand, etc., the spots were more discrete and also larger. The spots partially disappeared at times, and about May 1 the body was fairly clean, although at the places where the lesions were thickest, the skin had a greenish-yellow tinge from the decomposed blood. Slight bruises, incidentally sustained, were marked by bloody extravasations out of all proportion to the injury. None of the petechiæ disappeared on pressure.

Blood examinations were interesting. Table 1 shows the number of red and white cells and the hemoglobin per cent. (Dare).

Table 1.

Date.		Erythrocytes.	Leucocytes.	Hmg. %.
March	26	4.720.000	5.400	55
April	16	2.816.000	3,600	..
April	19	3.176.000	....	..
April	25	1.336.000	2.600	35
April	28	2.528.000	3.000	30
May	1	2.480.000	2.200	25
May	3	2.490.000	2.200	40
May	5	2.048.000	2.000	30
May	11	2.536.000	1.600	55
May	16	2.344.000	3.000	60
May	19	2.384.000	2.800	50
May	21	3.320.000	1.400	50
June	19	5,152,000	3,200	85

Table 2.—Differential Count.

Date.		Polymorphonuclears.	Lymphocytes.	Mononuclears.	Mast Cells.	Eosinophiles.
April	25	63	31.5	5	0	0
May	1	59.5	26.5	13	1	0
May	5	45	43	9	1	0
May	9	50	41	9	1	0
May	17	46	30	22	3	0
June	19	60	30	9	1	0

In making a differential count, both small and large lymphocytes are included under lymphocytes and the transitional cells are counted as mononuclears. The important alterations in these counts have been the high proportion of lymphocytes and the absence of eosinophiles.

In examining smears, while not making regular counts, I did see one and possibly two eosinophiles. This small number out of many thousands of white cells observed is of distinct interest. The coagulation time of the blood was delayed at first to ten minutes, but this period was shortened during the course of the disease. Red blood cells did not show many changes. Aside from the diminution in hemoglobin, the cells were not altered. Neither poikilocytosis, polychromasia nor basic stippling was noted. Parasites were absent.

Blood Cultures: Cultures were made in bouillon, glucose agar, nutrient agar and blood serum, but all these remained sterile. Inoculations of blood from veins of elbow into guinea-pigs were negative. The stools contained no blood.

Urine Examination: The urine was slightly turbid, light yellow, specific gravity 1020, acid. The twenty-four-hour amount varied from 1,000 c.c. to 3,040 c.c. The last examination showed the merest trace of serum-albumin; no serum-globulin or albumoses; glucose was absent. Microscopic examination showed a few red blood cells; no casts; calcium oxalate crystals were found in abundance.

Treatment.—On admission, the patient was given calcium chlorid internally, in gram doses four times daily. This was discontinued after three or four days, on the theory that it decreases the coagulability of the blood, if given for longer periods of time. Gelatin was given freely during the patient's entire stay in the hospital. The mucous membranes were painted with adrenalin chlorid during the hemorrhagic attacks. Iron and arsenic were given in the form of Blaud's mass and Fowler's solution, respectively.

Result.—Condition of the patient very slowly and gradually improved and she was able to go to her home ten weeks after admission. At present, the hemorrhagic attacks have ceased, but a considerable number of fine petechiæ remain.

REMARKS.

Purpura hemorrhagica has assumed much interest of late in connection with the bacterial investigations of many workers in this field. Letzerich was able to isolate an organism from the blood of a female patient, which produced purpura in rabbits. Other investigators have found bacilli or streptococci. The findings of various writers on this subject have been too divergent for us to consider the etiologic factor of purpura hemorrhagica as settled. In connection with the bacterial origin of this disease the low percentage of eosinophiles in this case is of interest. Simon has pointed out the relative decrease of eosinophiles in the infections, and this finding in the case is for that reason worthy of record as a possible link in the chain of evidence which tries to prove purpura an infectious disease.

Simon believes that a hypo-eosinophilia associated with an increase of the polynuclear neutrophilic elements is one of the "most subtle means of diagnosing certain bacterial infections," and cites a list of infections, including appendicitis, pneumonia, empyema, variously-situated abscesses, peritonitis, etc., in which this finding is present. If further observation should bear out the constancy of this septic factor of Simon its importance as a diagnostic sign would be unquestioned.

POISONING FROM OIL OF TANSY.

E. GARD EDWARDS, M.D.
LA JUNTA, COLO.

A case cited in The Journal, Aug. 11, 1906, prompts me to add to the literature the following case:

Patient.—C. H. J., aged 25, married, a large strong woman.

History.—I found patient in a convulsion that had every appearance of epilepsy and a history of having had three such attacks within a short time. The symptoms were almost identical with those described by Dr. Whitehill in the article referred to above. Respirations were rapid, pulse 124 and forcible; pupils dilated and without reaction, mouth bleeding, patient absolutely unconscious. There was a faint odor from the breath that reminded one of some pungent oil.

Treatment.—Acting on general principles, I gave 1/10 gr. of apomorphia. In spite of her benumbed condition, this produced copious vomiting, which was aided by filling her stomach, by a tube, with large quantities of warm salt water. One slight convulsion appeared after the administration of the emetic, and in forty minutes the patient was beginning to show signs of consciousness. At this time the respirations were 20, pulse 108, temperature 97. A hypodermic of strychnin, 1/30 gr., was given, and rest enjoined. Six hours later conditions were normal except temperature was subnormal.

Result.—The next day the patient was apparently as well as ever, and confessed to having taken 2 drams of oil of tansy about an hour before I was called, because of being overdue four days as to her periods, which had appeared some twelve hours after taking the medicine.

New and Non-Official Remedies

The following articles have been tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in the proposed annual, "New and Non-official Remedies." Their acceptance has been based largely on evidence supplied by the manufacturer or his agent, but to some extent on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before final acceptance and publication in book form.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

(*Continued from page 859.*)

ARISTOCHIN.

ARISTOQUIN. DIQUININE CARBONIC ESTER. CARBONYL QUININE.

Aristochin, $CO(C_{20}H_{23}N_2O_2)_2 = C_{41}H_{46}N_4O_5$, is the neutral carbonic ester of quinine.

It is prepared according to the patents by acting on quinine dissolved in pyridin or chloroform with carbonyl chloride or by heating together quinine and phenol carbonate in the proportion of one molecule of the latter to two molecules of the former.

It forms a white, absolutely tasteless powder, melting at 189° C. (372.2° F.) insoluble in water, difficultly soluble in alcohol, more soluble in warm alcohol and chloroform, very sparingly soluble in ether. It is capable of combining with one and two molecules of hydrochloric acid forming soluble salts. It is gradually decomposed by acids with liberation of quinine, thus acquiring a bitter taste; hence it is incompatible with acids.

It should be free from bitter taste. As it is decomposed by acids and alkalies with the formation of quinine, it should respond to tests for quinine after such treatment.

Actions and Uses.—The same as those of quinine, but, since it is only slowly acted on by acids, it is said not to produce disturbance of the stomach and to be notably free from tendency to production of cinchonism.

Dosage.—The same as that of quinine, in powder, mixed with milk sugar, dry on the tongue or suspended in liquids.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). German patents No. 105,666, 134,307 and 137,308. U. S. patent No. 625,075.

ARISTOL.

A name applied to Thymolis Iodidum, U. S. P.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. trademark No. 17,393.

ASPIRIN.

ACETYLSALICYLIC ACID.

Aspirin, $C_6H_4.O(CH_3CO).COOH$, 1:2 $= C_9H_8O_4$, is the acetyl derivative of salicylic acid.

It is prepared by the prolonged heating of 50 parts of salicylic acid and 75 parts of acetic anhydride at about 150° C. (302° F.) under a reflux condenser, and subsequent purification, by recrystallization from chloroform.

It forms small, colorless, crystalline needles, melting at 135° C. (275° F.), odorless and having an acidulous taste. It is soluble in 100 parts of water and freely soluble in alcohol or ether. It is readily split up on boiling with water or with alkalies with the production of acetic acid and salicylic acid or a salicylate.

It forms clear, colorless solutions, which do not develop a violet color on the addition of ferric chloride unless previously hydrolysed by boiling with sodium hydroxide. It gives no reaction with silver nitrate, and should leave no residue when heated on platinum foil.

It is incompatible with heat, moisture, alkalies, their carbonates and bicarbonates. It keeps well when properly protected.

Actions and Uses.—It acts like salicylic acid, over which it possesses the advantage of producing less of the undesired local and systemic side effects, on account of the slow liberation of the salicylic acid. It passes the stomach unchanged, the decomposition beginning in the intestine.

Dosage.—0.3 to 1 Gm. (5 to 15 grains) in capsules or wafers, or dissolved in sweetened water or dry on the tongue, followed by a swallow of water. The powder should be dispensed in wax paper.

Manufactured by Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 644,077. U. S. trademark No. 32,805.

BENZOSOL,

GUAIACOL BENZOATE. BENZOYL-GUAIACOL.

Benzosol, $C_6H_4(OCH_3)(C_6H_5COO)=C_{14}H_{12}O_3$, is a crystalline compound of guaiacol in which the hydrogen of the hydroxyl is replaced by benzoyl.

It is prepared by warming the potassium salt of guaiacol with benzoyl chloride and crystallizing the product from hot alcohol. It forms colorless, minute crystals which melt at 59° to 61° C. (138.2° to 141.8° F.); they are odorless and tasteless or nearly so. It is practically insoluble in water, sparingly soluble in ether, but readily soluble in hot alcohol. It contains 54 per cent. of guaiacol.

It forms with sulphuric acid a permanent yellow coloration which on the addition of acetone assumes a characteristic, brilliant cherry red color, distinguishing it from salol, which gives a yellow color. Ferric chloride produces in the benzosol sulphuric acid mixture a violet color, changing to green and blue, and, on the further addition of nitric acid, to orange and green, or of potassium nitrite to green, violet and yellow. When heated (saponified) with alcoholic potash, the odor of guaiacol is developed.

It is incompatible with the alkalies, which split up benzosol into guaiacol and benzoic acid.

Actions and Uses.—Benzosol is decomposed slowly in the intestinal tract into guaiacol and benzoic acid which exert their proper actions. The liberated constituents are absorbed and excreted in the urine. It is not irritating.

Its uses are analogous to those of creosote and of benzoic acid. It is recommended in incipient pulmonary tuberculosis, as an intestinal antiseptic in fermentation, diarrhea, typhoid fever, diabetes mellitus and as a urinary disinfectant in cystitis, etc.

Dosage.—0.2 to 0.6 Gm. (3 to 10 grains), in powder, capsule, pill, or suspended in liquids or as an emulsion.

Manufactured by Farbwerke, vorm. Meister, Lucius & Bruening, Hoechst a. M. (Victor Koechl & Co., New York). U. S. patent No. 453,035.

BETA-EUCAINE HYDROCHLORIDE.

EUCAINE HYDROCHLORIDE-β. BETA-EUCAINE.

Beta-eucaine hydrochloride, $C_5H_7N(CH_3)_3(C_6H_5COO).HCl$, is the hydrochloride of 2,6,6-trimethyl-4-benzoyl-hydroxypiperidine.

It is prepared by treating diacetonamine with paraldehyde, reducing the product with metallic sodium, benzoylating the vinyldiacetonalkamine so produced by treatment with benzoylchloride, neutralizing the resulting benzoylvinyldiacetonalkamine with hydrochloric acid and crystallizing.

It forms a white crystalline powder, soluble in 20 parts of water at the ordinary temperature, but more soluble in warm water, soluble in 14 parts of alcohol, producing neutral solutions which can be sterilized by boiling without change. The aqueous solutions yield ether soluble precipitates of the free base on addition of alkali hydroxides or carbonates.

The saturated aqueous solution gives no precipitate with mercuric chloride, which distinguishes it from the corresponding alpha-eucaine salt. It gives no color reactions with sulphuric or nitric acid, but yields a yellow precipitate with chromic acid, orange yellow with bismuth-potassium iodide, lemon yellow with picric acid, and a white precipitate with phosphomolybdic acid. It is incompatible with alkalies and their carbonates.

Actions and Uses.—Beta-eucaine hydrochloride is a local anesthetic like cocaine, but weaker and devoid of the stimulating properties of the latter. It does not dilate the pupil, nor does it contract the blood vessels as does cocaine. It has the advantage of stability even on prolonged boiling. It may be used in all cases in which cocaine is indicated as a local anesthetic, especially in ophthalmology.

Dosage.—It may be applied in a 2 to 3 per cent. solution to the eye, 5 to 10 per cent. for nose and throat and 5 to 10 per cent. for ointment for hemorrhoids.

Manufactured by Chemische Fabrik auf Actien, vorm. E. Schering, Berlin (Schering and Glatz, New York). U. S. patent No. 657,880. German patent No. 97,672.

BETA-NAPHTHOL BENZOATE.

BENZONAPHTHOL. BENZOYL-β-NAPHTHOL. NAPHTHOLIS BENZOAS.

Beta-naphthol benzoate, $C_6H_5.COO.C_{10}H_7 = C_{17}H_{12}O_2$, is the benzoic ester of β-naphthol.

It is obtained by heating b-naphthol and benzoyl chloride together at 170° C. (338° F.), extracting the product with alcohol, and crystallizing.

It forms colorless needles, or a white crystalline powder, colorless and tasteless, melting at 110° C. (230° F.). It is almost insoluble in water, but readily soluble in alcohol and in ether; it is also soluble in chloroform, in glycerin and in olive oil.

Benzonaphthol is decomposed by heating with caustic alkalies into naphthol and a benzoate which will then give their characteristic reactions.

To test benzonaphthol for the presence of b-naphthol it should be shaken several times with dilute solution of sodium hydroxide (1:10) and immediately filtered. If beta-naphthol is present in considerable amount it will separate as a turbidity or precipitate after acidifying with dilute sulphuric acid. If the amount of betanaphthol is small no precipitate appears, but the alkaline solution shows a bluish fluorescence and if it is boiled with chloroform, a green color is produced.

A solution of benzonaphthol should not give a violet color with chloride of lime or solution of iodine and alkali.

It is incompatible with antipyrine, camphor, phenol, ferric chloride, menthol, potassium permanganate, or urethane.

Actions and Uses.—Beta-naphthol benzoate is split up into its constituents on reaching the intestinal tract and acts as an antiseptic. It is said to be diuretic. It is used internally as an intestinal antiseptic in diarrhea and typhoid fever. Externally it has been recommended as a parasiticide in the form of 3 to 10 per cent. ointment, and has been used in psoriasis, eczema, scabies, etc.

Dosage.—0.2 to 0.5 Gm. (3 to 8 grains); maximum dose, single, 1 Gm. (15 grains), daily 4 Gm. (60 grains).

Manufactured by Fabrik von Heyden, Radebeul near Dresden (Merck & Co., New York). It is not patented nor trademarked.

BETOL.

NAPHTHALOL. NAPHTHOL-SALOL. SALINAPHTHOL.

Betol, $C_6H_4.OH.COO(C_{10}H_7) = C_{17}H_{12}O_3$, is the salicylic ester of β-naphthol.

It is obtained by heating b-naphthol-sodium and sodium salicylate with phosphorus oxychloride at 120° to 130° C. (248° to 266° F.).

It is a white, shining, crystalline powder, odorless and tasteless, melting at 95° C. (203° F.). It is insoluble in cold or hot water or glycerin, difficultly soluble in cold alcohol or turpentine, easily soluble in boiling alcohol, in ether, in benzene, and in warm linseed oil. In the cold it is not changed by acids or alkalies of moderate concentration. When heated with alkalies, it is decomposed into its constituents, which, if the solution is acidulated, will crystallize.

It is distinguished from salol by its higher melting point and by the production of a brownish green color, when a trace of nitric acid is added to its yellow colored solution in pure sulphuric acid. It burns on platinum foil leaving no residue (absence of fixed mineral impurities).

If 1 Gm. of betol is shaken with 30 Cc. of boiling water and filtered through a moistened filter, the filtrate should not have an acid reaction, (absence of salicylic, hydrochloric or phosphoric acid) nor should it after cooling show a crystalline deposit (salicylic acid or b-naphthol) and should not become turbid on the addition of silver nitrate (chlorides or phosphates) or barium nitrate (absence of sulphates) nor should it give a violet color with solution of ferric chloride.

Actions and Uses.—Betol is not affected in the stomach, but is split up in its original components when it reaches the intestinal tract by the pancreatic juice and intestinal secretions. It is believed to act as an intestinal antiseptic and, being excreted in the urine, to act in a similar way in the bladder.

It has the antirheumatic properties of salicylic acid. It is recommended for intestinal fermentations, catarrh of the bladder, particularly in gonorrheal cystitis, for rheumatism, etc.

Dosage.—0.3 to 0.5 Gm. (4 to 8 grains) in cachets, milk or emulsion.

Manufactured by The Heyden Chemical Works, New York. U. S trademark.

BISMAL.

BISMUTH METHYLEN-DIGALLATE.

Bismal, $4(C_{15}H_{12}O_{10}).3Bi(OH)_3 = Bi_3C_{60}H_{57}O_{40}$, is a compound of bismuth hydroxide and methylendigallic acid.

It is obtained by digesting 4 molecules of methylendigallic acid with three molecules of bismuth hydroxide in water.

It is a voluminous gray-brown powder, insoluble in water or gastric juice, but soluble in alkalies, forming yellowish red solutions.

Actions and Uses.—Bismal is an astringent and is recommended for the treatment of chronic diarrhea.

Dosage.—0.12 to 0.3 Gm. (2 to 5 grains) in cachets or powder.

Manufactured by E. Merck, Darmstadt (Merck & Co., New York). U. S. patent No. 605,246, German patent No. 87,099 (dropped in 1899).

BOROCHLORETONE.

A mixture of 1 part of chloretone (chlorbutanol) with three parts of boric acid.

Actions and Uses.—An antiseptic and anesthetic, used externally as a surgical dressing powder.

Prepared by Parke, Davis & Co., Detroit Mich. U. S. trademark.

BROMETONE.

TRIBROM-TERTIARY-BUTYLALCOHOL. ACETONE-BROMOFORM.

Brometone is 1,1,1-tribrom-2-methyl-propan-2-ol, $CBr_3.C(OH)(CH_3).CH_3 = C_4H_7OBr_3$, produced by the reaction of acetone on bromoform.

Made by the action of caustic alkalies on a mixture of bromoform and acetone.

Occurs in fine white, prismatic crystals which possess a camphoraceous odor and taste. It is slightly soluble in water, soluble in alcohol, ether, benzin and most organic solvents. It melts at about 167° C. (332.6° F.) and volatilizes on exposure to air.

Actions and Uses.—Brometone is claimed to have the sedative action of the bromides without the disadvantage of producing bromism. In doses of 0.3 Gm. (5 grains) four or five times a day, in adults, it is claimed to cause no unpleasant results and to produce no disturbance of the digestive organs, and to have no appreciable effect on the secretions. Its action is prompt and its effect is manifest for several hours. In doses exceeding 1.6 Gm. (25 grains) daily it may produce dizziness, vertigo, anorexia, and mental hebetude, all of which symptoms disappear on discontinuance of its use. Therapeutically it has been recommended in mild conditions of excitation and insomnia, in so-called narcotic abstinence, in hysteria and in nervous affections generally. It relieves some forms of cough and is said to produce amelioration in about 60 per cent. of cases of epilepsy. It has been used to relieve dizziness due to labyrinthine disturbances.

Dosage.—The dose is 0.3 Gm. (five grains), to be repeated two or three times during twenty-four hours.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

(To be continued.)

Radium in Trachoma.—Radium has been successfully applied by Kardo-Sisoyeff in 38 cases of trachoma, as he reports in *Russky Vrach.*, No. 20, 1906. The exposures were made every 2 or 3 days by means of a small tube containing about 10 mg. of radium. The tube was not pressed on the mucous membrane of the everted lids, but merely applied lightly and moved from place to place. The duration of each exposure was one minute. The benefit of the treatment was apparent as early as the second or third day, the granulations having become smaller, with very slight congestion. All forms of granulated conjunctivitis were treated, but the best results were obtained with papillary trachoma and diffuse infiltration. Especially in case of pannus the subjective symptoms were relieved by the second day, the lachrymation, photophobia, and spasmodic contractions of the lids.

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[For other information see second page following reading matter.]

SATURDAY, SEPTEMBER 22, 1906.

DISINFECTION.

Dr. Chapin's paper on disinfection[1] is of the kind that may do much good because it is likely to lead physicians to review critically their own ideas, convictions and practices anent disinfection. Judging from some of the remarks in the discussion of the paper, the word disinfection, as used by Dr. Chapin, seems liable to be interpreted wrongly. It is absolutely necessary in discussing this paper to bear in mind that the disinfection dealt with by its author is that "which is commonly carried out by health officials after death or recovery from contagious diseases." It is the routine practice of this sort of disinfection that Dr. Chapin attacks. As to cleanliness and other disinfective measures during the course of a contagious disease, Dr. Chapin appears to hold only the most orthodox views; and he emphasizes the far greater value of continuous cleansing, in the real meaning of the word, as compared with the perfunctory terminal disinfection, in limiting the spread of communicable diseases.

It can not well be denied that if proper isolation and real cleanliness be maintained from the beginning to the end of an infectious disease, counting the end as the period when there is adequate ground to believe that neither the patient nor his attendants and others with whom he has come in close contact during his illness any longer harbor the infecting agent, then there will be no call for the elaborate official terminal disinfection now prescribed and more or less commonly practiced. Clearly this ideal condition of things is not as yet generally realized or realizable. It is, however, the objective point of our efforts to minimize the spread of infection by the patient, and when this point is actually reached in a given case terminal disinfection should be omitted because unnecessary. There is, then, room for intelligent discrimination in terminal disinfection.

Certainly Dr. Chapin is correct, also, in his interpretation of the evidence of the relative importance of living beings and dead objects as carriers of infection. To-day there is no escape from the conclusion that the most important sources of infection in the diseases now in mind are the sick or convalescent patient, whether the disease is typical or atypical, and the so-called healthy "carrier." These sources may be ambulatory; in them the infective agents may multiply and persist; the most that contaminated dead objects ordinarily subjected to disinfection can do is to harbor for a variable time the causative agents which now only rarely find suitable conditions for multiplication. Hence terminal disinfection, even when effective, in reality possesses a relatively small power to limit infection, for the simple reason that fomites, after all, play a subsidiary rôle in the spread of infection. This being the case, it is a mistaken policy to rely on terminal disinfection to the extent that adequate and proper isolation and continuous cleanliness and the special precautions indicated in each particular disease become neglected. And this is the necessary result of blind, indiscriminating reliance on so-called disinfection as practiced by virtue of custom and dogma, and the real disinfectiveness of much of which may well be questioned.

Such questions as the real value of terminal disinfection are settled definitely by actual experimentation. Statistical studies are essential. It is desirable that the subject receive more attention from the investigative point of view than heretofore. Mere affirmation of a fact, e. g., the efficiency of disinfection, does not create that fact. There is already actual evidence at hand that tends to create doubt of the value of disinfection. Thus Dr. Chapin states that in Providence there was a recurrence in only 1.55 per cent. of 258 cases in which the warning card was removed without official disinfection—a somewhat better showing than in the control instances. In the *Semaine Médicale*[2] it is pointed out editorially that in Paris obligatory disinfection has been practiced systematically under favorable conditions for about fourteen years, but during the decennium 1895-04 there was no fall in the morbidity of scarlet fever, diphtheria and typhoid fever, while that of variola increased. There were some oscillations in the mortality, but no decided fall. These facts are interpreted as proof of the inefficiency of disinfection as carried out in France. We need further observations of this character.

While the value of terminal disinfection, for good reasons, is being questioned, the possible benefits of effective disinfection must not be withheld in the many instances where circumstances appear to indicate disinfective measures. This is true particularly in the case of tuberculosis in which precautionary measures and cleanliness have been neglected. In certain other diseases, e. g., typhoid fever, diphtheria, Dr. Chapin very properly places as a prerequisite a reasonable certainty that all the members of the household are free from infection. The burden of establishing this freedom from infection in most cases falls on our public health officials.

In determining their attitude toward the questions here discussed physicians should bear in mind that as our knowledge of the infectious diseases grows, especially as regards the sources of infection, the methods of best combating communicable diseases necessarily require readjustment. This does not involve any weakening of "the germ theory" of infectious diseases. On the contrary a strengthening. Further, that at present the most effective preventive methods known are, speaking broadly, adequate isolation of the patient, continuous cleansing, i. e., disinfection, during the course of the attack, due recognition of the important and often too much neglected healthy carriers, and in certain diseases prophylactic immunization (vaccination, diphtheria antitoxin).

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[1] The Journal A. M. A., Aug. 25, 1906, p. 574.

[2] July 25, 1906.

COLONIES FOR EPILEPTICS.

According to a careful estimate, says *Coöperation*, the organ of the Chicago Bureau of Charities, one in every five hundred of the population is an epileptic, and it, therefore, argues the importance of establishing public institutions for the care of these unfortunates. They are, it says, a burden to their friends and a menace to the welfare of others with whom they are associated, and yet they are not properly suited for the public institutions to which many of them are sent.

To a very large extent, this is the truth, but it is not exactly correct to infer that all cases need care in the same class of institutions, or even in any institution at all. The total of epileptics must include an appreciable number of individuals whose epilepsy is a comparatively slight disability and who are capable of maintaining themselves under the ordinary conditions in society. There are some, as physicians can testify, who, while suffering from occasional epileptic attacks, have their working power and social efficiency very little, if at all, impaired. There is another small minority of epileptics who require close restraint on account of their mental condition, and this class is much less than it would appear to be from the mistaken methods of their management. Many of the so-called dangerous epileptics are such only because of bad surroundings, ill treatment and probably also, in some cases, ill-advised medication. The fact that the use of the bromids can cause dangerous maniacal conditions was very early observed in the medical history of the drug, but has been too little appreciated, even up to very recent years.

A very large class of the epileptics, and probably the great majority, are perfectly suitable cases for an epileptic colony, in which they can be made not only happier and better in every way, but largely self-supporting. Perhaps it is not too much to claim that nine-tenths of those who are not practically disabled by their disease could be thus cared for. Under judicious management it is safe to say that the public epileptic colony could be the least expensive or burdensome to the taxpayer of any of the public charities. While economy should not be the first consideration, the nearest to self-support that is compatible with proper humane and scientific treatment should at least be the ideal in such institutions. There is no member of society that is more misunderstood by the general public than the so-called dangerous epileptic. A few are really dangerous and require restraint; the great majority of even the severe cases are perfectly manageable under proper surroundings by judicious moral and medical treatment. It would be impossible probably to remove every epileptic to such a colony, but for the great mass of those who are under public and private care it would be a blessing, and also a saving of public and private expenditure.

Epilepsy is not absolutely an incurable disease, even in such cases as are sent to the public institutions, there may be some capable of cure, and the curative treatment might well be an important object of the institution even if the results are not very great. The careful study of the disease will undoubtedly bring out many valuable facts and widen the scope of the curative function of the institution. At least this is a thing to be worked for, though the prospects of extensive results may not be the best. What has already been done abroad and in this country shows the possibilities for good of such colony treatment of the epileptic.

MILK AND ALCOHOL IN HOSPITALS.

Some very interesting data with regard to the comparative consumption of milk and alcohol in the London hospitals during the past forty years was the subject of an important communication from Sir Victor Horsley, the distinguished London surgeon, at the recent meeting of the British Medical Association at Toronto. These data are not likely to reach physicians through the ordinary channels because they were announced at the temperance luncheon instead of at the usual section meetings. According to Dr. Horsley the proportionate consumption of alcohol and of milk has been exactly reversed during the past forty years as the result of advance in medical knowledge with regard to the inefficiency of alcohol for the cure of disease. Forty years ago, at the beginning of the seventh decade of the nineteenth century, the expenditure for alcohol in the London hospitals was about $40,000 a year. The expenditure for milk during the same period was about $15,000. At the present time the annual expenditure for alcohol for medicinal purposes is about $15,000. The milk account on the other hand now runs up to over $40,000.

This represents very nearly the reversal of feeling in physicians' minds with regard to the relative value of these two fluids for the treatment of ailments of various kinds. It is true, as Sir Victor Horsley suggested, that the introduction of antisepsis and asepsis into hospital practice has accomplished not a little in doing away with the supposed necessity for stimulants. Forty years ago septic conditions were very common in the London hospitals and they were nearly always treated—as a sort of last resort—by large quantities of stimulants. Very few surgeons who recall those days consider that the stimulants did much good, but something had to be done, and the remedy at least gave a sense of well being to the patient that prevented most of the symptoms of discouragement in the face of surely advancing death.

Milk, however, has risen very much in the estimation of physicians during the past half century. Not a little prejudice existed, especially with regard to the consumption of large quantities of milk, and it was somehow thought, because of isolated unfavorable experiences, to be rather difficult of digestion by those who were in poor health. Now, however, it is recognized that observations of this kind were due to individual idiosyncrasies, and milk has come to be looked on as the most important element for conserving strength and renewing tissue loss that the physician has at his command.

It seems very probable that this difference of attitude with regard to both alcohol and milk will continue to be even more marked as the years go on. While here in America, perhaps, such a complete reversal of form has not taken place, this is partially due to the fact that American physicians were never as free in their use of alcohol for medicinal purposes as their British colleagues, while the movement that has emphasized the comparative inefficiency of alcohol for many symptoms for which it was supposed to be almost the supreme remedy began later in this country than in England.

THE LIFE INSURANCE EXAMINER AND THE AGENT.

We have referred to a number of improvements in life insurance examination work that ought to be secured. The attempt of an agent to use an examiner in trying to coerce an individual to make application for insurance is another abuse which is detrimental to the reputation of both company and agent; it is resented by the applicant and often subjects the examiner to insults. The examiner should never be asked to make an examination until the application has been made. When he is sent to call for an examination where the individual has made no agreement or appointment, the agent should be required to pay the usual fee, and for repeated offenses of this kind should be disciplined by the proper officials of the company. It saves time and annoyance to both the examiner and the applicant for the physician to make his own appointment by telephone or otherwise. The contention sometimes made that such a communication may give a half-persuaded applicant an opportunity to withdraw his application is a sad commentary on the current methods of life insurance soliciting.

This insane haste to rush the application to the home office, and to force a policy on an individual who has not been convinced that he desires it, is responsible for the fact that a more exhaustive and leisurely examination can not be made in doubtful cases. The use of the more refined methods of diagnosis, among them the examination of the blood, the estimation of the blood pressure, the use of the ophthalmoscope, and the more exhaustive study of the urine, both clinical and microscopic, in a twenty-four-hour specimen, would sometimes enable the examiner to discover defects or to eliminate the possibility of their existence, while without them his judgment of the risk must be uncertain. Of course, where such supplementary examinations are made, a reasonable fee should be added to the minimum fee of $5.00 for the regular examination.

A reform in some of these features of the life insurance business would conduce greatly to the comfort and efficiency of the medical examiner, would be to the advantage of the insurance company, and ultimately to that of the agents, who are in the main responsible for the existing conditions.

PRIVATE GAIN vs. PROFESSIONAL BENEFITS.

Last week we devoted considerable space to our esteemed contemporary, the New York *Medical Record*, and its attacks on the American Medical Association. Underlying the series of *Record* editorials was the insinuation that the American Medical Association, through its Journal, was accumulating money, and, further, that this money was being squandered or misappropriated, or something of the kind, by the trustees or by the officers of the Association, because—in the *Record's* opinion—a sufficiently detailed report of the affairs of the Association was not published to the world. This impression was conveyed in spite of the fact that every detail has been and is available at any time to those who are entitled to it. The *Record's* position as a critic in this matter will be appreciated when it is known that it does not publish and will not make known to any one even so much of its own affairs as its circulation. Every physician who contributes an article to the *Record* is interested in this particular information; he naturally wants to know something of the extent to which his article will be circulated if published in that periodical. Its circulation is also most important information for its advertising patrons, and is something that every advertiser has a right to know. The *Record* guards this information with the utmost care. It is conjectured, however, that its circulation is anywhere from 6,000 up—possibly the figure given is near the truth. It must be admitted, however, that if current reports are to be relied on, its circulation is constantly decreasing, and it might be embarrassing for William Wood & Co. to admit this publicly. But, be this as it may, what right has the *Record* to criticise the Association for the alleged withholding of minor details when it refuses to give to its patrons and supporters information of such fundamental and vital importance as its circulation?

Let us, however, consider another matter: We do not know what William Wood and Co.'s profits are from the *Record*, and it is not expected that a private firm will publish such information. Considering, however, that the *Record* gives little more than half as much reading matter as does the Association Journal, at the same subscription price, that their advertising receipts from the *Record* are large, it may be assumed that William Wood & Co. receive a fair profit from their paper, which is as it should be. In one of its editorials, the *Record* referred sarcastically and erroneously to a so-called surplus of a quarter of million dollars of the American Medical Association, not recognizing the difference between surplus and assets. In the commercial reports William Wood & Co., medical publishers, are rated at a pecuniary strength of from $300,000 to $500,000. Whence and from whom came this princely fortune? Since their business has been limited to publishing medical books and medical journals, it is fair to assume that it came from our profession. And what has William Wood & Co. done for the medical profession in return for this generous support which it has given them? Have they done anything? Nothing, absolutely nothing! Why should they! Since they are a commercial firm, what interest have they in our profession except what they can make out of it?

Now, what about the American Medical Association? Its income has been derived entirely from The Journal, which, for some years past, has made a fairly good profit. But these profits have been and are being used for the medical profession of the whole country, not necessarily for the individual members of the American Medical Association alone. From these profits the Association has been able to erect a building for its headquarters, thus realizing an ambition cherished by its members for many years; and has land to extend this building as the necessities of the future may require. It also has a reserve fund for future contingencies. For several years it has appropriated money for scientific research and for the development of organization and for better society work. To aid this work it is publishing a bimonthly bulletin, a periodical which is sent free to the presidents and secretaries of all the state and county societies of the country, to the councilors of the various state societies, and to others especially interested in building up county societies and making them more effective for good. Through its Council on Medical Education, it is working for higher standards and better conditions in medical education; and, through its Council on Pharmacy and Chemistry, it is endeavoring to check the dishonest practices of those who are offering to the medical profession fraudulent medicines and nostrums. For all this, and for other work of direct and indirect benefit to the medical profession as a whole, and to the public, the Association has been and is spending the money that it has received in profits from its Journal.

A year and a half ago the Association entered on a campaign to expose and to check the frauds and deceptions that had developed in the proprietary medicine business. It was known that the movement would be opposed by some of the journals whose existence depended on the support of those who would suffer from this campaign. It was not believed, however, that the *Medical Record* would be found among these, standing, as it claimed to do, for scientific medicine, and receiving, as it did and does, its support from those physicians who would naturally endorse this campaign. It was naturally to be supposed that William Wood & Co. would see the righteousness of the movement and that, even at a temporary sacrifice of some of its advertising receipts,[1] they would endorse and support it. But what happened? Did they have the *Record* endorse it? Did they see the hand-writing on the wall? No. Not only did the *Record* not endorse it, but, on the contrary, it opposed it in many ways, using sarcasm and ridicule because it had no arguments to offer.

When certain nostrums which were being exploited to and through our profession were shown to be frauds, did the *Record* tell its readers about it? No. On the contrary, it sold an extra amount of advertising space to the promoters of one of these frauds to hold up to ridicule and caricature The Journal and the Council on Pharmacy and Chemistry, and then refused[2] to publish a reply in the form of a statement of facts. When the Porto Rico Commission sent a letter[3] to the *Record* correcting misstatements that were being circulated regarding a well-known proprietary preparation, the communication was not published, presumably because it reflected on one of the *Record's* most prominent advertisers; this in spite of the fact that the letter contained information that every reader of the *Record* should have received.

Thus the *Record*, by deliberately opposing the work of the Council on Pharmacy and Chemistry, by wantonly attacking the American Medical Association, and by attempting to cause discord in its ranks, by refusing to aid in the campaign against frauds in "patent medicines" and impure foods, and by siding with its advertisers rather than with its readers, has shown itself to be an enemy to the profession and antagonistic to the best interests of both the profession and the public. We leave it to the members of the profession to draw their own conclusions regarding the value, and, especially, the sincerity of hostile criticism emanating from such a source.

In conclusion, we again suggest to William Wood & Co. that they think over this whole matter; that they consider whether it becomes a firm, which has been able to amass a fortune from the support given it by the medical profession, to allow its publication to oppose a movement endorsed by the best element in that profession—a movement inaugurated for the furtherance of honesty in the pharmaceutical business, and for the benefit of the profession and the public.

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[1] Just as a sample of the advertising carried by the *Record*, we refer to a few now running in its advertising pages: Antikamnia, Ammonol, Phenalgin, Sal Codeia—Bell, Bromidia, Iodia, Neurilla, Eusoma, Papine, Echtol, Germiletum, Dioviburnia, Neurosine, Seng, Cactina Pillets, Tongaline, Eehitone, Hagee's Cordial of Cod Liver Oil, Gray's Glycerine Tonic Comp., Vin Mariani, Kutnow's Powder, Uron, Syrup of Figs, Anasarcin, Robert-Hawley Lymph Comp., Micajah's Medicated Uterine Wafers, Hayden's Viburnum Comp., Zymoticine, etc.

[2] The Journal A. M. A., Sept. 23, 1905, p. 935.

[3] The Journal A. M. A., Oct. 7, 1905, p. 1099.

STANDARDIZATION OF SUPRARENAL PRODUCTS.

One of the most important additions to our therapeutic agents during recent years is the series of preparations from the suprarenal gland. While we do not yet know how widely these preparations may be used with satisfactory results, we do know that their value as therapeutic agents is such that they are depended on in many conditions, and that they should, therefore, be of uniform quality and character. The reports[1] which we published two weeks ago of the experimental work on these preparations show very plainly that the preparations on the market are of variable quality and character. This must not be. There is probably as much need for the standardization of these preparations as there is for the standardization of other organo-therapeutic products, such as diphtheria antitoxin, vaccine virus, etc. It is perfectly practicable to determine the strength of these suprarenal preparations with accuracy and to standardize them. It is presumed that the preliminary investigation made by Dr. Reid Hunt for the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service was primarily to show the need of this standardization, and we understand that this department of the government is considering the advisability of undertaking a supervision of these preparations similar to that which is so effective for good in the case of some other products. The Division of Pharmacology of the Hygienic Laboratory is well equipped to carry out this work. We have no doubt that the manufacturers will welcome such supervision, since it is to their interest, as well as to that of the profession and of the public, that the preparations should have a standard for the guidance of those who make as well as for those who use them.

CATCHY NAMES AND THEIR DANGERS.

In our news columns this week will be noted a death in St. Luke's Hospital, Chicago, from the accidental use of a solution of atropin when urotropin had been ordered. This incident calls attention to the evil attendant on the prevalent manner of naming new remedies—proprietary, in nearly every instance. Is it to be wondered at that mistakes are made when we have to contend with the following similar names of preparations of widely different character and composition: Sanatogen, Sanitol, Sanitas, Sanoform, Sanoforme, Sanosal, Sanose and Sanosin? Then we have a variety of names that apply to the same article, as occurs in this particular instance which has caused a death. Hexamethylene tetramine is now an official preparation in the U. S. Pharmacopeia as Hexamethylenamine—an awkward word for physicians to get used to, but one that it seems will have to be adopted. This was first introduced as Urotropin, but now is on the market as Aminoform, Cystamine, Cystogen, Formin, Hexamin, Uristamine, Uritone, etc. Why not get rid of all these names and adopt the correct one—the official name? If the one who prescribed the urotropin at the St. Luke's Hospital had desired to use Schering & Glatz's preparation, it would have been an easy matter to have written "Hexamethylenamine (Schering)." In hospitals where young physicians are taking their first work in actual practice, which is the case in all hospitals having internes, would it not be worth while to set a good example by prescribing remedies under their official titles and not by perpetuating proprietary names?

Medical News

CALIFORNIA.

Polyclinic Opened.—The San Francisco Polyclinic, formerly located on Ellis Street, was reopened at 443 Filmore Street, September 11.

Exclude Trachoma Immigrants.—The quarantine officer at San Francisco has refused landing to 48 persons suffering with trachoma, 27 of whom were Japanese and 15 Hindus, who arrived on the *Siberia*, September 12.

New College Building.—The College of Physicians and Surgeons, San Francisco, has let the contract for the erection of a one-story frame building, as a temporary building for its uses, along the northwestern line of Fourteenth Street and Woodward Avenue, for $19,722.

Personal.—Dr. Coyle J. Tracy, Pasadena, has been appointed a member of the insanity commission in Los Angeles County.——Dr. and Mrs. John J. Tully, Stockton, have returned after an extended tour of Europe.——Dr. Redmond W. Payne, San Francisco, left for New York, September 8, en route for Europe.

The Dead in the San Francisco Disaster.—The health department announces that 452 persons lost their lives as a result of the earthquake disaster, April 18. Of these, 266 were killed by falling walls, 177 perished in the fire, 7 were shot, and 2 died as a result of ptomain poisoning. Of the dead, 420 are believed to have been white, 18 Chinese and 4 Japanese.

New Hospitals.—Dr. John L. White, superintendent of the Sacramento County Hospital, has been given permission to erect an open-air hospital for consumptives, to cost about $600.——The Southern Pacific Medical Department plans to erect two cottages and a one story building on the present hospital grounds in Sacramento, as the accommodations for patients do not equal the demands on the institution.——Work on the San José County Hospital, to be erected at a cost of $65,000, on the site of the old county building destroyed by the earthquake, will be initiated in October, and it is probable that the building will be ready for occupancy six months later.——The Wentworth Hospital has been incorporated in Sacramento with a capital stock of $50,000, by Dr. E. M. Wilder, Sacramento, and others.——A hospital is to be built at McCloud by the McCloud Lumber Company, which will cost $25,000.

COLORADO.

Italian Dispensary Opened.—An Italian dispensary has been opened at Palmer and West Thirty-fifth avenues, Denver, providing medical service for indigent Italians. The following constitute the board of trustees: Dr. Daniel S. Neuman, president; Dr. Charles H. McLean, secretary; the consul-general of Italy and Drs. Sherman T. Brown, Giuseppe Cuneo and Clare P. Conroy. The consulting staff is made up as follows: Drs. Rodolfo Albi, Charles D. Spivak, Philip O. Hillkowitz, Amasa M. Bucknum and Pasquale De Cunto. The following make up the attending staff: Drs. Giuseppe Cuneo, Martin J. Waldron, Claud C. Keeler, Clare P. Conroy, Sherman T. Brown, Frank M. McCartney, Seymour D. Van Meter, Charles H. McLean and Orasio D. Abrahams; ear, nose and throat, Dr. Daniel S. Neuman; eye, Dr. Frederick A. Davis; nervous diseases, Drs. J. Elvin Courtney and Christian L. Neubert; diseases of the stomach, Dr. Charles D. Spivak; obstetrics, Drs. Rodolfo Albi and Thomas M. Burns; bacteriology, Dr. Thomas W. Hall, and *x*-ray treatment, Dr. George H. Stover.

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[1] The Journal A. M. A., Sept. 8, 1906, p. 790.

State Society Meeting.—The program has been issued for the coming meeting of the Colorado State Medical Society, which will be held in the Albany Hotel, Denver, October 9 to 11. The first two days and the morning of the third day will be devoted to the reading of papers and discussions on general subjects, while the afternoon of the third day will be taken up by section work. For just one-half day, therefore, the whole society will be divided into sections, as follows: section on surgery, gynecology and orthopedics, of which Dr. Walter A. Jayne is chairman; section on internal medicine and nervous and mental diseases, of which Dr. James Rae Arneill is chairman; section on hygiene and sanitary science, of which Dr. Hugh L. Taylor is chairman, and section on ophthalmology, of which Dr. Edward Jackson is chairman. Judging from the titles of the papers the latter section includes the subjects of laryngology and otology. Dr. Richard Cabot, Boston, will deliver an address Wednesday afternoon on "Mind Cure: Its Service to the Community." The program contains abstracts for most of the papers announced, which gives those who desire to attend an idea of the probable scope of the papers to be read.

DISTRICT OF COLUMBIA.

Decrease in Death Rate.—During the week ended September 1, 97 deaths were reported, a decrease of 23 from the record of the previous week. Of the decedents, 54 were white and 43 colored, indicating a total annual death rate of 15.6 per 1,000. Consumption, diarrheal diseases of infants, typhoid fever, heart disease and kidney diseases led the death causes.

IDAHO.

State Society Meeting.—The fourteenth annual meeting of the Idaho State Medical Society will be held in Lewiston, October 4 and 5. The council will meet in executive session on the evening of October 3, and the scientific proceedings will commence at 10:30 Thursday morning. The headquarters will be the Lewiston Commercial Club. The annual banquet will be held at the Raymond Hotel Friday evening. The Journal has just received the program and finds the list of papers to be one promising an interesting meeting. Dr. J. B. Morris, Lewiston, is president, and Dr. E. E. Maxey, Boise, is secretary-treasurer.

ILLINOIS.

Diphtheria.—An epidemic at Bardolph, near Bushnell, has grown to such proportions that the authorities have ordered all schools and churches closed.

Physicians Ill.—Dr. William C. Hill, Murphysboro, is reported to be critically ill with typhoid fever.——Dr. Amos S. Bickel, North Chillicothe, is seriously ill with anemia, at St. Francis' Hospital, Peoria.——Dr. Wilbur J. Hawkins, Aurora, is ill with appendicitis at his home.

State Board Reports.—The State Board of Charities in its quarterly report, just issued, states that since the organization of the board last April, the commissioners have visited every hospital for the insane in the state, 52 county almshouses, 52 jails, 19 orphanage and child saving institutions; it has investigated the charges against the Soldiers Orphans' Home, Normal; the Soldiers Widows' Home, Wilmington, and the Asylum for Feeble-Minded Children, Lincoln, and has inspected the schools for the deaf and blind at Jacksonville, and the Soldiers and Sailors' Home, Quincy.

Coroners Meet.—At the annual convention of the Illinois State Coroners' Association, held in Chicago, September 11, 48 counties were represented. Peter M. Hoffman, coroner of Cook County, was elected president of the association; C. Z. Noel, Joliet, and C. N. Streeper, Alton, were elected vice-presidents; R. L. Baker, Peoria, was elected secretary, and William Woodruff, Springfield, treasurer. One of the most important matters brought up was the necessity of passing a law compelling physicians to report cases of a certain class to the coroner. There is nothing at present in the statutes to prevent a physician of Illinois from signing a death certificate, although he may not have attended the deceased in the capacity of physician for a number of years.

Chicago.

The Work of the Visiting Nurses.—During August the Visiting Nurses' Association cared for 1,227 patients, and the nurses made 5,738 visits.

Gift to Hospital.—It has been announced that Dr. D. K. Pearsons has donated an additional $5,000 toward the fund for the new Presbyterian Hospital, which brings the total fund to within $10,000 of the $400,000 required.

Fatal Error.—Anton P. Freund, druggist at St. Luke's Hospital, has been discharged from that institution as a result of his mistake in furnishing atropin instead of a proprietary preparation of a somewhat similar name in filling a prescription for a patient in the hospital, who died soon after. The coroner's jury recommended that Freund's license as pharmacist be revoked.

New Maternity.—A new site has been provided for the Chicago Lying-in Hospital and Dispensary, now located at 294 Ashland Boulevard, at the northwest corner of Vincennes Avenue and Fifty-first Street. The cost was $52,500, and the new hospital will be erected at a cost of between $150,000 and $200,000. The new hospital, with 60 beds, will be able to care for 1,200 patients a year.

Personal.—Dr. Alfred C. Girard, United States Army, retired, has been obliged to give up his plan of practicing in Chicago, on account of the serious illness of his wife, and has returned to the Pacific Coast.——Dr. George E. Baxter was held up and robbed of a gold watch and a small amount of money, September 12.——Dr. and Mrs. Julien E. Hequembourg have returned after a month's trip to the Pacific Coast.

Deaths of the Week.—During the week ended September 15, 548 deaths were reported, equivalent to an annual mortality rate of 13.94 per 1,000. The deaths for the preceding week were 515, and for the corresponding week of 1905, 514. Among the important death causes were: Acute intestinal diseases, 110; consumption, 55; Bright's disease, 43; heart disease, 41; violence, including suicide, 39; cancer, 34, and pneumonia, 30.

INDIANA.

Hospital Contracts Let.—The trustees of the Indiana Village for Epilepsy awarded the contracts for the first buildings to be erected on land recently purchased by the state at New Castle for $14,195.——The contract for building the Southeastern Indiana Hospital for the Insane, Madison, has been awarded at a price of $1,165,885.

Physicians Ill.—Dr. R. W. Martin, Washington County, was removed from his apartments at Lake James to the Wood Hospital, Angola, for the treatment of pulmonary abscess. He is in a critical condition.——Dr. Edward L. Elrod, Henryville, underwent operation September 5 for appendicitis at the Norton Infirmary, Louisville, and is recovering.

Personal.—Dr. Robert H. Ross, Cassville, has been appointed a member of the Howard County Council.——Dr. Albert C. Yoder has been elected secretary of the Goshen Board of Health.——Dr. Chester C. Funk has been elected secretary of the newly organized New Albany Board of Health.——The new board of health of Terre Haute met September 7 for organization and elected Dr. Thomas W. Moorehead president and Dr. Myron A. Boor, secretary.

Medical Colleges Open.—A mass meeting of the students of the Indiana Medical College and the medical department of Purdue University was held September 5 and constituted an informal opening of the fall term of the school. About 100 students were present, and Drs. Henry Jamison, Frank B. Wynn, Edwin F. Hodges, John F. Oliver, Albert E. Sterne, Theodore E. Potter and Alembert W. Brayton addressed the meeting.——The State College of Physicians and Surgeons, in affiliation with Indiana University, opened for regular work September 5, with 40 present. No formal exercises were held. An informal reception for the students was held September 5 in the college building, at which speeches were made by the president of the University, and Drs. Allison Maxwell, B. G. Myers, John F. Barnhill and James H. Ford.

MISSOURI.

Must be Vaccinated.—The board of health of St. Joseph has requested the school board to require all pupils to present certificates of vaccination before entering school.

Milkmen Fined.—Eight St. Louis milkmen were fined, September 12, for selling impure and adulterated milk. Two of these paid fines, one of $50 and the other of $25. The remaining six cases were appealed.

Impetigo, Not Leprosy.—Investigation of the case of supposed leprosy reported to the St. Louis board of health a few days ago, reveals that the case was one of impetigo contagiosa, and that the diagnosis of leprosy was erroneous.

Auditorium Dedicated.—The new auditorium of the St. Louis Medical Society of Missouri, erected at 3523 Pine Street as a permanent home for the society, was dedicated with appropriate exercises, September 15. A full report will appear in next week's issue.

Addition to Hospital.—The board of managers of the Martha Parsons Free Hospital for Children are making an addition to the hospital building of a new wing, to contain several private rooms, two new bathrooms, a reception-hall and dispensary. The addition is to cost about $4,000.

Opens for the Year.—On September 6 the Medical Society of the City Hospital Alumni of St. Louis opened for its winter session by holding a meeting in the clinic-room at the City Hospital. The following officers were elected: President, Dr. Louis H. Behrens; vice-president, Dr. Walter C. G. Kirchner; secretary, Dr. Fred J. Taussig, and treasurer, Dr. Jules M. Brady.

New Quarantine Hospital.—Plans for a new quarantine hospital for St. Louis, to be erected below Jefferson Barracks, to cost $75.000, have been completed by the board of public improvements and referred to the proper committee. The building as proposed is to be constructed of brick and concrete, is to be 160 by 56 feet, and two stories in height with a basement, and is to furnish accommodations for 200 patients.

Physicians in Trouble.—Dr. Harrison Fitzgerald, St. Louis, was fined $10 and costs, for an alleged assault on Mrs. Letitia Landers.——"Dr." Charles De Meyer was fined $100 for practicing without having registered his license with the board of health. This is the ninth conviction which the St. Louis Medical Society has obtained, and nine licenses have been revoked as the result of this crusade of the society.——Warrants have been issued for the arrest of six physicians of Kansas City, who are charged with failure to report births within ten days, as required by the local ordinance.

Untidy Restaurants.—The Kansas City board of health has had printed a yellow card, to be posted in prominent places in restaurants where unsatisfactory sanitary conditions are found. These placards, posted by the local board of health, can not be removed without the authority of the board. The placard reads as follows:

CONDEMNED.

The kitchen in this restaurant is conducted in a dirty and insanitary manner. Food prepared in this condition is dangerous to health.

Board of Health.
St. Elmo Sanders, Sanitary Superintendent.

Personal.—Dr. T. Casey Witherspoon, St. Louis, is about to move to Butte, Mont.—Dr. Charles G. Geiger, St. Joseph, was assaulted by three men, August 29, while going to his residence, and suffered severe contusions.—Dr. George O. Coffin, Kansas City, returned September 2, after a five-months' tour of Germany.——Dr. E. L. Dorsett has been appointed junior assistant physician of the City Hospital, St. Louis, and Dr. Arthur L. Rohlfing has been appointed a vaccine physician of the city dispensary, St. Louis.——Dr. J. Val Koch, St. Louis, late house physician at the Emergency Hospital, has accepted a position as medical examiner in the service of the Burlington System, with headquarters at Burlington, Iowa.

NEW YORK.

Typhoid.—An epidemic of typhoid fever is said to have broken out in the eastern portion of Cortland.

Personal.—Dr. Eugene A. Smith, Buffalo, has returned from Europe.——Drs. Edward J. Meyer, Burt C. Johnson and William H. Mansperger, Buffalo, have gone to Newfoundland.——Dr. Hilton J. Shelley has been elected president; Dr. A. C. Santee, vice-president; Dr. J. La T. Hanmer, secretary, and Joseph B. Hulett, treasurer, of the Middletown Physicians' Club.——Dr. Floyd B. Parke, Elmira, slipped and fell while on a fishing trip near Smithboro. Although he is said to have broken a "bone in his neck," he does not show any evidence of spinal injury.——William S. Cheesman, Auburn, was thrown from his bicycle in a collision with a delivery wagon, August 30, and suffered severe contusions of the foot, and a possible fracture of one or more bones of the ankle.——Dr. Robert Knight, Seneca Falls, has been appointed coroner of Seneca County to fill the vacancy caused by the removal of Dr. Hubert Schoonmaker.——Dr. George McCombs, Frankfort, is ill at St. Luke's Hospital, Utica.

New York City.

A Short Milk Supply.—There is a shortage in the city's milk supply and it is becoming evident that the supply available for New York is unequal to the demand. The price has gone up with the shortage.

Investigation.—An investigation has been ordered into the death of a child, who died in the Children's Hospital, Randall's Island, September 7, from scalds received in a bath tub. The nurse in charge of the ward, it is said, has been discharged for neglect of duty and gross carelessness.

Trachoma on the Increase.—Commissioner of Immigration Watchorn claims that there are as many as 10.000 cases of trachoma among the aliens of this city. It is pointed out that the health board is doing a wonderful amount of good with its school inspectors in finding these cases and advising treatment by the family physician or others.

Infant Mortality.—The mortality among children under 5 years of age in 1881 from diarrheal diseases was 33.3 per 1,000; in 1905 it was 14.9, while this year it is believed that it will be even lower. This is considered a glowing tribute to the efforts of the 31 health inspectors who are inspecting the city's milk and removing that great menace to infants, filthy food.

Rabies Epidemic.—Dr. William L. Wheeler of the Pasteur Institute has declared that there is at present an epidemic of rabies in New York and vicinity and that the disease has not yet run its course. About 400 cases have been treated at the Pasteur Institute and by the board of health since January 1, and as many patients, it is said, have been under private treatment.

Personal.—Dr. and Mrs. Leonard Corning arrived from Europe on the *Oceana*, September 14.——Dr. James E. Kelly is under treatment in Bellevue Hospital for severe scalds of the leg received while on board his yacht, August 28.——Dr. Charles A Gordon, interne at St. Catherine's Hospital, Brooklyn, has resigned to take up private practice. On September 3 the members of the house staff tendered the doctor a complimentary dinner and presented him with a set of surgical instruments.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 1, 374 cases of tuberculosis, with 148 deaths; 149 cases of diphtheria, with 8 deaths; 94 cases of typhoid fever, with 20 deaths; 44 cases of scarlet fever, with 6 deaths; 41 cases of measles, with 3 deaths; 26 cases of whooping-cough, with 15 deaths; 3 cases of cerebrospinal meningitis, with 6 deaths; 12 cases of varicella and 3 cases of smallpox, a total of 746 cases and 206 deaths. There were reported to the sanitary bureau for the week ending September 8, 329 cases of tuberculosis, with 168 deaths; 149 cases of diphtheria, with 16 deaths; 139 cases of typhoid, with 13 deaths; 54 cases of measles, with 3 deaths; 46 cases of scarlet fever, with 3 deaths; 30 cases of whooping-cough, with 9 deaths; 10 cases of cerebrospinal meningitis, with 12 deaths; 9 cases of varicella and 2 cases of smallpox, a total of 744 cases, with 224 deaths.

OHIO.

Milk Licenses Revoked.—On September 4 Health Officer Friedrich of Cleveland revoked the licenses of five milk dealers on the grounds that their premises were insanitary.

Personal.—Dr. and Mrs. John G. Keller, Toledo, sailed from New York September 6, for Germany.——Dr. A. B. Gudenkauf, Sidney, has completed his term as senior interne at the Protestant Hospital, Columbus.——Dr. Myron J. Ewing and family, Findlay, have moved to Oregon.——Dr. and Mrs. George W. Ryall, Wooster, have returned from Europe.——Dr. Samuel A. Conklin, Canton, has gone to California.——Dr. and Mrs. Nathan S. Everhard, Wadsworth, have returned from Europe.

Ill and Injured.—Dr. Charles A. Lerch, Wooster, has entered a hospital in Cleveland for treatment.——Dr. John H. Criswell, representative to the legislature from Marion County, is critically ill at his home in Marion, as the result of a recent fall down the state house steps.——Dr. Charles W. Counts, Troy, was examined for insanity, September 3, and committed to the state hospital.——Dr. Edward W. Walker, Cincinnati, who has been dangerously ill with renal lithiasis, is reported to be improving.——Dr. J. T. Frawley, Dayton, for several years demonstrator of anatomy at the Western Reserve University, Cleveland, who has been ill for several weeks at St. Elizabeth's Hospital with nervous disease, has been taken to a sanitarium in Indianapolis for treatment.

OREGON.

Typhoid at Camp of Instruction.—It is reported that typhoid fever is now prevalent at the camp of instruction, American Lake, and that the government has been obliged to take radical measures for the suppression of the epidemic

Hospitals.—St. Mary's Hospital, Albany, was dedicated September 9 with impressive exercises, in which Dr. Harry Lane, mayor of Portland, and others participated.——A new hospital is to be built at The Dalles, to cost about $20,000. It will be known as The Dalles Sanitarium.

Personal.—Dr. Frank Cauthorn, Portland, is going to Mexico to assume charge of the work of the Interoceanic Railway of Mexico, with headquarters at Puebla.——Dr. F. E. Slater, Winne- Salem, has been appointed physician of the Omaha and Winnebago Indians in Nebraska.——Dr. Francis J. Hall, Portland, sailed from San Francisco, September 4, on his way to China.

PENNSYLVANIA.

The State Society Meeting.—At the business meeting of the Sep- Pennsylvania State Medical Society in Bedford Springs, Read- tember 12, it was voted that the society should meet in were ing in September of next year. The following officers vice-presidents, elected: President, Dr. Isaac C. Gable, York; Ansley, Drs. Charles H. Emmerling, Pittsburg; William B. M. Saltsburg; Philip R. Koons, Mechanicsburg, and Henry Lee Neale, Upper Lehigh; secretary and editor, Dr. Cyrus Theodore Stevens, Athens (re-elected); assistant secretary, Dr. Johns- Appel, Lancaster; treasurer, Dr. George W. Wagoner, Strickland, town (re-elected); trustees, Drs. David H. Donaldson, Erie; William S. Ross, Altoona, and John B. Association, Canonsburg; delegates to the American Medical Will- Drs. Adolph Koenig, Pittsburg; Israel Cleaver, Reading; Philadel- iam T. Williams, Mount Carmel, and Samuel Wolfe, inter- phia. The last day of the meeting was one of the most state esting sessions that was held. Dr. Samuel G. Dixon, ad- commissioner of health, delivered an unusually interesting depart- dress. He reviewed the work of the new state health the ment, which is one year old. Prior to the establishment of towns board of health, he said that half the boards of small health existed in name only. In 1,547 townships no permanent he organization has been provided for, so that one year ago local claims 3,500,000 people in the state were without any made protection to life and health. Every effort has been none by the new department to establish health boards where activ- previously existed, and at the same time to stimulate the report ity of those boards whose work had been neglected. The boards cards and blanks were furnished the different health re- throughout the state in October, 1905, and disregarding the of ports received for the fractional part of that month, a total the 71,254 cases of communicable diseases was reported for per nine months ending Aug. 1, 1906, an average of 7,917 and month. A daily report sheet is made of all rural cases, ad- following this, advisory and precautionary circulars are manage- dressed to the householders concerning the sanitary and ment of cases of typhoid fever, scarlet fever, diphtheria intention other communicable diseases. Dr. Dixon said it is his be to provide health officers for all townships, whose duty it will the to keep their districts clean. Since the establishment of located new department 500 diphtheria distributors have been cer- throughout the state. The collection of birth and death ending tificates began Jan. 1, 1906. During the six months cer- July 1, a total of 60,839 death certificates and 71,596 birth prevent- tificates had been received. He recommended means of state. ing the pollution of the drinking water throughout the society After the address of Dr. Dixon, three sections of the de- adopted a resolution that the organization of the state procedure partment of health as reported, and its method of heartily in educating the public and enforcing existing laws, be for endorsed, and that an expression of appreciation be given co- the excellent results already achieved and the unanimous the öperation of this body be vouchsafed. The report of meeting will be continued next week.

No Vaccination, No Studies.—According to an opinion by Attorney-General Corson, the pupils in private schools in this state are in precisely the same position in the matter of vaccination as those in public schools. They must be vaccinated. The law, he states, is binding on the teachers, principals and superintendents of all schools, public, private, parochial, Sunday or other schools.

Philadelphia.

Personal.—Dr. James A. Kearney has been appointed on the ophthalmological staff of St. Agnes' Hospital.——Drs. Ernest Laplace, George F. English, Gordon M. Christine and Howard E. Hopkins have returned from Europe.——Dr. and Mrs. Lewis Ziegler have returned from a three months' tour of Europe.——Dr. John D. McLean sailed for Europe, September 14.

CALIFORNIA RELIEF FUND.

The following contributions are acknowledged:

INDIVIDUAL CONTRIBUTIONS.

Barnard, A. F., St. Marys, Ga.	$ 1.00

SOCIETY CONTRIBUTIONS.

Chartiers Valley (Pa.) Physicians' S. and P. Association	50.00
Newport County (R. I.) Medical Society	4.00
Washington County (Pa.) Medical Society	25.00

Allegheny County (Pa.) Medical Society, $733.00:

Allen, Charles W.	$ 5.00	Marshall, W. N.	$10.00
Allison, R. W.	5.00	Matheny, A. R.	2.00
Aukrim, L. A.	5.00	Mathewson, F. W.	2.00
Behan, R. J.	2.00	Mathiot, E. B.	5.00
Billings, F. F.	2.00	Mayer, Edward B.	5.00
Bryant, W. C.	5.00	Menzalora, Marion	2.00
Burke, John G.	2.00	Mercur, William H.	10.00
Burroughs, H. S.	5.00	Milligan, Robert	5.00
Cash	25.00	Milligan, S. C.	5.00
Chessrown, A. V.	5.00	Montgomery, E. S.	5.00
Clark, H. E.	2.00	Morris, A. F. B.	2.00
Clarke, Robert G.	5.00	Morrison, Robert	10.00
Conti, G.	5.00	Moyer, I. J.	3.00
Cook, Charles B.	5.00	Murdoch, F. H.	5.00
Daggette, A. S.	2.00	McAdams, William J.	5.00
Davis, F. M.	2.00	McClymonds, H. S.	5.00
Davis, William McC.	2.00	McGeary, W. J.	5.00
Day, E. W.	5.00	McGraw, E. B.	5.00
Diller, Theo.	10.00	McKennan, T. M. T.	10.00
Disque, T. L.	10.00	McKinnon, C. L.	5.00
Donaldson, Walter F.	3.00	Neeley, E. E.	5.00
Dranga, Amelia A.	2.00	Neff, E. L.	5.00
Duncan, J. A.	2.00	Nettleton, D. E.	5.00
Duncan, J. L.	2.00	Newlin, H. S.	5.00
Eaton, P. J.	10.00	O'Brien, W. D.	2.00
Elterich, T. J.	5.00	Pershing, F. S.	5.00
Emmerling, Charles	5.00	Pettit, Albert	5.00
Evans, Edward E.	3.00	Phillips, J. S.	10.00
Ewing, William B.	5.00	Pierce, A. M.	2.00
Ewing, Wm. H.	5.00	Pool, S. N.	5.00
Foster, C. S.	2.00	Reynolds, J. Hervey	5.00
Foster, W. R. and J. S. DeMuth	20.00	Rigg, J. E.	2.00
Foster, William S.	25.00	Ritchie, M. Delmar	5.00
Gaub, Otto C.	5.00	Robeson, W. F.	5.00
Goldsmith, Milton and Luba	2.00	Robinson, W. H.	5.00
Grayson, T. Wray	3.00	Russell, J. M.	5.00
Hagemann, J. A.	5.00	Sadowski, Leon	5.00
Haworth, E. B.	5.00	Sahm, W. K. T.	5.00
Hays, George L.	5.00	Sanes, K. I.	10.00
Hazzard, Thomas L.	5.00	Sankey, T. M.	5.00
Heckel, E. B.	5.00	Silver, David	5.00
Henderson, W. L.	10.00	Simonton, Thomas G.	2.00
Hinchman, W. A.	5.00	Simpson, F. F.	5.00
Hirsch, Leon	5.00	Small, Edward H.	10.00
Hoffmann, Joseph H.	5.00	Soffel, August	10.00
Holt, J. Floyd	10.00	Spiro, M.	2.00
Huselton, W. S.	15.00	Steim, Charles J.	5.00
Irish, William B.	2.00	Stewart, R. W.	25.00
Jackson, C. Q.	5.00	Stewart, W. J.	10.00
Jackson, J. M.	2.00	Stieren, Edward	2.00
Johnston, James I.	2.00	Stillwagon, Charles A.	2.00
Köller, F.	5.00	Stuart, E. C.	10.00
Lichty, John A.	5.00	Thorne, J. M.	5.00
Lippencott, J. A.	20.00	Todd, Frank L.	2.00
Litchfield, L.	2.00	Voigt, Charles H.	25.00
Lyon, A. K.	5.00	Walton, L. S.	5.00
Knox, William F.	5.00	Wechsler, B. B.	5.00
Koenig, Adolph	5.00	Weisser, Edward A.	5.00
Mabon, John S.	10.00	Werder, X. O.	25.00
Macrum, Robert S.	3.00	Wolf, Jacob	5.00
		Zeller, Albert T.	5.00
		Zugsmith, Edwin	2.00

Total	$ 813.00
Previously acknowledged	13,130.00
Grand total	$13,943.00

GENERAL.

Railway Physicians Meet.—At the annual meeting of the Pacific Association of Railway Surgeons, held August 23, in San Francisco, the following officers were elected: Dr. Frank K. Ainsworth, San Francisco, president; Drs. W. A. Magee, San Diego, and William H. Hood, Reno, Nev., vice-presidents; Dr. James P. Dunn, Oakland, secretary; Dr. Frank L. Adams, Oakland, secretary, and Dr. Aaron Schloss, San Francisco, member of the executive committee.

FOREIGN.

Nostrums Evade Laws.—The president of the German *Apotheker-Verein* has called the attention of the German customs house authorities to the way in which the regulations are evaded in respect to certain secret and fake medicines whose importation and sale are forbidden in Germany. They are sent by mail from other countries directly to private customers.

Plague in India.—Consul-General Michael, Calcutta, states that plague has appeared in epidemic form at Verawal, in the Bombay presidency. He states that the prevalence of plague in India is local and that the impression general in western countries that all India is infected is erroneous. For example, in the Bombay presidency and Sind, the section of India which is most affected, only 19 districts, and states and towns out of 108 are reported infected, and of the 19 places 15 furnish cases running from one to eleven.

Medical Bequests from a Physician.—The former professor of legal medicine and toxicology at Montpellier, France, Dr. Jaumes, who died recently, aged 72, made the medical faculty his universal legatee. A fund producing an income of $1,200 was left to found a chair of general pathology and therapeutics, and a prize in legal medicine was also endowed in both the medical and law departments. Another fund representing an income of $2,000 was left in charge for an aged relative, at whose death it reverts to the medical faculty, and $6,000 was presented to the local medical and other scientific societies.

Subscriptions for Schaudinn's Widow.—Committees have been organized in England, as well as in Germany, to solicit subscriptions toward a fund to be presented to the widow of the recently deceased young scientist, Fritz Schaudinn. Although only 35, his name is world famous from his discovery of the spirochete connected with syphilis, and this discovery had been preceded by several others of epoch-making importance in various fields of zoology, especially in the study of protozoa, sporozoa and hematozoa. He succumbed to the effects of an abscess in the pelvis June 22, as was duly chronicled in these columns at the time.

Fifth International Conference on Tuberculosis.—This assemblage convened at The Hague September 6. One of the chief subjects discussed was "Channels of Infection," and among others, Calmette of Lille reported the interesting conclusions of his research in this line. A brief summary of his work will be found on page 972 in this issue. He has found that not only tubercle bacilli, but also insoluble particles of mineral dust and pneumococci are able to pass promptly through the intestinal wall without leaving a trace of their passage, and are carried by the leucocytes to the lung. The accumulations in the lung afterward are more extensive than when the substances are inhaled directly into the air passages. A number of Americans were given a prominent part on the program, and their communications still further emphasized the importance of the work being done in this country.

LONDON LETTER.

(From Our Regular Correspondent.)

London, Aug. 31, 1906.

The Liverpool School of Tropical Medicine.

In view of the alarming nature of the recent reports with regard to the spread of sleeping sickness in Africa and of the fact that an expedition organized by the Liverpool School of Tropical Medicine has been studying this disease for three years in the Congo, Sir Alfred Jones, president of the school, requested an audience of the king of the Belgians in order to confer with him on the subject. Recently the king offered a prize of $40,000 for the person who should discover a remedy and placed a credit of $60,000 in the Congo estimates for the purpose of prophylactic research. He granted the request of Sir Alfred Jones and received a committee from the Liverpool school, which included the president, Prof. Ronald Ross, Professor Boyce, Dr. J. W. W. Stevens, Dr. J. L. Todd and Dr. Evans. The king gave a most attentive hearing to their views on the necessity of preventing the further spread of sleeping sickness. He agreed with Sir Alfred Jones that the question is one of international importance and said that as far as he is concerned he is prepared to do all in his power to relieve both the white and black population from this terrible scourge. He asked the Liverpool school to submit to him a scheme for the prevention of the disease, which will be done as soon as possible. He promised his coöperation if it is in any way feasible or practical. He expressed in high terms his appreciation of the energetic work now being carried on by the school and of the thorough manner in which its expeditions are worked. To show the value he placed on that work he bestowed the Order of Leopold on Professor Ross, Professor Boyce, and Dr. J. L. Todd, the last of whom worked on trypanosomiasis in the Congo Free State for three years.

The Diminishing Use of Alcohol in Hospital Treatment.

Sir Victor Horsley's statement at Toronto that alcohol is being rapidly superseded by milk in London hospital treatment is well borne out by accounts of Guy's Hospital. Not only is the general bill for alcoholic liquors diminishing, while the number of patients is increasing, but the beer bill is actually disappearing. Last year, when there were 8,626 inpatients under treatment, the expenditure on malt liquors was £8 12s 6d. In 1896, when there were 2,000 fewer patients, the bill was double this sum. So small is the amount of beer consumed at Guy's that for the first time in the memory of the management it has been considered not worth while to order the drink by the barrel and bottled beer has been substituted. The hospital patients are now consuming 100 gallons of beer whereas five years ago they consumed 512 gallons. At one time beer was considered an ordinary part of the patient's diet. That idea has now disappeared. The quantity of wines and spirits consumed shows a similar reduction.

The Anti-Malarial Campaign in the Federated Malay States.

The measures taken against malaria at Port Sweetenham, in the Federated Malay States, have been previously reported in The Journal. Dr. Hamilton Wright now reports great success. The port was designed by the government to replace that of Klang, on the upper tidal reach of the river of the same name. Port Sweetenham was jungle covered, flooded daily by tides and had an average rainfall of about 100 inches yearly. The district was a center of the worst forms of malaria. On the formal opening of the port Klang was abandoned and the river closed to sea-going vessels. Severe malaria immediately broke out among the officials and coolies employed on the railway and shipping. A commission was appointed, consisting of doctors, railway and works officials, to devise measures for the suppression of malaria and for the general sanitary improvement of the port. The recommendations of the commission involved an outlay of from $50,000 to $60,000 and were at once accepted by the government. The new port was dyked, drained, leveled and cleared. Since these measures were carried out there has been scarcely a case of malaria, and instead of being an unhealthy and shunned swamp, the port has become a desirable billet.

The Lot of the East End Doctor.

The onerous conditions of medical work in the east end of London are illustrated by the following advertisement which has appeared in the *Times:* "An east end medical man, B. A. (Cantab.), who has never had a day's holiday or a Sunday's rest since he has been in practice, and who has not sufficient capital to purchase a more comfortable living, would like to change his profession. He has taken honors in science, so judges himself capable of filling a post as analytical chemist. Having good credentials and references, he hopes that manufacturing firms, etc., will give his advertisement consideration."

VIENNA LETTER.

(From Our Regular Correspondent.)

Vienna, Aug. 28, 1906.

The Report of the Metropolitan Board of Health.

The annual report of the board of health of Vienna was issued a few days ago and gives a good insight into the interesting changes taking place in the capital, viewed from a medical standpoint. The area covered by the city is about 120 square miles, and the population for 1905 was 1,900,000. The number of medical practitioners was 2,500 active and about 500 not strictly practicing doctors (dental surgeons, hospital staff and purely scientific workers). The hospitals belonging to the state number 11, with about 6,000 beds, besides numerous asylums and children's homes. The number of the in-patients in state hospitals was upward of 60,000, and the number of out-patients was nearly a million and a quarter. The mortality rate in Vienna shows a constant though slight decline, and stands now at 18.7 per thousand. Tuberculosis in all forms is responsible for fully 15 per cent. of all deaths; it gives rise to the sad name of morbus Viennensis. In all other respects the mortality has been lowered with the exception of (perhaps) cancer, which is constantly increasing; perhaps the more definite means of diagnosis is responsible for this increase. The infant mortality was pretty high in some poor districts, but as a rule it hardly exceeded 160 per thousand. This compares not unfavorably with the figures for France, England and Italy. Not a single case of smallpox has been brought to the notice of the board for two years, and the last case seen in Vienna had been imported from Italy by a railway laborer. It is strange enough, that in the city where Kaposi once could make his famous studies on the histology of smallpox eruptions, 35 years later the young dermatologists have to study the disease from pictures and casts, from lack of actual cases. Compulsory vaccination has effected this change. The decline in diphtheria mortality is continuously noted in all cases in private and hospital practice. Two severe epidemics of measles, with a mortality of 8 per cent., and of influenza of the gastrointestinal type with complications in the middle ear, were noted during 1905, otherwise the year was singularly uneventful. The ratio of births was 1 in 950, and the annual increase of the population was 2.2 per cent.

Pharmacology

State Universities and the Public Health.

As will be seen by the following account, copied from the *Bulletin of the Kansas State Board of Health*, vol. ii, No. 7, the School of Pharmacy of the Kansas State University is making an examination of proprietary remedies when requested to do so by the Kansas State Board of Health. This is interesting and gives promise of better things. The departments of pharmacy and chemistry of state universities, supported by state funds, should do their share toward supplying information in regard to the composition of the many remedies proposed for use in the treatment of disease. In the past, these schools and departments have been restricted in their work because of insufficient appropriation, but now that the need of better protection of public health is being appreciated, as is indicated by the enactment of a national pure food and drug law, there should be little difficulty in securing more liberal support; especially, since the passage of this law has made it essential that each state establish control of foods and drugs manufactured for consumption within its boundaries.

The following is the report referred to:

"Several weeks ago a tragedy occurred near Ellinwood, in Barton county, which emphasizes the necessity of a curb on 'The Great American Fraud.' A letter from a physician in Ellinwood gives the pathetic facts in the case:

> "'Louise Closen, aged sixteen months, while playing, secured a bottle containing tablets called "Vesitone," which an older member of the family was taking for bed-wetting. Her father does not know how many tablets were taken by the baby, but he thinks less than ten. Ten minutes after taking the medicine, the child became rigid in every muscle. The father gave it three-quarters of a teaspoonful of Winslow's Soothing Syrup. Two or three minutes later the father attempted to induce vomiting by giving salt-water and mustard, but did not succeed. The child was apparently unconscious from fifteen minutes after taking the tablets. A slight tremor was present during the whole time. Ten minutes after dying the spasm relaxed somewhat. The child died forty-eight minutes after taking the medicine.'

"The vesitone was sent to Professor Sayre of the State University for analysis, which is herewith submitted for the information of the public:

> "'The report of analysis of a remedial agent sent us by the secretary of the State Board of Health, which was labeled as follows: "Vesitone for a Certain Cure of Kidney and Bladder Weakness, etc., manufactured by the Union Medical Company, Edwardsburg, Mich." The question by the secretary regarding this was: "Does the medicine contain poisonous ingredients?" Our examination shows that the tablets contain about one-twelfth grain of alkaloidal material in each tablet, of which a fair proportion is strychnin.'

"The following is taken from the wrapper, which sets forth the remarkable virtues of this nostrum:

> "'It is a combination of a simple and harmless vegetable or herbal remedies that affects in a most wonderful manner the changes desired. Its action is directed so singly and directly to the affected organs that the cure is swiftly and surely accomplished without any shock whatever to the intricate organism of the most delicate child. It achieves its most marvelous results from the fact that it repairs and builds up the affected parts and organs in precisely the same way that they were weakened and broken down by the disease. The ingredients are so carefully chosen and so scientifically blended that there is absolutely no superfluous action, no organ is unnecessarily affected, and there is no irritation whatever from its use. In other words, it acts like a perfect antidote to the disease.'

"This statement, no doubt, was the occasion of the carelessness on the part of the parents in placing the remedy where the child might get it to play with. If this had been properly labeled, as containing a dangerous alkaloid, the parents would probably have exercised all necessary precaution to place it beyond reach of the little one.

"The coming legislature should enact a law compelling the manufacturers of all proprietary nostrums containing poisonous drugs to have the same distinctly set forth on the label, in order that people may be advised what they are taking. The coöperation of the physicians of the state is urgently requested in putting through a measure of this kind."

Character of Medicines Dispensed by Physicians.

The *Western Druggist*, in an editorial in the August issue, calls attention to the fact that though pharmacists are required by law to dispense drugs of a recognized strength and efficiency, there are no restrictions on physicians, who may dispense any and all remedies which they see fit to use. The editorial directs attention to the condition of affairs in Indiana, stating that it is an ideal state for the enforcement of laws in regard to pharmacy, because of the concentration of everything pertaining to medicine, food, hygiene and sanitation under one board and practically into the hands of the secretary, who has absolute jurisdiction over about 600 employés, unhampered by any political considerations. It then goes on to state that over one-half of the physicians in Indiana dispense their own medicines; that too often they procure their supplies from whomsoever will sell them most cheaply, and that nearly every city has one or more "fly-by-night" concerns, which, in order to get trade, undersell other dealers and often sell pharmaceutical preparations, such as elixirs, syrups, pills, etc., for less than the wholesale cost of the materials. Necessarily, the articles supplied by such concerns are liable to be below standard and could not be dispensed by a pharmacist without danger of prosecution and fine. An instance is quoted in which a physician had been giving a patient teaspoonful doses of a tincture of opium which he had purchased from one of these houses—the preparation probably being a weak solution instead of a reliable tincture—on giving the patient the same dose of a standard tincture of opium purchased from a druggist, opium poisoning resulted and the patient nearly died. This forcibly demonstrates, the drug journal says, that dispensing physicians as well as pharmacists should be required to use drugs of standard strength to obviate the danger to patients resulting from inaccuracy in dosage.

We are forced to acknowledge that there is much truth in the drug journal's comments. If physicians dispense their own medicines, they should be certain that what they use are reliable and of standard strength. As they are not able to test the preparations themselves, there is only one way by which physicians can have confidence in the preparations, and that is by obtaining them from reliable houses. But from recent developments, it would seem that it is not always easy to tell what houses are reliable. This much, however, must be admitted: Those concerns whose only claim is low prices for their products are not, as a rule, to be depended on. But if we mistake not the druggist is as likely to buy where he can cheaply as is the physician.

Whose Fault?

A certain pharmacist in San Francisco was, like so many others, burned out by the fire in April, relates the *California State Journal of Medicine*. He resumed business before the smoke had blown away, but on entirely new lines. He decided to run his store, for at least six months, as a purely prescription pharmacy, consigning nostrums, "patent medicines" and sundries to the outside place where they belong. His experience is most interesting. Within the first week a prescription for "antikamnia" was presented. It came not from a quack, nor from an infant in the profession, nor from an ignoramus, but from a physician of some standing in the community! Probably there has never been a more disgracefully but consistently dishonest and fraudulent nostrum foisted on our profession than this deadly "antikamnia," yet here is a physician, presumably a self-respecting gentleman, who continues to help along the fraud! And there were others as ignorant or as lazy who "prescribed"—forgive us the word—other nostrums, to the discouragement of the pharmacist who wanted to do the right. One day a woman came in with a prescription; it was filled and given her, but before leaving she asked for a bottle of a nostrum once popular with a certain class of physicians. Some kind friend had doubtless recommended it, and thus she was aiding (?) the physician. So it went until the shelves of the "prescription pharmacy" look about as much like a department store as though the effort for decency had never been made. The attempt to be clean and decent was defeated by the very men who should have supported it—the physicians!

Correspondence

The Attacks on the American Medical Association.

Detroit, Sept. 14, 1906.

To the Editor:—As a contribution to a correct estimate of the criticisms in Association management, the following observations are presented:

1. There has always been criticism of the American Medical Association management, a criticism varying with its prosperity. In this it falls under the general law of powerful organizations. Someone is always ready, with a club, to hit the head of anyone who rises above mediocrity, so as to reduce him to the general level. Hence, no friend of the American Medical Association need be disturbed by wild criticism, criticism inspired by hostility to its fundamental principles.

2. The medical profession has never learned cheerful submission to the guidance of its leaders. Many are restive under any regulation essential to effective organization, criticising both the committees who make and the officers who enforce them. It seems an American characteristic to be "agin the givernment." Very slowly we are learning the value of medical organizations, and the necessity of meeting the conditions essential to their operation. Nor have we learned to follow any administration long without "kicking." We want change—without reason often—from the President of the United States down.

3. There is an obvious lack of faith, by many, in either the capability or honesty of such management. Grafters themselves, they suspect the management of using its opportunities to feather its own nest. But the vast majority, while not grafters, have suffered so much therefrom, that they are easily led to impute the worst motives to those outside their personal knowledge—hence many grades of criticism.

4. The business of the American Medical Association has grown to such enormous proportions that its success demands a concentrated administration. Twenty-six thousand members can not be consulted when a stock of paper is to be purchased or the weekly edition of The Journal mailed—one head must look after all subordinates, wherever working. He may gather about him a corps of councilors, in addition to those provided by the Association, but he must remain the head or be absolutely useless. To comprehend even a tithe of this business will tax the capacity of one who gives his entire attention thereto. Criticism not based on such intelligent grasp of the Association's business can hardly be classed among the valuable assets of a scientific person. Yet such criticisms are heard too frequently for the reputation of their authors.

5. The organization of the profession into a living unity presupposes a knowledge by each doctor of his place and work therein and his disposition to apply said knowledge. Little criticism of the management's shortcomings will be heard from those devoted to the cultivation of such knowledge and disposition, because all their energies are otherwise employed. The great need of our growing organization is "less talking, more thinking and doing."

6. The establishment of a "clearing-house for medical supplies of unknown composition," in the hands of a working board of acknowledged ability and integrity, has awakened widespread criticism from those whose illicit gains were endangered. But such criticism ought to rejoice every friend of scientific medicine, as it shows that the American Medical Association is committed to an oneness of thought and practice such as will command the world's respect. In this many confess that they "love the Association more for the enemies it has made."

7. In view of these and allied things, what answer can the management make to its critics? It can appeal to the standard of the great Teacher, "by their fruits shall ye know them." It can ask in what respect have we failed to bring forth in its season, each after its own kind? Never before in the world's history has a similar management exhibited results in any sense comparable with that of the American Medical Association—lack of space makes details impossible here.

8. Should outside members desire an investigation of the minute details of The Journal office, the management will welcome the same as an admirable means of answering unintelligent criticism.

9. Is it not possible to plan the general meetings so that all present may feel that they do just a little as a whole? Now each is a member of a Section, in which he may work as he pleases, but collectively, as individuals or sections, they are impotent.

10. Owing to the method of their selection, all members of the House of Delegates do not possess that peculiar knowledge or special training necessary to initiate wise moves for the good of the entire profession, hence its acts must be restricted to (a) selecting the management and (b) supporting its plans for the Association's prosperity. Thus the management, rather than the House of Delegates, is the tribunal to which new ideas relating to the Association should be presented. If it approves, the House of Delegates will confirm, and vice versa. This is the more important, as the management does business every day in the year, while the House of Delegates has only an ephemeral life of four days' yearly.

11. Personally, I have found the management open to receive ideas from members, if presented in a helpful spirit, and ready to adopt them when convinced of their practical value. Hence it is suggested that each critic first present his criticism direct to the management, and later, if this fails, to the membership at large through the journals and societies.

It is hoped that all critics will follow the example of scientific students, viz., make sure they have made a real find in medical sociology by long study and reflection, ere bothering either the Association management or the medical public. So will the management have more time and energy to serve the Association, and the critic save his reputation as a careful student and logical thinker. Leartus Connor, M.D.

Detroit, Sept. 11, 1906.

To the Editor:—Thanks for publishing my communication. The answer of Dr. Happel shows that it was justified. The elaborate answer brought out those very points that the members want to know, and will help to clear up the air, just as I intended it should. A few more explanations will satisfy everybody, and that is just what I want. The only objection I might have to Dr. Happel's answer is his repeated statements, when he compares our Association with a well-managed business. Ours is that to a limited extent. But our members are educated, intelligent beings, interested in every bit of work done, and have a right to know every detail and should not be compared with common, everyday stockholders of business institutions.

I still believe that the right way to conciliate "kickers" is to take the wind out of their sails, and open up everything, so that they can see the error of their views; in fact, that was my whole plea, my sole object. All members have the good of the Association at heart, but disagree about how to accomplish it. That is all. By a quiet, dispassionate discussion they will agree readily. Dr. Happel's answer contained a number of slightly ironical expressions at which I had to laugh. They are when he mentions Dr. Walker's name on several occasions. The fact is that Dr. Walker knew nothing about this communication, had absolutely nothing to do with it. I do not need inspiration from Dr. Walker or anybody else. "I paddle my own canoe." J. H. Carstens.

Greenville, Texas, Sept. 10, 1906.

To the Editor:—I have just read Dr. Carstens' letter in The Journal, September 1, and wish to correct the statements made therein regarding the Walker resolutions. I do not know from whom Dr. Carstens could have gotten his impression that the Board of Trustees or the officers of the Association opposed the Walker resolutions. He certainly could not have gotten this idea from any member of the House of Delegates who was present at the time.

The moment the reading of the resolutions was concluded half a dozen men were on their feet (myself among the rest), trying to make motions. Dr. Jackson of Missouri was recognized by the President and moved to lay the resolutions on the table. This motion was immediately seconded by at least a dozen different men (myself among this number), was put to vote and carried unanimously, without any discussion whatever. I do not think there were more than three or four of the Trustees in the House at the time. Those Trustees who were present had no time or opportunity to express themselves favorably or unfavorably, as the House voted the resolutions down at once without discussion.

I voted to table the resolutions: 1. Because Dr. Walker had misunderstood the President's address when he said in his preamble that preceded his resolutions that he (the President) had indicated that there was a sentiment of uncertainty and distrust relating to the management of The Journal and sundry other matters, when the President had clearly shown in his address that there was no such sentiment except among those who were being shown up by the work being done by the Association, to-wit, the "patent-medicine" people and those working for them directly. 2. Because I considered them unnecessary, uncalled for, and not only a reflection on the Board of Trustees, but an insult to the intelligence of the members of the House of Delegates. The report of the Board of Trustees showed that this body had done its work in accordance with the instructions of the House, and we had full and satisfactory reports before us, and at the time the Walker resolutions were offered the Trustees had just satisfied the most exacting member in this regard.

Any man of ordinary intelligence would know that the rumors and gossip regarding maladministration were put in circulation by those who have an interest in disrupting the organization and causing dissension in our ranks. There could be no excuse in the mind of any intelligent member of the House of Delegates for such an investigation, and the only conclusion which I have been able to come to regarding the object of these resolutions is that they were introduced with the expectation that they would be voted down, thus affording capital for further insinuations. Evidently they are being put to the use for which they were intended. The evident feeling of the House of Delegates was that the resolutions were intended for ulterior purposes.

That the delegates did not want to discuss the matter is shown by the fact that they voted the resolutions on to the table without a word of discussion or objection from any one. Even the author of the resolutions apparently had no desire to discuss or defend them. The attempt to show that the officers or Trustees of the Association opposed the adoption of these resolutions is absolutely contrary to the facts.

C. E. Cantrell.

State Board Examination Statistics.

Columbus, Ohio, Sept. 4, 1906.

To the Editor:—In the statistics published in the Educational Number of The Journal, Aug. 25, 1906, we note some errors that affect the standing of the Ohio Medical University.

In Table A, "Physicians Examined by the State Boards During the Calendar Year 1905," the Ohio Medical University is credited with three examinations in West Virginia, with one failure. The facts are, two graduates were examined there in 1905 and both passed. Joseph Nathan Freilich, who had been a student and failed of graduation, session 1904-05, registered as a graduate and failed to pass the examination.

In the same table the Ohio Medical University is credited with two failures in Ohio. The only basis for this is that two of our graduates who took the examination were refused certificates for an alleged infraction of the rules. Their papers graded respectively 89 and 84 per cent. They took the examination again in the fall, passed with creditable grades and were given certificates. There was no question at any time of a lack of educational qualifications and the fact of certificates being refused does not mean an educational failure. It is not so recorded in the records of the board.

We appreciate fully the difficulties that beset the compilation of statistics and, therefore, do not call your attention to these errors in a spirit of unkindness. We ask, however, that they be corrected and the Ohio Medical University be given her proper standing. Very truly,

James U. Barnhill, Chancellor.
W. J. Means, Treasurer.

[The figures published in the tables referred to are not "errors," as our correspondents state, but are exactly as reported to us by the examining boards. We can not go back of these reports.—Ed.]

Miscellany

A State Board Examination Through a Frenchman's Eyes.—Dr. Ménager, a graduate of the Paris medical school, writes home entertainingly of his examination before the state board at Seattle, his communication being republished in the *Journ. de Méd. de Paris* for August 12. He had learned that the board would accept his replies written in French, on condition of his paying $15 for the necessary clerical work of translating. He relates that the candidates assembled in the "opera house," each with his diploma in a tin box under his arm, and the noise and commotion were indescribable. Finally, the jury took their places, each candidate took the oath, paid in $10 to the treasurer, and was informed in regard to certain formalities to get the rebate on his railroad ticket. A slip of paper with the questions was then handed to each one and they settled down to write. As places could not be found for all the candidates, the members of the examining board gave up their seats to them and sought places elsewhere. The president of the board took off his coat, as it was getting very warm, then his vest, and went around among the candidates in shirt sleeves and suspenders, and his example was gradually imitated by the other members of the board and finally by the candidates This was such a contrast to the formality of such official examinations in France that the two French candidates could scarcely believe their eyes. Occasionally some of the members of the board or a candidate drank a glass of water from the Chamberlain filter in the center of the room, "always the same glass, there was only one!" "Oh, Parisian pontiffs," he exclaims, "where are the robes of state and the academic hoods!!" . . . "After each session the candidates themselves handed in their MS. to the secretary. Occasionally the president of the board would interpolate: 'Dear doctors, there is a vacancy for a physician at such a place; Dr. so-and-so wants an assistant; the widow of Dr. so-and-so wants to sell his office equipment; hotel so-and-so has reduced its rates for you doctors while you are here for this business; you will find good accommodations and a good table there.' Involutarily my memory recalled the formal professors of my days in France with new respect. They seemed very great and very dignified in comparison with the licensing board before me." . . . "The longer I live here, however," he adds, "the less I mind all this. Time is money here, and all the old-fashioned conventionalities take time, and they cut them out here." . . . "The members of the board shook hands with us all, promising a prompt decision, and in three weeks we received back our diplomas—for which they had given us a receipt—and the newspapers published the names of the successful candidates, about 75 out of the total 110. I ask myself whether France would have given so kindly a welcome to an American physician, not speaking French, and armed merely with his diploma from the medical school in Philadelphia, Baltimore or New York!"

Poisoning from Emanations of Phosphin from Commercial Ferro-Silicon.—The manufacture of a compound of iron and silicon by means of the electric furnace has acquired much importance in connection with the steel industries, and large cargoes are now transported from points at which water-power enables the electricity to be cheaply produced to the iron works at which the material is used. The following case of poisoning from this material was reported by P. Lehnkering, Duisburg, Germany, at the fifth annual meeting of the *Freie Vereinigung Deutscher Nahrungsmittelchemiker*, May, 1906: In March, 1906, a Rhine freighter car ried a cargo of wine, soap and ferro-silicon (the latter about 35 short tons) from Mannheim to a point convenient to the Krupp works. The ship had apartments for the crew as usual in the bow and two other apartments aft. The forecastle and one of the cabins were completely protected by partitions from any emanations from the cargo, but the other cabin was located over that part of the hold in which the ferro-silicon was stored, and emanations therefrom were constantly being inhaled by two children occupying that apartment. The children (aged, respectively, 6 months and 2 years and 6 months) became ill and were confined to bed shortly after leaving Mannheim, suffering from giddiness and vomiting. Arriving at Duisburg, after two days' journey, the children were taken ashore and a physician consulted, who made a diagnosis of "meat poisoning." Both patients died the next day. The parents who were on the ship, but who did not remain continuously in the children's cabin, were affected with headache and dyspnea only. A postmortem was made on the body of the younger child. It is stated to have given indications of death by asphyxia, but no detailed information was furnished. Analysis of the material showed it to be crude ferro-silicon which was emitting phosphin, due to the fact that the casks containing it had been exposed to rain shortly before loading. The source of this phosphin is the calcium phosphid produced by the interaction of the phosphorus and calcium present as impurities in the materials used. From his experiments Lehnkering estimated that the total cargo could produce 851 gm. of the gas. Chemical tests of materials from the body of the child gave negative results, but indicated that death was not due to inhalation of either of the carbon oxids. Investigation developed several fatal cases in adults as well as children, and also some cases of death of cats and dogs. In the above-detailed incident, a canary that was in the children's cabin died about the same time. As this product is now in considerable demand and as its method of manufacture (electric) is liable to force its production at a point distant from its application, the danger of its emanations becomes an important matter in ship hygiene.

Keep Up the Fees.—The following is from the *California State Journal of Medicine:* "Just another word or two on the, to the insurance companies, tiresome subject of fees for life insurance examinations. In the first place, remember that our agitation out here is making history. Some of the insurance companies are referring, rather contemptuously, to the fact that 'California and one or two southern states are the only ones in the Union where the cut in fees has not been accepted' in abject silence—presumably, also, with gratitude that the companies are so generous as to pay the examining physician anything. They are howling about 'coercion' and 'trades-union' methods, and the iniquity of requiring that all members of a county medical society shall be required to live up to a certain fee schedule. They also talk about the sacrifice of independence, etc. Do not let many words and high sounding adjectives disturb your natural equanimity. When it comes down to brass tacks, the insurance company must admit that $5 is a small enough minimum fee; indeed, many of the companies have already admitted it. Perhaps some of you take the *Medical Examiner and Practitioner*, a publication primarily intended for insurance examiners. This publication preserved a discreet silence, so far as we could observe, on the very important subject of fees, until after the Boston session of the American Medical Association. Since then the two issues which we have seen contained a considerable amount of matter referring to fees. In the July number is an editorial so skilfully constructed that it may disturb the reader. It attacks the American Medical Association for taking up the insurance fee question, and (mis) states that the Association has entered into an agreement with the companies to recommend Dr. A. against Dr. B. Don't you believe it. The Association is working for the benefit of each and every one of us, and the object of the special committee on insurance which was appointed at Boston, is to secure the readoption of the minimum $5 fee. The journal quoted says that it protests against the Association's trying to force the trades-union idea down the throats of the medical profession. That is all pure buncombe, and the *Examiner* knows it. The Association does not force anything on the profession, or any portion of it. When the Association does anything, it is because the demand has come up to the Association through the county or state organizations. So with this fee question; a number of county and state organizations sent memorials to the House of Delegates at the Boston session, asking the Association to take some action; and the Association acted most conservatively by appointing a committee to confer with the insurance companies and to try to adjust the matter. It is the county societies that are agitating the question, and it is eminently right that they should do so. Who ever said that the fundamental idea of the trades-union was wrong? Who is forcing organization on the medical profession? It is not being forced at all; medical men are coming to their senses and realizing that coöperation is better than conflict, that is all. Stick to your demands for a minimum fee of $5, and do not examine for less: you will win out, if you will have a little patience."

Formaldehyd Disinfection.—D. Base has subjected to experimental investigation the various methods of generating formaldehyd gas for purposes of disinfection, with a view to determine the amount of gas present in the air of the room after the use of the same amount and strength of formaldehyd solution with the various methods. The experiments were made on a room practically, although not absolutely air tight, and on a summer's day when there was little wind. The air was drawn from the room through tubes containing potassium cyanid and the amount of formaldehyd estimated by determining the amount of cyanid remaining by precipitating with standard solution of silver nitrate and determining by titration the excess of silver nitrate. The results of the experiments (*Jour. Am. Chem. Soc.*, August, 1906), show that the various methods tested should be ranged in the following order so far as the amount of formaldehyd present in the air of the room is concerned:

1. Trenner-Lee retort. (Average yield, 46 per cent).
2. Autoclave. (Average yield, 42 per cent).
3. Permanganate-formalin, 300 gm. to 600 c.c. (Average yield, 37 per cent).
4. Sheet spraying. (Yield cannot be estimated).
5. Permanganate—diluted formalin in the proportion of 600 c.c. formalin, 300 c.c. water and 375 gm. permanganate. (Average yield, 32 per cent).
6. Kühn lamp, using 1,000 c.c. methyl alcohol as against 600 c.c. formalin in the other methods.

For simplicity and expedition, the permanganate-formalin method is preferable to all the others. Moreover, the quantity of formaldehyd gas can easily be increased by using more materials, which only requires a larger pail. The sheet-spraying method has the advantage of keeping up a steady supply of the gas so that the quantity at the end of twenty-two hours was only 2.75 per cent. less than that found ninety minutes after closing the room. Base quotes the conclusions of Werner (*Archiv. Hygiene*, 50, 305, 1904), as follows: 1. In all cases an average of 5 gm. of formaldehyd (absolute) per cubic meter (2.15 grains per cubic foot) should be present, with seven hours' action. 2. In exceptional cases, where loss of formaldehyd can not be avoided, or where numerous objects, or a good deal of matter of an organic nature which cannot be conveniently removed, are present in the room, the quantity should be doubled. 3. In all cases where the temperature is below 50° F., it should be raised; 68° to 77° F. is an efficient temperature. 4. The strength of the formalin should be known. Base's experiments indicated that there is danger of the formation of paraformaldehyd in the evaporation of formalin solutions which reduces the efficiency of some methods. On the other hand there is reason to think that the amount of moisture is a factor in the disinfectant action of formaldehyd, which is believed by some to settle in solution on the walls, furniture and other objects and to act in solution rather than in the form of gas. It is suggested that with the permanganate method more moisture might be introduced by the use of a tin or copper still. From the experiments of Base it appears that the amount of formaldehyd present in the air of the room was much lower than that required according to Werner, so that it is probable that the amount of material used in these experiments was too small for absolutely sure disinfection.

Marriages

Carl Groschner, M.D., Toledo, Ohio, to Miss Frieda Schillinger of Detroit, September 4.

Robert Clyde Lynch, M.D., to Miss Amanda Cecile Genin, both of New Orleans, August 23.

Sidney J. Eichel, M.D., to Miss Rose Bonn Reinhardt, both of Evansville, Ind., September 18.

Henry J. Perry, M.D., Boston, to Miss Winifred V. Freeman of Newark, N. Y., September 8.

Oliver Anderson Jeffrey, M.D., Weiser, Idaho, to Miss Maud Jeffrey of Chicago, August 25.

Harriette M. Collins, M.D., and William Arthur Lingham, both of Montrose, Colo., September 1.

John A. Cavanaugh, M.D., Chicago, to Miss Irene Cummings of Rock Valley, Iowa, September 12.

George W. Longenecker, M.D., Elsmore, Kan., to Miss Carrie L. King of Kansas City, Mo., August 13.

Robert Gardner Loring, M.D., Boston, to Miss Susan Douglas Merritt of Springfield, Ill., September 6.

Edwin Stanley Scharff, M.D., Plaquemine, La., to Miss May C. Milliken of New Orleans, September 18.

Clarence B. Norcross, M.D., Clairton, Pa., to Miss Clara Campbell of West Elizabeth, Pa., September 5.

Philip Merriman Egert, M.D., Holland Patent, N. Y., to Miss Allie Adelia Clarke of Utica, N. Y., September 6.

Nina W. Oliver, M.D., Lapeer, Mich., and Clifford S. McIntyre of Kalamazoo, at Walkerville, Ont., August 13.

Orin Russell Witter, M.D., Hartford, Conn., to Miss Gertrude Louise Clinton Hunt of Chaplin, Conn., September 5.

Elbert W. Blakeslee, M.D., Newport News, Va., to Miss Berkeley Ellyson of Norfolk, Va., at New York City, September 7.

Deaths

James H. Peabody, M.D. University of Georgetown, Washington, D. C., 1860; for many years a member of the American Medical Association; a charter member and once president of the Nebraska State Medical Association; some-time president of the Omaha-Douglas County Medical Society; a charter member of Omaha Medical College; emeritus professor of military surgery in the John A. Creighton Medical College; major and surgeon, U. S. V., in the Civil War, during which he served at Carver Hospital, Washington, and in charge of the U. S. Marine Hospital, St. Louis; as medical director of the Platte district of the Department of Missouri and later of the Department of the Platte; and then acting assistant surgeon, U. S. Army; formerly chief surgeon of the C. M. & St. P. Ry., Nebraska division, and consulting surgeon to the Union Pacific Ry.; one of the oldest practitioners of Omaha, died at St. Joseph's Hospital, Omaha, September 10, after an operation for prostatitis, from exhaustion, aged 73.

Everard D. Ferguson, M.D. Bellevue Hospital Medical College, New York City, 1868; a member and once vice-president of the American Medical Association; for three years surgeon at the Clinton prison, Dannemora, N. Y.; a member and first secretary of the New York State Medical Association and afterward president of the association; a member of the Rensselaer County Medical Society and the Medical Association of Troy and Vicinity; founder of the Samaritan Hospital, Troy, and one of the most prominent surgeons of New York State, who last April was tendered a dinner and presented with a loving cup by the Medical Association of Troy and Vicinity, of which he was the founder, died at his home in Troy, Septemer 8, from acute intestinal disease, after an illness of three days, aged 63.

John Theodore Heard, M.D. Harvard University Medical School, Boston, 1859, a member of the Massachusetts Medical Society; assistant surgeon of the Thirteenth Massachusetts Volunteer Infantry in 1861, and in May, 1862, made surgeon of the same regiment, and then successively brigade surgeon of the first brigade, second division, first army corps, surgeon-in-chief of the same division; medical director of the same corps; surgeon-in-chief of the artillery reserve of the army of the Potomac, and finally medical director of the fourth Army corps; who was taken prisoner during the battle of Gettysburg and was made brevet lieutenant colonel, U. S. V., March 13, 1865; a well-known physician of Boston, died at his summer home in Magnolia, Mass., September 2, aged 70.

Charles A. Ruggles, M.D. Vermont Medical College, Woodstock, 1854; a member of the State Board of Health of California for 15 years ; for four consecutive years president of that body; once vice-president of the National Conference of State Boards of Health, and selected to make a special report to that organization on leprosy; a delegate to the Pan-American Medical Congress in Mexico; a resident of Stockton, Cal., for 37 years, died at his home in that city, September 11, from heart disease, aged 77.

Leroy Milton Yale, M.D. Bellevue Hospital Medical College, New York City, 1866; a specialist on orthopedic surgery and pediatrics of New York City; at one time surgeon to Bellevue Hospital; a former editor of *Babyhood*, and an etcher of repute, died suddenly at his summer residence in Quissett, Mass., September 12, from cerebral hemorrhage, aged 65.

William Wilson Varick, M.D. Bellevue Hospital Medical College, New York City, 1876; a well-known practitioner of Jersey City; a member of the Hudson County Board of Health and visiting physician to the Jersey City Hospital, died at his home in Mersemere, Bergen County, N. J., September 8, after a prolonged illness from heart disease, aged 58.

Harvey Link, M.D. Kentucky School of Medicine, Louisville, 1862, a well-known practitioner of Millard, Neb., and for fifty years a practitioner of that place; a pioneer medical man of Douglas County, and at one time a member of the territorial legislature, died at his home in Millard, September 10, after an illness of one month, aged 82.

Melvin E. Page, M.D. Bellevue Hospital Medical College, New York City, 1889; a member of the Medical Society of the State of New York and of the Oswego Physicians' Society; a specialist on diseases of the eye and ear, died at his home in Oswego September 9, three days after an operation for appendicitis, aged 40.

Charles H. Hall, M.D. Pennsylvania Medical College, Philadelphia, 1855; for more than a quarter of a century a leading practitioner of Macon, Ga.; during the Civil War surgeon to the Forty-fifth Georgia Infantry, C. S. A., died at his home in Macon, from heart disease, September 9, after an illness of fifteen months, aged 70.

Edward W. Perkins, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1861; a practitioner of Dinwiddie County, Va., for 43 years; for many years physician to the Dinwiddie County Almshouse, died at his home near Reams Station, Va., September 4, after a protracted illness.

Wansor Wilson Weeks, M.D. Rush Medical College, Chicago, and Hering Medical College, Chicago, about 1898, of Steelton, Pa.; hospital steward during the Spanish-American War, died in the Sister's Hospital, Buffalo, N. Y., July 27, one week after an operation for appendicitis, aged 31.

William C. Hill, M.D. College of Physicians and Surgeons of Chicago, 1902; a member of the American Medical Association, and a prominent physician of Murphysboro, Ill., died at St. Andrew's Hospital, Carbondale, Ill., September 4, after an illness of five weeks, aged 25.

Alva F. Ward, M.D. Western Homeopathic College, Cleveland, 1860; said to have been the oldest practitioner of Jamestown, N. Y., died at his home in that city September 10, after an illness of a few hours, from injuries received in a fall from a street car, aged 72.

Jay W. Sheldon, M.D. Homeopathic Hospital College, Cleveland, 1864, formerly president of the New York State Homeopathic Medical Society, and a member of the State Board of Examiners, died at his home in Syracuse, N. Y., September 7, after a long illness, aged 69.

Frank Harvey Dunbar, M.D. University of Vermont Medical Department, Burlington, 1903, of Swanton, Vt., died at the Mary Fletcher Hospital, Burlington, September 5, after an operation for cholelithiasis, from which he had been suffering for two months, aged 37.

Maurice James Chase, M.D. Vermont Medical College, Woodstock, 1850, for half a century a prominent practitioner of Galesburg, Ill., died at the home of his daughter in that city, September 6, after a brief illness, due to the effects of a fall, aged 80.

Jane Hammond Murphy, M.D. Woman's Medical College of New York Infirmary, New York City, died at the Job Haines Home for the Aged, Bloomfield, N. J., from paralysis of the throat, March 28, after an illness of two or three days, aged 85.

George W. Fellows, M.D. Vermont Medical College, Woodstock, 1851, for many years a practitioner of Kewanee, Ill., died at his home in Creston, Iowa, September 6, from Bright's disease, after a long illness, aged 78.

Cecil A. Butler, M.D. Medical College of Indiana, Indianapolis, 1901, of Manatee, Fla., died at the home of his parents near Huntsville, Ind., from cerebrospinal meningitis, September 6, after a short illness, aged 30.

James F. Kelly, M.D. Medical Department of Western Reserve University, Cleveland, 1896, formerly assistant superintendent of the Cleveland State Hospital, died suddenly in New York City September 4.

William A. Smith, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1881, of Atlanta, Ga., died at the Tabernacle Infirmary in that city, September 8, after an illness of about three weeks, aged 48.

Elmer Beecher, M.D. Castleton (Vt.) Medical College, 1835; state senator from Chittenden County in 1860, died at his home in Burlington, Vt., July 16, from senile debility, after a short illness, aged 95.

William D. Walradt, M.D. Albany (N. Y.) Medical College, 1878; a practitioner of Castleton, N. Y., for more than 25 years, died in the Albany City Hospital, September 6, after an illness of two weeks.

Andrew J. Vann, M.D. Medical College of Georgia, Augusta, 1855, one of the oldest and most prominent practitioners of De Kalb County, Ala., died at his home near Porterville, September 4, aged 74.

John Stolze, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865, of Reading, Pa., a surgeon during the Civil War, died at Lake Geneva, Wis., September 11, after a lingering illness, aged 73.

William A. Smith, M.D. Medical College of Alabama, Mobile, 1881, of Anniston, Ala., died at the home of his mother in Mexia, Ala., September 5, from tuberculosis, after an illness of several months.

Joseph H. Drake, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874, died at his home in Des Moines, Iowa, September 8, after an illness of two years, from heart disease, aged 60.

Charles M. Billings, M.D. New York Medical College, New York City, 1867, one of the oldest practitioners of Nashua, Iowa, died suddenly from heart disease, September 4, at his home, aged 68.

Percy Earnest Wagar, M.D. Detroit College of Medicine, 1894; treasurer of the Island of Negros, P. I., and later transferred to Manila, died in Manila August 12, from hyperpyrexia, aged 36.

James D. Seymour, M.D. Harvard University Medical School, Boston, 1872, a practitioner of Whately, Mass., since 1878, died in a sanitarium in Brattleboro, Vt., September 11, aged 56.

Edgar A. Brooke, M.D. University of Maryland School of Medicine, Baltimore, 1887, formerly of Dillon, Mont., died at Bonner, Mont., September 3, from heart disease, after a short illness.

William C. Hamilton, M.D. Homeopathic Medical College, Philadelphia, 1861, for forty years a practitioner of Philadelphia, died at his home in that city, September 5, aged 63.

Charles B. Flint, M.D. New York Homeopathic Medical College and Hospital, New York City, 1890, died at his home in Watertown, N. Y., September 8, after a brief illness.

C. F. Champion, M.D. Louisville (Ky.) Medical College, 1891, a pioneer practitioner of Enid, Okla., died at Wichita, Kan., September 9, after an illness of several years.

Samuel Fernald, M.D. Hahnemann Medical College, Philadelphia, 1884, died at his home in Philadelphia from laryngitis, July 30, after an illness of nine days, aged 79.

William F. Wallace, M.D. Columbus (Ohio) Medical College, 1880, died at his home in Rochester, N. H., September 5, from heart disease, aged 56.

William H. Clark, M.D. Beach Medical College, Indianapolis, 1886; of Indianapolis; died suddenly in that city, from heart disease, August 30, aged 76.

Marcus P. Anthony, M.D. Atlanta (Ga.) Medical College, 1892, a practitioner of Lake Butler, Fla., died at Blue Ridge, Ga., August 24.

Narcissus Garand, M.D. Toledo (Ohio) Medical College, 1885, died at his home in Toledo September 6, from Bright's disease, aged 66.

Joseph Wolfgarten, M.D. National Medical University of Chicago, 1895, died at his home in Chicago, September 10.

Deaths Abroad.

Isidor Neumann von Heilwart, M.D., formerly professor of dermatology and syphilography at Vienna, died August 31, aged 74. He was professor of these specialties from 1873 to 1903, when he reached the age limit. His manuals on dermatology and syphilis and his great atlas of cutaneous affections are known everywhere. He has trained a number of promising pupils, among whom may be mentioned E. Finger, Rille, Glück, Ehrmann and Matzenauer.

A. Herzen, M.D., professor of physiology at Lausanne, died August 24, aged 67. He was born in Russia, but his scientific work was done in Switzerland. His published works were mostly devoted to the physiology of the stomach and brain, with numerous popular works on physiology, hygiene and school inspection. His pamphlet, "Hygiène et Moralité," has been translated into many languages, and the German translation has been officially commended to students in Germany. He wrote with equal fluency in the five principal languages of Europe.

Queries and Minor Notes

Anonymous Communications will not be noticed. Queries for this column must be accompanied by the writers's name and address, but the request of the writer not to publish name or address will be faithfully observed.

THE REST CURE FOR NEURASTHENIA.

——, Fla., Aug. 31, 1906.

To the Editor:—I would appreciate advice concerning any, or the best literature concerning the Weir Mitchell treatment of neurasthenics. I understand he has no medical work out on this subject. I would appreciate it if you would put me on the right track to get a clear understanding in print of the so-called rest cure treatment.

N. A. P.

Answer.—The so-called "rest cure," employed with such success in properly selected cases of general nervous prostration, especially in thin, anemic, run-down women, and consisting primarily of a judicious application of isolation or seclusion, forced feeding, and passive exercise, is the outgrowth of the early observations of Samuel Jackson. It is to Weir Mitchell, however, that we are specially indebted for the elaboration and scientific systematizing of this line of therapy, and hence it is not infrequently spoken of as the "Weir Mitchell treatment." In 1877 appeared his little book, "Fat and Blood," in which the treatment was first systematically outlined. The book is still the authority on the subject. In 1881 he again elaborated the treatment in his "Lectures on Diseases of the Nervous System, Especially in Women," (second edition, 1885). Dr. Mitchell has discussed the treatment incidentally in many of his later writings. In 1883 the rest cure was strongly commended, elaborated, and made popular in Europe by W. S. Playfair of London in "The Systematic Treatment of Nerve Prostration and Hysteria." These essays of Mitchell and Playfair placed the treatment on a firm, scientific basis. Since this introduction of the rest cure it has undergone many minor modifications at the hands of many physicians, and its literature has grown enormously. The explanation of these numerous modifications lies in the fact that the diseases, such as neurasthenia, for instance, in which faulty metabolism is so obvious, are not all regarded in the same way by all physicians. A general outline of the treatment will be found in any of the larger works on nervous diseases, especially those of Beard, "Nervous Exhaustion;", Mills, "Diseases of the Nervous System;" Wood, the article on "Neurasthenia" in vol. v of Peffer's System; Oppenheim, "Diseases of the Nervous System;" Dana, "Text-Book of Nervous Diseases;" Mettler, "Diseases of the Nervous System;" and others. The current literature on the subject is so extensive that an adequate list of it here would occupy too much space. Our correspondent is referred to the Index to Current Medical Literature which appears in The Journal in the last issues of June and December.

The purpose of the treatment is "to renew the vitality of feeble people by a combination of entire rest and excessive feeding, made possible by passive exercise obtained through the steady use of massage and electricity." Six weeks or more of seclusion from friends and relatives are enjoined. Absolute mental and physical rest in bed is insisted on. Daily massage, bathing (where partial rest is in use) and electricity are administered. Selected, regularly-given food, and appropriate tonics, with symptomatic medication complete the régime. It is obvious that there is possible a wide latitude in the exhibition of this line of treatment. For this reason it is capable of doing great harm as well as great good. It can not be employed by any rule-of-thumb. The principles underlying it and the ends sought for in the particular case in hand must be clearly defined in the medical attendant's mind. This being given and the cases carefully selected, we have in the so-called rest cure of Weir Mitchell a most powerful and successful therapeutic measure.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 15, 1906:

Wales, Philip G., surgeon, on the expiration of his present leave of absence, ordered to Fort Wayne, Mich., for duty.

Woodall, Wm. P., asst.-surgeon, granted ten days' leave of absence.

Torney, Geo. H., deputy surgeon-general, having completed the duty for which he was ordered to Washington, D. C., will return to his station.

Brechemin, Louis, Jr., asst.-surgeon, ordered to proceed from Camp of Instruction, American Lake, Washington, to Seattle, Wash., for duty on the transport *Buford*, en route to Honolulu, H. T.

Crabtree, Geo. H., asst.-surgeon, advanced to the rank of captain from Sept. 5, 1906.

Lyster, Theo. C., asst.-surgeon, left Ancon, Canal Zone, Isthmus of Panama, en route to the United States, on leave of absence.

Noble, R. E., asst.-surgeon, leave of absence further extended 21 days.

Ragan, Chas., asst.-surgeon, the leave of absence granted in S. O. 65, Sept. 3, 1906, Army and Navy Gen. Hosp., Hot Springs, Ark., is extended five days.

Lewis, Wm. F., asst.-surg., ordered to proceed from Chicago, to Fort Sheridan, Ill., for temporary duty.

Ashford, B. K., asst.-surgeon, ordered to accompany Second Battalion, Corps of Engineers, from Camp of Instruction, Mt. Gretna, Pa., to Washington Barracks, D. C.

Murray, Alexander, asst.-surgeon, granted 10 days' leave of absence.

Woodruff, Chas. E., surgeon, granted 15 days' leave of absence.

Porter, E. H., contract surgeon, arrived at Fort Reno, Okla., for temporary duty.

Stearns, C. H., contract surgeon, left Fort Monroe, Va., on 7 days' leave of absence.

Ware, Wm. H., dental surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jenkins, F. E., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Jordan, E. H., contract surgeon, left San Francisco, for Manila, P. I., for duty in Philippines Division.

Baker, C. L., contract surgeon, leave of absence extended one month.

Sanford, J. L., contract surgeon, leave of absence extended one month.

Stone, F. P., dental surgeon, granted leave of absence for 14 days.

Van Kirk, H. H., contract surgeon, granted leave of absence for one month.

Woiven, F. H., dental surgeon, will proceed from Fort Trumbull, Conn. (via Fort Jay, N. Y., for temporary duty for a period of 14 days) to Fort Monroe, Va., for temporary duty for a period not to exceed 2 months.

Mead, J. A., contract surgeon, returned to duty at Watertown Arsenal, Mass., from leave of absence.

Stanton, S. C., contract surgeon, left Headquarters, Dept. of the Lakes, Chicago, on 6 days' leave of absence.

Richardson, W. H., contract surgeon, returned from duty with Field Hospital, Camp of Instruction, Fort Benjamin Harrison, Ind., and assigned to duty to accompany 10th Battalion, Field Artillery, to Michigan City, Ind., for target practice.

Hereford, J. R., contract surgeon, left Fort Caswell, N. C., for Fort Screven, Ga., for duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending September 15, 1906:

Moore, J. M., surgeon, detached from the *Puritan* when out of commission; to *Franklin*, Navy Yard, Norfolk, Va.

Bell, W. H., surgeon, detached *Nevada*, to home and wait orders.

Lumsden, G. P., surgeon, detached *Minneapolis* when out of commission; to home and wait orders.

Payne, J. H., Jr., P. A. surgeon, detached *Arkansas;* to home and wait orders.

Iden, J. H., P. A. surgeon, detached *Florida;* to home and wait orders.

Geiger, A. J., P. A. surgeon, to Naval Hospital, Mare Island, Cal.

Farwell, W. G., asst.-surgeon, detached *Worden* to *Connecticut*.

Lee, A. E., asst.-surgeon, detached Naval Hospital, Mare Island, Cal., to Medical School, Washington, D. C.

Mears, J. B., asst.-surgeon, detached *Minneapolis* to *Worden*.

Percy, H. T., surgeon, detached Naval Hospital, Yokohama, Japan, to home and wait orders.

Minter, J. M., asst.-surgeon, to Naval Hospital, Norfolk, Va.

Huff, E. P., acting asst.-surgeon, to Naval Hospital, New York.

Steele, J. M., medical inspector, to Naval Recruiting Office, Cleveland, Ohio.

Hibbett, C. T., medical inspector, to U. S. R. S. *Franklin*.

Wentworth, A. R., surgeon, to U. S. S. *Louisiana*.

Schaller, W. F., asst.-surgeon, and Longabaugh, acting asst.-surgeon, to the U. S. Naval Medical School, Washington, D. C., Sept. 29, 1906.

Munger, C. B., asst.-surgeon, to Naval Station, Guam, L. I.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 12, 1906:

Geddings, H. D., asst. surgeon-general, granted leave of absence from Sept. 15 to 30, 1906, both days inclusive.

Sawtelle, H. W., surgeon, placed on "waiting orders," to date from Sept. 5, 1906.

Godfrey, John, surgeon, directed to report to chairman of board of medical officers, Washington, D. C., Sept. 13, 1906, for physical examination.

Wertenbaker, C. P., surgeon, granted leave of absence for seven days, from Sept. 15, 1906.

Wickes, H. W., P. A. surgeon, granted two days' leave of absence, from Sept. 11, 1906.

Earle, B. H., P. A. surgeon, relieved from duty at Columbia River Quarantine Station and directed to proceed to Charleston, S. C., and assume command of the service.

Smith, F. C., asst.-surgeon, granted leave of absence for two days, from Sept. 4, 1906, under Paragraph 191 of the Regulations.

Fogarty, J. N., acting asst.-surgeon, granted leave of absence for seven days.

Kimset, W. A., acting asst.-surgeon, granted leave of absence for thirty days, from Sept. 10, 1906

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for ten days, from Aug 14, 1906.

Jackson, J. M., Jr., acting asst.-surgeon, granted leave of absence for four days, from Sept. 2, 1906.

McConnell, A. P., acting asst.-surgeon, granted four days' leave of absence, from Sept. 10, 1906.

APPOINTMENTS.

Dr. William W. Miller, of Tennessee, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

Dr. Robert A. C. Wallenberg, of Michigan, commissioned (recess) as asst.-surgeon, Public Health and Marine-Hospital Service, Sept. 4, 1906.

BOARD CONVENED.

A board of officers was convened to meet at the bureau, Washington, D. C., Sept. 13, 1906, to determine whether or not the physical condition of Surgeon John Godfrey is such as to entitle him to "waiting orders." Detail for board: Asst. Surgeon-General H. D. Geddings, chairman; Asst. Surgeon-General J. M. Rager; Asst. Surgeon-General J. W. Kerr, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the surgeon-general Public Health and Marine-Hospital Service during the week ended Sept. 14, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Aug. 25-Sept. 1, 3 cases.
North Dakota: State, July 1-31, 8 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 21-28, 1 case.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, June 1-30, 177 deaths.
Brazil: Bahia, July 28-Aug. 11, 6 cases, 2 deaths; Pernambuco, July 15-31, 4 deaths.
Gibraltar: Aug. 19-26, 1 case.
Italy: General, Aug. 8-16, 3 cases.
Panama: Colon, Aug. 19, 3 cases.
Turkey: Constantinople, Aug. 12-19, 1 death.

YELLOW FEVER.

Cuba: Habana, Aug. 10, 1 case.
Guatemala: Gualan, 2 cases, 1 death.

CHOLERA—INSULAR.

Philippine Islands: Manila, July 14-28, 126 cases, 115 deaths; Provinces, 968 cases, 704 deaths.

PLAGUE.

Australia: Cairns, July 14-21, 1 case; Sydney, July 7-14, 1 case, 1 death.
Brazil: Bahia, July 28-Aug. 4, 1 case, 1 death; Rio de Janeiro, July 7-15, 2 cases.
Egypt: Alexandria, Aug. 10-14, 3 cases, 2 deaths; Port Said, Aug. 11, 2 cases; Suez, Aug. 11-16, 3 cases, 2 deaths; Garbieh Province, Aug. 13, 1 case, 1 death.
India: General, July 14-21, 959 cases, 796 deaths.
Japan: Formosa, Aug. 1-10, 3 cases, 6 deaths.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11 12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

The President, Lieut.-Col. Albert H. Briggs, N. G., N. Y., in the Chair.

The meeting was called to order by the president, who informally welcomed the association to Buffalo and gave notice that the formal welcome would be extended at a meeting to be held the same evening in the Y. M. C. A. building.

Reports.

The executive council reported the election of members during the year, and submitted the proposed amendments to the constitution providing for the establishment of a class of affiliated members containing the United States pension examining surgeons, the medical officers of the United States revenue service, and of the other government services and other persons interested in military medicine and surgery; providing that the corresponding members should report at the end of each year to the secretary, informing him of any change of address or title, the penalty for failure to so report being suspension, and providing that the honorary members should report to the secretary at the end of each year notifying him of any change of address or location. The executive council also recommended a change in the by-laws whereby the name of the official organ should be changed from the *Journal of the Association of Military Surgeons of the United States* to *The Military Surgeon*, with the subtitle reading, *The Journal of Military Surgeons of the United States.*

During the year 91 members have been added and 9 have died.

Award of Enno Sanders Prize.

The Enno Sanders prize medal was awarded Major James Evelyn Pilcher, the secretary, whose essay was entitled, "The Training of the Medical Officer of the State Forces to Best Qualify Him for Local Service and Mobilization with National Troops." The author summed up the subject as follows:

1. There is need of special study on the part of the medical officers of the National Guard and state troops to fit themselves for work in their own forces, not only in local service, but in connection with the national services in time of war and in peaceful mobilization.

2. The most essential feature in the effort to secure harmonious action with other state troops and with the national forces is uniformity of training, particularly along the lines of medico-military administration.

3. The most important element of the medical officer's training is confessedly the highest grade of efficiency in military hygiene, medicine and surgery. But of great importance and overlapping these to a considerable degree is a familiarity with medico-military administration, without which, indeed, the proper practice of military medicine, surgery and hygiene will be impossible. The medical officer must become deeply acquainted with the proper methods of selecting recruits; he must be able to control his men, commanding respect, not only of the hospital corps, but of the sick under his direction; he must be an authority beyond dispute on camp location and organization; he must understand the principles and practice of field hospital construction and composition; he must have experience in the instruction and drill of the sanitary soldiers, and he must be prepared to protect his service and assist his comrades by a thorough acquaintance with the records of his department.

4. To crown all these and to add to his efficiency in every respect, there must have developed in him an enthusiasm based on loyalty to the nation and interest in his profession, which shall impel him at all times to labor unceasingly and incessantly for the good of the service which has honored him with its commission.

By pursuing, then, these lines of work and thought, the medical officer of the National Guard of the United States will find his department *semper paratus* for all the emergencies of peace within the limits of the commonwealth which he is serving, and ever ready, in case the dark clouds of national or international conflict should overshadow the horizon of the nation's glory, to at once unite and coalesce with the forces which the mother country has maintained as a nucleus about which all military operations shall center.

Public Meeting.

The public meeting to welcome the association was held in the auditorium of the Young Men's Christian Association building on the evening of September 11, chairman of the committee on arrangements, Hon. Herbert P. Bissell, presiding. Addresses of welcome were delivered on the part of the city of Buffalo by the acting mayor, Hon. Louis P. Fuhrman; on behalf of the medical profession by Major Roswell Park; on behalf of the state of New York by Hon. Rowland B. Mahaney, and on behalf of the Association of Military Surgeons of the United States by the president of the association, Lieut-Col. Albert H. Briggs.

Foreign Delegates.

The foreign delegates were then presented with the insignia of the association by the secretary, who accompanied each presentation with appropriate remarks.

The following delegates to the association from foreign countries were present:

China—Surgeon-Captain Ho Ken Yuen, Imperial Navy; Surgeon Major Tchau Shi Wa, Imperial Army, and Surgeon-Captain Kai Sha Chow, Imperial Army.

Mexico—Major Alejandro Ross, C.M.-M.M.

Great Britain—Major Arthur Gaskell, staff surgeon, Royal Navy; Lieutenant-Colonel William Grant Macpherson, Royal Army Medical Corps and Colonel William John Read Rainsford, Royal Army Medical Corps.

India—Major W. H. W. Elliot, I. M. S.

Guatemala—Colonel Ramon Bengoecha, chief of the Medical Department of the Army.

Nicaragua—Surgeon-General J. Lysandro Medina.

France—Colonel Henri Mareschal, chief surgeon of the garrison of Paris.

Canada—Lieutenant-Colonel George Henry Porke and Major W. H. Delaney.

Italy: Lieutenant Giacomo Tartaro, surgeon Royal Army Reserve.

Election of Officers.

The following officers were elected: President, Col. Valery Havard, assistant surgeon-general, U. S. Army; vice-presidents, Rear Admiral Presley M. Rixey, surgeon-general U. S. Navy; Col. George Tully Vaughan, late U. S. P. H. and M. H. Service, and Col. Joseph K. Weaver, N. G. Pa., Norristown, Pa.; secretary, Major James Evelyn Pilcher, U. S. A., Carlisle, Pa. (re-elected); assistant secretary, Capt. J. Carlisle De Vries, N. G. N. Y.; treasurer, Major Herbert A. Arnold, N. G. Pa. (re-elected).

After discussion of Atlantic City, Denver, Pittsburg, Milwaukee and the Jamestown Exposition, it was decided to hold the 1907 meeting in Norfolk, Va., at a date to be fixed by the executive council.

(To be continued.)

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Sixteenth Annual Meeting, held at Salt Lake City, Utah, Aug. 30 Sept. 1. 1906.

(Continued from page 885.)

Principles and Mechanics of Abdominal Drainage.

Dr. R. C. Coffey, Portland, Ore., presented the following deductions: "1. Fluids are rapidly absorbed by the peritoneal cavity; crude or granular matter only through lymph spaces at the diaphragm. 2. A drainage tract always contains microorganisms. 3. Any form of drainage is isolated from the free peritoneal cavity in six hours. 4. A drain causes a flow of serum by irritation which is profuse in proportion to the amount of drain within the peritoneal cavity. 5. This flow is delivered to the surface only in proportion to the amount of drainage passing out through the wound. 6. Serum and pus accumulate around drainage only when the drainage at the outlet is less than that contained inside, or is not sufficiently extensive to deliver the fluid before it is filled with débris and granulations. 7. Blood and pus are never found in the neighborhood of a properly applied drain after 48 hours. 8. The flow of serum dissolves blood clots and thick pus, leaving the gauze clean and white by the time it ceases. 9. The flow of serum does not occur to any extent in formed abscess cavities; therefore, blood and pus are not well drained from them by capillary drainage. 10. A tube will drain a walled cavity and will drain the peritoneal cavity under the influence of gravity, but not otherwise. 11. A single tube is much more likely to be choked by intestines and omentum than two or more parallel tubes. 12. Gauze drains in proportion to the amount coming through the opening, and will only drain when it is in contact with dressings or clothing, or when its outside end is at a lower level than the cavity to be drained. 13. Small gauze drains are likely to be choked at the exit, unless covered by a tube or protective. 14. There are three cavities of the peritoneum to be drained, the right and left flank separated from each other by the spinal column, and the pelvis separated from the flanks by the psoas muscles. Either flank holds more fluid, and is an inch deeper than the pelvis, and its bottom is more than four inches below the top of the divide made by the psoas muscle on which the appendix rests. The body must be elevated to an angle of 51 degrees to bring the bottom of the flank on a level with the divide, and 60 or 70 degrees to properly drain by the Fowler position. The entire cavity can be drained by gravity by a lateral position. 15. Drainage should always be in contact with the parietal peritoneum on one side. A line drawn from the center of the perineum to the tip of the shoulder passes through the pelvis and deepest part of the flank and on the right side through the appendix. These diagonal lines we call the right and left drainage lines. Drainage should always be placed external to these lines or just above the pubic bone. 16. If only one of the three cavities is infected, it alone should be drained."

Massage of the Heart in Apparent Death from Anesthetics.

Dr. D. S. Fairchild, Des Moines, Iowa, reported a case of massage of the heart in apparent death from anesthesia, and reviewed the literature of 24 other reported cases. He spoke of the time after arrest of the heart when positive results might be expected. He discussed the best route for approaching the heart for the purpose of massage.

Technic of Laminectomy.

Dr. Harry M. Sherman, San Francisco, discussed the relative merits of the simpler form of the operation as contrasted with the osteoplastic method, endeavoring to answer the question: Is the complex operation, with its sacrifice of motor nerves and its cutting of muscles for the sake of saving the laminæ, worth while? In general, this question was answered in the negative, but certain conditions were pointed out, as in the case of pressure paraplegia of vertebral tuberculosis with a right angle kyphos, in which the preservation of the laminæ, as a support for the longitudinal spinal muscles, might be essential for the complete and permanent relief of pressure on the cord, and in such cases the osteoplastic method might find a satisfactory use.

Peripheral Versus Intracranial Operations for Tic Douloureux.

Dr. Charles H. Mayo, Rochester, Minn., said that one of the most distressing diseases is facial neuralgia. More methods of internal, external and surgical treatment have been advanced for its cure than for any other condition. In 1896 Dr. Abbe reported a case in which he interposed mechanical obstruction to the reunion of the nerve by placing rubber tissue over the foramina of exit of the nerves in the skull. For nine years Dr. Mayo has employed silver screws to obstruct the infraorbital foramen after torsion, removal of the nerve by the Thiersch method. For a less period the inferior dental canal has been obstructed with equal success. While not as effectual as the intracranial operation, because of the numerous branches, still the method controlled the two branches most commonly affected. It can be employed on many who would not submit to the intracranial operation, with its attendant mortality and occasional failures to cure.

Aneurismal Varix.

Dr. J. Clark Stewart, Minneapolis, reported an interesting case of large aneurismal varix of the forearm, and exhibited photographs. He presented a history of such cases, and described the operative methods used. He likewise discussed the proper treatment of the lesions in the upper and lower extremities, and considered the radical difference in the conditions present.

Sarcoma of the Male Breast.

Dr. F. Gregory Connell, Salida, Colo., reported this case. The patient was 25 years of age. The mother had both breasts removed for cancer. There was no history of traumatism. The tumor started in a congenital discoloration of the skin near the right nipple, and in three months had grown to the size of a walnut. The breast and axillary glands were removed. The healing of the wound was perfect. Two months after discharge the patient presented himself for examination, and a keloid was found to have developed in the cicatrix. When last seen, six months later, the keloid was smaller, and there was no evidence of a recurrence of the sarcoma. Histologic examination showed the tumor to be a spindle-celled sarcoma.

Malignant Complications and Degenerations of Uterine Fibromyomata.

Dr. Charles W. Oviatt, Oshkosh, Wis., presented the following conclusions: 1. Women suffering from fibroid disease of the uterus incur a greater risk in allowing it to remain than in having it removed by a competent surgeon. 2. The fact that adenocarcinoma of the body of the uterus occurs much more frequently in cases of fibroid tumor than does cancer of the cervix, leads him to believe that there must be a direct causative relation between fibroid tumors and cancer of the body of the uterus. 3. Every fibroid tumor removed should be subjected to careful laboratory study, no matter what its gross appearance.

Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy.

Dr. Leonard Freeman, Denver, after detailing 14 cases on which he had operated for tuberculosis of the kidney and bladder, drew the following conclusions: 1. Tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily. 2. It is usually at first unilateral. 3. Medical or climatic treatment is unsatisfactory in most cases. 4. The ideal treatment is early nephrectomy, providing there is one sound kidney. 5. Tuberculosis elsewhere, unless far advanced, is not a contraindication to operation. 6. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy, and can seldom be cured without it. 7. The demonstration of tubercle bacilli in the urine often fails. 8. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal with time.

Dr. A. H. Kerr, Salt Lake City, reported a case of ureteral cystostomy or uretero-vesical implantation.

Operative Procedures for Chronic Urethritis.

Dr. A. C. Stokes, Omaha, discussed the incurable gonorrheas in the male. He gave the reasons why this disease is so often not cured. He spoke of the havoc of gonorrhea in civilization. A minute anatomic and pathologic diagnosis must be aimed at, and having once arrived at a definite diagnosis as to the position of the infection, we should resort to the methods that are most applicable to its treatment. He spoke of external urethrotomy in its relation to chronic gonorrhea, and of operating for vesiculitis, prostatitis and old infections in the vas deferens. He reported 4 cases where chronic gleet was treated by external urethrotomy and cauterization of the prostatic follicles and urethra. He discussed vasotomy in the treatment of infections of the seminal vesicles and epididymis. He described the technic of the latter procedure and reported 5 cases in which he had operated.

The following papers were also read: "The Control or Elimination of Pneumothorax During Operations on the Chest" (with lantern slides), by Dr. Dudley Tait, San Francisco; "Abdominal Contusions," by Dr. William Jepson, Sioux City, Iowa; "A Point in the Technic of Ligating the Appendix in Appendectomy," by Dr. Jabez N. Jackson, Kansas City, Mo.; "Intestinal Suture," by Dr. A. F. Jonas, Omaha; "Complications and Sequelæ of Prostatectomy," by Dr. J. N. Warren, Sioux City, Iowa.

The election of officers was reported in The Journal, September 8, page 788.

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario Aug. 21-25, 1906.

(Continued from page 886.)

SECTION ON STATE MEDICINE.

Hygiene of the Home.

Dr. John J. Cassidy, Toronto, a member of the Ontario Board of Health, offered in his paper many practical suggestions for the perfection of the hygiene of the home. The first requirement is a dry site, and the ideal situation is one in which the sunlight may penetrate at some time during the day into every room of the house. The basement should extend beneath the entire house, with windows extending nearly to the top of the wall, so that space may be given for the expulsion of gases arising from the decaying and putrefaction that is continually going on in the soil. A floor of six inches of closely packed clay forms a good resistant and is more impervious to the passage of gases than solid concrete. Moderately hard well-burned brick is, he believes, the most suitable material for outside walls, and a coating of paint will prevent rain from soaking in the brick. Good plaster is the best for walls, and wall paper should be avoided. Kalsomine offers much less obstruction than paint or wall paper to the air. Ample openings for light and a good circulation of air are needed; all doors and windows should extend high up toward the ceiling. The advantage of a chimney in a room which facilitates the escape of impure air and the entrance of fresh air was referred to. The basement and the kitchen, which are in a way the most important parts of the dwelling, should naturally receive more frequent attention than the living rooms, where presumably organic filth is less likely to gain access. Cleanliness in the kitchen is necessary, sewage should be kept under cover and frequently removed, and the rooms should be ventilated automatically. The bed chamber should contain no carpets, but only a washable rug near the bed. The waxed floor should be mopped every morning with a damp cloth, and the walls painted with white enamel paint. The window curtains should be of cotton or some washable fabric, and frequently laundered.

Medical Inspection of Schools.

Dr. Helen MacMurchy, Toronto, referred to the government indorsement in Great Britain of the medical inspection of schools and pupils, which the country had consequently adopted. The day had come when there must be the greatest possible coöperation between the teacher and the medical profession, and it was important that the medical inspection should be made by qualified medical practitioners who should be properly remunerated. Inspectors need special training and many of the colleges are now giving instruction along this line. The first step in advancement consists in the modification of existing conditions, and both the pupil and the parent should be impressed with the importance of cleanliness, pure food, pure air and good health. Children of the poor should get enough to eat to bring about that development necessary for good health and consequent good citizenship. The importance of hygiene can not be overestimated.

Mr. William Scott, B.A., principal of normal schools, held that compulsory school attendance must necessarily be supplemented by a compulsory school inspection law for effective dealing with infectious diseases. He held that it was not the place of the teacher to perform the medical inspection; the teacher can do much toward making the pupil more careful, ambitious, truthful and earnest in intellectual, moral and physical conditions, but the teacher should be well trained to understand the significance of a sound mind in a sound body. Medical inspection will do much to aid the teacher, not only by supporting his authority, but by suggestions which will assist him to maintain the health of the pupils under him at the highest possible standard. He said that an educational campaign is necessary, not only to deal with infectious diseases, but to improve those physical defects, which experience has shown to be present in a large percentage of school children, and which can be minimized, if not entirely removed. He emphasized the importance of the education of the teacher along those lines which should enable him to observe significant hygienic conditions.

Water-Gas Poisoning.

Prof. John Glaister, Glasgow, discussed the questions of the risks to health and life from the recent adoption by municipalities of carburetted gas, as a substitute for, and an admixture of the common coal gas. In Great Britain, the problems arising from the use of water gas resulted in the referring of the question to a Department Commission, and its findings in the circumstances were declared to be both reasonable and fitting. Should the adoption of carburetted water gas become general, it should be under state regulations, such as pertain in the Public Health Act to the internal drainage systems in our homes. It would be most desirable that before such gas be put in a new building, the joints and fixtures should be inspected and that in all old buildings, the existing fittings should be initially inspected and that in all buildings used for dwelling places, the power of periodical inspection by the gas authorities should be given and its exercise enforced on similar lines to those given the water companies.

International Sanitary Protection.

Dr. Peter H. Bryce, Ottawa, Chief Medical Officer of the Department of the Interior, opened this discussion by a paper on "International Coöperation in the Inspection of Emigrants and Immigrants." He referred to the problems arising from pauperism, war, commercial disaster, industrial revolutions in European countries and spoke of the continued flow of emigration to Canada. Medical inspection is most imperative and the practical coöperation which exists between England, Canada and the United States, have resulted in the development of a most desirable class of immigrants. A wise recommendation to be urged by representative medical men is that which will require specific international medical inspection in connection with immigration, and the rigid recognition and enforcement of laws regarding the influx of undesirables.

State Control of Health.

Dr. Jennie G. Drennan, St. Thomas, pleaded for a fuller recognition, by the state, of its duty toward the health of the people. She believed that in the scope of its health department should be included all hospitals, asylums and public institutions. The public should be taught how to live and if the state were as anxious to preserve health as it is to preserve peace, this desirable result would soon be attained. She deplored the tendency on the part of the public to trust its healh to "patent medicines," and contended that men had been taught everything else but how to live properly. She emphasized the responsibility of the state in this direction, and urged that those having to do with the preservation of the public health should constitute an organized army of men and women made fully acquainted with their official duties by special educational courses.

Surgeon Rell M. Woodward, U. S. P. H. and M.-H. Service, Boston, outlined what had been done on the part of the United States in the medical inspection of immigrants, and described the application of rigid methods of sanitary inspection which were instituted at Rotterdam. In this inspection hot baths are given by the attendants, as the emigrants are often totally ignorant of baths and their purposes; after this, the hair of the male emigrants is cropped, and that of the female emigrants carefully combed and inspected. After a detention of five days, if no disease of any kind develops, the emigrants are allowed to proceed on their journey. Dr. Woodward believes that more attention should be given to immigrants passing through a country and that greater power should be given to the health officers of the country of destination.

Food Inspection and Supervision.

Mr. A. McGill, B.A., assistant analyst of the Inland Revenue Department, Ottawa, in a paper entitled, "Some Remarks on Food Preservatives with an Idea of Legislation in the Matter," remarked that the presence of a preservative in a product should always be announced on the label, and that the discrimination of the purchaser to protect himself by this publicity alone can not be trusted. He mentioned salt, sugar, wood smoke and alcohol as being the least injurious of the preservatives commonly used. In his report on preservatives, compiled for the dominion government, he recommended:

(a) That the use of formaldehyd or formalin, or preparations thereof, in foods or drinks, be absolutely prohibited, and that salicylic acid be not used in a greater proportion than one grain per pint in liquid food, and one grain per pound in solid food; its presence in all cases to be declared.

(b) That the use of any preservative or coloring matter whatever in milk offered for sale in the United Kingdom be constituted an offense under the Sale of Food and Drugs Acts.

(c) That the only preservative which it shall be lawful to use in cream be boric acid, or a mixture of boric acid and borax, and in the amount not exceeding 0.25 per cent., expressed as boric acid; the amount of such preservative to be notified by a label on the vessel.

(d) That the only preservative permitted to be used in butter and margarin be boric acid or mixtures of boric acid and borax, to be used in proportions not exceeding 0.5 per cent., expressed as boric acid.

(e) That in the case of all dietetic preparations intended for the use of invalids or infants chemical preservatives of all kinds be prohibited.

(f) That the use of copper salts in the so-called "greening" of preserved fruits be prohibited.

(g) That means be provided, either by the establishment of a separate court of reference or by the imposition of more direct obligation on the local government board to exercise supervision over the use of preservatives and coloring matter in foods, and to prepare schedules of such as may be considered inimical to the public health.

The author believed that the injuries produced by most preservatives is to the kidneys, and that a goodly proportion of the diseases of the kidneys may be due to this cause.

Dr. Henry L. E. Johnson, Washington, D. C., in his paper on "National Supervision and Standardization of Food," held that the question of pure food is of equal importance with that of good health and that this factor is being recognized, as is evidenced by the efforts of the hygienists, along the lines of the protection of the individual and national health. He pointed out the dangers of adulterated foods and "patent medicines" and the necessity of collecting, under a system of uniform legislation, all the duties which could possibly be assigned to boards of public health. He urged the importance of national coöperation in establishing a system of food standardization and the improvement and regulation of the conditions surrounding the preparation, production and sale of every form of food.

Sailors' Food.

Mr. William Spooner, M. R. C. S., Liverpool, pointed out that a system of inspection has done much to remove the ills connected with the rations of the sailor, but that there are still many conditions existing which need improvement. The most important fact, in his idea, was that the human organism demanded variety, and that sufficient variety was not provided as a rule. The tendency was toward the excessive use of animal food, which did not conduce to the best health conditions. The speaker believed that fresh vegetables should be placed on every ship sufficient to last for as great a portion of the voyage as possible. He discussed at length the new compulsory food scale developed along proportionate lines.

Preservatives in Food.

Prof. John Glaister, Glasgow, expressed the opinion that the use of preservatives in food is objectionable. The recognized use of certain preservatives, however, is a proof of their usefulness and he, therefore, suggested that there should be a classification of preservatives, into two classes, one of which would contain those which were harmless in operation and effect, and the other those which were harmful. He was inclined to think that a little more consideration might be paid to the effect of cold storage on food, as in many cases, meats chilled before rigor mortis has set in, putrefies very rapidly when taken out of cold storage.

(To be continued.)

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

Eleventh Annual Meeting, held at St. Clair, Mich., Aug. 30-Sept. 1, 1906.

(Concluded from page 886.)

Spontaneous Rupture of the Esophagus.

Dr. John O. McReynolds, Dallas, Texas, reported a case of spontaneous rupture of the esophagus, which occurred about four o'clock in the morning, the patient dying from hemorrhage in a few hours. There was no hematemesis at any time. The autopsy showed a rupture three inches long in the lower third of the esophagus, the left pleural cavity, the mediastinal space and stomach being filled with dark grumous blood. Microscopic sections showed that the esophagus was very thin-walled and that the wall had been destroyed by a process of ulceration.

The Use of Paraffin.

Dr. Secord H. Large, Cleveland, Ohio, in a paper on "The Safest Method of Using Paraffin," described the technic of subcutaneous injections in saddle-back noses, in atrophic rhinitis, and in deformities after sinus operations. He detailed the causes of failure, the high and low melting points of paraffin, and outlined the dangers of the use of this substance and how to avoid them.

Spray and Electrocautery Useless.

Dr. Edward J. Bernstein, Kalamazoo, Mich., in a paper entitled "The Comparative Uselessness of the Spray and Electrocautery for the Rhinologist," stated that in his hands he had been using the spray steadily less and less as a means of cleaning the nose, and that he had long felt that it was futile to expect cure of any nasal conditions by the spray. He stated also that he had not used the electrocautery for ten years and could think of only the smallest possible number of conditions in which it might be used in preference to the knife. He believed that much of the harm assigned to rhinology may be traced to the fact that almost every physician's office in the land is supplied with a spray apparatus, with which physicians, without regard to pathologic conditions, attempt to treat nasal affections.

Treatment of Acute Dacryocystitis.

Dr. Lee Masten Francis, Buffalo, N. Y., stated that in most cases of acute dacryocystitis, stricture of the lachrymal duct is the causal factor. The success of the treatment depends on rapid control of pus and dilatation of the stricture. It is important to avoid lacerations which may be followed by stricture. Experiments have shown that antiseptics may be driven into the lachrymal sac by the use of inunctions. Pus formation may be controlled by drainage through the canaliculi, by gentle upward massage, by ice compresses and by inunctions. The author regards the probe as invaluable, but it should not be used until the pus has nearly disappeared and the acute inflammation subsided, and then only with extreme care.

Should the Antrum be Opened in Mastoid Operation?

Dr. George F. Scott, Buffalo, N. Y., remarked that mastoid operations are performed by all sorts of physicians who always look for the antrum. After the ear has become dry, but the cells still remain affected, the antrum will be found dry also. There is no need to open it. With proper care, it is not at all difficult to select those cases which need antrectomy or the modified Schwartze operation.

Evacuation of the Tympanic Cavity.

Dr. Percy Friedenberg, New York City, claimed that aside from the operative management of such grave complications of otitic disease as sinus thrombosis and brain abscess, the most practical advance in the otology of the present day has been in the recognition of the importance of early paracentesis of the tympanum and free drainage in acute otitis, as a preventive of mastoid involvement. Any measure which will aid drainage will be welcomed. For a number of years the author has made it a routine measure to aspirate the middle ear by suction through a sterilized glass tube immediately after paracentitis. By this means a dram or more of bloody or purulent fluid will be brought out, where otherwise a much smaller quantity would be obtained. By this procedure, the incision in the tympanum may be kept from premature closure and a second paracentitis thereby may be avoided. This treatment is free from the dangers of catheterization or Pollitzeration, which increase intra-tympanic pressure and may force septic matter into the mastoid cells. Furthermore, by causing a partial vacuum, it encourages depletion of the mucosa of the middle ear and flushes out the aural cavity.

Oral Tuberculosis.

Dr. Thomas E. Carmody, Denver, described the channels of infection in tuberculosis of the mouth; primary and secondary infection and their relation to laryngeal and nasal lesions, and the influence of age, sex, occupation and personal habits. He then gave in detail the tissues most often affected with difference in lesions, and gave a description of the surgical, medical, curative and palliative treatment.

Is Laryngeal Tuberculosis a Primary Infection?

Dr. Lorenzo B. Lockhard, Denver, averred that the absence of pulmonary disease does not of itself establish the primary nature of tubercular laryngeal disease. Lymphatic involvement, especially of the tonsils and cervical glands had been proved. While the dependence of some laryngeal cases on disease of the tonsils and cervical glands had been demonstrated, a few cases had been recorded, substantiated by autopsies, in which the larynx and lungs have been found normal, and in these cases no reference has been made to the condition of the lymphatic system. There is no inherent peculiarity of the laryngeal mucosa or its secretions which should prevent it from becoming primarily infected, but as yet this occurrence has not been conclusively proved, despite the fact that tuberculosis is the most common of all laryngeal diseases.

Sarcoma of the Nose.

Dr. Robert Levy, Denver, reported a case in which the pathologic findings were verified by indisputable authority. The tumor was completely removed by intranasal operation. Recurrence did not yield to surgical measures. The development was coincident with the appearance of multiple sarcomata of the legs. After the cessation of all treatment, the nasal tumor disappeared completely, and some of the tumors of the legs also disappeared, but not all nor completely. The tumors of the leg returned and continued to grow until the patient died. At no time after the disappearance of the nasal tumor was there a return of the growth in the nose. The author then discussed the question of spontaneous disappearance of malignant growths.

Removal of the Faucial Tonsils.

Dr. Ovidus A. Griffin, Ann Arbor, Mich., stated that unanimity of opinion as regards the advisability of the complete removal of the faucial tonsils does not obtain. He gave the anatomy and physiology of the tonsils, and the indications for their removal, and stated that the extirpation should be as complete as possible. He then described an original scissors, by the use of which separation of the pillars and complete removal of the tonsils could be effected.

Eyestrain and Crime.

Dr. George M. Case, Elmira, N. Y., urged the necessity of the examination of the eyes of inmates of penal institutions and especially of reformatories and schools for incorrigibles. He stated that a large percentage of the young criminals of New York have strikingly high ocular defects. He considered eyestrain as a contributing factor in truancy in school, disinclination to work and inebriety. He believed that routine examination of the eyes of school children would do much toward the prevention of criminal tendencies and would elevate the standard of civilization, and considered that state appropriations should be made for this purpose. The managers and superintendents of institutions should be informed as to the baneful results of eyestrain in the production of crime.

Cataract Extraction.

Dr. Duff W. Greene, Dayton, Ohio, read a paper on "Cataract Extraction Within the Capsule by External Manipulation—the So-called Indian Method." The condition of the capsule often determines the amount of vision secured. Extraction within the capsule by external manipulation eliminates this and avoids secondary operation. Unfortunately, in some cases certain unknowable conditions of the zonula or of the capsule itself may defeat the endeavors to deliver the lens after this method. It is a more difficult operation than either the simple or the combined method. The section must be larger, the iridectomy broader, and the zonular attachments to the capsule must be broken up by direct and continuous pressure. The capsule itself must not be ruptured, as this is essential to the success of the method.

Cataract Extraction with Preliminary Capsulotomy.

Dr. Homer E. Smith, Norwich, N. Y., outlined the essentials of a smooth extraction, the preliminary treatment of the patient, the immediate preparation for operation, the capsulotomy done through the cornea with a knife-needle, the cornea having been dilated some hours before the extraction of the lens. He detailed the advantages of this procedure as compared with capsulotomy done subsequent to the corneal section, and described the extraction and the first dressings.

Nasal Obstruction.

Dr. Arthur E. Prince, Springfield, Ill., in his paper entitled "Some Considerations Relative to Nasal Obstruction," answered the following questions: (1) What is the cause of the prejudice against the removal of tonsils and what would overcome the prejudice? (2) What is the best method of removing hypertrophied turbinates? Is it wise to operate on both at the same time? (3) Is the return of adenoids often observed, and what is the best remedy to prevent their return? (4) What is the status of the profession with regard to the removal of adenoids, tonsils and hypertrophied portions of the turbinates at one operation? He gave a description of his methods and a summary of his results, and detailed the position, technic, anesthetic, instruments and after-treatment.

Travel Notes

(*Continued from page 713.*)

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.
CHICAGO.

The interior mountain plateau of South Africa has a healthful climate, and malaria, if it exist, is limited to circumscribed locations. No place along the East Coast is exempt from this disease, which prevails throughout the year, although it is much more frequent during the rainy season. Professor Koch has made the statement that in German East Africa the disease as a rule reaches its topographic limits at an altitude of 3,000 feet, and from what I have seen this rule applies to most parts of Africa. As soon as we reached this altitude we no longer saw the impress of malarial poisoning stamped on the faces of the people living on the coast, and the number of malarial patients in the hospital diminished with the increase of the altitude, being smallest in Johannesburg, which is situated nearly 6,000 feet above the level of the sea. At Victoria Falls, which has an altitude of less than 3,000 feet, malaria prevails to a considerable extent along the Zambesi River during the summer months, but the disease gradually diminishes in frequency between the river and Bulawayo, which is nearly twice as high above the level of the sea as the Victoria Falls.

Few tropical diseases have their origin either in Cape Colony or in the interior of South Africa, and the diseases encountered here resemble those met in temperate climates. The farther south I traveled from Victoria Falls the more the natives had lost their primitive-type, customs and habits, and in consequence had lost in part their resistance to some of the diseases of the Europeans, notably tuberculosis, carcinoma and appendicitis. In Cape Colony many of the natives, once black as ink, had quite a fair complexion, and the facial type had undergone decided changes toward that of the Europeans in consequence of the long-standing and free admixture of Caucasian blood. I will pass in brief review what I saw in the different hospitals as I traveled southward from Victoria Falls.

BULAWAYO MEMORIAL HOSPITAL.

This name was given to the hospital to commemorate the jubilee of Queen Victoria, and was built and opened its doors for the reception of the sick seven years ago. The hospital is a handsome brick building admirably adapted for the changeable climate of the country. It is built on the pavilion plan and is surrounded by large grounds, embellished by fine walks, trees, shrubs and flowers (see illustration). The main building, a large imposing one-story pavilion, is devoted to offices, resident surgeon's quarters and European patients. The capacity of the hospital is 120 beds, of which about one-half are in the two detached rear pavilions for the natives.

The European part has a number of well-furnished pleasant private rooms, for which the patients pay $4.50 a day. A number of larger rooms contain two and three beds, for which a smaller charge is made. Patients in the large wards pay according to their means. Most of the blacks are charity patients, but for some of these their employers pay a small sum. Henry Curtis, B.S. and M.D. (Lond.), F.R.C.S., is the resident surgeon. He does all the operative work, and his results have been exceptionally good, so much so that the surgical material has increased considerably from year to year during his term of service. He is a fine young man with superior attainments, and has kept pace with modern medical and surgical literature, although he has been isolated from medical centers for a number of years. The patients are nursed by three English Sisters and 13 pupil nurses. I was particularly impressed with the neat and clean conditions of the two wards for natives, and with the care given their patients by the Sisters and nurses. The operating room is small, but fairly well equipped for aseptic work. The institution has a Roentgen apparatus, the first one I saw in Africa, which is in charge of the resident surgeon.

In this hospital I first learned of the effects of civilization on the blacks, in causing a growing susceptibility to some of the diseases to which the savages appear to be almost immune. I refer particularly to carcinoma, appendicitis and tuberculosis of bones, joints and lymphatic glands. I saw none of these diseases in the blacks in the hospitals of the East Coast. Dr. Curtis has collected 12 cases of malignant disease in negroes, and is preparing a report of these for the medical press. In the hospital report for 1905 I find mention of two cases of sarcoma of bone occurring in natives; three cases of tubercular glands, and four cases of tuberculosis of bone, in one of which the disease involved the left humerus and right scapula, in two the vertebræ and in one the pubic bone. One case of appendicitis in the native is reported in which an abscess had formed. The patient was operated on, but died a few days later from pneumonia and cardiac failure. In the cases of glandular tuberculosis the disease implicated the inframaxillary glands in one case, the axillary in another, and in the third the crural glands were affected. During the year referred to, the hospital took care of 1,261 patients—722 whites and 539 blacks—and the average number of in-patients was 54. At the time of my visit not more than half the beds were occupied.

The demand on the hospital space is always heaviest during the rainy season, when the malarial patients, many coming from a distance, form the bulk of the inmates. The salubrity of the high mountain plateau of South Africa has become almost proverbial in that country. During the year, 469 cases of malaria and one of black-water fever were treated in the hospital, but in many of the cases the disease did not originate in Bulawayo or anywhere near it, as many of these patients came from localities where malaria is endemic. It is interesting to know that of the 469 cases of malaria only 128 of the patients were blacks, and that of the 19 cases of black-water fever all were whites with the exception of one, a colored boy from the Cape. Only 17 patients with typhoid fever entered the hospital during the year, and of these, 5 died, all of whom, with one exception, were whites. Of ten cases of pulmonary tuberculosis, six were in whites and four in blacks. Influenza is credited with only three cases, two whites and one negro; acute and subacute rheumatism with 31 cases, 10 whites and 21 blacks; pneumonia with 66 cases, and only two deaths; 17 whites and 49 blacks. Of 35 cases of scorbutus, 33 were blacks, and of these, 5 died; of the two whites, one died. None of the figures in the statistics is large, the diseases enumerated covering almost the entire nomenclature, and the absence of tropical diseases and the small number of acute gastrointestinal diseases is noteworthy, and the best possible evidence that Bulawayo is not a good place for many doctors.

The small number of injuries treated in the hospital also attracts attention. Only five amputations for injuries were performed during the year. Among the fractures enumerated were three of the skull, two of the ribs, four of the clavicle, one of the humerus, one of the radius and five of the tibia and fibula, all compound. Of the 134 operations performed, 48 were on whites and 86 on blacks. The hospital receives an annual government grant of $18,000, which is a material aid in defraying the necessary expenses. Half the cost of free native patients is also borne by the government, which amounted during the year 1905 to over $6,000. The entire expenses of the hospital amounted to about $65,820.

CARNARVON HOSPITAL, KIMBERLEY.

Kimberley is the most famous diamond city of the world, and its population of about 75,000 depends largely on the brilliant gems taken from its five mines. It has only one general hospital, named after a former governor. This was built soon after the discovery of the mines, twenty-five years ago, and has been enlarged since that time to meet the constantly increasing demands. Like all South African hospitals, it is constructed on the cottage plan, the building material of the one-story pavilions being brick and the roof corrugated iron. It can accommodate 200 patients. The two large wards for the blacks are detached from the remaining buildings, as well as the new hospital for white children. Patients who can afford to pay are charged from 25 cents to $7.50 a day, according to accommodations. A large number of plainly furnished, comfortable rooms are the main source of income. The only government support the hospital receives is the hospital head tax of 25 cents a week imposed on all adult male natives. The large grounds, the broad verandas around each pavilion and the grate fires in the wards impart to the hospital an aspect of home comfort. At the time of my visit a biting cold wave from the south swept the treeless plains unmercifully and the open grate fires looked particularly attractive.

Bulawayo Hospital.

Two resident surgeons live on the premises in separate buildings and devote their whole time and attention to the care of the inmates. The senior resident surgeon is permitted to do consulting work outside of the hospital, but the junior's income is limited exclusively to his small salary. Nine English Sisters and 50 nurses and probationers have charge of the nursing. The training school for nurses in connection with the hospital is in a flourishing condition. A three years' course is compulsory. The teaching is done by the Sisters and regular lectures are given by the medical staff. The nurses' home is a new separate modern building. Cleanliness and good order prevailed throughout the institution, and the blacks seemed to be well cared for. All the blacks who die here are subjected to postmortem examination, and the permission of the natives is never asked. In the children's ward I saw a child on whom tracheotomy had recently been performed for diphtheritic laryngitis and the little patient was well on the way to recovery. Intubation is not regarded with favor in this part of Africa, and when surgery has to be resorted to in cases of laryngeal stenosis, tracheotomy is the operation of choice. A laparotomy for pelvic inflammation was in progress in the plain, large, well-lighted operating room at the time of our visit. Operating gowns, masks and gloves are not often, if ever, seen in the operating rooms of the South African hospitals. The surgeons roll their sleeves up to the elbows, cleanse and disinfect their hands, put on aprons and then go to work. Several cases of injury from dynamite explosions and a number of fractures made up the bulk of the surgical material.

COMPOUND HOSPITALS.

By a compound is meant the enclosure of a mine in which the miners, usually Kaffirs, are confined as long as they are in the service of the company, which on an average is six months. No one can enter these compounds without special permission, and the miners are not permitted to leave the premises. Each of the five diamond mines employs from 2,000 to 2,500 blacks. The large square in which they live is surrounded by a wall. The sleeping places, butcher shop, stores and hospital are built all around against the wall, and in the large open space the blacks cook, eat, wash, smoke and play. I saw here a group of blacks who were smoking hemp, passing a large pipe from one to the other. Each of them took a large draught, retained the smoke for some time in the distended mouth, and then allowed it slowly to escape. At least two who were enjoying this vice, showed plain manifestations of intoxication.

Each compound has its own hospital and doctor. The building is constructed of corrugated iron, and has accommodation for about eighty patients. A dispensary and small operating room are to be found in each of these hospitals. The nursing is done by male attendants, but in one of the compounds a trained female nurse of mature age was at the head of the nursing staff, and it was in this hospital that the wards and bedding were cleanest.

The prevailing diseases among the miners are bronchitis, pneumonia and scurvy. Scurvy is very common and, as the physician of one of the compounds assured me, is due to the lack of vegetable food, which is very expensive here, and which the blacks refuse to buy in sufficient quantity on account of the high price, as they are anxious to save all the money they can to enable them to return to their homes as soon as possible. The most common injuries are burns and wounds from dynamite explosions and fractures. Among the interesting cases I saw here was a negro, the subject of multiple large keloids and an albino Kaffir. The man was about 30 years of age, with fair complexion, red curly hair and the characteristic eyes of the albino. I was informed that the average mortality from pneumonia in these compound hospitals is not less than 25 per cent. I saw and examined a number of cases during the acute stage of the disease, and in each of them the viscid rust-colored sputum was present.

It is not so very easy for the blacks to get into one of these compounds, as they have to undergo a thorough physical examination by a physician, but there is more ceremony connected with their getting out. Stealing of diamonds by the miners is an old trick and has cost the companies millions of dollars. All kinds of devices have been invented and practiced by the blacks to enrich themselves by stealing now and then a diamond which they find. To encourage honesty, the company pays each miner 10 per cent. of the value of the stones he finds, provided he delivers them at once to the manager. Notwithstanding this inducement, thefts are by no means rare even now with all possible precautions to guard against them. Some of the compounds are roofed in with wire netting to avoid all possibility of communication between the natives and the outsiders. The shrewd blacks will hide away diamonds in all avenues of their bodies whence they can be removed after they have left the compound. Against this method of pilfering the company now has instituted and enforces a measure well calculated to do away with this practice. When a black miner signifies his intention to leave the compound, he is put in a separate place and under guard, with others who are about to leave, and is subjected to repeated examinations for one week. Both of his hands are confined in stout leather mittens fastened with a lock at the wrists. This muffling of both hands prevents the temporary prisoner from grasping and disposing of any diamonds hidden in any part of his body, or the body of any of his companions. Each man is given a brisk dose of castor oil, the discharges are examined, and if at the end of a week no diamonds are found, he is given his liberty. In one compound I counted twenty blacks, lying side by side in a room, who were under observation prior to their departure. The physical condition of the men who leave the mines, after working on an average for six months, is much better than at the time of their entrance, as I had abundant opportunity to observe.

(To be continued.)

State Boards of Registration

COMING EXAMINATIONS.

OKLAHOMA Board of Medical Examiners, Guthrie, September 25. Secretary, J. W. Baker, Enid.

NEW YORK Boards of Medical Examiners, Albany, September 25-28. Chief of Examining Division, Charles F. Wheelock, Albany.

UTAH State Board of Medical Examiners, Salt Lake City, October 1. Secretary, R. W. Fisher, Salt Lake City.

ARIZONA Board of Medical Examiners, Phoenix, October 1-2. Secretary, Ancil Martin, Phoenix.

COLORADO State Board of Medical Examiners, Denver, October 2. Secretary, S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Lewiston, October 2. Secretary, J. L. Conant, Jr., Genesee.

MONTANA Board of Medical Examiners, Senate Chamber, The Capitol, Helena, October 2. Secretary, Wm. C. Riddell, Helena.

MINNESOTA State Board of Medical Examiners, Old Capitol Building, St. Paul, October 2-4. Secretary, W. S. Fullerton, St. Paul.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 2-4. Secretary, H. M. Wheeler, Grand Forks.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 4-5. Secretary, Gardner T. Swarts, Providence.

GEORGIA Board of Medical Examiners (Regular), Capitol, Atlanta, October 9. Secretary, E. R. Anthony, Griffin.

ARKANSAS State Medical Examining Board, Little Rock, October 9. Secretary, J. P. Runyan, Little Rock.

KANSAS State Board of Medical Registration and Examination, State House, Topeka, October 9. Secretary, F. P. Hatfield, Grenola.

MICHIGAN State Board of Registration in Medicine, Lansing, October 9. Secretary, B. D. Harison, Detroit.

MISSISSIPPI State Board of Health, The Capitol, October 9. Secretary, J. F. Hunter, Jackson.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Washington, October 11. Secretary, Geo. C. Ober, Washington.

NEW JERSEY State Board of Medical Examiners, Trenton, October 16-17. Secretary, J. W. Bennett, Long Branch.

TEXAS State Board of Medical Examiners, Houston, October 16-18. Secretary, T. T. Jackson, San Antonia.

FLORIDA Board of Medical Examiners (Regular), Jacksonville, October 17-18. Secretary, J. D. Fernandez, Jacksonville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 17-19. Secretary, J. A. Egan, Springfield.

LOUISIANA State Board of Medical Examiners, New Orleans, October 19-20. Secretary, F. A. Larue, New Orleans.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 23-25. Secretary W. T. Gott, Indianapolis.

Kentucky July Reports.—Dr. J. N. McCormack, Secretary of the State Board of Health of Kentucky reports the following examinations: At the examination held at Louisville, July, 1906, the number of subjects examined in was 13; total number of questions asked, 120; percentage required to pass, 70, not less than 60 in any one branch. The total number of candidates examined was 17, of whom 11 passed, including 2 osteopaths, and 6 failed, including 3 osteopaths and 1 graduate in optics. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent
Hospital Coll. of Med., Louisville	(1906)	72, 79
University of Louisville	(1906)	76
St. Louis Univ. (Marion-Sims-Beaumont Med. Coll.)	(1906)	76
Barnes Med. Coll.	(1906)	74
Medical Coll. of Ohio	(1902) 82; (1906)	78
University of Pennsylvania	(1905)	85
University of Tennessee	(1906)	70

FAILED.

Hosp. Coll. of Med., Louisville	(1903)	65
Univ. of Tennessee	(1905)	55

At the meeting held July 16, 1906, the following were granted licenses to practice medicine without examination:

	Year Grad.	Total
Hosp. Coll. of Medicine, Louisville	(1896) 1; (1906)	40, 41
University of Louisville	(1887) 1; (1894)	1, 2
Kentucky School of Med.	(1888) 1; (1906)	6, 7
Louisville Med. Coll.	(1906)	1

At the meeting held July 22, 1906, the following were granted licenses to practice medicine without examination:

Louisville Med. Coll.	(1906)	4
Kentucky School of Med.	(1906)	2
University of Lonisville	(1899)	1

New Louisiana Officers.—We learn from Dr. Felix A. Larue, secretary of the Lonisiana State Board of Medical Examiners, that on and after Oct. 1, 1906, the office of the board will be Room 502, Tulane-Newcomb Building, 211 Camp Street, New Orleans.

New Nebraska Rules.—Dr. George H. Brash, secretary of the Nebraska State Board of Health, sends us the following resolutions which were adopted and approved by that board, Aug. 8, 1906:

Resolved, That after July 1, 1906, no one shall be allowed to practice medicine or osteopathy until a certificate has been issued by the Nebraska State Board of Health.

Resolved, That after July 1, 1906, no one shall be granted a certificate on reciprocity unless the applicant has been in active practice in the state, by whose board he is endorsed, for at least one year immediately preceding such endorsement.

West Virginia July Report.—Dr. H. A. Barbee, Secretary of the West Virgina State Board of Health, reports the oral and written examination held at Charleston, July 10-12, 1906. The number of subjects examined in was 9; total number of questions asked, 120; percentage required to pass, 80. The total number of candidates examined was 79, of whom 52 passed and 27 failed, including 15 non-graduates. The following colleges were represented:

PASSED.

College.	Year. Grad.	Per Cent.
George Washington University	(1904)	86
American Coll. of Med. and Surg., Chicago	(1906)	82
Drake University	(1905)	82
Louisville Med. Coll.	(1906)	97
Kentucky University	(1906)	82, 86
University of Louisville	(1906)	87
Hospital Coll. of Med.	(1904)	87
Baltimore University	(1905)	80, 80
College of P. & S., Baltimore	(1903) 83; (1906)	81, 84, 85, 85, 89, 89, 92.
University of Maryland	(1906)	88, 93, 94
Maryland Med. Coll.	(1905) 82 (1906)	86
Baltimore Med. Coll.	(1906)	94
Barnes Med. Coll.	(1906)	83
Leonard School of Med.	(1895)	80
Medical Coll. of Ohio	(1905) 82; (1906)	84, 89
Starling Med. Coll.	(1906)	85
Pulte Med. Coll.	(1906)	91
Columbus Med. Coll.*	(1882)	84
Eclectic Med. Inst., Cincinnati	(1906)	81
Jefferson Med. Coll.	(1905) 94; (1906)	84, 88
University of Pennsylvania	(1904) 86; (1906)	90
Meharry Med. Coll.	(1906)	83
Chattanooga Med. Coll.	(1906)	82
Medical College of Virginia	(1902) 91; (1906)	81, 86, 86, 94
University of Virginia	(1898) 88; (1903) 90; (1906)	87, 88
University Coll. of Med., Richmond, Va.	(1906)	84, 85, 86

FAILED.

	Year Grad.	Number Examn'd.
Kentucky School of Med.	(1905)	2
University of Louisville	(1906)	1
Kentucky University	(1904) 1; (1905) 1;	2
Baltimore University	(1905)	1
Maryland Med. Coll.	(1906)	3
Barnes Med. Coll.	(1905)	1
University of the South	(1904)	1
University Coll. of Med.	(1897)	1

*Merged with Starling Medical College in 1892.

The following questions were asked:

PRACTICE OF MEDICINE (REGULAR AND HOMEOPATHIC).

1. Describe the tongue in typhoid fever; chronic gastric catarrh: biliousness and scarlet fever. 2. Cirrhosis of the liver: give symptoms and causes. 3. Give normal dimensions of the liver in midaxillary and mammary line. 4. What is the pulse rate at birth, at five, ten, fifteen and twenty years? 5. What is arteriosclerosis and what are the symptoms? 6. Where is the apex beat of the heart felt? Where are the various murmurs heard? What causes the heart sounds? 7. What is fever? What is the normal temperature? Name a disease in which fever occurs. What is hyperpyrexia? What is a subnormal temperature? How control fever? 8. Vomiting: Describe the cause, mechanism and general therapy. 9. Physical diagnosis: (1) What is vocal frematus? (2) What is vocal resonance? (3) What is a mucous râle? (4) What is a crepitant râle? (5) What is a friction murmur? 10. Give differential diagnosis between smallpox, chicken pox and pustular syphiloderm.

MATERIA MEDICA (HOMEOPATHIC).

1. Give indications for sepia in female trouble. Compare with pulsatilla. 2. In constipation, with no movement of bowels without cathartics or enema, what drugs are called for? Give indications. 3. What remedies are called for in dysentery. Give characteristics. 4. Give indications for rhus tox in typhoid. Compare with similar acting drugs. 5. Differentiate between cuprum-arsen. and merc. corr., in bowel trouble. 6. Mention four polychrests. Give characteristics of each. 7. Mention three remedies having a pathogenesis of green diarrhea and give characteristics. 8. Give indications for three remedies curative in nasal catarrh. 9. Differentiate gelsemium and natrum muriaticum in intermittent fever. 10. Give the therapeutic individuality of sulphur and phosphorus.

MATERIA MEDICA AND THERAPEUTICS (REGULAR).

1. Define materia medica and therapeutics. What is the difference between empirical and rational therapeutics? 2. Name four ways by which medicine may be introduced into the circulation. 3. Give a rule for calculating doses of medicine for children. 4. Name three drugs excreted by the mammary glands and which may affect the nursing infant. 5. From what source is ergot derived, and what is its most important physiologic action? 6. What is the difference between an abstract and an extract? What are expectorants, diaphoretics, diuretics? How do they act? 7. What is normal saline solution, how administered and in what conditions used? 8. Dose of salol. How disposed of in intestines? How eliminated? Symptoms of overdose. 9. Name one hydragogue cathartic, one intestinal antiseptic, one hypnotic, one antiseptic, give dose of each. 10. What are alkaloids? Name six important ones with dose.

MATERIA MEDICA AND THERAPEUTICS (ECLECTIC).

1. Apocynum: Indications and uses. 2. Apis: Indications and uses. 3. Aralia: Indications and uses. 4. Belladonna: Indications and uses. 5. Cactus: Indications and uses. 6. Passiflora: Indications and uses. 7. Libradol: Indications and mode of application. 8. Aconite: Indications and uses. 9. Ipecac: Indications and uses. 10. Echinacia: Indications and uses.

PRACTICE OF MEDICINE AND PATHOLOGY (ECLECTIC).

1. Typhoid fever: Give etiology, symptoms, diagnosis and treatment. 2. Diphtheria: Give etiology, symptoms, diagnosis and treatment. 3. Give the early diagnosis of tuberculosis of the lungs and the treatment. 4. Appendicitis: Give medical treatment. 5. Lobar pneumonia: Diagnosis and treatment. 6. Smallpox: Give briefly the management and treatment. 7. Scarlet fever: State briefly the care and treatment until dismissed. 8. Rubeola: Give symptoms, diagnosis and treatment. 9. Malarial fever: Give etiology, symptoms, diagnosis and treatment. 10. Cholera infantum: Give symptoms, diagnosis and treatment.

PHYSIOLOGY.

1. Give reaction of the following fluids: Blood, milk, gastric juice, pancreatic juice, saliva, urine and perspiration. 2. In what tissues of the body is lime phosphate most found and its absence constitutes what diseases? 3. From what source are starch, glycogen and sugar derived? 4. What disturbances of digestion result from absence of bile? 5. What is the change in the air breathed, before and after inhalation? 6. Define sensitive nerve, motor nerve, mixed nerve. Give example of each. 7. What are the function and distribution of the fifth pair of nerves? 8. What is meant by nutrition? Define proximate principle. Gixe example. 9. Give composition and functions of the blood. 10. What is fat and how and where digested in the alimentary canal?

ANATOMY.

1. Mention the sutures at the vertex of the skull and state what bones they unite. 2. Mention any one muscle which moves the humerus (1) forward, (2) backward, (3) inward. 3. Describe the renal circulation. 4. Name the bones of the head. 5. Name the principal lobes of the brain and fissures dividing them. 6. Minutely describe the relations of the peritoneum to the bladder. 7. Describe the inguinal canal. 8. Locate and briefly describe the gall bladder. 9. Describe the female urethra as to (1) location, (2) dimensions, (3) structure. 10. What is contained in the right hypochondriac region?

CHEMISTRY.

1. Give names and formulæ of five acids used in medicine. 2. What is "rough on rats?" What is the antidote? 3. What is carbolic acid, physical and chemical properties, antidote? 4. What is arsenic, chemical properties, antidotes? How would you detect it in a solution? 5. Give test for formaldehyd in milk. 6. What are the constituents of normal urine? 7 Name all the different tests for albumin. 8. Name all the tests for sugar. Give formula for Fehling's solution. 9. What are carbohydrates? Name four. 10. What is an incompatible? Name three. What is an insoluble? Name three.

HYGIENE.

1. What is the difference between permanent and removable hardness of water? 2. What is the difference between contagion and infection? 3. Define the terms epidemic, pandemic and endemic. Name a disease of each. 4. How much cubic air space should be allowed each person in a sleeping room? Why? 5. What is the difference between antiseptics, disinfectants and deodorants? 6. Name five of the best disinfectants and explain their action and method of use. 7. What conditions of climate would you recommend for tuberculous patients? Does such a location exist in West Virginia? Explain. What is the best method for preventing the spread of tuberculosis from a sanitary standpoint? 8. How would you prevent the spread of the following: Typhoid fever, diphtheria, scarlet fever and measles? 9. Should a person have gas lights, oil lamps, candles or growing plants in a sleeping room? 10. What is ventilation? Explain the difference between natural and artificial.

OBSTETRICS AND GYNECOLOGY.

1. What bones and ligaments form the obstetric pelvis? 2. Name all the female organs of generation. 3. Describe the stages of formation of embryo and its membranes. 4. Describe the fetal circulation. 5. Give the steps of a normal labor in a primipara? Multipara? 6. A patient with babe six weeks old calls you, she is suffering with pain and dragging in lower abdomen, is very tender, temper-

ature 102.5. a profuse discharge from vagina. On examination you find the uterus measuring five inches and lacerated on the left. Patient is a very sick woman. generally. womb soft and boggy. Treat. 7. Describe a case of placenta prævia centralis, give treatment. 8. Define eclampsia, give symptoms and treatment. What is the prognosis of eclampsia as to mother and child? 9. What constitutes the "bag of water?" What is its functions or office? Would you rupture? 10. Tell how to handle a case of abortion at second or third month.

BACTERIOLOGY.

1. How do you classify bacteria? Name three divisions. 2. What are the products of bacteria? 3. Do bacteria develop spontaneously? Does body temperature affect them. 4. How do micrococci grow? 5. Define sterilization. How obtained? 6. What is an antiseptic? The most effective. 7. Which contains the greatest number of bacteria, river water or ground water and why? 8. What methods are used to free drinking water from bacterial danger? 9. What theory has been brought forward to explain the resisting power of the human body against pathogenic invaders? 10. What factors influence the development of various pathogenic bacteria in the body?

SURGERY.

1. Inflammation: Define, name two common varieties. 2. What constitutes an exotosis, a neoplasm? What is a gumma? Cause, most frequent site and treatment. 3. Define, divide and treat hemorrhage. 4. Describe amputation at middle third of leg, naming important structures severed. Complete operation. 5. Aneurism: Define, give varieties and treatment. 6. Otitis: Define, classify, give cause and treatment. 7. Fracture: Define, classify and give symptoms. Describe and treat a Colles' fracture. 9. Dislocation: Define and classify. 10. Reduce a backward dislocation of humerus at shoulder.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns.]

Eczema.

In the treatment of eczema of the female genitals the following combination is recommended by von Schlen in the *Amer. Year Book of Med. and Surgery:*

R.	Ichthyoli	gr. xv	1
	Pulv. amyli		
	Ung. zinci oxidi, āā	ʒiii	12
	Lanolini	ʒvi	24

M. Ft. unguentum. Sig.: Apply locally to the affected parts.

In dry eczema of the scalp, neck and external genitals the following combination is recommended, using coal tar instead of wood tar:

R.	Coal tar	ʒiss	6
	Alcoholis (95 per cent.)	ʒi	4
	Spts. etheris sulphurici	ʒss	2

M. Sig.: Apply locally with a brush.

In the treatment of professional eczema of the hands the following combinations are advised:

R.	Zinci oxidi	℥ii	60
	Pulv. cretæ		
	Lotio plumbi		
	Olei lini, āā	ʒss	15

M. Ft. mistura. Sig.: Apply locally to the affected parts. Or:

R.	Zinci oxidi		
	Sulphuris sublim.		
	Cretal prep.		
	Olei lini, āā	℥ss	15
	Aquæ calcis, āā	℥i	30

M. Sig.: Apply locally.

The foregoing combinations are of value in the milder forms of eczema. Previous to going to bed the patient should be instructed to cleanse his hands carefully and nails with soft soap if the eczema be dry. or with weak soapsuds if the eczema is moist, followed by thoroughly drying the hands and applying the ointment, and at the same time rubbing the hands until the ointment is completely absorbed. The hands should then be covered with gutta percha tissue, thin strips being wrapped around each finger. The whole hand should then be covered with wool-like mittens. The following morning the dressing should be removed, the hands cleansed and a small amount of the ointment again rubbed in for the day. After recovery is almost complete there will remain a few patches, which should be touched up with chrysarobin stick made up as follows:

R.	Chrysarobin	ʒii	8
	Lanolini	℥iss	45
	Ceræ albæ	ʒvi	24

M. Melt and pour into glass tubes and allow to cool. Sig.: Touch the affected areas two or three times a day.

The hands of those patients who are required to handle lime, plaster and cement must be protected during their work. This may be done by instructing the patient to rub his hands, before beginning his work. with tar diluted with castor oil and alcohol, as this combination is not only palliative and curative, but neutralizes the action of the lime.

In some cases the following combination is recommended to stimulate the corneous layer of the skin:

R.	Zinci oxidi	gr. xv	1
	Lanolini		
	Resorcin, āā	ʒiiss	10
	Cretæ prep	ʒss	2

M. Ft. unguentum. Sig.: Apply locally.

In the treatment of chronic palmar eczema the following combinations are recommended by the *Medical Bulletin:*

R.	Olei cadini		
	Olei olivæ, āā	℥ii	60

M. Sig.: Apply locally twice a day. And:

R.	Acidi salicylici	ʒi	4
	Camphoræ		
	Chloralis hydratis, āā	gr. xv	1
	Sulphuris precip	ʒi	4
	Adipis benzoinatis, q. s. ad	℥i	30

M. Ft. unguentum. Sig.: Apply locally after applying the oils as given.

Intestinal Dyspepsia.

Diarrhea and intestinal indigestion, according to Hemmeter in *Pract. Med. Series*, may be due to failure of gastric digestion, abnormal fermentative changes in the stomach, imperfect function of the pancreas, fermentation or putrefaction in the intestine.

The treatment is: 1. Dietetic, avoiding alcohol, tea, coffee and tobacco, and regulating the diet by excluding those articles which pass the intestines undigested or else give them in very small quantities and in a finely divided state. The experience of the patients is often a good guide. 2. In the treatment of constipation present the practitioner should decide whether it is due to spasm or atony, and in many cases this may have to be determined by therapeutic tests.

[In spastic constipation the patient has colicky pains, especially after eating sour foods, and when he has gone to stool there is a feeling of incomplete evacuation, the caliber of the stool is small, ribbon-shaped, as differentiated from the large caliber of the stool in atonic constipation.]

Care should be taken in the last meal of the day, as a heavy supper often produces a restless night. The treatment, according to Hemmeter, of the general neurasthenia should be electrotherapy, hydrotherapy, massage and baths.

Insomnia may be corrected by simply flushing out the colon. Hypnotics should be avoided if possible. As intestinal antiseptics in these cases the author recommends bismuth salicylate, subgallate, betanaphthol bismuth, thymol, menthol, resorcin and salol.

For putrefactive diarrhea with abdominal pain the following combination is recommended:

R.	Bismuthi subgal.	ʒii	8
	Salve	gr. xxiv	1|65
	Ext. opii (denarcotized)	gr. iii	|20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

For the anexoria the following combination:

R.	Strych. sulph.	gr. 1/3	|02
	Acidi hydrochlor. dil	℥ss	15
	Ext. condurango flu	f℥iss	45
	Elix. gentianæ	℥vi	180

M. Sig.: One tablespoonful in two ounces of water one-half hour before meals, taken through a glass tube. Or:

R.	Tinct. nucis vom	ʒiiss	10
	Tinct. card. co	℥ii	60
	Tinct. gent. co	℥vi	180

M. Sig.: One tablespoonful three times a day before meals in a small amount of water.

Or, according to Boas, the following:

℞. Ext. nucis vom......................gr. vi |40
Bismuthi subcarb. ....ʒiiss 10|

M. Ft. chartulæ No. xx. Sig.: One before each meal.

Menche recommends the following combination:

℞. Resorcin resublim. ....gr. lxxv 5|
Tincturæ rhei ....℥ss 15|
Elix. simplicis, q. s. ad...............℥iii 90|

M. Sig.: One tablespoonful twice a day before meals. Or:

℞. Resorcin resublim...............gr. lxxv 5|
Bismuthi salicylatis
Pulv. rhei
Sodii sulphatis, āā.....................ʒiiss 10|
Sacch. lactis ....ʒiiiss 14|

M. Sig.: One teaspoonful before each meal.

When fermentation is present with anorexia the following formula after Ewald is advised:

℞. Tinct. nucis vom......................ʒvi 24|
Resorcin sublim...................gr. lxxv 5|
Elix. simplicis ....ʒiii 12|

M. Sig.: Ten to fifteen drops every two hours in a small amount of water. Or:

℞. Ext. condurango fld...................fʒv 20|
Resorcin sublim.........................ʒi 4|

M. Sig.: Thirty drops four times a day in water.

When anemia is present with the gastrointestinal symptoms the following combination is recommended:

℞. Quin. sulph......................gr. xviii 1|20
Strych. sulph......................gr. 1/3 |02
Ferri sulph.........................gr. xii |75
Acidi arsenosi.....................gr. 1/5 |014

M. Ft. pil. No. xii. Sig.: One pill three times a day.

Tongue and Mouth in Typhoid Fever.

In considering the care of the tongue and the mouth in typhoid fever Shoemaker states that some of the gastrointestinal symptoms may be avoided. The mouth should be thoroughly cleansed after each feeding with an antispetic solution similar to the following combination:

℞. Creosoti (beechwood)...............m. xv 1|
Aq. eucalypti ....f℥vi 180|

M. Sig.: To be applied with a swab of absorbent cotton after each feeding.

When the lips become dry as well as the tongue the following application is recommended:

℞. Acidi citrici ....ʒv 20|
Syrupi limonis ....f℥i 30|
Aquæ q. s. ad......................f℥viii 240|

M. To be used as a mouth wash, diluted as necessary.

When the tongue becomes dry and brown the internal administration of turpentine will often be effective, given in the form of the official emulsion of the new Pharmacopeia, or as follows:

℞. Olei terebinthinæ ....ʒiv 15|
Olei amygdalæ exp.................m. lxxv 5|
Syrupi ....ʒvi 24|
Pulv. acaciæ ....℥ss 15|
Aquæ q. s. ad......................℥iiiss 100|

M. Sig.: One to two teaspoonfuls three or four times a day.

If there is any contraindication to its use, such as nausea or some kidney involvement, the author recommends that dilute nitric acid be given in five-minim doses (.30), well diluted in water, three times a day after food.

Medicolegal

Evidence in Action by Physician Against Administrator.

The Supreme Court of Colorado holds, in Temple vs. Magruder, a case where the latter-named party sought to recover against an administrator a judgment on a claim for medical services, that the physician's account book must be deemed a book of original entry, and would have been admissible in evidence had the preliminary proof required by the statute been made. But it holds that it was clearly error to permit the physician to testify in the case, because of the statute providing that "no party to any civil action, suit or proceeding, or person directly interested in the event thereof, shall be allowed to testify therein, of his own motion, or in his own behalf, . . . when any adverse party sues or defends as the . . . executor or administrator . . . of any deceased person . . . unless when called as a witness by such adverse party so suing or defending." By the plain and positive provision of this statute, the physician, the court says, was incompetent to testify in this case of his own motion, and over the objection of the administrator, on any matter, or at all.

Opinions of Unprofessional Observers as to Sanity.

The Supreme Court of Kansas says, in the case of Kempf vs. Koppa, that an unprofessional observer is competent to form a judgment and express an opinion on the sanity or insanity of one he knows. A fundamental qualification is that the witness shall have had adequate opportunities of observation of the conduct, declarations and appearance of the person whose sanity is in question. The weight and force of the testimony will depend on the extent of the opportunity, as well as the power and habits of observation possessed by the witness, and a consideration of all the circumstances under which the opinion was formed. The courts do not undertake to lay down a definite rule as to how closely the witness must have observed the person whose sanity is the subject of inquiry in order to be qualified as a witness, as even a casual observer may discover mental manifestations that would make his testimony valuable. Whether there is a fair basis for an opinion by a witness must be left largely to the trial court, and the jury, taking note of the opportunity and powers of observation of the witness, must then decide what weight and effect shall be given to his opinion.

Nature of State Board of Health and Its Acts—Powers—Revocation of Certificate.

The Supreme Court of Missouri says that in the case of State, on the relation of McAnally vs. Goodier and others, the relator (McAnally) asked for a writ of prohibition to prevent the State Board of Health proceeding in an investigation of charges of alleged improper conduct and revoking a certificate to practice medicine and surgery issued to him in 1883. Under the act of 1883 he was not required to have a certificate from the State Board of Health to entitle him to practice medicine, because he had been practicing for a period more than five years before the law was enacted, and he maintained that the board had no right to revoke the certificate issued to him, even if it should find after investigation that he was morally unworthy to exercise the high calling, because he said that the board had no right to issue it in the first place. But a complaint of that kind does not make a very persuasive appeal for a writ which, after all, is within the sound discretion of the court to issue or refuse independent of strict technicality, as the very right and justice of the case require. The certificate implied not only that the holder is learned in the science, but that he is, from a moral or ethical standpoint, worthy to be trusted. In this case, if the board, on investigation, should find the relator guilty of the charges preferred, the utmost it could do would be to cancel the certificate that it had itself issued, leaving the relator in full possession of what he said the law gave him independent of the board—that is, the right to practice medicine on his own merits; but it would not leave him armed with his certificate of good character from the State Board of Health. The relator had no right to hold that certificate if he was unworthy of the confidence it invited.

The relator complained that the board was going to try him without exercising compulsory process to bring before it the witnesses he needed for his defense. But the State Board of Health is not a court—is not a judicial tribunal. It can issue no writ. It can try no case—render no judgment. It is merely a governmental agency, exercising ministerial functions. It may investigate and satisfy itself from such sources of information as may be attainable as to the truth or falsity of charges of misconduct against one holding one of its certificates, but its investigation does not take on the form or character of a judicial trial. The law does not contemplate that the technical rule of evidence applicable to a judicial trial will be strictly followed, or that compulsory attendance of witnesses will be made. It contemplates that a plain, honest, common-sense investigation shall be made, with good faith and as thorough as may be with the light of such evidence on either side as is obtainable without process and with the means at hand, much like the investigation that fair-minded, intelligent men would make in their own business concerning the alleged misconduct of one of their employés, with this difference only, that the board can not revoke the license except for cause and after the accused has had an opportunity to be heard.

The statute says the board may refuse to issue the certificate, or may revoke it after it has been issued, if the man is unworthy. This implies that the board may have some information of misconduct of an applicant which would justify a refusal to issue the certificate, or, after the certificate is issued, that would justify its recall, and in either case the board is authorized to act, "after giving the accused an opportunity to be heard." Those are the only words that suggest a trial, and they fall far short of a judicial trial. To guard and protect the health and welfare of its people the state must have its ministerial agents or officers and intrust them with power. If every administrative act that looks to the enforcement of the law should be required to be reduced to the compass of a lawsuit and be put into effect only after a court had at the end of a formal trial stamped its judgment on it, the government would make slow progress. There must be trust reposed somewhere and the power to execute the law. The General Assembly has taken great care to secure trustworthy men to perform the duties that are devolved on the State Board of Health. The duties of the board are of an administrative or ministerial character, and, therefore, as long as its acts are within the scope of the exercise of a reasonable discretion it is free to act. If perchance, through a misunderstanding of the law, the board should refuse to perform a given duty, the writ of mandamus will right the wrong, but the writ of prohibition does not go against such a body. It goes only against a court or a tribunal exercising judicial functions.

In other words, the court holds in this case that the state board of health is not a judicial body; that it has the power to revoke a license or certificate issued by it if, after investigation, in which the licensee is afforded an opportunity to be heard, it is satisfied that he has been guilty of unprofessional or dishonorable conduct; and that, in conducting such investigation (or "trial," if that term is preferred), it is not assuming to exercise a judicial function. Therefore a writ of prohibition does not lie to prevent the investigation.

Damages Recoverable for Wrongful Death of Physician.

The commissioner, whose report is affirmed by the United States District Court, in Pennsylvania, in the case of Ward vs. Dampskibsselskabet Kjoebenhavn, an action to recover damages for the wrongful death of a physician, says that no cases were called to his attention, and his search had not disclosed any, in which the amount of compensation for the death of a physician under similar circumstances was determined. The physician in question, Dr. John M. B. Ward, was at the time of his death 39 years of age. He had been a physician for twelve years. For the last eight years he had been an assistant quarantine physician, selected for his competency. Prior to his appointment as assistant quarantine physician, he had been elected to a position on a hospital staff, devoting his time to bacteriology. At the time of his death he was in receipt of an annual salary of $2,000 and the use of a house and other perquisites estimated of the value of $1,000 more per year. His personal expenses were estimated at $1,000 a year, leaving $2,000 as the yearly sum that his widow and children were deprived of by his death. Under these circumstances the commissioner thinks an award of $25,000 damages proper; and the court concurs therein.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

1 *Mysteries and Sources of Suicide. G. M. Gould, Philadelphia.
2 Shock. L. Waite, Chicago.
3 *Pleurisy with Effusion and Pulmonary Tuberculosis. H. F. Stoll, Hartford, Conn.
4 *Acute Mastoiditis, Its Prevention, Diagnosis and Treatment. J. J. Thomson, New York.
5 *Hay Fever and Persistent Bronchial Asthma Relieved by Treatment Directed to the Antrum of Highmore. J. E. Schadle, St. Paul, Minn.
6 *Possible Danger in the Therapeutic Use of Osmic Acid. A. E. Hertzler, Kansas City, Mo.

1. **Mysteries and Sources of Suicide.**—Gould calls attention to the important part which he believes eyestrain plays in suicide. He thinks that the most convincing and striking proof of the theory of this influence in producing suicide pertains to the time of life at which the numbers of suicides increase, reach their acme and decline. Presbyopia with its doubling and trebling of eyestrain, according to Gould, occasions the increased disease and suicide at the ages of from 40 to 60 years. Gould cites specific instances of victims of eyestrain.

3. **Pleurisy and Pulmonary Tuberculosis.**—Stoll concludes that all effusions within the pleural cavity are to be considered grave, as a large majority of them are of tuberculous origin. Although a positive history is most important, a negative one is valueless in excluding tuberculosis. In the absence of a pneumonia or a septic condition he considers the very presence of a pleural exudate sufficient to raise the question of tuberculosis. Patients with pleuritis should be told that the affection is probably due to the tubercle bacillus. They should be assured that they will get well, but they should be warned to take especial care of their health for a number of years.

4. **Acute Mastoiditis.**—Thomson says that the best preventive treatment of this condition is to keep the patient in bed for several days. A good cathartic is indicated. As soon as there is any bulging, an early and free incision should be made in the membrana tympani.

5. **Hay Fever and Persistent Bronchial Asthma.**—Schadle reports the case of a patient who had been suffering for almost two years with hay fever and asthma. Both antral cavities were irrigated with a warm boric acid solution until the return fluid was clear and free from sediment. The sinuses were then freely insufflated with thymol iodid. This treatment was continued for five days. On the third day the symptoms disappeared. The environment was not changed, nor was any treatment given other than that mentioned.

6. **Danger in Use of Osmic Acid.**—Hartzler states that when a dilute solution of osmic acid is injected into the free peritoneal cavity, particles are carried to the kidney, as in the case of silver chlorid, with the small accompanying hemorrhages. Although the small amount of osmic acid used in the treatment of neuralgia is probably not great enough to jeopardize life, still there is a limit to the amount of the chemical which can be used safely in therapeutics.

New York Medical Journal.

September 8.

7 *Cholelithiasis. C. Beck, New York.
8 Case of Sacroteratoma. S. Leobold and L. B. Phillips, Inwood, N. Y.
9 *Deep Breathing as a Therapeutic and Preventive Measure in Certain Diseases of the Lungs. J. H. Pryor, Buffalo.
10 Diagnosis of Gastric Ulcer. H. Weinstein, New York.
11 *Cure of Tuberculosis of the Joints. E. A. Tracy, Boston.
12 Relation of the Physician to Sanitation and Hygiene. H. P. Sights, Paducah, Ky.
13 Résumé of Recent Work in Clinical Pathology of the Urine. T. W. Hastings, New York.
14 X-Ray in Splenic Enlargements. C. Eastmond, Brooklyn.

7. **Cholelithiasis.**—In his discussion of the clinical history of cholelithiasis, Beck lays particular stress on the diagnosis of this condition by means of the Roentgen ray, which has proven very satisfactory in his experience, and describes his method of operation.

9. **Deep Breathing.**—Pryor makes an earnest plea for deep breathing as a therapeutic measure of the first magnitude in the treatment of malnutrition characterized by that complex group of symptoms ascribed to neurasthenia, toxemia, indigestion, anemia, gout, and in affections of the lungs and pleura. He says that deformities due to rickets and spinal curvatures are often susceptible of great improvement by combined exercise of the lung and special gymnastics. In delayed consolidation, incomplete resolution, imperfect restoration of function accompanying or following pneumonia; partial consolidation, collapse or carnification of the lung, associated with or resulting from pleurisy with effusion; bronchiectasis and adhesions of the pleura, deep breathing is particularly beneficial. Breathing exercises must be taught and watched to be effective. The lungs should be filled from bottom to top. The object to be attained is increase of the tidal and supplemental, and a decrease of the residual air. If coughing is produced by deep breathing, it is usually beneficial and assists in distending unused lung tissue, stretching or tearing adhesions and dislodging secretion.

11. **Tuberculosis of Joints.**—Tracy pleads for the employment of correct principles in the treatment of tuberculosis of joints consisting of the fixation of the joint, protection of the joint from weight bearing, and good constitutional treatment. He reports 16 cases.

Boston Medical and Surgical Journal.

September 6.

15 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. (To be continued.) V. C. Vaughan, Ann Arbor, Mich.
16 Child and the Public School Curriculum. T. F. Harrington, Lowell, Mass.
17 Observation Hospitals or Wards for Early Cases of Mental Disturbance. L. V. Briggs, Boston.
18 *Appendicostomy and Cecostomy for the Relief of Chronic Diarrhea. S. G. Gant, New York.

18. **Appendicostomy and Cecostomy in Chronic Diarrhea.**—Gant gives his personal experience in the treatment of 9 cases of persistent ulcerative colitis and chronic diarrhea by means of appendicostomy or cecostomy. In 8 of these cases the appendix was brought up, attached to the skin and opened in order to permit through-and-through irrigation. In the remaining cases the cecum was opened and a catheter introduced, after the method of Gibson, for the same purpose. Gant's experience with these operations has been most gratifying. He says that the operation of appendicostomy is comparatively simple, can be performed quickly and is no more dangerous than is the interval operation for appendicitis. Gant opens the abdomen by a short intermuscular or gridiron incision such as is made for appendectomy. He says further:

> The appendix is located, freed if adherent, brought outside the abdomen, opened and a probe inserted to make sure of its patency. If found to be too short, strictured or otherwise unsuitable, it should be removed and a cecostomy substituted. If, however, the appendix is sufficiently long and patent, it is ligated and cauterized. The cecum at its base is sutured to the abdominal wall and the parietal peritoneum, muscles and skin closed with plain catgut sutures. The appendix is anchored to the skin by one or two sutures and the wound covered with protective tissue and gauze held in place by adhesive plaster. In some cases the meso-appendix is left intact, while in others the artery is ligated and the peritoneum stripped off, but apparently neither method has any advantage over the other. Usually the part of the appendix external to the ligature sloughs about the fourth or fifth day, leaving the open stump projecting about one-fourth of an inch above the skin.
>
> The irrigations are begun immediately, using saline solution, ice water, or solutions of boracic acid, potassium permanganate, carbolic acid, ichthyol, bichlorid of mercury, or nitrate of silver. In practically all cases the abdominal discomfort and frequent evacuations cease immediately after the operation, or after the first irrigation, and within a few days the stools become almost normal, containing but little blood or mucus. It appears to make but very little difference what irrigating fluid is employed, provided that it is used daily and in sufficient quantity to cleanse the bowel thoroughly.

The only unpleasant sequela in Gant's series of cases was a small ventral hernia.

Lancet-Clinic, Cincinnati, Ohio.

September 8.

19 Albuminuria. J. H. J. Upham, Columbus.

St. Louis Medical Review.

September 1.

20 Hemoptysis as a Sequela of Epileptic Convulsions. W. Spratling, Sonyea.
21 Origin and Heredity of Matter. (To be continued.) J. Wright, New York.

Surgery, Gynecology and Obstetrics, Chicago.

August.

22 *Pulsating Exophthalmos. J. Ransohoff, Cincinnati.
23 Medico-Military Notes in Manchuria. J. V. Hoff, U. S. Army.
24 Practical Bacteriologic Studies in the Surgical Clinic. W. G. Macdonald, Albany, N. Y.
25 *Use of Thyroid Extract to Shorten Coagulation-Time of the Blood. W. J. Taylor, Philadelphia.
26 Case of Traumatic Hemorrhage into the Left Lateral Lobe of the Cerebellum; Operation; Recovery. H. A. Ballance, London, England.
27 Acute Intussusception in Young Children. E. Eliot, Jr., New York.
28 *Cancer of the Sigmoid and Rectum. C. H. Mayo, Rochester, Minn.
29 *President's Address Before the American Surgical Association. A. Vander Veer, Albany, N. Y.
30 *Treatment of Congenital Dislocation of the Hip by Incision. E. H. Bradford, Boston.
31 *Open Treatment of Fractures. E. Martin, Philadelphia.
32 Experiences in the Operation of Thyroidectomy, Partial and Complete. F. J. Shepherd, London, England.
33 *Surgery of the Large Intestine. G. E. Armstrong, Montreal, Canada.
34 *Surgery of Carcinoma of the Upper Portion of the Rectum and the Sigmoid Colon. J. C. Bloodgood, Baltimore.
35 History of Our Knowledge of Aspiration Drainage in Empyema and Other Surgical Conditions. J. D. Bryant, New York.
36 *Hyperplastic Tuberculosis of the Intestines. G. B. G. De Nancrede and E. E. Butterfield, Detroit.
37 *Cancer of the Colon. W. Meyer, New York.
38 *Surgery of Tuberculosis of the Colon. L. L. McArthur, Chicago.
39 *Serum-Therapy of Tetanus. C. A. Porter, Boston.
40 *A New Method of Utilization of the Sac in the Radical Cure of Hernia. R. Park, Buffalo, N. Y.
41 *Satisfactory Vesical Evacuator. H. A. Kelly, Baltimore.
42 *Technic in Caring for the Umbilical Cord and Navel. T. M. Burns, Denver.

22, 36, 39.—See THE JOURNAL, July 14, 1906, page 147.

25, 29, 30, 31, 40.—See THE JOURNAL, July 7, 1906, pages 66 and 67.

28, 33, 34, 37, 38.—See THE JOURNAL, June 30, 1906, page 2016.

41. **Vesical Evacuator.**—For several years past Kelly has made use of an evacuator in order to empty the bladder of the last drop of urine when the patient is in the knee-chest position, which is in all respects satisfactory. The evacuator is made up of a tube 18 cm. long in its straight portion and 8 cm. long beyond the bend. It consists simply of a bent tube 3.5 mm. in diameter, through which the urine is drawn by a suction bulb into a suitable glass receptacle. The inside diameter of the tube is a little over 2 mm. in diameter. A cap which screws on the end of the tube is used to push down into the vertex of the bladder as the suction is applied, when there is a free and rapid flow from the vesical vertex into the glass bottle held below the level of the bladder. A little flange near the outer end serves to give the fingers a firm hold.

The value of this simple little instrument is said to be twofold; in the first place, it serves to remove any urine which has not been passed or removed by catheter before putting the patient in the knee-chest position. A few drams of water lying in the vesical vertex may easily prove a source of much annoyance to the examiner—above all, if the patient is not in a good posture. Furthermore, if the operator desires to collect urine from one kidney by means of the ureteral catheter, while at the same time he is collecting the urine from the opposite kidney transvesically by means of a vesical catheter, under these circumstances it is most important to empty the bladder thoroughly just before catheterizing the ureter, in order that the urine which runs into the bladder and then out through the vesical catheter may really represent the kidney not catheterized. Such a method of examining the uncatheterized kidney is always valuable as a means of determining the urea coefficient. It may be valuable, too, for a microscopic and a bacteriologic examination, provided the bladder itself is sound.

42. **Caring for Umbilical Cord and Navel.**—Burns' method differs from those in general use: 1, In the use of a ligature close to the skin covering of the cord; 2, in the arrangement of the gauze; 3, in the absence of any antiseptic powder; and 4, in the use of cotton between the abdominal band and the genitals. Five minutes after the child is born the cord at the juncture of the skin and amniotic coverings is tied with a silk ligature (No. 10 or 12 twisted silk, or a doubled piece of

knitting silk). The ligature is drawn very tightly, so as to compress the deeply situated blood vessels. Two inches from the navel the cord is clamped with a pair of hemostatic forceps (Pean's five-inch long bite). The cord is held away from the child's genitals by the hemostatic forceps and cut one and a half inches from the navel with an angular pair of scissors. The placental end of the cord is carried by means of the hemostatic forceps to the Kelly pad. Wharton's jelly is squeezed out of the cord by grasping the cord near the navel with the fingers of one hand and stripping with the fingers of the other hand. The cord is tightly ligated one inch from the navel, then the ends of the ligature are carried around the cord to the side opposite the knot and tightly tied.

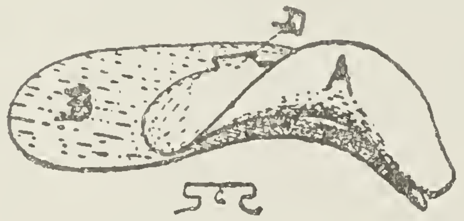
After the child is washed, the cord and navel region are bathed with a saturated solution of boric acid and wiped perfectly dry. A strip of sterilized gauze of four layers is cut to the size of 7 by 3½ inches. In one-half of this, at about the center of the junction of the lower with the middle third, a hole is cut and the cord passed through it and laid upward on the gauze. The other half of the gauze is folded over the cord. A piece of absorbent cotton is placed above the gauze and the band applied. Between the band and the genitals a piece of cotton is placed to prevent the urine from soiling the dressing. The method has been used with the very best results in the last 100 cases attended by the author, and no harmful effects have been noticed.

Albany Medical Annals.

September.

43 Subacute and Chronic Vesiculitis. J. W. Wiltse, Albany.
44 *A Brace to Aid in the Treatment of Flat or Weakened Feet. J. M. Berry, Troy, N. Y.
45 Professional Circumspection. E. Oliver, Ancram, N. Y.
46 Modern Scientific Medicine and Its Relation to Union University. J. D. Craig, Albany.

44. Brace for Flat or Weakened Feet.—The brace employed by Berry consists of two parts, a supporting portion (A) and a base piece (B). (C) represents the tongue portion of the support, which fits into the slot in the base piece marked (D).



The supporting portion is made of No. 16, 18 or 20 (depending on the weight of the patient) tempered galvanized steel fitted over a plaster-of-Paris model of the arch of the foot. It supports the arch of the foot and projects high up on the inner side of the foot so that when worn with a properly constructed lace shoe it exerts firm lateral pressure on the foot, thus preventing lateral deformity. It does not cover any of the weight-bearing portion of the heel or ball of the foot and is attached to the base piece in such a manner that it is movable in every direction, thus allowing all motions of the foot to take place. In other words, it supports and holds in position the arch of the foot with the smallest amount of splinting. The base piece serves simply to hold the supporting portion in place. It is made of flexible spring brass so that it readily conforms to the shape of the bottom of the shoe, and when it slips into place in the heel of the shoe the arch supporter is in its correct position.

The method of taking the plaster cast for the brace in question is as follows: The patient sits with the knee flexed and resting on a support in such a way that the outer surface of the foot rests against an upright support. The foot presses closely but not too firmly against the upright support, thus leaving a space between the foot and the support corresponding to the arch of the foot. The support is tilted somewhat to allow the position to be assumed by the patient more comfortably. The arch of the foot is first coated with vaselin to prevent the plaster adhering and with a dermatographic pencil the outline of the brace is drawn on the foot, special care being used in marking out the anterior and posterior limits and the height to which the brace rises laterally. The foot is now put in position on the support and the space represented by the arch of the foot filled with plaster cream. The plaster hardens in a few moments, and on removal the outline made with the dermatographic pencil will be found to have been transferred to the plaster. Any imperfection in this negative cast can be filled with plaster cream, and after this has hardened, the surface is coated with vaselin, the outline of the brace freshened and a positive cast made, especially necessary in all cases where the arch is very low or where edema or swelling has partially obliterated the arch. The cast is now sent to the instrument makers and the steel plate fitted to the outline.

International Journal of Surgery, New York.

September.

47 Retrodeviations of the Uterus. A. J. Walscheid, Union Hill, N. J.
48 *Prolapsus Ovari in Femoral Ring, Simulating a Strangulated Femoral Hernia. T. W. Parsche, Chicago.
49 Logic of Abdominal Pain. J. L. Wiggins, East St. Louis, Ill.
50 Case Illustrating the Association of Pelvic Disease with Appendicitis. R. S. Joyce, Ogden, Utah.
51 Preliminary Tracheotomy in Operations About the Tongue and Pharynx. B. G. Copeland, Birmingham, Ala.
52 Appendicitis—Hypospadias—Cervical Adenitis—Cystic Ovary. G. E. Woolsey, New York.
53 Appendicitis. R. T. Morris, New York.
54 *A New Splint for Fractures of the Humerus. G. G. Marshall, Wallingford, Vt.

48. Prolapsus Ovari in Femoral Ring.—Parsche reports a case of femoral hernia of the ovary occurring in a woman who had a tumor in the femoral region for 14 years, causing her no distress until she over-exercised and the hernia of the ovary became strangulated.

54. New Splint for Fractures of Humerus.—Marshall's splint consists of two thin pieces of board fastened to each other at right angles by their long edges. One, longer than the other, is 15 inches long by 3¼ inches wide; the other is 11 inches long by 3 inches wide. In the angle at the lower end is fitted a square piece of material with a slot cut through it near its outer end. Surmounting the upper end of the shorter side of the splint, is fastened a crutch piece to fit the axilla. This piece is also curved forward so that the end will not crowd on to the chest, as the arm rests across the body. When the splint is in position the crutch piece fits closely in the axilla, and the longer side supports the posterior aspect of the arm, while the shorter one supports the inside of the arm. The square at the lower end of the splint extends from 2 to 4 inches below the elbow, according to the length of the arm. Strips of adhesive plaster are applied, one to the inside and one to the outside of the arm, extending up to the point of fracture. At the elbow the strips are folded on themselves so as to cover their adhesive surfaces, and the inner one passed through a slit in the lower end of the piece; the outer strip is passed through a similar slit in the square piece, the two ends drawn tightly and tied. This gives strong extension in the line of the shaft of the humerus. This splint is of special advantage in compound fractures of the humerus as the dressings may be removed without weakening the entension.

Texas State Journal of Medicine, Fort Worth.

September.

55 Management and Treatment of Pulmonary Tuberculosis at a Climatic Resort. B. Cornick, San Angelo.
56 Etiology and Treatment of Movable Kidney. F. W. Kirkham, Cuero.
57 Malarial Keratitis. F. D. Boyd, Ft. Worth.
58 *Drains and Drainage. C. E. Cantrell, Greenville.
59 When Ovarian Cystomata Should be Removed Without Puncturing or Opening. F. D. Thompson, Ft. Worth.
60 Early Treatment of Pneumonia. C. A. Gray, Bonham.
61 Creosote in Tuberculosis. J. C. Carleton, Boston.

58. Drains and Drainage.—To dilute the waste matter coming from the rapid changes that ordinarily follow a surgical operation, Cantrell fills a water-bag with normal salt solution and hangs it eight to ten inches above the patient, adjusts the long vaginal nozzle, that has numerous openings, into it so that as the water passes in at some, gas that may want to escape may pass out at others. This is inserted into the rectum and held in place with strips of adhesive plaster passed around the nozzle and then made fast to the patient, the water is turned on slowly. Cantrell says that it is surprising the quantity that may be taken up in this manner with little or no discomfort, thus facilitating drainage through the natural channels, as well as supplying the necessary fluids otherwise needed.

Journal of Experimental Medicine, New York.

August.

62 *Study of Epidermal Fibrils. R. L. Thompson, St. Louis.
63 *Influence Exerted on the Virulence of Carcinoma in Mice by Subjecting the Tumor Materials to Incubation Previous to Inoculation. G. H. A. Clowes and F. W. Baeslack, Buffalo.
64 *Studies on Calcareous Degeneration. O. Klotz, Montreal.
65 *Pathogenesis of Experimental Colitis and Relation of Colitis in Animals and Man. S. Flexner and J. E. Sweet, New York.
66 Solution of Tissue with Abscess. E. L. Opie, New York.
67 *Simple Method for Plating of Anaërobic Organisms. H. Zinsser, New York.
68 Influence of Colloids on the Diffusion of Hemolysins. S. Flexner and H. Noguchi, New York.

62. **Epidermal Fibrils.**—Thompson found that in certain animals, in addition to the protoplasmic fibrils of the stratum filamentosum that are present normally in human epidermis, there are well-developed fibrils in the cells of the stratum germinativum. These fibrils are present in the human epidermis only under conditions of increased cell activity. These fibrils, that are prominent in the stratum germinativum of human epidermis under conditions of increased cell activity, seem to increase in direct ratio to rapidity of cell production. The differentiation of these fibrils of the stratum germinativum into the finer fibrils which connect the cells of the stratum filamentosum can be observed under proper conditions of growth and therefore there should be no separation of the fibrils into different groups with various names. This process of fiber production by the cells of the human epidermis is analogous to increased fiber production by various other cells under similar conditions, and may be of importance in identifying or classifying new growths of epithelial origin.

63. **Effect of Incubation on Tumor Cells.**—The experience of Clowes and Baeslack with mouse tumors has demonstrated that a great difference exists not only in the relative immunity possessed by different individuals, but also in the relative virulence of different tumors all owing their origin to the same source. The variations in question can be accentuated by incubation of the transplantation materials previous to inoculation at temperatures varying from 37 to 41 C. In the case of extremely virulent tumors giving a yield of over 60 per cent. under normal conditions, a distinct and gradual fall in virulence accompanies increasing temperatures of incubation until a point is reached at which no further tumors are obtained. On the other hand, relatively inactive materials giving comparatively small yields of tumors under normal conditions may be so stimulated by subjecting them to incubation at suitable temperatures as to afford a large yield and relatively more rapidly growing tumors than were obtained in the normal series. Those tumors which give a small yield under normal conditions, but which give an increased yield on incubation, are either rapidly growing young tumors, or small and hard tumors, or tumors that have been extremely slow in their development, and have in certain cases exhibited indications of a tendency to undergo spontaneous recovery. Those tumors which on inoculation give a large yield at normal temperatures and a gradually decreasing percentage of tumors in the batches inoculated with materials which have been incubated at increasing temperatures are generally fully grown tumors which have developed rapidly and come of a relatively active strain.

64. **Calcareous Degeneration.**—The methods employed by Klotz resemble those of previous investigators. A pure solution of adrenalin chlorid, 1 to 1,000, was injected into the ear veins of rabbits. Microscopic lesions, such as dilatation of the blood vessels, hemorrhages in the brain and aneurismal distensions of the larger vessels, were noted. The most frequent lesions were situated in the descending arch of the aorta, where white calcified plaques formed the chief naked-eye alterations. The aneurisms were found to be situated in the centers of these white plaques which have been described by some as atheromatous areas. Histologic examination shows that these plaques, at on early stage, are situated entirely in the media and that the calcification which occurs here is the secondary result of a degenerative, chiefly fatty, change which takes place in the media. Calcification is never found in the intima, and only rarely are there any intimal changes. The intimal changes which occur are of two kinds; either there is a local heaping up of endothelial cells at a point where no degenerative changes of any kind have taken place, or there is a thickening of the intima underneath the endothelial cells, chiefly due to proliferation of the connective tissues, in which slight fatty changes may occur. Such being the case, Klotz believes that the term atheroma must be discarded in describing the experimental arterial lesions in rabbits.

65. **Colitis in Man and Animals.**—Flexner and Sweet state that the toxin of the Shiga dynasty bacillus is liberated from the bacillus through the process of autolysis. In rabbits the toxin is not absorbed directly in an active form by the gastrointestinal tract; in man, however, absorption of an active poison does take place from the intestine. The toxin is excreted in rabbits, and probably in man as well by the intestine, chiefly probably by the large intestine, which being injured by the act of elimination, reacts by the development of inflammation, etc. In rabbits the characteristic action of the toxin depends on the integrity of the biliary secretion into the intestine. When the bile is prevented from entering the intestine, either by ligature and section of the duct or by establishment of a biliary fistula, no lesions whatever of the large intestine appear, or they are inconsiderable in extent. The loss of toxin through a biliary fistula does not prevent in rabbits the lethal effects which are caused, apparently, by a nervous poison. The tying off of the bile duct seems to prevent the passage of the toxin in amounts sufficient to cause the large intestinal lesions into the blood. The liver, therefore, in this condition tends to hold back the toxin from the general circulation. The peculiar effects of the toxin on the large intestine in rabbits is not produced at once, but would appear to depend on successive acts of excretion of the poison by the bowel. The establishment of biliary fistula reduces the intensity of action of corrosive sublimate on the large intestine in rabbits; and the lesions of ricin poisoning in these animals are also modified by this operation. Dysentery toxin is destroyed by peptic digestion, and also, though probably more slowly, by tryptic digestion. The absence of power of the toxin to cause poisoning in rabbits when it is brought directly into the lumen of the intestine, is not explained by the destructive action of trypsin. The character of the histologic changes in the cecum of rabbits caused by the dysentery toxin, points to an action on the substance and not primarily on the surface of the intestine.

67. **Method for Plating Anaërobes.**—The method described by Zinsser, besides being a facile one for separation, permits the assumption of absolute anaërobiosis. The apparatus used consists of two circular glass dishes fitting one into the other as do the halves of a Petri dish, and similar to these in every respect, except that they are higher, and that a slightly greater space is left between their sides when they are placed together. The dishes should be about three-fourths to one inch in height, they need be of no particular diameter, although those about the same size as the usual Petri dishes are most convenient. The sole requirement necessary for successful plating is that the trough left between the two plates when put together shall not be too broad, a quarter of an inch being most favorable. Into the smaller of these plates the inoculated agar is poured exactly as is done into a Petri dish in the ordinary anaërobic work. Prolonged boiling of the agar before plating is not essential. When the agar film has become sufficiently hard on the bottom of the smaller dish, the entire apparatus is inverted. The smaller dish is now lifted out of the larger and placed, still inverted, over a moist surface—a towel or the wet surface of the table—to prevent contamination. Into the bottom of the larger dish, which now stands open, there is placed a quantity (1 to 2 drams) of dry pyrogallic acid. Into this, over the pyrogallic acid, the smaller dish, still inverted, is then placed. A strong solution of sodium hydrate is poured into the space left between the sides

of the two dishes, in quantity sufficient to fill the receiving one half full. While this is gradually dissolving the pyrogallic acid (and this is the only step which requires speed) albolin, or any other oil, is dropped from a pipette, previously filled and placed in readiness, into the same space, thus completely sealing the chamber formed by the two dishes. If these steps have been performed successfully the pyrogallic solution will at this time appear of a light brown color and the small plate with its agar film will float unsteadily above the other. Very rapidly, as the pyrogallic acid absorbs the free oxygen in the chamber, this plate is drawn down close to the other, and the acid assumes a darker hue, which remains without further deepening even after three or four days' incubation.

Archives of Ophthalmology, New Rochelle, N. Y.

July.

69 Epithelial Formation in the Iris. E. L. Oatman, Brooklyn, N. Y.
70 Case of Melanosarcoma of the Choroid and Orbit. E. L. Oatman, Brooklyn.
71 Traumatic Lacteration of the Inferior Rectus Muscle. H. Moulton, Ft. Smith, Ark.
72 Case of Orbital Endothelioma. J. M. Cooper, Detroit, Mich.
73 Glioma of the Retina. S. C. Ayres, Cincinnati.
74 Pigmentation of the Retina After Optico-Ciliary Neurectomy in Man. T. F. Studer.
75 Posterior Sclerotomy as a Preliminary to Iridectomy in Acute Glaucoma. A. Knapp, New York.
76 Two Cases of Osteoma of the Orbit Successfully Treated by Operation. A. Knapp, New York.
77 Eye Infection, Three Hundred Cases with Bacteriologic Examination. D. Smith, Bridgeport, Conn.
78 Rare Case of Thrombosis of the Cavernous Sinus Following Orbital Thrombophlebitis. F. Stocker, Lucerne.

The Philippine Journal of Science, Manila. Supplement II.

June 15.

79 New Philippine Ferns. E. B. Copeland, Manila.

The Philippine Journal of Science, Manila.

July.

80 Rinderpest. P. G. Woolley, Manila.
81 Preliminary Geologic Reconnaissance of the Loboo Mountains, Batangas Province. W. D. Smith, Manila.
82 Vegetation of the Lamao Forest Reserve, II. H. N. Whitford, Manila.
83. Catalogue of Philippine Hymenoptera, with Descriptions of New Species. R. E. Brown, Manila.
84 Notes on Birds Collected in Mindoro and in Small Adjacent Islands. R. C. McGregor, Manila.

California State Journal of Medicine, San Francisco.

July.

85 Indications for and a Description of the Mastoid Operation. H. Hastings, Los Angeles.
86 Medical Licensure. S. D. Van Meter, Denver.
87 Recognition of Affections of the Upper Air Passages in School Children. E. Mayer, New York.
88 Etiology of Embolism. W. H. Flint, Santa Barbara.
89 Diet and Hydrotherapy in the Treatment of Rheumatism and Gouty Conditions. R. Crees, Paso Robles.
90 *Proprietary Medicines. G. H. Simmons, Chicago.

90.—See The Journal, May 5, 1906, page 1333.

Woman's Medical Journal, Toledo, Ohio.

August.

91 Dysmenorrhea in Young Girls. J. Ghrist, Ames, Iowa.
92 Timidity. M. K. Isham, Cincinnati.

Ophthalmic Record, Chicago.

August.

93 Observations on Methods of Advancement. J. E. Cogan, Cleveland, Ohio.
94 Critical Review of the American Railway Association's Rules Governing the Visual Qualifications of Employés. N. M. Black, Milwaukee.
95 Concerning the Signs in the Retina of Persistent High Arterial Tension and Their Diagnostic and Prognostic Import. G. E. de Schweinitz, Philadelphia.
96 Silver Preparations in Conjunctival Disease. M. Standish, Boston.

Texas Medical News, Austin.

August.

97 Importance of the Recognition and Treatment of Adenoids. D. T. Atkinson, Hillsboro.
98 Prenatal Influence and Postnatal Suggestions. C. E. Belcher, Munson Station, Pa.

Vermont Medical Monthly, Burlington.

August 15.

99 Medical Curriculum. H. C. Tinkham, Burlington.
100 Diagnosis of Chronic Interstitial Nephritis. S. W. Hammond, Rutland.
101 Recent Phases in Connection with the Vermont Observation Law for Insane Criminals. W. D. Berry, Burlington.
102 Preventive Medicine. H. L. Manchester, Pawlet.
103 Broncho-Pneumonia in Children. L. A. Newcomb, Montpelier.

Fort Wayne Medical Journal-Magazine.

August.

104 Forceps. L. P. Drayer, Ft. Wayne.
105 Food Values and Their Practical Application. A. P. Buchman, Ft. Wayne.

The Medical Fortnightly, St. Louis.

August 25.

106 Case of Camphor Poisoning. O. M. Rhodes, Bloomington, Ill.
107 Huacos (Mummy-grave) Potteries of Old Peru (A Study in Pre-Columbian Pathology). A. S. Ashmead, New York.
108 Female Prostate—Anatomico-Surgical. C. E. Barnett, Ft. Wayne.

Pennsylvania Medical Journal, Athens.

August.

109 Philadelphia County Medical Society—Its Problems of the Future. J. M. Anders, Philadelphia.
110 *Focal Diagnosis of Operable Tumors of Cerebrum. C. K. Mills, Philadelphia.
111 *Remarks on the Surgical Aspects of Operable Tumors of the Cerebrum. C. H. Frazier, Philadelphia.
112 *An Instrument Affording a Quick and Safe Method of Entering the Skull with the Minimum Destruction of Bone and Always Preserving a Vital Bone Flap. H. C. Masland, Philadelphia.
113 *Avulsion of the Terminal Branches of the Trigeminal Nerve for the Cure of Trifacial Neuralgia. E. LaPlace, Philadelphia.
114 *Conservative Treatment of the Enlarged Prostate. H. M. Christian, Philadelphia.
115 Case of Cesarean Section. J. H. Devor, Ft. Loudon, D. F. Unger and G. M. Brubaker, Mercersburg.

110, 111, 113.—See The Journal, Oct. 4, 1905, page 1188.

112.—See The Journal, March 4, 1905, page 713.

114.—See The Journal, Oct. 28, 1905, page 1351.

Illinois Medical Journal, Springfield.

August.

116 Some of the Problems of the Internist which Concern the Surgeon. J. F. Percy, Galesburg.
117 *Significance of Hydrochloric Acid Variation in the Stomach Contents. E. J. Brown, Decatur.
118 Flatfoot and Symptomatic Arches. F. B. Lucas, Peoria.
119 Rights and Duties of Municipalities in Regard to Infectious Diseases. G. W. Webster, Chicago.
120 Obstetric Asepsis and Antisepsis. J. B. De Lee, Chicago.
121 Action of Antiseptics on the Parasite. A. Gehrmann, Chicago.
122 Fifty Bacteriologic Tests of Hands, Brushes, Gloves, Pasteur-Filtered Water, Steam and Formaldehyd Sterilizers, and Formaldehyd Disinfection of Rooms. A. Goldspohn, Chicago.
123 *Attitude of the Physician Toward the Nostrum Evil. C. S. Williamson, Chicago.

117, 123.—See The Journal, June 9, 1906, page 1787.

Annals of Gynecology and Pediatry, Boston, Mass.

August.

124 Medical Inspection and Examination of School Children in New York. S. J. Baker, New York.

Southern Medicine and Surgery, Chattanooga, Tenn.

August.

125 Arteriosclerosis; Its Relation to Disease of the Nervous System and to Disorder of Function. (To be continued.) J. Collins New York.
126 Technic of Abdominal Closures. E. Malone, Memphis, Tenn.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

August 25.

1 *Circulation Viewed from the Periphery. J. Barr.
2 *Technic of Operations on the Central Nervous System. V. Horsley.
3 *Teaching of Obstetrics. W. S. A. Griffith.

1, 2, 3.—See abstracts in The Journal, Sept. 1, 1906, p. 706.

The Lancet, London.

August 25.

4 *Observations on the Effect of Sterile Caseous Matter in the Treatment of Tuberculous Disease. P. Paterson.
5 *Anti-cholera Serum. A. McFadyen.
6 Hematogenous Albuminuria. R. H. Fox.
7 Two Cases of Multiple Infection. G. C. Chatterjee.
8 Correction of Death-rates. T. F. Pearse.
9 Induction of Hypnosis. E. Ash.

4. **Sterile Caseous Matter in Treatment of Tuberculosis.**—Paterson directs attention to a few observations which he has made on the effect produced on tuberculous lesions by the injection of some of the products of the tubercle bacillus as elaborated in the body. He says that it is well known that tubercle bacilli are found in the walls of tuberculous abscesses, but in the contents they may be so few that inoculation experiments may be necessary to demonstrate their presence. The conditions in the interior of such abscesses are apparently

favorable to growth; the serum and soluble toxins pass into the circulation, producing more or less constitutional disturbance, whilst there is a stream of fresh serum, rich in nutritive substances, into the interior; the temperature is most suitable, and still not only do the bacilli not increase, but actually diminish in numbers. There must, then, be some substance in the contents which is inimical to the bacilli and, as the fluids are being constantly renewed, presumably this deleterious material is in the encapsulated solids.

The conditions which exist in an abscess, as regards the relative proportion of caseous matter, can not be produced in the body as a whole, still the possibility remains that the introduction of small quantities might exert a beneficial influence on the disease. But before such injections can be made it is necessary to destroy the living bacilli present, for though these may be so few as to escape notice with the microscope, inoculations show that even in these cases they are present. As it was requisite that the chemical constitution of the solids should be as little charged as possible it was evident that neither heat nor chemicals could be used for the purpose of sterilization, and extreme cold, even though applied continuously for a long time, does not affect the virulence of organisms. Cold applied intermittently was found to produce the desired result. If tuberculous pus be kept in a refrigerator for five or six months, but allowing it to thaw frequently during that time, the pus will not induce tuberculosis when injected into guinea-pigs, even in large doses. Having destroyed the bacilli by this means the serum is poured off and the sediment is then washed for three days in a continuous stream of cold sterilized water to remove all soluble toxins. Sterile normal salt solution is now added to the fine white sediment till each centimeter of the emulsion contains 5 milligrams of solid substance and the material is then ready for use.

Large numbers of animals have been injected with this suspension by Paterson, and in no instance has tuberculosis been produced. If a large quantity be injected into a tuberculous patient there is a well-marked reaction, but a few minims can be given without any evident disturbance. If the opsonic index is to be regarded as the degree of resistance of the body against any particular organism then we have in this substance a means of raising the tuberculous index to a high level and that without any negative phase. In one of Paterson's patients this index rose from 0.5 to normal limits within twelve hours. Such a rapid rise is unusual, but there is no difficulty in raising the index to what is regarded as normal and in maintaining it at that level. The technic necessary to obtain this index is so elaborate that it can only be conducted in a fully equipped laboratory and by a properly trained observer, and so long as it remains in this position it can only be employed in a limited number of cases. In using caseous matter, Paterson has found the temperature a convenient guide to the dose. If sufficient be introduced to raise the temperature from 0.5 degree to 1 degree, the best results are obtained and at the same time the index keeps within normal limits. If there be no rise of temperature the index may still be high and yet little, if any, improvement be observed in the disease. He has found that from 0.1 to 0.5 cubic centimeter of emulsion given every second day is sufficient to raise both index and temperature. Paterson begins with the smaller quantity and increases the amount at each injection till a slight reaction appears.

5. **Anticholera Serum.**—MacFayden conducted experiments which show: 1. That acutely toxic cell juices possessing active immunizing properties can be obtained from the cholera organism by the method employed. 2. That an antibody can be produced for that primary poison which exists as an integral constituent of the cholera bacillus—a matter on which there has been considerable dispute and difference of opinion. 3. That the antiendotoxic power of the serum can be raised to a marked degree—a matter of equal importance. 4. That the serum in addition to its antiendotoxic possessed agglutinative and bacteriolytic properties. 5. That in the case of the cholera organism there exists an intimate relationship between its virulence and toxicity. 6. That the cholera endotoxin obtained under the conditions described is thermolabile, being readily destroyed at 55 and 60 C.

Journal of Tropical Medicine, London.

August 15.

10 Beriberi—A Restatement and Reply to Some Criticisms. H. Wright.
11 Malignant Anthrax Edema in Central America. A. Y. Massey.

The Liverpool Medico-Chirurgical Journal, London.

July.

12 Diminishing Birth-rate. H. R. Jones.
13 Effect of Small Doses of Potassium Iodid. W. Carter.
14 Polycythemia Vera (Vaquez's Osler's Disease); A Description of a New Clinical Entity. With a note of a Method of Estimating the Viscosity of the Blood. J. H. Watson.
15 Irregular Pulse: Its Value in Prognosis. J. Hay.
16 Stokes-Adams Disease. J. Hay.
17 Modern Treatment of Syphilis. D. Smart.
18 Complications of Pneumonia and Their Treatment. N. Raw.
19 Acute Nephritis—Morbus Brightii; With Special Reference to Treatment. A. G. Gullan.
20 Possible Danger in Exploratory Puncture of the Chest. H. Armstrong.
21 Significance of the Opsonic Power of the Blood, and the Value of Estimations of the Opsonic Index in the Diagnosis of Tubercular and Other Infections. T. R. Bradshaw and E. E. Glynn.
22 Opsonic Power of the Blood. G. A. Grace-Calvert.
23 Case of Acute Hemorrhagic Pancreatitis. F. W. B. Young.
24 Some Cases of Chronic Rigidity of the Spine. W. B. Warrington.
25 Further Note on Appendicitis. F. T. Paul.
26 Case of Appendicitis with Complications. K. W. Monsarrat.
27 Three Cases of Intra-Peritoneal Rupture of the Bladder. R. W. Murray.
28 Internal Derangement of the Knee Joint; Differential Diagnosis and Treatment. T. Thomas.
29 Tropical Abscess of the Liver. G. P. Newbolt.
30 Posterior Vertebral Tuberculosis. K. W. Monsarrat.
31 Case in which the Spinal Cord of a Rabbit was Used to Bridge over a Gap in the Musculo-Spiral Nerve. D. D. Crawford.
32 Position of the Operative Treatment of Fibroid Tumors of the Body of the Uterus. T. B. Grimsdale.
33 Puerperal Eclampsia. J. Blair.
34 Preliminary Note on a New Theory of Female Genital Activity. W. B. Bell.
35 Three Interesting Cases of Papillomatous Tumor. F. T. Paul.
36 Examination of the Blood by Means of Cut Sections. R. M. J. Buchanan.
37 Aspects of Pruritus. F. H. Barendt.
38 Scabies: Some Points in Diagnosis, Infection and Treatment. F. H. Barendt.
39 X-Ray Treatment of the Ringworm of the Scalp. S. Taylor and W. C. Oram.
40 Subjective Symptoms in Eye-Diseases. R. J. Hamilton.
41 Influence of X-Rays on the Nitrogenous Metabolism and on the Blood in Myelogenous Leukemia. O. T. Williams.
42 Treatment by Hypnotic Suggestion. A. B. Taplin.

Annales de l'Institut Pasteur, Paris.

Last indexed XLVI, page 1651.

43 (XX, No. 4.) Trypanosomiase des chevaux de l'Annam (horses). J. J. Vassal. Id. Comparison avec le surra. A. Laveran and F. Mesnil.
44 *Des endotoxines solubles typhique, pesteuse et dysentérique. Besredka.
45 Sur une spirillose d'un chéiroptère (bat). C. Nicolle and C. Comte.
46 (No. 5.) *Le sérum antidysentérique. L. Vaillard and C. Dopter.
47 *Origine intestinale de la tuberculose pulmonaire et mécanisme de l'infection tuberculeuse. A. Calmette and C. Guérin.
48 Etudes épidémiologiques et prophylactiques du paludisme. IV campagne en Algérie, 1905. (Commenced in No. 4.) E. and E. Sergent.
49 *La lèpre expérimentale chez les singes inférieurs (monkeys). C. Nicolle (Tunis).
50 Bacillus putrificus. Bienstock.
51 (No. 6.) Transmission de la péripneumonie des bovidés aux espèces ovine et caprine (pleuropneumonia in sheep and goats). E. Dujardin-Beaumetz.
52 Sur les relations des sensibilisatrices avec l'alexine. J. Bordet and F. P. Gay.
53 De l'action du streptocoque et de sa lysine introduits par voie buccale et de quelques questions qui s'y rattachent. A. Tchitchkine.
54 (No. 7.) *Traitement des trypanosomiases par les couleurs de benzidine. (Commenced in No. 6.) F. Mesnil and M. Nicolle.
55 Injection des couleurs de benzidine aux animaux normaux. G. Bouffard.
56 To Gather and Preserve Flies, Mosquitoes, etc.—Récolte et conservation des diptères. E. L. Bouvier.
57 Culture du trypanosome de la grenouille (of the frog). G. Bouet.
58 Recherches sur la toxine et l'antitoxine cholériques. Bran and Denier.
59 Nouvelles recherches sur la spirillose des poules (of fowls). Levaditi and Manouellan.
60 *Un sérum toxique pour les nerfs périphériques. A. Schmidt (Moscow).

44. **Soluble Endotoxins.**—Besredka states that an endotoxin can be obtained from bacilli, by triturating a dry mixture of the bacilli and sea salt and then adding water. These endotoxins are more strongly toxic than any other toxin yet described, but they can be neutralized by corresponding serums

obtained by intravenous injection of living microbes. The temperature at which they are destroyed by heat is invariable and characteristic, like the boiling or melting point for chemical substances.

46. **Great Efficacy of Antidysentery Serum.**—Vaillard and Dopter state that the serum of horses immunized against the bacillus of dysentery possesses antimicrobian and antitoxic properties which render it useful in therapeutics. This serum is entirely harmless for man, but is proving to be almost specific in the treatment of bacillary dysentery. It has no effect on any other variety. They claim that it arrests both the infection and the intoxication and insures rapid recovery, putting an end at once to all the intestinal disturbances. Its effects are more striking the earlier it is used, although it has proved effectual even as late as the sixteenth day. Prolonged and chronic dysentery is also amenable to this serum treatment. These results were practically constant in 96 cases of severe dysentery treated with the serum alone, the number of stools ranging from 15 to 288 a day. The amount injected ranged from 20 to 100 c.c., and the injection was sometimes repeated after twenty-four hours, and again a third time in the most threatening cases. The Shiga-Kruse bacillus had been used to immunize the horses, but the serum proved equally effectual against this and against the Flexner bacillus. The curative action of the serum is so prompt and certain that its prophylactic use seems hardly necessary.

47. **Frequency of Tuberculous Infection by Way of Digestive Tract.**—Calmette and Guérin supplement their previous publications on experimental tuberculosis with the present article, which relates research with cows. The results show that adult cows, as well as calves, contract tuberculosis by the intestinal route, without any traces to be found in the walls of the intestinal tract revealing the passage of the tubercle bacilli through them. In younger animals the bacilli are retained more or less completely in the mesenteric glands. They may die off in the glands or may entail the formation of tubercles. In adult animals the defensive reaction on the part of the glands is much less pronounced, and the bacilli are generally swept along, with the leucocytes which have incorporated them, into the lymph circulation and through the pulmonary artery to the lung. Pulmonary tuberculosis in the adult, supposedly primary, is more often of intestinal origin. In experimental work, infection by way of the digestive tract is the most effectual and the one that conforms best to the normal conditions of natural infection.

49. **Transmission of Leprosy to Monkeys.**—Monkeys of a low type have been found by Nicolle to be susceptible to leprosy in about the same degree as they are susceptible to syphilis. The findings with anthropoid apes may prove more instructive.

54. **Treatment of Trypanosomiasis by the Benzidin Dyes.**—Nicolle and Mesnil have been experimenting with other dyes of the benzidin group to which trypan red belongs, and give the details of their research, both in regard to the chemical and the biologic action of the dyes in trypanosomiasis. They found that the dye known as "dichlorobenzidine-acid H" (Bayer) is the most powerful in its curative action and is effectual in the three forms of trypanosomiasis in animals, in nagana, mal de caderas and surra. It has, besides, a very striking preventive action in respect to surra. Their tests were made mostly on mice.

60. **Prepared Serum Toxic for the Peripheral Nerves.**—Schmidt made an emulsion of sciatic nerves from hogs and injected it into the peritoneum in guinea-pigs. The serum of the guinea-pigs acquired in time a destructive property for the peripheral nerves of frogs. The nerves suffered both in their physiologic functions and in their structure.

Annales d. Mal. d. Org. Gén.-Urin., Paris.

Last indexed, XLVI, page 1652.

61 (XXIV, No. 6.) Cystoscope combiné pour irrigation, evacuation et cathétérisme de l'un on des deux uretères. A. V. Freudenberg.
62 Synorchidie artificielle après section du cordon pour grosses hernies on ectopies très élevées. Mauclaire.
63 Prostatectomie totale par la voie sus-pubienne. A. Papadopoulos.
64 (No. 7.) Salt Starvation.—Les régimes déchlorurés. (Mal de Bright, chlorurémie et azotémie). F. Widal.
65 De la mesure de la capacité du bassinet (of small pelvis). G. Luys.
66 Anatomie pathologique des cancers épithéliaux de la prostate. Motz and Majewski.
67 Procédé opératoire de l'amputation partielle du pénis, à lambeaux latéraux égaux caverno-cutanés. Kalliontzis (Athens).
68 (No. 8.) Décapsulation rénale et néphrectomie dans le traitement des formes graves de l'éclampsie. Pousson and Chambrelent (Bordeaux). See The Journal, page 308, and also in vol. xlvi, page 1567.
69 Traitement de l'épididymite blennorrhagique par l'epididymotomie. Bazet (San Francisco). See The Journal for April 28, 1906, page 1319.
70 Traitement chirurgical des néphrites chroniques. Address at Lisbon International Medical Congress. A. Pousson.
71 (No. 9.) *Traitement de la blennorrhagie chronique par les instillations de nitrate d'argent suivies de l'introduction d'un cathéter en zinc. F. Balzer and A. Tansard.
72 Sur la lithiase rénale. P. Héresco.
73 Le massage vibratoire de la prostate. Nicolich.
74 (No. 10.) Masturbation symptomatique (épilepsie larvée). C. Féré.
75 Nouvelle canule urétrale à triple courant. F. Zacco (Turin).
76 Funiculite lympho-toxique des pays chauds (tropical). R. Ménocal (Havana).
77 Injections of Sea Water in a Case of Nephritis.—L'eau de mer en injections isotoniques sous-cutanées dans un cas d' edème brightique. Robert-Simon.
78 (No. 11.) *Etude des ruptures traumatiques de la vessie (of bladder). L. Morel.
79 Les méfaits des artifices de la fécondation (mishaps with artificial aids to fecundation). C. Féré.
80 Du rôle de la ponction lombaire dans le traitement de l'urémie nerveuse. G. Carrière (Lille).

71. **Silver Nitrate and Zinc in Chronic Gonorrhea.**—Balzer and Tansard report 13 cases treated with nitrate of silver and zinc, the action of the zinc decomposing the silver nitrate. There is thus a production of silver albuminate and of silver chlorid which are deposited on the mucosa lining the urethra. There is, further, a formation of metallic silver, also of traces of zinc chlorid, and, finally, of zinc nitrate, which is the most effectual factor of all in the treatment. To obtain this combined local action they instil 10 to 20 drops of a 1 per cent. solution of nitrate of silver. Immediately afterward they insert a catheter made of metallic zinc, about 32 or 40 in the Béniqué series. The zinc catheter is held in the urethra for a minute or two, until the chemical reaction becomes evident by the pain experienced and by the black discoloration of the vaselin with which the catheter is lubricated. In two minutes this black stain shows that the silver-zinc reaction has occurred, and the catheter is then withdrawn. The catheter should be boiled beforehand in distilled water and cleaned at once after removal. They rub it with potassium iodid until it has resumed its usual color. It loses its polish soon and has to be sent to be repolished occasionally. The efficacy of this combined treatment is established by the cases reported. They affirm seven applications cured the first patient, 9 the second and third, 5 the fourth, and so on, all cases of rebellious chronic gonorrhea in males. The method is probably equally applicable for girls and women, in vaginitis and metritis.

78. **Traumatic Ruptures of the Bladder.**—Morel reports 3 cases which show the diagnostic importance of finding always the same quantity of urine in the ruptured bladder, as all the urine above the point of rupture flows out into the peritoneal cavity. The almost immediate refilling of the bladder is also important. The urine accumulated outside flows back into the bladder as soon as it is emptied. One patient had general paralysis, and this allowed his bladder to become distended to the bursting point. The degeneration of the bladder musculature also favored abnormal distension.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 76.

81 (LXXIX, No. 1.) *Die Sectio cæsarea an der Klinik Schauta. J. Neumann.
82 Ueber Melanosarcoma ovarii. Gleichzeitig ein Beitrag zur Physiologie des Pigments. H. Bab.
83 *Studien zum klinischen und pathologisch-anatomischen Verhalten der Lymph-Drüsen bei malignen Erkrankungen, hauptsächlich dem Carcinoma colli uteri (behavior of lymph glands with cancer). F. Fromme.
84 (No. 2.) *Ueber die primären Resultate und die Dauererfolge der modernen Myom-Operationen (results immediate and remote). O. Sarwey.
85 *Ueber die Tuberculose der Vulva. Logothetopoulos.
86 *Influence of Disinfection of Vagina on Puerperal Morbidity.—Einfluss der Scheidendesinfection auf die Morbidität des Wochenbettes. K. Baisch.
87 Zur Frage der Cysten der Corpora lutea des Ovariums. W. Grouzdew.

88 *Zur Gravidität und Hämatometra des atretischen Nebenhorns (closed accessory horn). R. Freund.
89 Fall von Gonokokkämie bei einem Säugling mit Blennorrhoe (in Infant). Hocheisen.
90 *Kidney Functioning in Congested Kidney of Albuminuria in Pregnancy and in Eclampsia.—Nierenfunction bei Schwangerschaftsniere und Eklampsie. O. Büttner.
91 *Die Nucleo-Proteide in der Behandlung septischer Krankheitsformen. E. Pollak (Vienna).

81. **Schauta's Experience with Cesarean Section.**—Neumann discusses from various points of view the 175 Cesarean sections performed in Schauta's clinic, with five others done immediately after death. He remarks that this is the largest series of operations yet published from one clinic. He tabulates the various details, showing that 161 of the women recovered, including 52 febrile cases; in 140 cases there was no reaction on the part of the wound, while there were stitch-hole abscesses in 10 and in the abdominal wall in 8. In 25 cases postoperative bronchitis was observed, with lobular pneumonic foci in 4 and croupous pneumonia in 1. About half of these pulmonary cases occurred during the winter. In one case a latent tuberculous affection of the lungs made itself manifest in the bronchitis after the operation. These respiratory affections occurred about equally with the various anesthetics employed. The importance of these affections is shown by the fact that these cases were all accompanied by fever except in 5 out of the 45. Coughing also has an unfavorable influence on the healing of the wound, being probably responsible for 9 out of the 18 cases in which the wound did not heal by primary intention. In the 14 fatal cases the wound had healed by primary intention in several, and death was due to eclampsia in 3 and to other causes in the 6 for which the operation was in no way responsible. In 8 cases the operation may possibly be incriminated, one death being due to asphyxia under chloroform, one on the fifth day to pneumonia. The anesthetic in this last case had been Schleich's mixture. Death in another case was the result of axial torsion of the intestine from adhesions consecutive to the Cesarean section. In another case it was the result of hemorrhage from the stump after a Porro operation. Hemorrhage from the stump in a second case was due to pre-existing infection. In the three other cases death was due to infection of the wound, and they emphasize anew the extreme caution necessary in selecting cases for Cesarean section, also the necessity for avoiding internal examination of women for whom Cesarean section is contemplated, and, last but not least, absolutely certain asepsis on the part of the operating surgeon. Of the 175 children, 164 were living twenty-four hours after the intervention, 7 were born dead and 3 died in asphyxia. In 18 cases Cesarean section had been done before, in 13 instances at the same clinic. Adhesions were found in all these cases, so large and strong in 2 cases that it was hard to open up the peritoneal cavity. The adhesions were at about the same points as in Haven and Young's material. They show that the ultimate outcome even with modern technic is still far from perfect. The best results were obtained with a sagittal incision, made as high as possible.

83. **Lymph Glands in Carcinoma of the Cervix.**—Fromme is assistant physician in charge of the gynecologic clinic at Halle, and here discusses certain questions connected with cancer of the cervix, among them the cause of the sudden febrile attacks with chills sometimes observed in the course of cancer. He reviews the literature on the subject of the behavior of the lymph glands, and then describes in detail 31 cases from his own experience presenting atypical features. Among other points learned is that the occasional appearance of fever with carcinoma of the cervix must be the result of infection of some of the lymph glands with very virulent micro-organisms, which overcome the resistance offered by the glands and pass on into the blood. When the glands are already affected, even slightly virulent micro-organisms are able to overcome their resistance. The micro-organisms come from the cancer, or enter through some mechanical or chemical injury of its surface. In consequence of the bacterial invasion of the glands a growth of granulation tissue and of connective tissue is stimulated. This may be the work of the cancer toxins alone or associated with living bacteria, or it may follow invasion of the gland by the cancer. This new formation of connective tissue aids in the defense as, if the gland is not already cancerous, it opposes greater resistance to invasion by the cancer later, and if the gland is already cancerous, the malignant growth may become encapsulated by connective tissue and be choked out. The gland then seems to be full of a white, greasy mass.

84. **Results of Operative Treatment of Myoma.**—Sarwey analyzes the results of 430 operations for myoma at Döderlein's clinic at Tübingen. Comparing them with others' statistics he finds the total mortality of myoma operations to be 4 or 5 per cent.; those done by the vaginal route show 1 or 2 per cent. higher mortality and the conservative operations 1 per cent. higher mortality than the radical operations. He comments on the great frequency of complications of myoma and declares that they are a strong argument for operative treatment. The ultimate outcome, he says, in cases treated by removal of both ovaries in connection with the radical operation are the best conceivable. Disturbances connected with the artificial menopause were noticed in only a third of the patients, and were always so slight and transient as not to interfere with the working capacity. Danger of trouble in the ovaries later is thus summarily done away with. Conservative operations have several drawbacks, among them the possibility of recurrence and of rupture of the uterus at the point of enucleation. Youthfulness and the express wish of the patient to retain menstruation and the possibility of conception are the only indications, he thinks, for conservative procedures. He advocates not to waste time on symptomatic treatment if it does not soon prove effectual, but to operate promptly after fully instructing the patient in the matter.

85. **Tuberculosis of the Vulva.**—The lesion was removed in the case described on the assumption that it was a cancer, but it proved to be a patch of ulcerated miliary tuberculosis, apparently primary. The patient was a woman of 75, and she succumbed five days afterward to general weakness. An old tuberculous focus was found in the right apex and the glands of the hilus were calcified. The findings in this case throw doubt on some of the published cases of supposed primary genital tuberculosis.

86. **Influence of Disinfection of Vagina on Puerperal Morbidity.**—Baisch remarks that the use of rubber gloves and bacteriologic examination have placed the study of this question on a surer foundation. His article is based on 1,000 spontaneous births in which the parturient was usually repeatedly examined, as many as thirty times in one case. In half of the patients the vagina was washed out with a solution of sublimate. The febrile cases among the irrigated numbered 64, that is, 12.8 per cent., while the unirrigated had only 40 febrile cases, that is, only 8 per cent. Comparing only those in which an internal examination was made, 12.8 per cent. of 500 irrigated and 7.7 per cent. of 373 unirrigated, proved to be febrile cases. Excluding the extragenital sources for the fever, the percentages were respectively 10 for the irrigated and 5.2 per cent. for the unirrigated. Bacteriologic examination before and after showed that the rinsing with a solution of corrosive sublimate was not able to destroy the various germs, especially streptococci and gonococci. It modified the bacteriologic content to the extent that the harmless bacilli were destroyed or overwhelmed by the streptococci which then proliferated unchecked. Streptococcus endometritis was observed in 5 cases among the unirrigated and in 14 cases among the irrigated. The sublimate disinfection has now been abandoned. At present every second parturient is treated by the Zweifel method of wiping out all the blood from the vagina a few hours after birth. The findings to date indicate that autoinfection is not responsible for puerperal fever. The latter seems to be always due to the penetration of pathogenic germs into the uterus. The experience at the clinic has been that 7.6 per cent. of all spontaneous deliveries are followed by fever. The aim should be to prevent access of pathogenic germs to the uterus. The access of germs is favored by anything—such as sublimate irrigation—which reduces the physiologic protecting powers of the vagina. Döderlein's success with lactic acid indicates, however, that the prospect of destroying the pathogenic germs in the vagina is not absolutely hopeless.

88. **Fetation in a Closed Accessory Horn of the Uterus.**—Two cases are described and illustrated and the literature reviewed. Among the points brought out is the fact that de-

fectively developed genital organs are peculiarly liable to infection, especially from the intestines; also that if there is any mucosa at all, menstruation is liable to occur, and in a closed organ the menstrual blood may be absorbed.

90. **Kidney Functioning in Congested Kidney of Pregnancy and in Eclampsia.**—Büttner states that the urine in the congested kidney of pregnancy, during normal delivery and during the convulsions of eclampsia, exhibits the characteristics of insufficiency on the part of the kidneys, evidently due to defective blood supply. This in turn, he is convinced, is the result of spasmodic contraction of the blood vessels in the kidney. The convulsions in eclampsia are probably due to spasmodic contraction of the arteries in the brain, but the assumed toxin causing this vasoconstriction is still mere conjecture.

91. **Nucleo-Proteids in Septic Affections.**—Pollak discusses the various theories in regard to the mechanism of immunization, immunity and serum treatment, and then describes 2 cases in which he injected nuclein and salt on theoretical premises in regard to the action of the nucleo-proteids in septic affections. He injected the mixture subcutaneously so as to take advantage of its leucotactic properties to the fullest extent. The prompt benefit that followed encourages him in advocating general adoption of this means of treatment built up on the broadest principles, aiming to increase by artificial aid the resisting powers of the organism in its struggle with streptococci by supplying to the organism some preparation of nuclein. The beneficial effect may not be due to the nucleic acid alone; the albuminoids of the nucleo-proteids certainly participate in it.

Berliner klinische Wochenschrift.

92 (XLIII, No. 23.) Zur Pathologie der Akroparäthesie. A. Pick.
93 *Zur Frage der Leukotoxin-Bildung durch Röntgen-Bestrahlung. R. Milchner and W. Wolff.
94 *Superheated Air plus Calomel and Iodin for Tuberculosis of Mucous Membranes.—Zur Behandlung der Schleimhauttuberkulose. E. Holländer.
95 Zur nasalen Behandlung der Epiphora. A. Meyer.
96 Experimenteller Beitrag zum Mechanismus der Magensekretion nach Probefrühstuck (gastric secretion after test breakfast). (Concluded.) L. Kast.
97 To Measure Temperature of Skin.—Beitrag zur Messung der Hauttemperatur. E. Weisz.
98 *Dietetic Regulations at the Homburg Spa.—Die Homburger Diäten. C. Pariser (Homburg).
99 (No. 24.) Ueber Spirochæta pallida bei congenitaler Syphilis. H. Beitzke.
100 Relations between Human and Bovine Tuberculosis.—Die Beziehungen der menschlichen Tuberkulose zu der Perlsucht des Rindes. L. Rabinowitsch.
101 *Thyroid Treatment of Obesity.—Zur Fettsuchtbehandlung mit Schilddrüse. M. Rheinboldt.
102 Untersuchungen ueber primäre Tuberkulose im Verdaungskanal (digestive tract). Summarized on page 813. J. Ipsen.
103 Spirochæta pallida (Schaudinn) und Organerkrankung bei Syphilis congenita. P. Huebschmann.
104 Study of Mouse Tumors.—Ueber Sarkomentwicklung bei einem drüsenartigen Mäusetumor. L. Loeb.
105 Die Radioactivität der Mineral-Quellen (springs). (Concluded.) H. Sievcking.

93. **Formation of Leucotoxin Under Roentgen Treatment.**—Milchner and Wolff exposed an extirpated but surviving spleen to the action of the Roentgen rays. Severe pathologic changes became evident after a few hours, while another spleen under the same conditions but not exposed to the rays showed normal structure. The extract of the exposed spleen, injected into animals, rapidly reduced the numbers of leucocytes. Injection of the unexposed spleen was followed by marked leucocytosis. Their research also confirmed in other ways the generation of a leucotoxin under Roentgen action.

94. **Superheated Air Plus Calomel and Iodin in Treatment of Tuberculosis of Mucosæ.**—Holländer reiterates that ascending tuberculous processes of the mucosa of mouth and nose occur much more frequently than is generally recognized, both in connection with lupus and without it. In contrast to the descending form, in which the condition of the diseased lung dominates the clinical picture, the prognosis is not unfavorable. The ascending variety displays a pronounced tendency to heal after removal of the primary focus, and complications in the lungs run a mild course. Treatment with superheated air without direct contact is capable of realizing a complete cure. In his extensive experience during the last ten years not a single case has shown itself refractory to this treatment. His success with quinin plus iodin in erythematous lupus encouraged him to try iodin in these tuberculous processes, with calomel for the local chemotactic agent. Fifteen minutes before applying the calomel he administered a tablespoonful of a 5 per cent. solution of potassium iodid. The calomel was applied as a dry powder to the lesion on cotton and left for twenty-four hours, or it was rubbed into the mucosa of the gum or a 1 or 2 per cent. oily suspension was injected directly into the tissue. The latter method induced necrosis of the tissues, but after the necrotic tissues were absorbed or thrown off the process was found remarkably influenced for good. In laryngeal tuberculosis he advises insufflation of the calomel. The most striking results obtained by this treatment were in the case of a girl with extensive lupus of the lip and upper gum. The entire upper lip had fallen in from the ulcerative process and she was unable to eat solid food. The calomel tampons were applied and the iodin given twice a day, and in the course of five weeks the entire process had healed. He has found it extremely beneficial in tuberculous processes in the bladder. He has treated over 100 patients with tuberculosis of the nasal mucosa, 30 with tuberculous and lupous processes in the mouth and gums, about a dozen patients with tuberculosis of the lips, including 2 with isolated primary tuberculosis, and a patient with extensive tuberculous processes on the tongue. In 3 cases he applied the superheated air to the larynx after laryngotomy. In 2 cases the process was of the descending type and the results of treatment were not satisfactory; in the other it was ascending and the patient was cured. In conclusion he urges more general adoption of this iodin-calomel treatment in tuberculous affections of the bladder mucosa as well as in those of the larynx and mouth.

98. **Dietetic Regulations at Health Resorts.**—Pariser describes the way in which the physicians of Homburg have satisfactorily solved the problem of providing a suitable diet for the various classes of patients taking treatment at the spa. without attracting attention to the patient or inconveniencing the hotel or boarding-house management. The affections most common among the patients are chronic gastric or intestinal catarrh, with diarrhea, chronic constipation, diabetes, heart affections, gout, nephritis and neurasthenia. Four special diets with a few subclasses have been found to answer the purpose, diet 1 for gastric affections, 2 for intestinal catarrh with diarrhea, 3 for constipation and 4 for diabetes. The local medical society supplies the landlords with the booklets containing the list of 220 different articles or dishes. The landlord marks the price opposite the dishes he intends to serve on that special day, or makes up the table d'hôte from the list. He is supplied with a fresh lot of the booklet menus for each day. Opposite the name of each dish are the figures 1, 2, 3 and 4 in parallel columns or the space for one of the figures is left blank. The absence of the figure shows that the dish is forbidden in the diet represented by the figure. The booklet contains also a brief presentation of the principles that guide the selection of the diet, with also general and special remarks. These booklets are supplied at cost price, and have been gratefully accepted by the landlords, while from the medical and scientific standpoint they are regarded by all who have seen their workings as a great advance. The daily booklet menus are supplemented by a large wall table that hangs in each kitchen and bears in large type the four "diets" and subdivisions. The forbidden dishes are printed in red ink. the others in black. The table contains also a few of the "guiding principles" in a brief summary. The system has been in use now for a year or so. with, it is said, constantly increasing satisfaction on the part of all concerned and great benefit to the patients. Each patient is given a separate booklet containing only the diet prescribed for his individual case when he enters on the "cure."

101. **Thyroid Treatment of Obesity.**—Rheinboldt gives the details of 4 cases of obesity in which thyroid treatment was given, supplemented by copious ingestion of albumin, to supply the demands of the over-nutrition consequent on the thyroid treatment. While the thyroid extract is being taken he assumes that about 3,000 calories above the ordinary are required, and if this extra supply is not given from without, the patient's own albumin is drawn on and his general health suffers. In the 4 cases described the treatment proceeded without

the slightest by-effects, which Rheinboldt accepts as confirmation of his theoretical reasoning. He urges that the thyroid treatment should be begun very gradually, and the dose always be restricted to the effectual minimum. The tablets must be thoroughly chewed. At least 20 per cent. of the calories needed should be supplied in albumin, preferably meat. In his experience the elimination of water was much promoted by the thyroid treatment.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

106 (XXXII, No. 30.) Grundsätze der Behandlung der Appendicitis. E. Sonnenburg.
107 *Relations between Physical Behavior and Action of Drugs.—Die Beziehungen zwischen dem physikalischen Verhalten und der Wirkung der Arzneistoffe. E. Frey.
108 Study of Living Spirochetes.—Ueber Beobachtungen an der lebenden Spirochæta pallida. A. Beer.
109 *Bemerkungen zur Desmoid-Reaktion. H. Sahli.
110 *Experimentelle Untersuchungen ueber fermentative Fettspaltung im Magen (splitting of fat in stomach). F. Heinsheimer.
111 Ueber Garrulitas vulvæ. W. Schulein.
112 (No. 31, *Greifswald Festschrift.*) Historical Sketch of Greifswald Medical School.—Geschichtlicher Ueberblick ueber die medizinische Fakultät. P. Grawitz.
113 *Ein Beitrag zur Vererbungslehre (heredity). K. Peter.
114 *Zur Methodik der Untersuchungen der Fettresorption im Darm (absorption of fat in intestine). M. Bleibtreu.
115 Ueber teratoide Geschwülste im Becken-Bindegewebe (tumors in pelvic connective tissue). P. Grawitz.
116 *Ueber senile Atrophie der Augenmuskeln (ocular muscles). Thiele and P. Grawitz.
117 Testing of Drugs on Healthy Persons.—Die Arzneiprüfung am gesunden Menschen. H. Schulz.
118 *Changes in Germs by Cultivating them in Certain Species of Animals.—Ueber die Veränderung der Pathogenität und Virulenz pathogener Organismen durch künstliche Fortzüchtung in bestimmten Tierspezies und ueber die Verwendung solcher Organismen zu Schutzimpfungszwecken. F. Loeffler.
119 *Zur Gramschen Färbungsmethode (staining technic). F. Loeffler.
120 *Komplementablenkung und Blut-Eiweiss Differenzierung (biologic blood tests). Uhlenhuth.
121 *Record of Heart Movement at left Auricle.—Die Registrierung der Herzbewegungen am linken Vorhof. O. Minkowski.
122 *Influencing of Absorption by Diuretics after removal of Kidney.—Ueber die Beeinflussung der Resorption durch Diuretika nach der Nierenexstirpation. S. Weber.
123 *Ueber die Beziehungen der Bence-Jonesschen Albumosurie zum Eiweisstoffwechsel (and albumin metabolism). E. Allard and S. Weber.
124 *Ueber Asthma bronchiale. P. Strubing.
125 *Ueber die Häufigkeit und operative Prognose der Bauch-Aktinomykose des Menschen (of human abdomen). P. L. Friedrich.
126 *Suction Hyperemia for Differentiation of Cancer.—Die Verwertung der Saugapparate zur Diagnose bei bösartigen Geschwülsten. C. Ritter.
127 *Zur Frage des Cardiaverschlusses der Speiseröhre (closure of esophagus). F. Sauerbruch and R. Haecker.
128 *Zur Chorea gravidarum. A. Martin.
129 *Zur Colpohysterotomia anterior. Ph. Jung.
130 *Prognose und Therapie der perforierenden infizierten Augapfelverletzungen (injuries of eyeball). O. Schirmer.
131 Zur Kenntnis des Streptococcus mucosus als Erreger der akuten Otitis media. Wittmaack.
132 Intelligenz-Prüfung von Rekruten und älteren Mannschaften. E. Schultze and C. Ruhs.
133 Ein Beitrag zur Diagnostik der Pulpakrankheiten. Schröder.

107. **Relations Between Physical Behavior and Action of Drugs.**—Frey shows how the physical properties, the solubility in water or oil, the dissociation into ions, and the diffusibility are important for the medicinal effects of drugs. Sufficient has already been learned to explain many of the effects observed, as he illustrates by specific examples.

109. **The Desmoid Reaction.**—Sahli warns against the desmoid capsules on the market, having always insisted that the physician must make the little desmoid bag for himself at the time of using, for reasons which he states. Physicians who have not had successful results with the desmoid test have, many of them, confessed that they knew of Sahli's work only by brief summaries in other journals, and he says that it is not fair to any method to decry it from tests made in ignorance of the author's minute technic.

110. **Splitting of Fat in the Stomach by Action of a Ferment.**—Heinsheimer's tests were made on animals and on a young woman with an artificial esophagus who submitted to various series of experiments, the first instance of the kind in an adult. The gastric juice was collected as it flowed naturally, free from admixture of intestinal or pancreatic secretions. The fundus secreted a specific ferment which contained a fat-splitting ferment. This ferment seems to be exceptionally active in infants.

113. **Inheritance of Maternal Characteristics by Larvæ.**—Peter's experiments were with the larvæ of the echinus or sea urchin, and they showed a marked transmission of maternal characteristics without admixture of the paternal. The findings suggest that the laws of heredity are more complicated than hitherto assumed and that different organisms are regulated by different laws.

114. **Research on Absorption of Fat in Intestines.**—Bleibtreu describes the technic with which he was able to study the absorption of fat in the isolated, ligated intestine. Cats were the animals used and the substance injected was a soap in the nascent phase. An emulsion of cod-liver oil or olive oil was emulsified by shaking it in water with a little dilute soda solution. To this was added a little dried, pulverized cat pancreas tissue and some bile or solution of salts from ox bile. The needed alkaline carbonate was supplied by the mucosa of the intestine. This mixture was injected into the isolated intestine and the abdomen closed. When examined six or eight hours later, the chyle vessels were found as surcharged with fat as after a copious meal of milk. A control loop without the addition of bile to the mixture showed none of this absorption. He thinks that the technic described will be found useful for further research on intestinal absorption.

116. **Senile Atrophy of Ocular Muscles.**—Thiele describes a case and suggests that what is generally called amyotrophic atrophy of the ocular muscles is in reality merely senile atrophy.

118. **Modification of Virulence of Micro-organisms by Cultivation in Other Species.**—Loeffler reports among other findings that the germ of foot-and-mouth disease loses its pathogenic properties for cattle after passage through young pigs. He describes the technic by which germs thus modified by being cultivated in animals of other species can be utilized for protecting immunization.

119. **Gram Staining Technic.**—Loeffler has been experimenting with various dyes to improve the Gram technic, if possible. He obtained much better results with methyl violet 6 B and methyl violet BN dissolved in a 1 or 2.5 per cent. aqueous solution of carbolic acid, in the proportion of 1 to 10. The first mentioned is most excellent for all the micro-organisms tested except the pneumococcus; for this the second dye is preferable. The carbolic solution must be freshly prepared.

120. **The Biologic Blood Tests.**—Uhlenhuth has found that dirt, straw, urine, tuberculin and various other substances liable to be encountered with a specimen of blood sent in for examination, "divert the complement"—which is the basis of the hemolytic blood test recently put forth by Neisser and Sachs, mentioned on page 310 of the last volume of The Journal. This possibility of error deprives the test of accuracy under ordinary conditions, although not detracting from its value in the laboratory where extraneous contamination can be excluded. Comparative research with the two methods, the hemolytic and the precipitating biologic test, gave instructive findings among others in regard to inoculation of monkeys with normal human albumin for serodiagnosis of syphilis for instance.

121. **Record of Movements of Heart at Left Auricle.**—Minkowski has devised a means to record the movements of the left auricle by a registering apparatus connected with a sound introduced into the esophagus under Roentgen control. He uses an ordinary soft Jacques sound with an opening in the side, over which is drawn a long, narrow rubber bag tied above the opening. By blowing into the sound the little bag is inflated. The sound above is connected with a Jaquet sphygmocardiograph and the heart beat, as felt in the esophagus, is registered on the drum. The bag is inflated until it fits tight in the esophagus, opposite the heart, without pressure. Specimens of curves thus obtained are given.

122. **Action of Diuretics After Removal of Kidneys.**—Both kidneys were excluded by a ligature in rabbits, and various diuretics then administered or injected. The results demonstrate, Weber thinks, that the diuretics of the caffein group not only affect the endothelium of the kidneys, but also the extrarenal capillaries, and thus they promote metabolism. They act not only on the kidneys, but have also a general capillary action.

123. Albumosuria and Albumin Metabolism.—Allard and Weber report the findings in a carefully studied case of albumosuria in a man of 54. The amount of albumose eliminated was out of proportion to the possible sources ingested, especially during febrile states, suggesting that the albumose was derived from destruction of the organic albumin.

124. Bronchial Asthma.—Strubing gives a comprehensive analysis of the various theories that have been suggested in regard to the etiology of bronchial asthma. For diagnosis and treatment it is indispensable that the various disturbances should be sharply differentiated and each one traced to its true origin. When the asthma has developed on the basis of a neurosis, other nervous manifestations are liable to be encountered. He has found it possible to train healthy persons until they could imitate the attack of asthma. By the same means he believes it possible to train the asthmatic until they can control the attacks and finally cure them altogether. Treatment based on this principle will be described in a later communication.

125. Abdominal Actinomycosis.—Friedrich states that in fully 4 per cent. of the 200 patients operated on at Greifswald for inflammation of the cecum during the last three years, the lesion proved to be actinomycosis. Of the 8 patients treated by extensive resection into sound tissue, 7 are still living in good health. It has been the experience hitherto that the affection is liable to recur during the fifth to the sixth year after two or three years of peace, but the patients in the cured cases seem to be perfectly well.

126. Suction Therapy for Differentiation of Malignant Tumors.—Ritter has found suction cups extremely useful for aspirating particles from tumors and fistulas for microscopic examination without danger of hemorrhage or of accelerating the growth of the tumor. In one case described a dubious tumor in the upper abdomen showed fluctuation. A puncture opening was made with a wide cannula and a cupping glass, such as Bier uses for the breast, was applied daily. In a few days the edema had subsided and the tumor could then be palpated. Jelly-like masses were aspirated by the suction, and the patient was much relieved and gained five pounds in weight in seven weeks. The opening was enlarged by a small incision and scraps were obtained for microscopic examination by means of forceps introduced into the tumor through this opening. He has applied this suction therapy in a number of other cases, mostly inoperable cancers. It always brought great relief, while no untoward effects were observed in any instance. In the exceptional cases requiring unusual diagnostic measures the suction cup will be found very useful.

127. Closure of Esophagus from Stomach.—Sauerbruch and Haecker report experiences on dogs which suggest that the stomach closes the entrance into the esophagus by a kind of valve caused by the pressure of the fundus on the esophagus. This is sufficient to prevent reflux of stomach content into the esophagus even after the cardia has been completely excised. But if the vagi are severed, the swallowed food does not pass down into the stomach, showing that peristaltic action is necessary to overcome this valve closure of the entrance into the stomach.

128. Chorea of Pregnancy.—Martin states that in all his extensive experience with chorea in pregnant women he was never compelled to interrupt the pregnancy except in 3 cases. Medicinal treatment always proved sufficient to conquer the trouble in others. In these 3 cases the menacing chorea rapidly subsided after expulsion of the ovum. Two of his patients exhibited chorea with each recurring pregnancy. In one patient the chorea developed in a pregnancy after an attack of acute articular rheumatism after a normal pregnancy, and reappeared in the succeeding pregnancies with increasing intensity. He advocates bromids, although iron and arsenic may suffice for the milder cases. His formula is sodium bromid and ammonium bromid, each 2 gm., and magnesium bromid 4 gm., in doses of from 2 gm. to 8 gm. a day. He never found it necessary to go above these doses. Complicating endocarditis and meningitis, of course, are indications for more energetic measures. He never observed any untoward effects during the long continued bromid treatment, although 13 days after its discontinuance in one case two attacks of heart weakness were observed. They certainly had some connection with the bromids which had been taken for 81 days.

129. Anterior Colpohysterotomy.—Jung says that 3 out of 8 women treated by anterior colpohysterotomy succumbed to previously existing affections which had been the indication for the intervention. He asserts that this operation should be restricted to cases in which there is direct danger for mother or child, or both, and the soft parts are still unprepared for delivery. Such conditions are observed in eclampsia, severe nephritis, uncomplicated heart defects, premature detachment of the normally located placenta, and in acute general affections such as pneumonia. Under other conditions, anterior colpohysterotomy should not be done, enticing as it may appear.

130. Treatment of Perforating, Infected Wound of the Eyeball.—Schirmer has had only 2 cases of sympathetic ophthalmia in 157 cases of perforating, infected lesions of the eyeball. He ascribes this fine record to his energetic treatment with mercurial inunctions, saturating the system with mercury, by inunctions of blue ointment, rubbing in every day from 6 to 9 gm. until he has used up from 150 to 200 gm. in the course of nine to twelve weeks. A few instances of mild stomatitis or mercurial exanthem required the suspension of the inunctions for a few days, but otherwise he met with no signs of intolerance. A most important factor in treatment is the bed rest which he enforces until all inflammation has subsided, sometimes for from four to six weeks. Getting up too early is almost invariably followed by recurrence of inflammation. The inunctions are made morning and evening, rubbing in half the daily dose each time. This general mercurial treatment is completed by subconjunctival injection of 0.3 c.c. of a 1 to 2,000 solution of corrosive sublimate. By this energetic general and local mercurial treatment he has saved many eyes when the patients were on the point of having them enucleated. Sympathetic ophthalmia developed in only two instances and in one the systematic mercurial treatment had not been attempted. In the other an operation had been done on the second eye. The impregnation of the entire system with mercury affects the disease germs not only in the eye, but wherever else they may lurk. He was able to save 103, that is, 66 per cent., of the 157 injured, infected eyes that have come under treatment during the last ten years. Ninety, or 57 per cent., were left with more or less vision. Sympathetic ophthalmia was never observed during or within three months of the course of mercurial treatment. The main points are to give enough mercury and to keep it up long enough. Out of 41 cases in which there was still a foreign body in the eye, the results were excellent in 27. The outcome was even better in the cases with retained foreign body than in those without. The iron splinters were always extracted with the magnet. The results in all cases were far better the earlier the treatment was commenced.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A Text-Book of Genito-Urinary Diseases, Including Functional Sexual Disorders in Man. By L. Casper, Professor in the University of Berlin. Translated and Edited with Additions by C. W Bonney, B.L., M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Surgeon to the Southern Dispensary, Philadelphia. With 213 Illustrations and 23 full-page plates, some in colors. Cloth. Pp. 618. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1906.

Report of the Royal Commission on the Decline of the Birth-Rate and on the Mortality of Infants in New South Wales. Vol. I. Together with Copies of Commissions, Diagrams, Statistical Evidence and Statistical Exhibits, etc., 1904, second session. Paper. Pp. 97. Sydney: William Applegate Gullick, Government Printer, 1904.

A Text-Book of Sanitary and Applied Chemistry, or The Chemistry of Water, Air and Food. By E. H. S. Bailey, Ph.D., Professor of Chemistry, University of Kansas. Cloth. Pp. 343. Price, $1.40. New York: The MacMillan Company, 1906.

Transactions of the Medico-Chirurgical Society of Glasgow, edited by H. McLaren, M.B., C.M., Editorial Secretary to the Society. Vol. V. Sessions 1903-1904, 1904-1905. Cloth. Pp. 301. Glasgow: Alex. MacDougall, 1906.

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Original Articles

PROPRIETARY MEDICINES.*

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NEW YORK.

Goethe once said that the most interesting book that could be written would be a treatise on human errors. In that book, large like a library, the history of quackery—well meant or deceitful—would fill a large place. The distrust of medicine and its powers is as old as the world, for not many ever knew or cared to appreciate what medical science or art is capable or not of accomplishing, or should be held responsible for. Besides, the more uncultured or uncontrolled the human intellect the greater is the predominance of mysticism. In Greece quackery was rife and Aristophanes made it the subject of ridicule. The elder Cato, who advised the use of cabbage against all sorts of disease and employed witchcraft and incantations for luxations, demanded the expulsion from Rome of the Greek physicians. The iatromechanics, who taught the direct interdependence of stars and man and prescribed pills compounded during the conjunction of Jupiter and Venus, and the medieval priests who cured with prayers and processions and auto da fés, must surely have met with failures and driven the sick somewhere else. Even the specialists among the saints, St. Anna the ophthalmologist, St. Judas the doctor for cough, St. Valentine for epilepsy, St. Rochus the veterinarian, may have made mistakes and proved incompetent.

Nor was the public always edified by the doctors in other respects. Hippocrates complains bitterly of the contests of doctors among each other. More than 2,000 years later Peter Frank thought and advised seriously that the only way to procure an orderly consultation was to call in the police. The maltreatment they were exposed to in the Middle Ages, the contempt in which wounds and ulcers were held, so that the medical faculty of Paris about 1300 committed their candidates by oath not to practice surgery; the barbarous methods of treatment by fire for the dangerous body fluids to which everything was attributed, and afterward the nauseating draughts with which the sick were punished until no better man than Hahnemann tried to redeem them—all that did not contribute to add to the dignity of the profession and to the confidence of the public. All that drove the masses into the arms of the sectarians and the quacks.

Then followed the era of scientific medicine, little more than half a century ago. It was built up on anatomy and physiology and was studied on biologic lines. We should have suspected that the darkness of quackery would disappear before the new light. On the contrary, it has grown in geometric proportions until the accumulated ignorance of quacks and fakers has become a power in every land. The Germans, who like to style themselves the nation of thinkers, have more quacks than any other people. Indeed, Saxony and Bavaria have one quack to two regular physicians; Berlin itself has two to nine. It is in Berlin that 29 per cent. of the men among the quacks—including clergymen, workmen, stewards, bathhouse keepers, shepherds and university students—and 14.4 per cent. of the women had, before embarking in the practice of doing the sick people, collided with the law courts on account of theft, forgery and sexual crimes. It is Berlin that has a judge who, in discharging one of that ilk, said the man deserved the greatest confidence, for he was in possession of very good prescriptions obtained from the servant of a famous dermatologist.

Scientific medicine, as developed by the Vienna school more than fifty years ago, ended in nihilism. Patients, however, would not long be satisfied with being merely percussed and auscultated and autopsied. They had the pardonable wish to be healed and cured. But the only chance they were given was to serve as scientific material. With that they were not pleased and ran off to fill the offices and the coffers of the quacks. Then, after Skoda and Rokitansky, came Virchow, the great man of the century, the enemy of mysticism and obscurantism, the daily discoverer of new facts and new methods in pathologic anatomy, the founder of the cell theory, the great anthropologist and hygienist, the assiduous therapeutist of the individual man and of society, the very realization of what Aristotle meant by his "politician," that is, the philosophical and scientific statesman. The great mistake of his life resulted from his democratic confidence in the people. His idealism moved him to believe that the people would instinctively distinguish between the physician and the quack; it was on his advice that the Prussian parliament opened the doors to the fakers and reduced the medical profession to a trade. That was in 1869. He learned too late that people do not know who is who in medicine. People are not even taught by lectures or pamphlets or books, which are superfluous to the physician and not read by the masses. It is their nature to prefer to be in opposition at all hazards. They would rather pay hundreds of millions annually for pseudo-doctrines as displayed in books and journals and for proprietary medicines.

Do you care to know about how many there are? Up to Oct. 12, 1900, there were United States patents for 321 disinfectants, 30 extracts, 48 hair dyes and tonics, 180 insecticides, 376 internal remedies, 56 plasters, 371 topical remedies, 78 veterinary medicines. There were trademarks for drugs and chemicals, 319; medical compounds, 5,794, which increase at the rate of 250 annually. The State Board of Health of Massachusetts has examined about sixty proprietaries for their percentage of alcohol, according to the board's report

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Howe's Arabian Tonic, "not a rum drink," contains 13.2 per cent.; Parker's Tonic, "purely vegetable," recommended for the cure of inebriates, 41.6 per cent.; Schenck's Seaweed Tonic, "entirely harmless," 19.5 per cent; Copp's White Mountain Bitters, "not an alcoholic beverage," 6 per cent; Greene's Nervura, 17.2 per cent.; Hoofland's German Bitters, "entirely vegetable and free from alcoholic stimulants," 25.6 per cent.; Kaufman's Sulphur Bitters, "contains no alcohol," 20.5 per cent. and no sulphur; Whiskol, "a non-intoxicating stimulant," 28.2 per cent.; Golden's Liquid Beef Tonic, "for treatment of alcohol habit," 26.5 per cent.; Hood's Sarsaparilla, 18.8 per cent.; Peruna, 28.59 per cent.; Lydia Pinkham's Vegetable Compound, 20.61 per cent.; Kilmer's Swamp-Root, 7.32 per cent.

We, the doctors, like Virchow, our great master, are responsible for a great deal of this injury that is done to the people. For a baby it is we that prescribe artificial foods, the composition of which we do not know. What Nature gives us at a low price—milk, cereals, salt and sugar—we know and therefore underestimate. Nature is democratic and offers the best she has for the rich and the poor alike. We covet what is unknown and high-priced. We prescribe nostrums of known or unknown composition; the latter is not far from criminal, the first would be excusable but for two reasons. One of them is that the manufacturer looks for the good he can do to himself, and that factories are not run for your benefit; the second is that an unalterable formula, though its composition may correspond with the label, should not be used by the physician who deals with a variety of cases, ages and circumstances. I do not blame a layman who indulges in self-medication after being treated by his physician with a remedy he sees advertised in the glowing headlines of his daily paper. I have known at least one of the infant foods that was advertised and sold for twenty years, and then publicly discarded by the manufacturer, who claimed to have at last found the proper — probably cheaper — compound. The layman must be excused for refusing to pay a doctor in addition to the advertising expenses of the tradesman.

We physicians do more. We take medical journals that advertise nostrums, that print "reading notices" of proprietary medicines, old and new; that sell pages of their issue to the trade; that print eulogies of factory products in the shape of "original articles;" that alternate their medical and advertising pages. When I spoke of this abomination before the International Medical Congress of Paris in 1900 a Western medical journal of that style asked the appropriate question: "Who, after all, is this Dr. Jacobi? If it had not been for us, the journals, he would have lived and died in obscurity."

Thus it is that even the mind of the medical man is gradually poisoned. What these sheets do not, perhaps, accomplish fully, the glib agent—sometimes an M.D., who gains access to you by the card he sends in to you—will complete. He dumps his wares—his blotters, inkstands, paper-knives, pencils, blank books and almanacs—on your table, either personally or through the postoffice. Well, he can afford it. For the poisonous anilin preparation with sodium bicarbonate which he baptizes with a hybrid name and which is prescribed by thousands of us yields him a thousand per cent. of profit. And how? It has been given admission to what should be your sacred medical book, the United States Pharmacopeia. That is why you find thousands of doctors and hundreds of apothecary shops with stacks of advertising sheets and quackish booklets, but without a United States Pharmacopeia or the American Pharmaceutical Association's formulary. That is why a friend found the expensive prescription of a prominent New York practitioner which read: "Remedium Spontaneum, Radway," and which meant no less than merely cheap "Radway's Ready Relief." The same friend took the trouble of examining 50,000 prescriptions compounded in a number of drug stores. Between 1850 and 1873 he met on the prescriptions of physicians no nostrums and no machine-made tablets; in 1874, 1 in 1,500; between 1875 and 1880, 2 per cent. of them; 1880-1890, 5 per cent.; 1895, 12 per cent.; 1898, 15 per cent.; 1902-1903, from 20 to 25 per cent. In a large drug store, one of the gaudy ones, to which the prescriptions of our fashionable doctors are sent, I was assured that 70 per cent. of the prescriptions sent in by reputable physicians contained either nostrums pure and simple or as a part of a compound.

Perhaps it would lead too far to examine all the reasons for that demoralization. But one of them should be generally known and appreciated, which is that there are very few medical schools a graduate will leave, diploma in hand, with the knowledge and practice of writing a prescription. Our medical schools neglect their duties by thus omitting to teach the art of medicine in combination with what is exclusively and pompously called "science." Let the schools remember what every one of us general practitioners can tell them, that medicine means both science and art. I have here the prescription, dated April 14, 1906, which was given to a patient who swallowed the stuff, by the professor of pharmacology and therapeutics in one of the great universities between the Atlantic and the Mississippi—very far from the Mississippi—which is a mixture of scientific and queer langage, viz., "Bili-salol"—what is bili-salol in the Pharmacopeia?—"0.25, dentur tales doses No. C, three to five pills after meals three times a day."

If there is so much proprietary medicine prescribed, and so much quackery, clear your own skirts, professors and doctors. The quacks and manufacturers smile at our unctuous words and unclean hands.

PROPRIETARY MEDICINES AND THEIR ABUSES.*

GEORGE DOCK, M.D.
ANN ARBOR, MICH.

Proprietary medicines are substances which some one has an exclusive right to make or sell for medicinal purposes. The exclusive right may depend on secret methods of manufacture, or on a patent on the method of preparation, as in Germany, or on process and substance both, as in America, or on a copyright on the substance. A patent on the name, or a copyright, is one of the most effective methods of acquiring and maintaining exclusive rights in the case of medicines whose virtues are fictitious, though secrecy is in some cases equally effective, for a time.

Proprietary medicines are not either good or bad by reason of their origin. In the language of the day, none are "ethical" or "unethical" *per se*. The possibility of greatest danger occurs among secret preparations and depends partly on the fact that secrecy regarding a remedy may have more serious consequences than secrecy in the manufacture of steel or rope and many other indispensable articles. The chief objection is that no dependence can be placed on the constancy of action of such substances, and that no certain comparisons can be made of observations on their action. They are not fit for scientific deductions.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

There is no essential difference between proprietary medicines advertised exclusively to physicians and those advertised to the general public—the former in medical periodicals or special circulars, the latter in newspapers, handbills or almanacs, or on rocks, fences and barns. These are, perhaps, more frequently of secret composition, but recently this difference has been abandoned with great ostentation by some makers of so-called "patent" medicines. One or the other may be honest in intent and harmless or even useful in effect, just as either one may be fraudulent in conception and dangerous in use. The same lawless nomenclature is followed in both cases, the euphonious or hideous, outlandish or suggestive names being much alike in all. As a further evidence of similarity, a preparation that begins most blatantly in newspapers or on fences may in time find a welcome in reputable medical journals, and, on the other hand, a remedy first advertised to and used by physicians may in time be advertised in newspapers or form the leader in a cut-rate drug store or on the drug counter of a department store.

It is difficult to discuss proprietary remedies in a comprehensive way, but impossible to specify without becoming lost in the endless confusion they present. Certain classes stand out prominently. So there are synthetic compounds, active principles and new salts, real discoveries in chemistry that may have the virtues and drawbacks of chloral hydrate, sulphonal, urotropin, of salol, codein, cocain and others. They are usually put on the market with very little preliminary testing, but with the most sweeping claims. There are mixtures of these with other substances, sometimes representing an advance in pharmacy, often not. Then, there are preparations, whose chief recommendation is that they are of pleasing appearance or taste—"elegant," in the language of practical pharmacy. Though no more efficient than plainer preparations, they seem capable of filling a useful purpose, but are often hampered by secrecy of composition or unfounded claims of far-reaching therapeutic action. Expensive advertising and lavish distribution of "samples," neither of which should be necessary in legitimate trade, enormously raise the price at which these are sold.

It is unfortunate that the laws and customs of ownership do not permit a clearer separation of various classes. There is a deep-seated objection, on the part of most physicians, to the taking out of patents on such inventions as instruments or drugs, but it seems to me that this attitude is wrong in principle and partly responsible for a good deal of the demoralization now obviously existing. I am speaking, of course, of genuine discoveries and not of mixtures or formulæ.

It is a curious and paradoxic fact that no objection is made to physicians taking out copyrights on books, yet there is no essential difference. In the present organization of society, it is not only legal, but natural and proper, that any one making an invention or discovery of value should be able to realize a material return for his pains or ingenuity, and this right can best be preserved by patent. Jenners and Pasteurs will doubtless continue to investigate without hope or expectation of gain, for the love of experimentation, and will achieve not only glory, but also more material rewards, but that is no reason for checking inventive talent of a lower order. The man who invents a new dye may make a fortune. Why not the man who invents a drug that will do for pneumonia what quinin does for malaria?

Regarding instruments, if not protected, imperfect imitations are put on the market. No one is benefited except the makers, who deserve only the ordinary returns for their part of the transaction. If the inventor wishes to lower the price he can easily forego his royalties and give the buyer the benefit. I do not intend to discuss the question as to the profit derived from patents on books, instruments or medicines, though there is a matter for discussion on this point, but merely to emphasize the propriety of allowing inventors or authors to control, for a time at least, the manufacture of their products. The incidental fact that the price of the article may be enhanced by the patent does not affect the question materially. Prices of medicines will always be regulated, like other commodities, by the law of demand and supply. If fashion causes an elevation of price beyond the real value of the article, as occurs with many other things besides drugs, this does not seem a sufficient reason for interference with the well-known laws of trade.

Perhaps the strongest objection against the owning of patents on instruments or medicines by physicians, but one that is rarely expressed, is the danger of abuse in ways not open to the usual objects of trade. An author can hardly stimulate the sale of a book in any but obvious ways, but a medical man, especially if he has a reputation as a scientist, might excite an artificial demand for an instrument or a new remedy. Yet the danger of this is much more likely to exist, and to a greater degree, if the ownership is disguised, as it may be now, and in fact sometimes is. Publicity in such a case, as in others, seems the most promising check to dishonesty either intellectual or financial.

So far I have assumed that a proprietary medicine may be of value. Such a medicine may even be of very great value. Many of the newer nostrums, some of the very ones most objectionably advertised, have not only been imitated by manufacturing pharmacists openly patronized by the profession, but have even been admitted to the Pharmacopeia with a haste not characteristic of sound therapeutics.

I do not think we realize clearly enough the enormous waste of time and energy in the trial of new remedies. Many are doomed to early oblivion, as a perusal of the advertising pages of any series of medical journals makes clear. Just as the names of nostrums advertised in newspapers and trolley cars change year after year, so do those in medical journals. Many others would disappear, but for costly advertising, which is, of course, paid for by the purchaser.

Two sets of evils follow from this ever-changing but never-ceasing flood. On the one hand, the layman has perpetuated or strengthened in him the belief in the magical properties, as distinguished from the physiologic effects, of medicines—the faith in drugs as substitutes for right living. Or, as in the development of bacterial therapy and prophylaxis, he has set up a hope, if not a trust, in the use of antibodies in place of efficient public hygiene, e. g., typhoid inoculations instead of pure water and proper sewage; antirabic inoculations instead of proper dog laws, etc., etc. Or, again, if less credulous, he concludes that the art of medicine has no principles at all, that medicines "are for readiness, and not for propriety" (Bacon).

On the other hand, the physician who follows such methods fails to increase as he should in therapeutic experience and facility. Getting therapeutic knowledge, perhaps, but never therapeutic wisdom, he drifts along, depending more on the statements of salesmen or drummers than he does on those whose interests in drugs are chiefly in their therapeutic effects, and hardly at all on his own observations. Even if observations are carefully made and recorded, the accumulation fails because of the variety of data, as in the case of a physician I know who tried some three dozen creasote preparations in as many cases of consumption in a short time, and was unable to speak confidently of any one.

The making of new preparations and the haste to try them form a vicious circle. Synthetic drugs and mixtures were poured forth in response to the alacrity with which the first ventures in these lines were taken up. As the sick layman grasps at anything in the way of treatment, so many physicians prescribe new and untried drugs, and just as every soldier in Napoleon's armies carried a marshal's baton in his knapsack, so every assistant in a chemical factory dreams of and works for a new synthetic, and many a teacher whose ambition is supposed to be centered on "gathering pebbles on the seashore of science," is working just as hard on some similar scheme. The manufacturers gladly exploit any novelty, expecting the usual profits. The medical profession, as one of the most striking examples of the triumph of Hope over Experience, keeps on accepting the discoveries, repeating over and over the story of disappointment.

The natural tendency to believe everything, not always repressed by training, is skilfully fostered by the resources of the modern advertiser. Exaggeration is inseparable from the enthusiasm of an inventor and discoverer. Had it not been for the unproved assertion, based on perfect good faith, in the complete and permanent protection against smallpox, the use of vaccination would long have been delayed. There is some difference between the sanguine hopes of a discoverer and the studied rhetoric of an advertising expert, but the difference is not easy to see. In the case of proprietary remedies exaggerated claims of excellence at every point, assertions of freedom from the untoward effects inseparable from the action of remedies, insinuations of new properties and suggestions of the imperfection or uselessness of older remedies are all advanced with a skill born of keen competition.

Sometimes the assertions are so absurd that it would seem impossible for any one to pay further attention to the substance advertised, yet experience shows that this is not so. A few years ago a preparation was exploited which was claimed to contain live red blood corpuscles, which latter were alleged to be capable of entering the body of the sick man and restoring it to health. The finding of the philosopher's stone, the realization of perpetual motion, or the existence of Dowie's healing power seem as easy to accept as theorems of Euclid compared with these claims. And yet this product, notwithstanding so disreputable a beginning and a later stage less daring, but just as cloudy, has become, if not the head of the corner, at least part of the basis of many a medical journal. The claims of organic iron preparations, of intestinal antiseptics, cardiac stimulants and antipyretics are almost as bad and do not require further mention.

Unfortunately, in all these claims, the manufacturers are aided by testimonials from physicians, just as dangerous as the testimonials of governors and congressmen that fill certain newspapers. The plain puff is too obvious, and pseudo-scientific articles are published often with great luxury of illustration.

The manager of one of the most iniquitous frauds ever sold once told me with honest pride that his firm never made a statement it did not believe. I was astounded at first, but in looking through the literature I found the claim was literally true. Everything necessary to exploit the material was furnished by physicians. That the information was given gratis may be a mitigating circumstance.

There is another method of furthering the use of new preparations, becoming so widespread as to suggest a conspiracy, though the growth may be merely the result of "mob suggestion." This is the vilification of critics of indiscriminate or irrational drugging. "Who is not for us is against us" seems to be the motto of drug sellers, and just as, sixty years ago, Skoda was called a therapeutic nihilist because he believed that bleeding and tartar emetic were not necessary in the treatment of people with pneumonia, so now any one who does not at once and always prescribe large and numerous doses of drugs is given the same term—and with the obvious intention of making him odious.

What are the remedies for the abuses connected with the sale of proprietary medicines and which I have imperfectly sketched in the preceding lines? To many the prospect seems hopeless. Drugs, like a mighty flood, pour out so rapidly that many are swept off their feet. Yet the situation is neither unique nor hopelessly bad. Sound, temperate Hippocratic medicine has lived through even worse phases. The physician of the sixteenth and seventeenth century had no coal-tar preparations and no sera, but he had more than 3,000 plants in his materia medica, not to mention minerals and animals of all kinds from worms to man, their organs, secretions and excretions. Medicine survived this, the richer by a few remedies of real value, and there seems no reason to fear that oblivion will overcome the less useful of the newer discoveries and permit the good ones to take admitted rank.

How to secure the really valuable new remedies is the problem now before all earnest therapeutists. Repression by force or by enactment can never serve against such a condition. The right to investigate, to discover, if wished for to patent new remedies, need not be curtailed. Authoritative bodies, governmental or otherwise, can do much to assist in determining the status of such products, but the final verdict must come from the great body of practical therapeutists, the physicians in actual charge of sick people. Such a body as the Council on Pharmacy and Chemistry of this Association may perform an important function in making impartial examinations and reports on new substances of obscure composition, but it can not determine whether or not such substances shall be used. The American Pharmacologic Society can also carry on an equally valuable work in making further tests. But no such body can be depended on to disclose all the good things and repress the bad, and just as far as it prevents the development of the spirit of responsibility and of criticism on the part of the physician will it do harm.

Medicine has never been successful when bound down by traditions, schools and authorities. It has only flourished when it made use of every resource that science or chance could bring—whether the cinchona bark of the savage, the hydrotherapy of the peasant or the synthetic compounds of the university professor—testing all things, holding fast to the good.

I shall take the liberty of discussing briefly some of the solutions for the present abuses.

One of the most general is the exclusion of advertisements of proprietary medicines, at least those of unknown composition, from medical journals. There are some good reasons why this view should receive consideration. A scientific periodical certainly makes a more pleasing impression when it is free from all advertising. In the case of journals of a more practical tendency it is convenient to be able to find advertisements of drugs, books, instruments and other supplies, but even if classified it is difficult to find what is wanted if there is a preponderating number of notices of drugs, mostly unknown. These are particularly exasperating when inserted among the pages of text, as in some of the most reputable English periodicals. On the other hand, merely keeping such advertisements out of journals would not stop the nuisance, for the same matter, or more, would be forced on us in other ways—sample copies, circulars and the like. Nor would the exclusion of such matter from journals be a likely aid to the morals of those who now fall victims to the wiles of the advertiser. In the practice of medicine, virtue that comes only from lack of temptation is as doubtful a quality as in other cases. Moreover, the daily or weekly appearance of an advertisement can not be sufficient reason for any competent person to patronize the thing advertised. Surely the readers of medical journals do not buy every carriage or automobile, or even every book, any more than they buy all the bargains advertised in the daily paper. Medicines, like get-rich-quick schemes, furnish a bait of unusual attraction, but both can be withstood.

It can hardly be expected that physicians will abandon the reading of journals with advertisements of nostrums, but if the goods advertised were not bought the obnoxious pages would soon disappear.

It would seem possible to exclude the most exaggerated or obviously baseless claims, but this is not so easy as might seem at first glance, as the following experience shows: In a recent number of the *Fortschritte der Medizin* there was a brief notice of a preparation loudly advertised in America, with a fling at the "credulous colleagues" in "the land of unbounded possibilities." Yet in the same number of the same journal, as in all the previous numbers, were many advertisements, to me just as bad, including one of a remedy for gout, sciatica, "all rheumatisms," influenza and nervous headaches, the same being also an expectorant useful in putrid bronchitis, typhoid and pneumonia, and a specific for whooping cough, asthma, cardiac neuroses and arteriosclerosis!

A decided gain would come from a freer criticism of all kinds in our medical literature. A fear of frankness seems to bind it all—in abstracts, in book reviews and in editorials. Much of this depends, no doubt, on trade affiliations, but it seems to spread beyond them. I may be permitted to cite an example: A plain and easily controllable investigation of the claims of a widely advertised mud preparation was published in THE JOURNAL of the Association at my instigation. Personal communications and letters from many physicians confirm my idea that the report was one of value. Within a few days after it appeared a circular letter was issued to medical journals, giving a misleading account (though it had been believed by the writer) of the origin of the article, and requesting editors of other journals not to abstract it. The scientific statements in the article were easy to test, and were important, no matter how the article originated. Most of the periodicals, however, followed the wishes of the advertisers and the article was conspicuous by its absence from the abstract columns of the great bulk of journals.

Incidents of this kind, for I am sure the experience mentioned is not unique, indicate one of the greatest obstacles to the freedom of medical science.

Recently a very clear-minded critic of affairs has pointed out the advantages of greater frankness on the part of physicians toward patients. I think most of us agree on this, at least in the case of intelligent patients. But is there not even greater need of frankness among ourselves, and especially of plain speaking, without cant, prejudice or passion, as regards one phase of one of the greatest evils of the day—the nostrum evil?

At best proprietary remedies will continue to be made and advertised, and all sorts of claims will be made for them. We as a profession can not directly stop these things, even if we think it desirable to do so.

We can, however, learn how to use better than we do now well-known remedies and in that way lessen the use of the others. And, although we can not draw a sharp line between unprincipled time-serving or the affectation of ultramodernity, we can at least express our opinion of crude experimentation. We can assume that the physician who depends on the remedies advertised in display type is no more deserving the credit of advanced views than one who should sell his horses or automobile and buy a balloon for making his daily calls. We can look as coolly on new drugs as we do on a new phase of mental healing or a new application of massage. If this were done, production would be less rapid, the vogue of each novelty shorter, the possible virtues of some more quickly determined.

At times, no doubt, some loss would come from this attitude, as it did from the neglect of the revelations of Holmes, Semmelweiss and Lister. Yet there would be compensations. Perhaps the loss of life from the delay of accepting asepsis was not greater than that from the indiscriminate use of coal-tar antipyretics.

How can the profession be brought to a better attitude as regards the present evil? Many think the solution is to be found in more teaching of prescription writing, of lectures on therapeutics. I differ from those who hold this view. What is needed is (1) broader and deeper training in preliminary and biologic branches and the cultivation of exact habits of mind; (2) a more intense study of pathology, not merely to acquire anatomic data, but to learn the actual results and extent of the lesions in common diseases, so that the student may offset speculation with fact; (3) a more intimate study of clinical medicine, that can only come from more prolonged and more personal investigation at the bedside.

In speaking of the evils of the nostrum habit among physicians do we not forget that, although we usually speak of the profession as a whole, the individuals vary enormously in capacity and opportunities for the study of medicine? Doubtless many graduates of hopelessly poor schools become sound and well-informed physicians, and equally doubtless some graduates of great schools fall into utter routinism, but is not the chief fault the existence of several scores of schools that never have given and never can give proper medical instruction?

To sum up, proprietary medicines are increasing as the result of natural developments. Their abuses spring partly from the exaggeration of legitimate commercial methods, partly from the credulity of the medical profession. The remedy for this part is wholly in ourselves. Let us do all we can to overcome this at least.

THE PHYSICIAN'S RESPONSIBILITY FOR THE NOSTRUM EVIL.*

RICHARD C. CABOT, M.D.
BOSTON.

As physicians we are largely responsible for the sale of secret remedies. We help to create the demand. We feed it.

We feed it because it is shown that 44 per cent. of the prescriptions filled at one of the best of our Back Bay drug stores in Boston call for nostrums—secret remedies of whose constituents we are ignorant.

The conditions are the same or worse elsewhere. The manufacturers and those whose living depends on the sale of these nostrums, have done their best to obscure the issue by vilifying the leaders of the present vigorous crusade against secret nostrums; I mean Dr. Simmons and Dr. Billings. The nostrum makers and a group of medical journals which are their organs, try to deceive us into believing that the great crusade for honest, open, intelligent prescribing and against fraud and ignorance in therapeutics, is all the work of those splendid leaders, Dr. Simmons and Dr. Billings. The truth is that almost every man of mark in the medical profession of the United States has put himself on record within the last year as being in entire accord with the policy of The Journal of the American Medical Association, and with the quite unanswerable arguments brought forward in this section by Dr. Billings a year ago. The leaders of medicine throughout the country are in accord on this matter and it is time for the rest of us lesser lights to stand up and be counted too. Any one who attacks Dr. Simmons and Dr. Billings attacks every one of the leading men in American medicine to-day. We, their followers, should stand ready to be hit, too, by every missile thrown at them, for the intelligence of the profession is solidly on the side of The Journal in this matter.

The issue is simply between light and darkness—between ignorance and knowledge. A man should know what he is prescribing and not pour down their patients' throats mixtures of whose ingredients and action he is ignorant. It is not a question of where these nostrums are advertised, or whether or not they are patented, or whether the Pharmacopeia contains or excludes them. The whole question for us is: Shall we be false to the confidence which our patients place in us? Shall we, who should safeguard their interests with the keenest watchfulness, desert our post and permit, nay advise them, to use medicine whose composition is wholly guesswork to us, though our patients trust us to investigate and to understand it?

I do not see how any honorable man can see two sides to this question. Suppose an investor went to his financial adviser for counsel on investments and was recommended to buy a certain stock. Suppose the investor to ask "What is the property? Is it manufacturing stock, railroad stock, mines, municipal enterprises?" Would he not be angry and indignant if his expert adviser should answer: "I don't know what it is. A promoter gave me some and said it was good, but I know nothing about it save what he told me." A pretty sort of adviser, this! False to his trust, surely; but we are far worse than that, for the financial adviser was dealing only with his client's property, while we deal with his life. They juggle with his dollars—we with his vital organs.

I believe there are not many in this audience who are not guilty—as I am guilty—of the sin of having used remedies—some of them dangerous—without knowing what they contained. I have used ammonol, before our Council on Pharmacy and Chemistry showed it up. I supposed (ignorantly, culpably) that it was a synthetic chemical compound, instead of an acetanilid mixture. I am ashamed of it. I shall try to do better, and never again to advise a powerful poison without knowing it, or an inert drug while supposing it, on hearsay evidence, to possess power. But that is just what is advised in 44 per cent. of the prescriptions filled in our Back Bay drug stores. If the public realized this it would be justly angry at our indolence and faithlessness in the high position of trust.

But, I believe that we not only feed the public demand for useless and harmful drugs, but also go far to create that very demand.

Babes are not born with a desire to take a drug for every symptom—they acquire this desire. Who teaches them? You and I do. We educate our patients and their friends to believe that every or almost every symptom and disease can be benefited by a drug. Some ignorant practitioners believe this, and we can not blame them, though we deplore the results of their indiscriminate drugging. But in my experience the educated physician who knows that only a few of his patients can be much benefited by drugs, gives out just as many prescriptions as the ignorant physician who believes all that the Pharmacopeia and the nostrum vendor tell him. The only difference is that the educated physician gives his drugs as placebos. In my opinion, the placebo habit does more harm than the habit of giving drugs to every patient with full faith in their pharmacologic action. But of this I shall say more in a moment. Here what I want to insist on is that so long as the chief visible, tangible, gustable result of a physician's visits is a row of medicine bottles, just so long will the patient tend to try to eliminate the middle man (the doctor) and buy the drugs himself, "patent" or pharmacopeial as the case may be.

If the result of the physician's visits were a reform in the patient's diet, a lengthening of his hours of sleep, better habits in bathing, ventilation and exercise, and a sleeping balcony, no patient would be such a fool as to think he could get these results out of a bottle of "patent medicine" or a box of headache powders; but when the net result of the doctor's expensive visits is medicine bottles, the patient learns his lesson, clings to his bottle, and eliminates the expensive visits. Result: $75,000,000 a year for secret remedies.

Placebos have another bad result. They weaken the confidence of the patient in the physician, because every placebo is a lie, and in the long run the lie is found out. We give a placebo with one meaning; the patient receives it with quite another. We mean him to suppose that the drug acts directly on his body, not through his mind by means of expectant attention. If the patient finds out what we are doing he laughs at it or is rightly angry with us. I have seen both the laughter and the anger—at our expense. Placebo giving is quackery. It also fosters the nostrum evil.

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

The "patent medicine" and nostrum industry will be seriously crippled when we do two things:

(*a*) Stop advising secret remedies which may be poisonous or inert.

(*b*) Stop fooling our patients with placebos.

The positive side of all this negative advice I have tried to explain in another paper.[1]

DISCUSSION.

SYMPOSIUM ON PROPRIETARY MEDICINES.

Dr. W. S. Thayer, Baltimore, said he agreed with Dr. Cabot. He related an occurrence in the South when he attended a country medical society and talked on the subject of typhoid fever, telling them what it was, etc. After going over the question of the pathologic conditions involved he told of what one could expect from the methods of treatment and talked very plainly regarding it. He did not know that a well-known drug firm had engaged men to make speeches during a recent campaign, telling of the good of intestinal antiseptics in the treatment of typhoid fever. If the members of that society had had the training that the members of the American Medical Association had, they would have known when that man talked such arrant nonsense. Dr. Thayer said that the better education of the physicians all over the country would do much in the solving of this problem.

There was a point in which he did not agree with Dr. Dock; he could not see the advantage to be gained by admitting the possibility of physicians patenting drugs, etc., for that was not the way for the practicing physician to make money; we should have a higher aim than that. It was a mistake and was likely to lead to more harm than good. The stand should always be taken that the medical profession should not patent or acquire individual rights in the discovery of anything which had to do with the treatment of the diseases which afflicted the human being.

Dr. H. A. Hare, Philadelphia, said that he wished to raise his voice in defense of the medical profession, and if he took on himself this defense, he did it because he wished to defend himself as well. He vehemently denied the truth of any statement made that members of the medical profession, particularly of Pennsylvania and of Philadelphia, had deliberately given placebos to patients with the idea of fooling or deluding them. He said he was in accord with the statements made by Dr. Thayer, and against those made by Dr. Dock, in what was said regarding numbers of the medical profession patenting drugs or instruments. In regard to patented remedies which possess therapeutic value he believed physicians should employ them. If they did not they would be depriving themselves and their patients of remedies which the more progressive members of their calling would use. It is a mistake to turn down everything because it is patented. He said he could mention drugs employed by all of them for many years which were patented and which they could not do without, such as phenacetin.

Dr. Hare said that a surgeon could recommend an instrument and name the man who made the instrument and not be criticized for it; but if a physician wrote an article and endorsed a certain drug as being of value, even though he did not mention the name of the maker, he would be under suspicion. Dr. Hare thought there should be a normal balance in this matter and that they should give rational consideration to the therapeutic possibilities of substances presented to them.

Dr. S. Solis Cohen, Philadelphia, said he wished to emphasize some points that had not been sufficiently brought forward in the papers. Distinction must be clearly made among the various classes of proprietary remedies: 1, "Patent medicines," so called, the nostrums sold to the public through advertisements, usually full of falsehoods, like peruna, the Pinkham medicines and their kind; 2, the nostrums advertised to physicians, the secret or partly secret "proprietary," sold to the public in part directly, in part through the prescription of careless, thoughtless or deluded practitioners, such as antikamnia and its congeners; 3, the proprietary not secret, for example, Squibb's ether or Hayden's creosotal; 4, the drugs patented and therefore not secret, as antipyrin and phenacetin; 5, patented drugs tainted with fraud because not conforming to the description in the patent.

He agreed with Dr. Hare that non-fraudulent patented drugs might be used by physicians without hesitation, but there was some danger that Dr. Hare's words might be misunderstood. When Dr. Hare spoke of using "illegitimate" or "unethical" remedies he might be misconstrued as supporting the use of secret remedies; in other words, nostrums, the drugs and mixtures of which the composition was concealed. This subject was so important and the nostrum manufacturers tried so hard to render the distinction obscure that there must not be left even by inadvertence a loop hole for misconception. Referring to one speaker's *peccavi* or rather *peccabat*, Dr. Cohen did not understand how any intelligent physician could wittingly order a medicine the composition of which he did not know, but that such a mistake was in this instance honestly made did not justify an indiscriminate denunciation of all other drug-giving. What is needed is intelligent use of drugs, that is to say, the use of known drugs, under suitable conditions. Should they abandon opium or digitalis because some one may use them unnecessarily? One great fault of secret remedies is that there is no guarantee of their uniformity. The composition of "patent medicine" and other nostrums might be changed day by day and has been changed materially in well-attested instances, as shown by careful analyses. One who prescribes antikamnia, for example, has no means of knowing whether it will be the same thing or something else to-morrow.

Dr. Dock's proposition for physicians to take out patents on remedies is an unthinkable method. The cure is worse than the disease. While we might yield to necessity and as he—Dr. Cohen—had already conceded, prescribe drugs of known composition patented by their makers, yet we should not encourage such a lowering of the traditional standards of the medical profession itself. It was to be regretted that they had not taken a decided stand, as indeed he, among others, had urged at the time, and refused to prescribe patented drugs when Knorr's antipyrin was first put on the market. The general issue would have been fought out then and there, and science and humanity would have won. Nothing would have been lost to therapeutics even had the introduction of antipyrin into clinical use been long delayed. Indeed, the temptation to exploit the drug for gain would have been removed, it would not have been so widely and wildly advertised or so much imitated, and perhaps thousands and tens of thousands of lives would have been spared that were lost through its use and that of other coal-tar antipyretics in typhoid fever, pneumonia, and especially influenza. The true sphere of usefulness and, above all, the limitations of the new drugs would have been well defined. Nothing would have been lost, and much would have been gained. It is too late to return to the *status quo ante*, but they can at least preserve what is left of the traditional heritage of the physician.

Dr. Woods Hutchinson, Redlands, Cal., asked that they all look at that medical barbarism, the United States Pharmacopeia, and the enormous lists of things that had been published. Anyone looking over those lists must have been struck with the great number of drugs that have been retained, and it is the fault of the profession that such a large number was retained. The remedy lies in our hands. At least one-half the pages should be cut out; instead, somewhere in the neighborhood of 1,500 or 2,000 remedies had been added. He believed the Pharmacopeia should be revised.

Dr. Albert Francine, Philadelphia, said that he thought it was worth while to review briefly what had been accomplished by the agitation during the past few years against nostrums and proprietary medicines in relation to the general public, to the accomplishment of legislation and to the profession itself. He said that the education of the public had proceeded rapidly and that they were becoming fully alive to the dangerous character of these mixtures. This was shown practically in the fact that the sale of "patent medicines" had decreased enormously throughout the country; and was also reflected in the public press, which now published frequent accounts of poisoning from headache powders and other nostrums, recognizing that the public was interested.

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[1] "The Renaissance of Therapeutics," The Journal, June 2, 1906.

Success had not been so marked in regard to getting the enactment of legislation. He wished that every state could accomplish the legislation which Massachusetts had just inaugurated, by which cocain could be sold only on a doctor's prescription and could not be an ingredient of any copyright mixture whatsoever; morphin could be present only in the proportion of one-fourth gr. to the ounce of solution; and alcohol could be used only in sufficient quantity to act as a solvent. This was certainly a long step in the right direction, and must, if enforced, be the death blow to the alcoholic nostrums and to many others containing cocain and morphin.

The most interesting and difficult phase of the subject and the field for their most legitimate efforts, was in the relation of the profession to proprietary medicines. Their use by physicians appeared to be increasing rather than diminishing. This arose from two things, carelessness and ignorance. Credit must be given to the manufacturing chemist for putting out very elegant mixtures, some of them with the formula on the bottle, and for the temptation thus held out to use them. But as Dr Billings had well said: "To the rational physician, mixtures even with a known formula are objectionable, for disease is never quite the same in different individuals and never quite the same in its different stages." Dr. Francine thought that too many members of the profession did not appreciate their responsibilities in this regard. He thought that the medical schools did not do their full duty in training their graduates in the arts of pharmacology and therapeutics, and in prescription writing. Graduates did not know how to write prescriptions, how skillfully to combine drugs, and did not, as a rule, subsequently familiarize themselves with them. Every graduate, even after a term of service in a large hospital, should diligently apply himself to this study, and it was because this was not generally done that they fell back on ready-made preparations. He thought there was justification for criticism of the usual methods of teaching therapeutics in the medical schools, though this phase of it was a difficult problem for the latter to handle or adjust properly. The physiologic action of drugs and prescription writing should be taught in close relation to their clinical application. It seemed folly to teach the use and action of the nitrites to second and third-year students, when they had little or no familiarity with the diseases in which they were indicated, and yet this was the usual course. It would seem wise, if the physiologic action of drugs must be taught at that time to supplement such theoretical teaching by practical work in prescription writing and prescribing in the fourth year directly to clinical cases in the wards and dispensaries.

Dr. Louis LeRoy, Nashville, Tenn., said that the speakers were laying all of the trouble, or most of it, at the door of the practicing physician, as if he could revolutionize public opinion. He said that he had found that the attitude of the public man now was about reflected by the attitude of the medical man of some one hundred years ago; it took one hundred years to come to the attitude and it probably would take another hundred years to come to the attitude of the medical men of to-day. While they might take some decided step, he felt only moderately sanguine over diminishing to any marked extent the public use of nostrums. Another thing he said should be borne in mind: the medical student came to them in the mental attitude of the general public and in that student they must build up this work. A great thing that had been lacking so long in medical schools was common "horse sense," as well as the ability to correlate what they got. Some of this could be cultivated to a certain extent, although some never would, and some never could. He said they were at fault in medical teaching, in that they did not teach medical students how to put two and two together.

Dr. Richard C. Cabot, Boston, in answer to what was said regarding placebos, said that he would charge no man with what he had not done himself and that he had given bushels of placebos, as all doctors do, to impress the patient. But when they gave placebos they were in precisely the same attitude as the quack. They were pretending to possess remedies and powers which, in fact, they did not possess. Dr. Cabot added that placebos were lies, because if they explained to the patient that they were inert and given solely to influence his symptoms through his mind, they would then be useless. It was only when they led the patient mistakenly to suppose that these inert drugs had genuine medicinal action, that they work on his mind. They should all do as Grover Cleveland, at the last annual meeting of the Medical Society of the State of New York, entreated them to do, namely, treat their patients like intelligent human beings; be open with them, be fair with them, treat them as they would want to be treated if they were sick.

Dr. George Dock, Ann Arbor, Mich., said that he would limit his remarks to the question of patients. He was prepared for the objections made against the patenting of medical inventions, and, in fact, expected even greater objections. He had at one time shared the views so clearly stated by Dr. Thayer. He thought that conditions had somewhat changed and that the objection to the patenting or dispensing of a secret preparation could not apply to the patenting of a discovery or invention of a new principle. A good deal has been said about the fact that Jenner did not take out a patent on vaccination. It would have been a great deal better for vaccination if Jenner had. He himself complained of the harm that was done by careless and ignorant vaccinators. If he had been able to control the standard of vaccine and the method of vaccinating for a few years, the result might have been very much better. A patent made the material public, or open, so far as its composition was concerned. He thought it was unfortunate that in this country they were able to patent the product. It would be very much better if the right were limited to patenting the process. Invention would be stimulated in still further perfecting the product. If a physician did not wish to take money derived from the patent of an invention it would be an easy thing to forego his royalties. On the other hand, if it is wrong to take out a patent on a remedial agent it would seem to be equally wrong to use the patented article. Dr. Dock said that he had not used ammonol, but confessed to having used Behring's antitoxin, adrenalin and modified milk, all of which he was informed were patented. He did not believe that these would have been any worse if patents had been held by physicians.

CIRRHOTIC CHANGES IN THE LIVER FOLLOWING A SINGLE INJURY.*

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It is well known that various poisonous materials circulating in the blood may cause the destruction of the cells of the liver, sometimes in very small foci, sometimes much more diffusely throughout the whole organ. In many cases, as has been emphasized by Opie, this destruction may occur fairly regularly in certain portions or zones of the lobule, while in other cases it is difficult to determine any such regularity.

Necroses of similar type may be produced experimentally, as shown by Pearce and others, but they most commonly occur in the course of acute infections and intoxications. When limited in extent they may destroy so little of the liver that no definite symptoms result and the injured area is in time replaced by scar tissue, the remaining liver tissue becoming hypertrophied to compensate for that which was lost. This process may become a more or less continuous one if the source of the poison persists, and the final result of such repeated injuries and healings is one or other of the varieties of cirrhosis of the liver. The changes involved in this I have discussed in detail in a previous paper.[1]

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

When the injury to the liver tissue is very extensive and involves at one time the greater part of the liver, symptoms at once arise, and such a condition which is commonly classed as acute yellow atrophy may quickly bring about the death of the patient. Recovery sometimes occurs, and the reparatory changes in the liver in such cases have been minutely studied. One case of this kind was reported in detail,[2] and since that time another case has come to my notice. This second case was that of a child who died of peritonitis following appendicitis, but who had otherwise always been well except for an attack of scarlet fever some months before. At autopsy the liver was found to be extraordinarily distorted by the presence of large prominent nodules of grayish, swollen-looking liver substance, each surrounding a central branch of the portal vein. Between these masses the tissue was shrunken and fibrous and dark grayish red in color. Microscopically there were found conditions entirely analogous to those described in the published case, i. e., in many areas the collapsed scarred framework of the liver with proliferating sprouts from the bile ducts; in other places the greatly enlarged liver lobules which had resulted from the hypertrophy of those lobules which remained uninjured.

The aim of this note is merely to show what must be almost obvious, that there may occur a scarred condition of the liver perhaps intermediate between the ordinary cirrhosis and the extraordinary distortion just described, a condition, in other words, in which some single attack of an infectious disease or some single intoxication has produced a single non-progressive, though widespread, injury from which complete and permanent recovery has occurred.

Such livers present, in general, a smooth, even surface, interrupted only by a network of fine linear grooves, which are also seen on section and which indicate the places where destruction of the liver cells took place. The remaining tissue in two cases which we have studied was composed of lobules perfectly normal in form, but rather larger than the normal. Microscopically, but little proliferative change in the bile ducts are to be observed, and it appeared, indeed, that in these cases but little definite scar tissue had appeared, the depressed lines being composed of atrophic and collapsed liver tissue in which the blood capillaries were separated by scale-like remains of liver cells only.

Similar conditions have been observed in a case of pernicious anemia and in a case of myelocytic leukemia in which the livers were found to present, evidently as the result of a single injury, ramifying bands and lines in which the epithelial cells had been destroyed so that the framework of the tissue had collapsed into a red, vascular, spongy substance, while the remaining uninjured liver tissue stood out prominently in the form of opaque, yellowish-gray masses, with normal or somewhat enlarged lobulations.

These are rather extreme cases, but there are many cases in which, although no symptoms referable to the liver were noted during life, the autopsy revealed a liver practically normal, except for the presence of irregular, fine lines of scar tissue throughout its substance. These are commonly recognized as cases of incipient cirrhosis, and, indeed, it can not be denied that they are cases of cirrhosis, but we have no evidence whatever that the condition is part of a progressive process. From the normal state of most of the liver tissue it seems far more probable that we are dealing, not with the beginning of an advancing cirrhosis of the liver, but rather with a finished or stationary condition which has existed unchanged, since the injuries to the liver produced in the course of an attack of some infectious disease in earlier life were permanently healed. In other words, the condition differs from ordinary cirrhosis merely in not being progressive and in representing only the scars of an old injury.

DISCUSSION.

Dr. W. Ophüls, San Francisco, believed with Dr. MacCallum that the importance of the regenerative and reparatory changes taking place in cirrhosis can not very well be exaggerated, but he would not go so far in giving the interstitial changes an entirely secondary position. His contention is based very largely on some experiments which he has been doing on chronic nephritis. For his experiments he used guinea-pigs and dogs, feeding them certain well-known poisonous substances which affect the kidneys, and the specimens show that, although there are degenerative changes with the interstitial processes which were observed, they are hardly marked enough to be regarded as primary, nor is there any direct local relation between the two, the degenerative changes being diffuse in character and the inflammatory changes being localized in certain parts. It is certainly true that in these chronic inflammations degenerative and reparatory changes in the epithelium play a very important rôle in the production of the anatomic picture.

Dr. Henry A. Christian, Boston, asked Dr. MacCallum what in these lesions he considered the possible determining feature of the attack on the periphery of the lobule in the light of the fact that most acute conditions attack the center of the lobule. Such, at least, had been the distribution of acute necroses in his cases. He also asked what Dr. MacCallum thought about the endothelial type of cell which appears, that is, the cell which morphologically resembles an endothelial cell; whether he regards such cells as true endothelial cells.

Dr. MacCallum said that he was convinced that the only instance of primary trouble is of the highly organized tissues. He can not make clear himself any constricting effect on the liver tissue. In regard to Dr. Christian's remarks, he thought that necrosis of the liver is different in arrangement at Baltimore from what it is in Boston. He has been struck by the relative rarity of the central lesions. As to Dr. Christian's second question, he does not regard these as endothelial cells or that they go to the formation of any blood vessels.

Dr. Henry A. Christian, Boston, agreed that what Dr. MacCallum said about the difference between Boston and Baltimore is true. This was brought out when Dr. Opie read his paper in Washington on "Zonal Necroses of the Liver." Dr. Christian said that he felt rather badly because he thought that this condition might have been overlooked in Boston, but he came back and went over something like 2,000 cases and found only central necroses. He can not explain why this difference exists. The types of cirrhosis in Baltimore and Boston are practically the same.

Electric Signal for Wet Diapers.—We learn from an exchange that the Exhibition of Hygiene recently held at Vienna contained a practical device, the invention of Professor Pfaundler, to aid in the care of infants. It is an electric contrivance with dry elements and a small wire pad. The latter is placed in the child's diaper. As soon as the diaper becomes wet the circuit is closed and an electric bell rings until dry conditions are restored.

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[1] MacCallum: "Regenerative Changes in Cirrhosis of the Liver," The Journal A. M. A., Sept. 3, 1904.

[2] Johns Hopkins Hospital Reports, vol. x.

A PLEA FOR MORE RADICAL OPERATIONS IN CANCER OF THE LIPS AND TONGUE.*

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The decreased number of recurrences after a thorough removal of the breast according to the method of Halsted and others has taught us that the same principles could be applied in the surgical treatment of carcinomata elsewhere in the body. In no class of cases does this seem more promising than in carcinomata of the more superficial character like those of the face, tongue, lips, ear, etc.

MODE OF GROWTH OF SQUAMOUS-CELLED CARCINOMATA.

Carcinomata of the lips, tongue, ear, etc., all belong to the flat or squamous-celled type. They spread almost exclusively either by continuity of tissue or along the lymphatic spaces and vessels to the lymph nodes which normally drain the region involved. Metastatic growths in the internal viscera or long bones are very rare in the squamous-celled type of carcinoma.

von Winiwarter and Landau were unable to find internal metastases in a large number of cases examined by them. Küttner[1] found only four in which there were such deposits in a number of cases of cancer of the tongue reported from nine German university clinics.

These data confirm the frequently observed clinical fact that recurrence of carcinoma of the lips, tongue, etc., usually takes place close to the original seat of operation or in the adjacent lymph nodes. Such a local or regional recurrence usually manifests itself from one to three years after operation; but cases have been reported in which they did not appear for eight or ten years. The latter are a rare exception.

There are but few reliable statistics which will aid us in judging of the percentage of permanent recovery after the older and less radical operations for removal of the class of carcinomata of which this paper treats. The chief reason for this is the great difficulty in following the cases for a long period. Küttner was able to collect 162 cases from nine hospitals in which the non-radical operation had been performed for cancer of the tongue and found only 13 per cent. of permanent recoveries.

There is no form of carcinoma in which involvement of the lymph nodes draining the area involved takes place as early as in carcinoma of the tongue, lips, etc. It is for this reason that operations for the radical removal of all infected territory seem to offer such favorable opportunities for permanent cures.

LYMPH NODES WHICH DRAIN THE LIPS, TONGUE, FACE AND EARS.

These have been carefully investigated by Sappey, Küttner,[1] Polya,[2] Poirier[3] and others and can be best understood by a reference to Figures 1, 2 and 3. They are as follows:

1. For the Tongue (Fig. 1).—Submaxillary lymph nodes receive lymph from the edge, lower surface and middle of dorsum of tongue and entire floor of mouth. Superior and inferior deep cervical nodes drain entire tongue and floor of mouth. In addition to these there are some intramuscular nodes situated in the geniohyoid muscles, and at times retrograde lymph currents may involve the parotid nodes. There is much intercommunication of lymphatics so that a carcinoma involving only one side of the tongue may invade the lymph nodes of both sides of the neck. The most important node is situated at the bifurcation of the common carotid arteries. This node lies deep beneath the posterior belly of the digastric muscle. In order thoroughly to remove the deep nodes which drain the tongue, it is also necessary to excise the lower part of the parotid salivary gland.

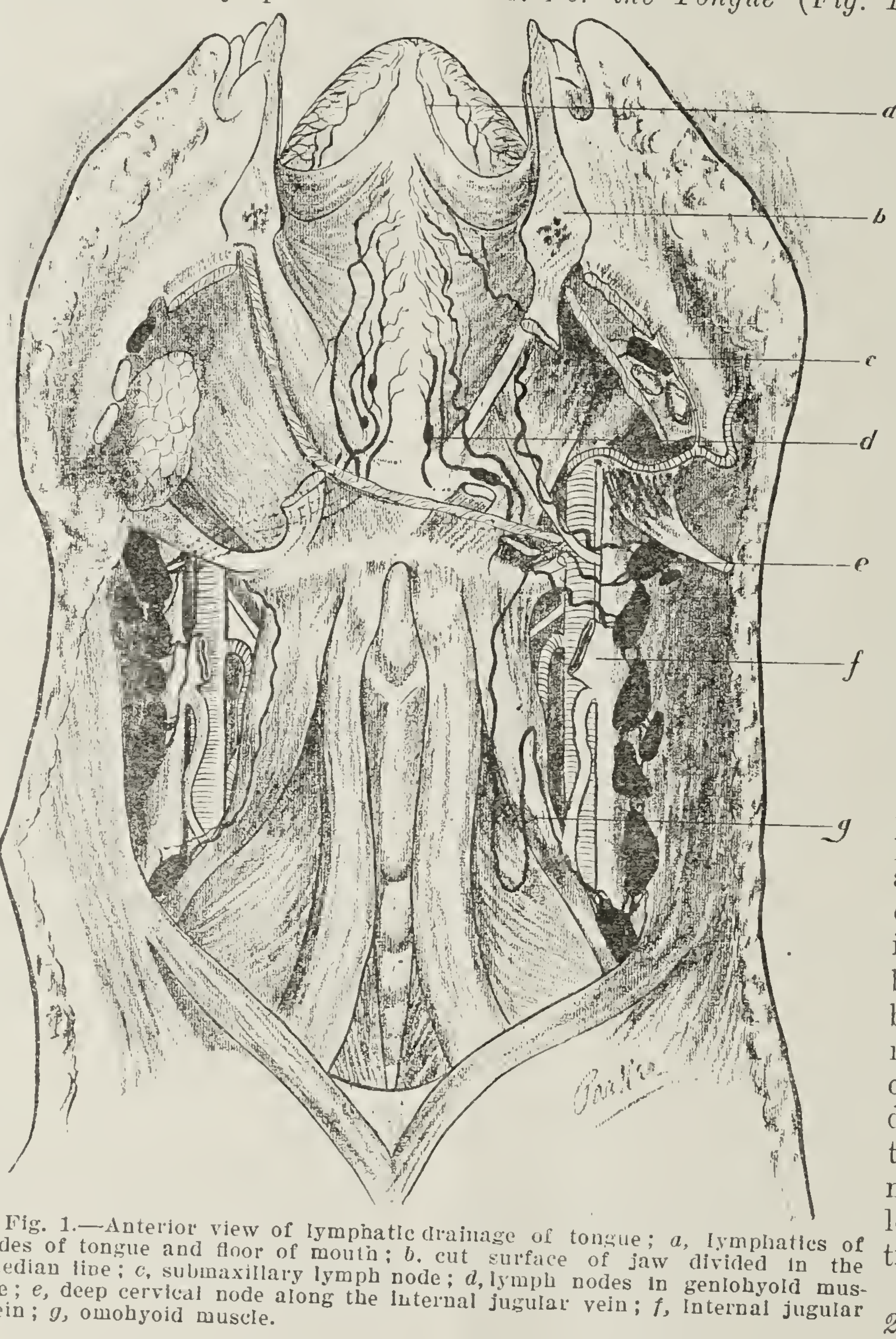

Fig. 1.—Anterior view of lymphatic drainage of tongue; *a*, lymphatics of sides of tongue and floor of mouth; *b*. cut surface of jaw divided in the median line; *c*, submaxillary lymph node; *d*, lymph nodes in geniohyoid muscle; *e*, deep cervical node along the internal jugular vein; *f*, internal jugular vein; *g*, omohyoid muscle.

2. For the Lips (Fig. 2.)—The chief lymph nodes which drain the lips are situated in the submental and submaxillary regions. Occasionally infection of one of the deep cervical nodes will take place at an early period. The submental lymph nodes draining the lips are situated just beneath the skin between the two anterior bellies of the digastric muscles. The submaxillary nodes lie embedded in the subcutaneous fat of this region in close relation to the capsule of the submaxillary salivary gland. They are at times found within the latter so that it is always safer to remove the submaxillary salivary gland itself.

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*Read at the annual meeting of the Illinois State Medical Society, May 16, 1906.

[1] Küttner: Beitr., z. Klin. Chir., vol. xxi.

[2] Polya: Deutsch. Ztschr. f. Chir., vol. lxv.

[3] Poirier, Cuneo and Lamere: "The Lymphatics."

Involvement of the deep cervical nodes does not take place until a later period of the primary growth, but in a radical operation, even at an early stage, the possibility of their involvement must be borne in mind.

3. For the Ear (*Fig. 3*).—The lymph nodes draining the external ear are chiefly the deep cervical, although at times the parotid and mastoid nodes may be first affected.

4. For the Nose, Face and Cheeks.—The lymphatic drainage of the nose, face and cheeks is chiefly into the submental and submaxillary nodes and from these into the deep cervical at a comparatively late period of the development of the primary growth. The lymph from the lateral portion of the face drains into the parotid nodes situated on, within and beneath the capsule of the parotid salivary gland.

One can not in general rely on any one set of nodes being affected, but must remove all of them in order to be thorough. One should not depend on external palpation for enlarged lymph nodes before undertaking a radical operation. Such enlargement may be simply inflammatory or there may be a number of deep nodes which are not palpable.

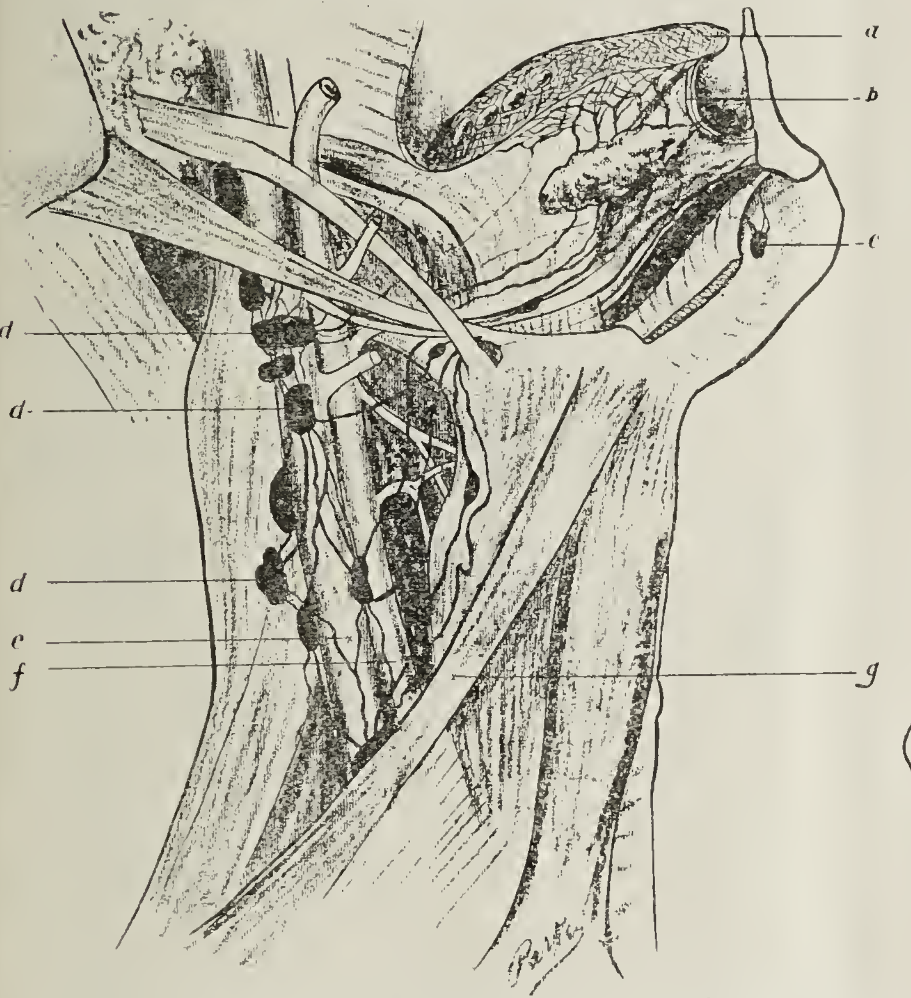

Fig. 2.—Lymph nodes draining tongue: *a*, Lymphatics of tip of the tongue; *b*, lymphatic trunks of sides of tongue and floor of mouth, draining into *c*, submaxillary and submental nodes, and into *d*, deep cervical nodes; *e*, internal jugular vein; *f*, common carotid artery; *g*, omohyoid muscle.

HISTORY OF OPERATION.

Before beginning the description of the methods I will refer briefly to the development of this tendency toward more radical operations in this class of carcinomata.

The majority of the articles have appeared during the past eight years. The first surgeon to advocate thorough removal of all lymphatic nodes was Butlin.[4] In a paper published in 1898, he stated that he had employed the method since 1895, in a more or less systematic manner, for cancer of the tongue. Since 1898 a number of articles have appeared advocating the same procedure for cancer of the tongue, lips, etc. Among these may be mentioned those of Crile, Küttner,[1] Polya,[2] Stewart.[5] Cheyne,[6] Stieda,[7] Ebel,[8] Boyd and Unwin[9] and Whitehead.[10]

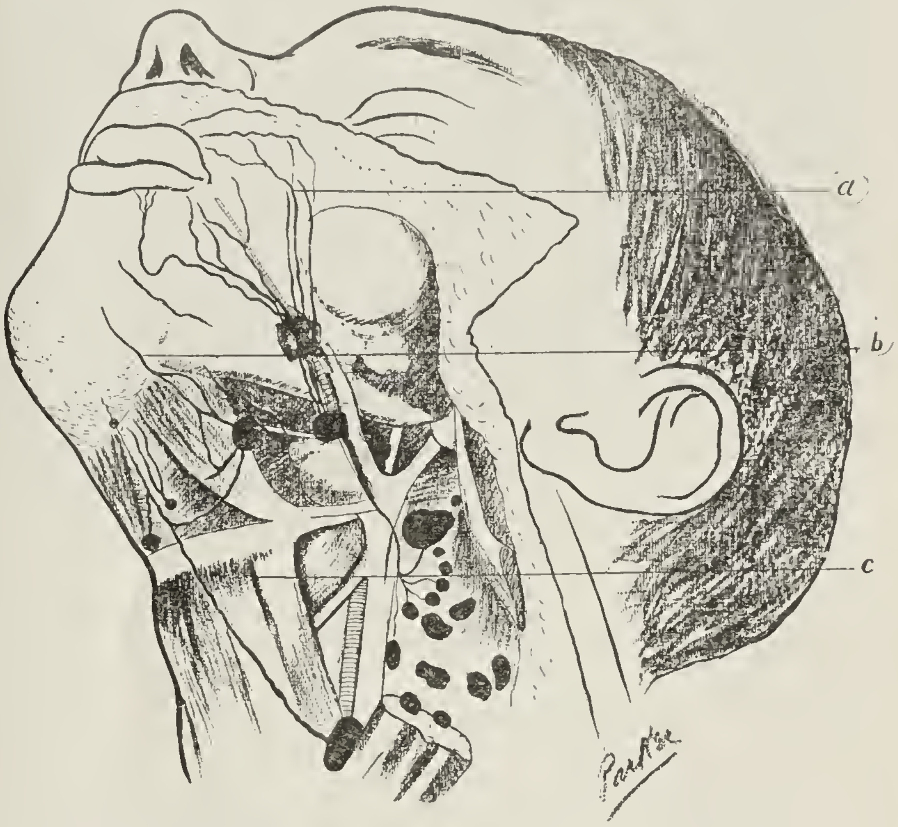

Fig. 3.—Lymph nodes draining cheeks and lips: *a*, Lymph nodes of cheek; *b*, lymph nodes of lower lip and chin region draining into submaxillary and submental glands; *c*, deep cervical nodes.

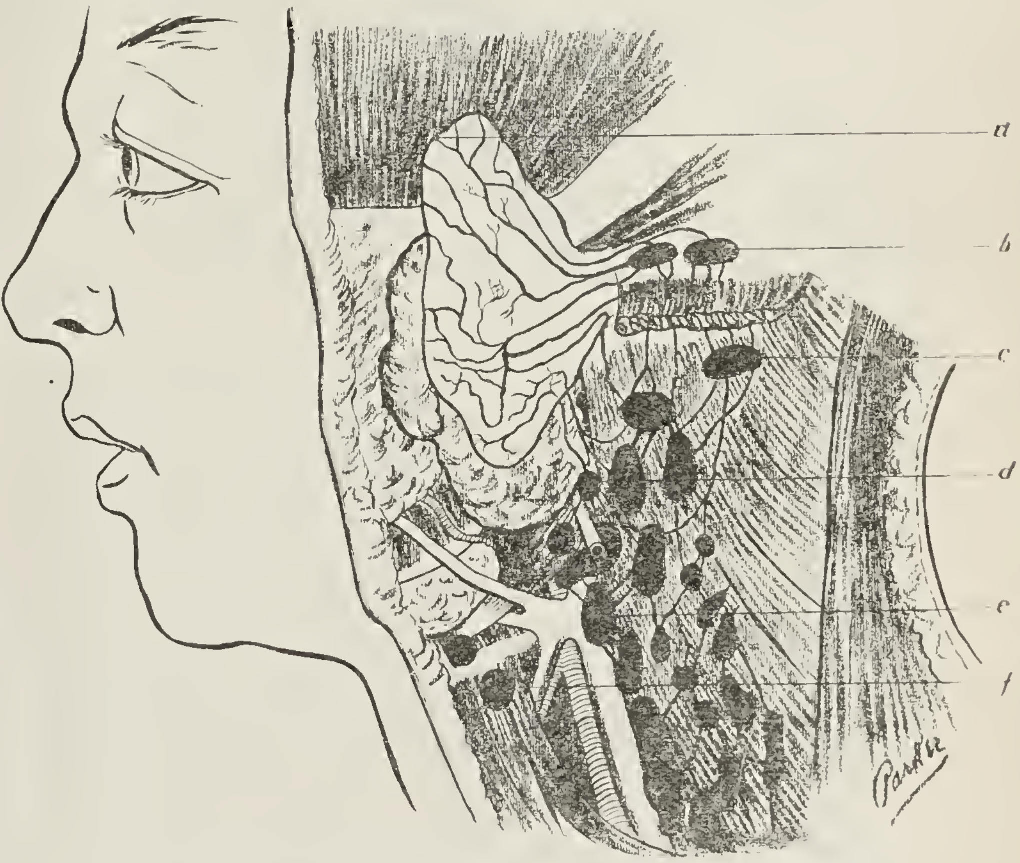

Fig. 4.—Lymph nodes draining ear (Poirier); *a*, Lymphatic trunks of auricle; *b*, mastoid, *c*, *d*, *e*, and *f*, deep cervical nodes.

Unfortunately there are but few statistics up to the present time which will enable one to form an opinion as to what extent these more radical operations have less-

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4. Butlin: Brit. Med. Jour., vol. i, 1898, and vol. i, 1905.

5. J. C. Stewart: St. Paul Med. Jour., vol. vi, 1904.

6. Cheyne: Practitioner, April, 1899.

7. Stieda: Archiv. f. Klin. Chir., vol. lxiii.

8. Ebel: Beitr. z. Klin. Chir., vol. xl.

9. Boyd and Unwin: Practitioner, May, 1903.

10. Whitehead, W.: Practitioner, May, 1903.

ened the percentage of recurrence. As in the case of the development of the same mode of operation in cancers of the breast, it will be necessary to collect a large number of cases and await a considerable time after operation before we can judge of the value of the same principle as applied to cancers of the lips, tongue, etc. It would seem as though a period of at least three years should elapse before results could be fairly judged.

Butlin[4] began to perform the operation for the complete removal of the contents of the anterior triangle of the neck in December, 1895, or January, 1896. Between that period and December, 1901, there were 28 of these operations, and, in a paper published in 1905, he says: "I will merely take the number of persons who died of affection of the gland without recurrence in the mouth and the number of successful cases, that is, of persons who were alive and well three or more years after the operation, or who died of some other disease than cancer more than three years after the operation. There were 28 cases of removal of the contents of the anterior triangle of the neck from January, 1896, to December, 1901; 4 patients died of affection of glands without recurrence in the mouth; successful cases, 10.

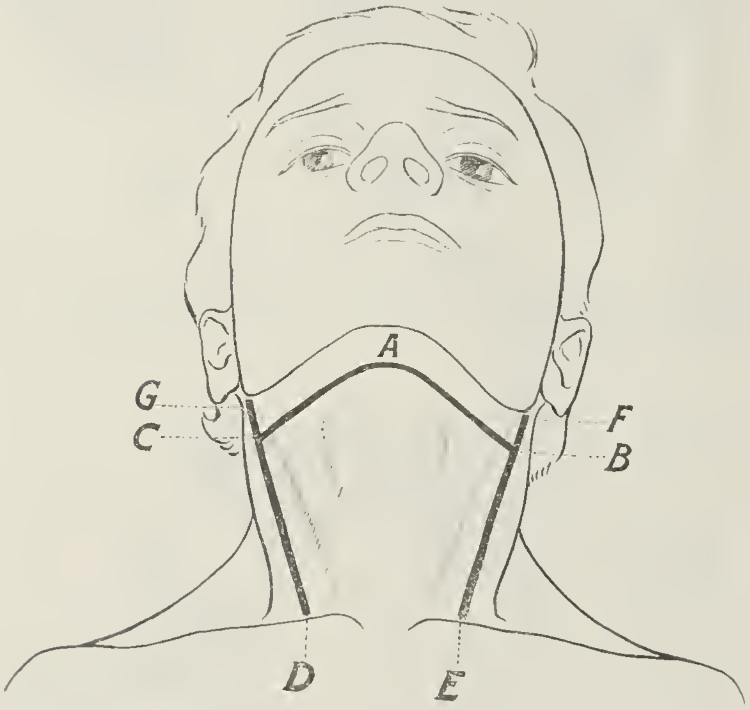

Fig. 5.—Incision employed in extirpation of lymph nodes in carcinoma of the lips, tongue, etc. C, A, B. transverse incision parallel to lower border of lower jaw, and midway between upper border of thyroid and lower jaw for extirpation of submaxillary and submental glands; G. C, D and F, B. E. incisions over middle of sternocleidomastoid muscles to permit extirpation of deep cervical nodes, with or without the removal of the sternocleidomastoid and internal jugular vein. The nodes in the supraclavicular region may be removed by an incision parallel to the upper border of the clavicle, carried outwards from D or E respectively.

Compare with these the results of the old operation, in which the glands which could be felt to be enlarged were taken out, but no more than this was done. Up to January, 1896, I performed this operation 31 times. Of these 31 cases of removal of enlarged glands before January, 1896, 8 patients died of affection of glands without recurrence in the mouth; successful cases, 5.

Again, take another series of cases to compare with the first series. Between January, 1896, and December, 1901, Butlin operated on 34 patients for the removal of cancer of the tongue without removal of the glands of the neck. Of these 34 cases 9 patients died of affection of the glands without recurrence in the mouth; successful ones, 9."

It will be seen at a glance that by far the most successful results are those which were procured by the removal of the contents of the anterior triangle. But the mere statement of numbers does not tell anything. Allowance has been made for certain conditions which were present or which were absent in each of these three series of cases. In the first series of cases, there were 18 patients in whom the glands were perceptible to touch at the time they were removed, 7 in whom they were not perceptible, and 3 of whom there was no note on this important point. By far the best results were obtained in the 7 cases in which the glands were not perceptible to touch. For 4 of these patients are among the 10 successful cases. Of course, in the second series the glands were perceptible in every one of the 31 patients, and that was why they were removed. So far from thinking the results bad, he was surprised to find they were so good. For it is a remarkable circumstance that five persons, under such conditions, should have been cured by so incomplete an operation. In more than 1 of these 5 cases the glands were proved by microscopic examination to contain epithelioma. Yet one of these patients was alive and well nearly twenty years after the operation.

Probably no corrections are required in the third series of 34 cases. For if, on the one hand, it may be said that these 34 cases comprise the lightest and most favorable of all the cases (which is, of course, true), there were, on the other hand, some of them in which the glands were not removed, because they were beyond reach of removal, and the operation on the tongue was merely palliative.

In 1903 I began to employ the radical removal of the lymphatic nodes and surrounding tissues in the submaxillary triangle and along the internal jugular vein as a routine procedure in cancer of the lips, tongue, ear and face. The number of cases is still too small and the time which has elapsed too short to render a publication of results advisable at the present time, so that the present article is intended more as a preliminary communication to call the attention of the profession to a much-needed change in our surgical treatment of these more superficially situated carcinomata.

The method employed at the present time by the majority of surgeons varies chiefly, *a*, as to the incision; *b*. as to the amount of tissue to be removed; *c*, as to whether the operation shall be performed at one or two sittings. It is necessary to divide the cases into two classes: first, those in which the case is seen by the surgeon at a comparatively early stage of the lymph node involvement; second, those seen at a later period when the secondary growths are very extensive. For the former the first method of operation to be described is to be employed; for the more advanced cases the methods recommended by Crile, Butlin[4] and others are to be used.

TECHNIC FOR LESS ADVANCED CASES.

1. Removal of Primary Growth.—In cancers of the lips and tongue the amount to be removed varies, of course, with the extent of the lesion. As a general rule one should never be content with excising at least a half inch of healthy tissue on each side of the growth. In cancer of the tongue which extends beyond the median line, it is better to remove the entire organ, since the lymphatics of both sides of the neck are probably involved. Whether the tongue shall be removed, *a*, through the mouth after the method of Whitehead; or, *b*, through an incision parallel to the lower jaw, i. e., from below, combined with temporary resection of the jaw, is a matter of individual preference. The majority of surgeons both in this country and abroad prefer the Kocher method, i. e., from below the jaw. It can be readily combined with radical removal of infected lymphatic tissue, or combined with ligation of the external carotid artery to be referred to below.

Temporary resection of the lower jaw in the median line after the method of Langenbeck adds greatly to the exposure of the operative field.

2. *Removal of Infected Lymphatic Nodes.*—In the majority of cases cancer of the lips, tongue, ear, face and cheek, the incisions shown in Figures 5 and 7 will suffice. I have used them since 1903 and they give excellent access to every part of the neck. In cases of cancer of the lips only the first portion need be employed; viz., C, A, B (Fig. 5). This consists of an incision through the skin and subcutaneous fat extending parallel to the lower jaw and midway between the lower border of the latter and the upper border of the thyroid cartilage from the sternocleidomastoid muscle on one side of the neck to the same structure on the opposite side.

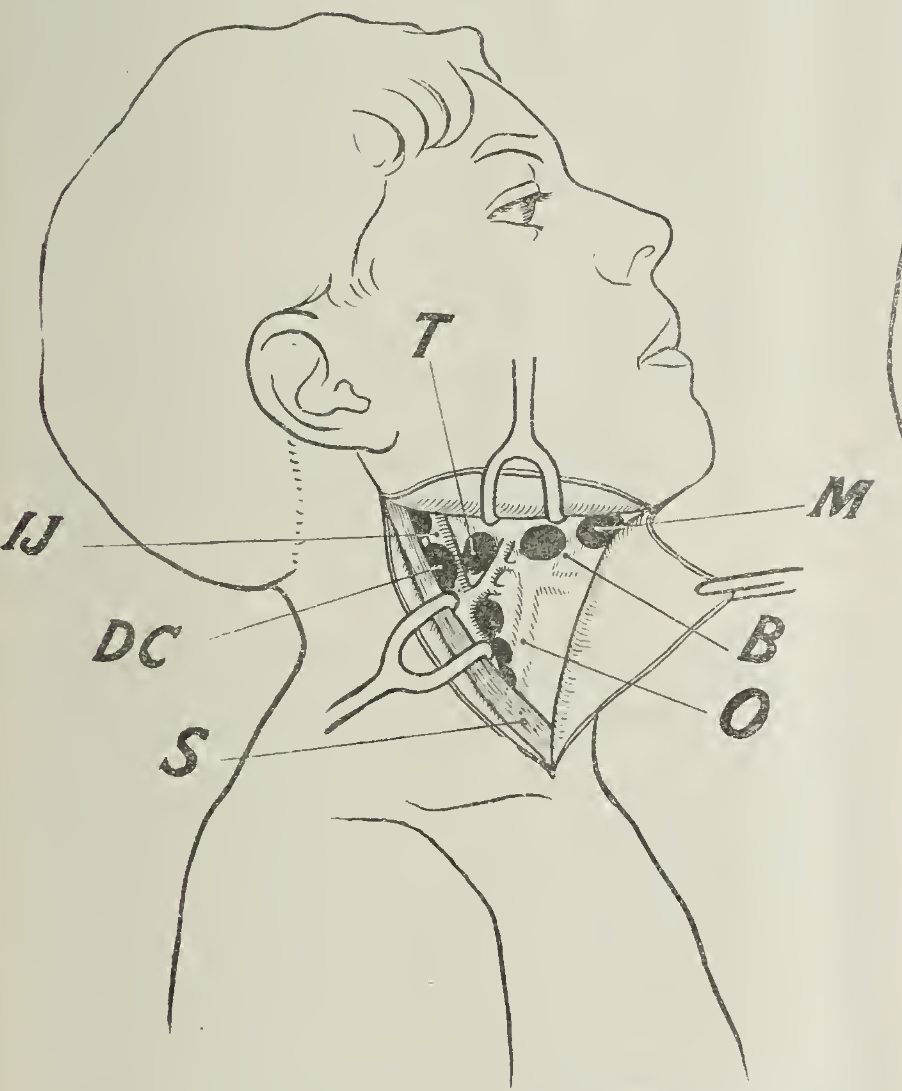

Fig. 6.—Location of most frequently affected lymph nodes in carcinoma of the tongue: M, submaxillary nodes; T, deep cervical node lying between internal and anterior jugular veins; D, C, deep cervical nodes lying in front and behind internal jugular vein: S, sternocleidomastoid muscle, retracted so as to show the deep cervical nodes in the upper half of the neck; I, J, internal jugular vein; O, omohyoid muscle; B, anterior belly of digastric.

The flaps are retracted and all of the following tissues removed in submental region and the submaxillary triangles on both sides of the neck: subcutaneous fat. submaxillary and submental lymph nodes, submaxillary salivary glands and all veins, large or small.

In cases of cancer of the tongue the removal of lymphatic nodes, etc., should not only include the contents of the submaxillary region, but the additional incisions (G,C,D and F,B,E), shown in Figures 5, 6, and 7 should be made. These permit free exposure of the lymph nodes lying along the internal and anterior jugular veins beneath the sternocleidomastoid muscles on both sides of the neck and many lymph nodes between the sternocleidomastoid muscle and the muscles of the larynx and at the bifurcation of the common carotid.

If the sternomastoid or the omohyoid be involved, they should be removed, since their extirpation does not interfere greatly with the movements of the head. Similarly if the nodes are adherent to the internal jugular it is best to resect a portion of this vessel. No operation should be considered complete without a thorough removal (through the incisions made over the middle of the sternocleidomastoid muscle) of the deep cervical nodes along the internal jugular. The exposure of the supraclavicular fossæ on each side through an incision parallel to the upper portion of the clavicle (Fig. 6) permits an inspection of the lymphatics in this region and removal of the abundant fatty tissue and infected lymphatics. In cases of cancer of the tongue there are two other places in which search should always be made for infected lymph nodes. These are on and within the parotid capsule.

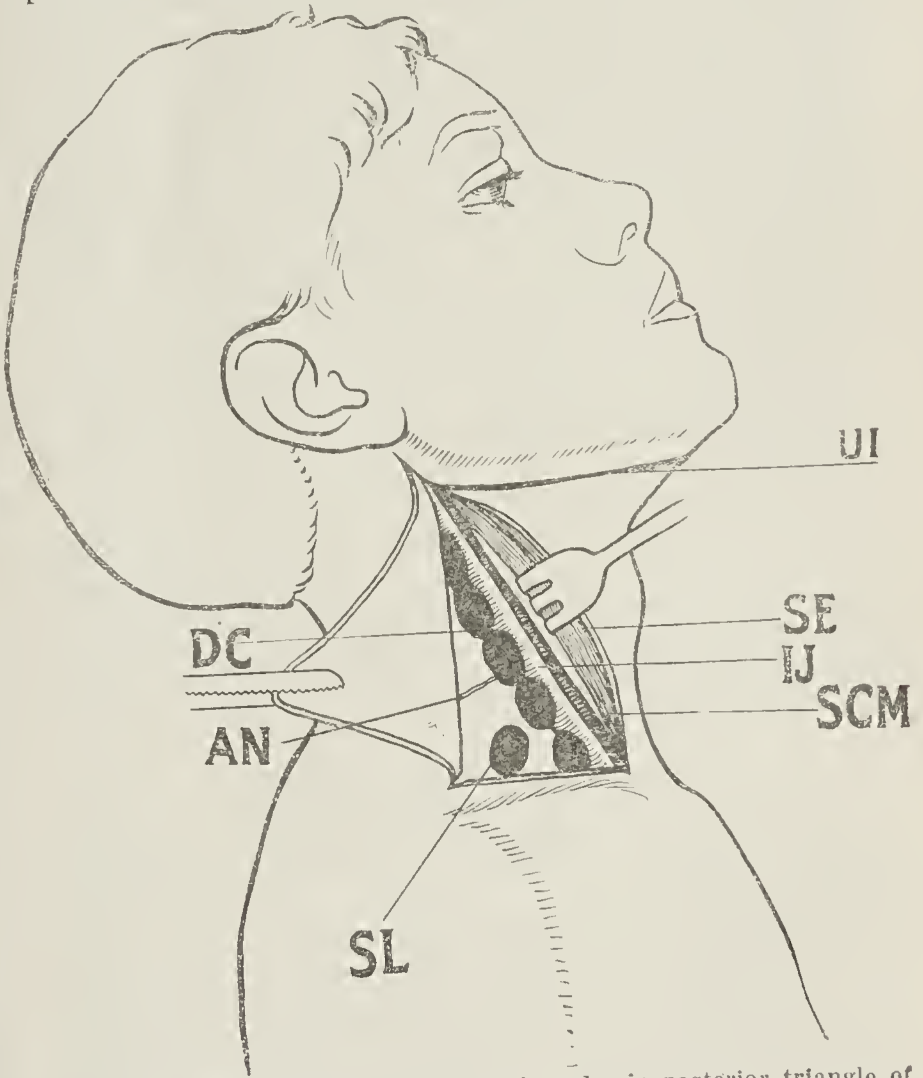

Fig. 7.—Method of removing lymph nodes in posterior triangle of neck, and those adherent to posterior aspect of internal jugular vein without resection of the sternocleidomastoid muscle: U, I, incision through which the submaxillary and submental glands have been removed; S, E, skin edge; I. J, internal jugular vein; S, C, M, sternocleidomastoid muscle pulled forward; S, L, supraclavicular nodes; A, N, spinal accessory nerve; D, C, deep cervical of internal jugular nodes.

3. *Hemostasis.*—Hemostasis in operations for extirpation of cancer of the lips and of the lymphatic nodes in the submaxillary region is a much simpler problem than in the case of an operation for cancer of the tongue. In the latter the question depends again on whether the organ is removed through the mouth or from below by Kocher's method. In the latter case the incisions described above for the removal of lymphatics greatly facilitate the ligation of the lingual or even of the external carotid arteries. There is, of course, some danger of cerebral embolism following the ligation of

the external or common carotid. Mortality from this cause is estimated by Crile usually at from 1 to 2 per cent., but at the time of life at which cancer is likely to develop the danger of embolism from this cause increases to from 20 to 30 per cent. A ligation of the lingual arteries through the neck incision before removing the tongue is especially to be recommended as greatly decreasing the amount of hemorrhage and not being followed by embolism. In general it may be said that every vessel should be caught with artery forceps and ligated lest they reopen after the clots become dislodged.

Every precaution should be taken to avoid infecting the field of operation either from the primary growth or through careless removal of carcinomatous lymph nodes. The primary focus should be cauterized, if possible, and great care taken not to open the lymph nodes during their removal.

4. Mode of Anesthesia, Posture, Etc.—The mode of anesthesia varies according to whether or not a preliminary tracheotomy has been performed. If the latter has been done, the anesthetic is given through the canula in the trachea. If no tracheotomy has been performed one can use the method of Crile, viz., inserting a rubber tube through each nostril extending to the level of the epiglottis, or the anesthetic can be administered through the nostrils after being poured on a sponge or pumped through a rubber tube inserted just beyond the external nares with the aid of the modified Brophy apparatus. Chloroform should be given preference on account of the greatly increased amount of salivary secretion after the use of ether. The hypodermic administration of 1/4 gr. morphin 15 minutes before beginning the operation greatly decreases the amount of anesthetic used.

The best position for thorough removal of the tongue with removal of the lymphatics is with a sand bag under the shoulders and the head thrown well back. Whitehead prefers a sitting posture. In operation on the lips the primary growth can be excised with the head elevated, and then the latter can be lowered to permit removal of the lymph nodes.

TECHNIC IN ADVANCED CASES.

This has been so well described by Crile in a number of recent articles that it will be necessary to refer only briefly to it here.

In these advanced cases Crile closes the common carotids temporarily by means of a clamp and then proceeds to remove from below upward all of the soft tissues, including the lymph nodes themselves, the sternocleidomastoid muscles, the internal jugular vein, fat, etc. It is remarkable how little general or local disturbance such radical procedures cause. Whitehead mentions having excised portions of the common carotids in two cases.

SHALL THE OPERATION BE PERFORMED IN ONE OR TWO SITTINGS?

The question arises in these radical operations whether both the primary growth and the lymphatics shall be removed at one sitting. The answer is that it depends, *a*, on the general condition of the patient; *b*, on the extent of involvement; *c*, on the skill and experience of the operator in this class of cases.

In cancer of the lips both operations can usually be performed at one sitting. In cancer of the tongue there should be only one sitting unless the patient's condition is such as to permit of an operation requiring in the most experienced hands from 1 to 1½ hours. The shock from these operations is, as a rule, very slight, so that, if possible, both had better be performed at the same time.

Boyd and Unwin[9] have called attention to a very important fact, viz., that if the tongue growth is removed at the first sitting and then the lymphatics taken out 1 to 2 weeks later an increased lymph stream follows and the tumor cells are more widely diffused. They advise, if the operation is to be performed in two steps, to remove the glands first and the tongue a week later.

It may be said in general that, with the exception of very old or weak patients, there are many advantages in performing both operations at one sitting, especially if the Kocher method of removing the tongue be employed. Butlin[4] performs the operation on the tongue first. The removal of lymphatics is done as soon as the patient is able to take food by mouth, i. e., liquid food enough to enable him to fight through the second operation.

My own method has been to perform both operations for cancer of the lips, face and ears at the same sitting. In cancer of the tongue I have carried out both at the same sitting in fairly robust patients without much glandular involvement. If the latter is extensive it is better to follow the plan of Butlin just mentioned.

103 State Street.

THE RADICAL CURE OF ANEURISM.

PRESENT STATUS OF THE METHOD OF INTRASACCULAR SUTURE, OR ENDOANEURISMORRHAPHY.*

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NEW ORLEANS.

SYNOPSIS.

The term, endoaneurismorraphy, meaning the closure of an aneurismal orifice connecting the trunk of an artery with the aneurismal sac by suturing the orifice from *within* the sac and the obliteration of the sac by suture, I introduced in 1902, in a paper read before the American Surgical Association at its meeting in Albany, to describe an operation which it was my fortune to apply for the first time at the Charity Hospital of New Orleans while attempting the extirpation of a traumatic brachial aneurism in a negro, March 30, 1888, eighteen years ago. It was after the failure to cure this traumatic aneurism by the application of a proximal and distal ligature of the brachial artery that I attempted the extirpation of the sac; but the extirpation had to be abandoned because of the danger of injuring the median and ulnar nerves which were incorporated in the walls of the sac. The persistence of bleeding, after the removal of the tourniquet, from numerous collaterals which opened into the main trunk at each end of the sac, compelled me to adopt the suture with needle and silk to occlude the bleeding orifices. This simple expedient, suggested by the urgent hemostatic necessities of the case, appeared to be so easy and satisfactory that it seemed to me that any surgeon similarly situated, would have instinctively adopted this way of extricating himself from what would otherwise have been a difficult situation.

The detailed report of this case[1] attracted no notice, and it was not until after my report[2] of four additional cases of aneurism treated by this method, in which the technic of the operation, as a systematic procedure, was fully described, that the value of the suture, methodically applied to the cure of aneurism, began to be realized, and the interest of other operators roused in the subject.

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* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Medical News, Philadelphia, Oct. 27, 1888.

From June, 1902, the date of my first communication, to April, 1905, when the status of the operation was summarized,[3] I was able to present the reports of fifteen operations for aneurism performed by thirteen different operators who had adopted the method I had described. These fifteen cases, with my original five personal operations, summed up a total of twenty aneurisms treated by the method of intrasaccular suture up to April, 1905. In my second report[4] I was able to add ten more cases, from various sources, to the list, thus making a total of thirty, reported up to January, 1906.

I am now able to add six more operations to the record, four of which are of American origin and two foreign (Le Fort and Del Conte), which can not be recognized as typical procedures, such as I have described for this operation, though they are instances of the suture as applied to the closure of arterial orifices in aneurisms.

Very recently, I have learned through the program of the International Medical Congress, held in Lisbon, March, 1906, that Prof. R. Lozano, of Saragossa, Spain, has adopted my suggestions and operated on four aneurisms by arteriorrhaphy, including in this an abdominal aortic aneurism, one subclavian and two popliteals. This would swell the list of aneurisms treated by the method of suture to forty, including in this thirty-four cases reported by American operators who have adopted the procedure which I originally suggested, and six others reported by three foreign surgeons, two of whom have operated on two patients, by methods of their own, in which, however, the essential principle of suture is recognized.

With a list of thirty-four American cases thus far reported, which may later on be increased to forty when the details of these foreign cases are better known, we will soon be in a position to institute a fair comparison with other surgical methods of treating aneurisms, notably with (1) the ligature, (2) the method of Antyllus, (3) the method of Purmann, or Phylagrius, and (4) the more recent modification of the old operation suggested by the late lamented von Mikulicz.

The mere summary of the facts already gathered from the thirty-four American cases thus far reported is, I believe, sufficiently demonstrative to prove that the new method of intrasaccular suture has not only stood the test of experience, but that in all suitable cases it will accomplish, with greater certainty and simplicity, all that the older classical methods just referred to, have done and can do, for the cure of all aneurisms that are amenable to direct surgical intervention.

Before submitting a brief analysis of the reported cases I deem it necessary to explain, for the benefit of those who have not had access to my previous writings, what I mean by the cure of aneurism by the method of suture, or endoaneurismorrhaphy.

I will have to repeat here what I have recently had to state elsewhere, that "In spite of my efforts to elucidate the essential principles of the operation, and to simplify the *modus operandi*, a great deal of confusion and misapprehension still exists in the minds of many practitioners and surgeons who, having obtained their information from abstracts and second-hand descriptions given in journals and even text-books, regard it as a difficult and complicated procedure, necessarily restricted to a small group of cases which I have described as suitable for arterioplasty," or, as I shall classify them in this article, under the head of "reconstructive endoaneurismorrhaphy."

It is evident that the ideas entertained abroad on this subject are very confused. Höpfner,[5] in his notable article of 1903, classified my cases with a group of normal arteriorrhaphies, and the latest German writer on aneurism, Otto von Frisch,[6] of von Bergmann's clinic, indulges in commentaries and criticisms of an operation which he evidently does not understand, and about which he has certainly not been correctly informed. Del Conte, of Naples, in dealing with this subject, also labors under a serious misapprehension as to the essential features of the operation. The idea that prevails abroad is that the operation which Bullock, of Lexington, Ky., first associated with my name, is essentially the "formation of a new artery from an aneurismal sac by suturing, after laying open the aneurism and turning out the clot." This is not at all surprising when we consider that this idea largely prevails in this country and that the few foreigners who have paid any attention to this subject have formed their conception of the procedure on the current interpretation given of it in our own periodical literature.

Such misconceptions of the method of intrasaccular suture, demand rectification in order that the operation may not be divested of its chief merit, as a simple and thoroughly practical measure applicable to the vast majority of cases in which the ligature and methods of incision and extirpation are still currently applied, as preferred methods. The errors that I wish to correct more especially are: (1) the belief that this method of intrasaccular suture is a technically difficult procedure; (2) that arterioplasty, or the reconstruction of an artery out of the sac walls (reconstructive endoaneurismorrhaphy) is the essential and necessary feature of the operation, whereas, in reality it is only a secondary variation or development of the fundamental procedure, shortly to be described, and is applicable only to a limited number of fusiform aneurisms. In fact it is a question, which we are now trying to answer, in what particular class of aneurisms arterioplasty is necessary or especially indicated. The bolder, more aggressive idea, that of arterioplasty, has clung tenaciously to the minds of superficial readers and reviewers, and the less striking but more generally applicable arteriorrhaphy as applied to fusiform and sacciform aneurisms, has been overlooked and ignored. It should be especially remembered that the general utility of the intrasaccular suture method, as I have understood it, depends on the ease and certainty with which the aneurismal orifices can be sutured and closed without interfering with the collateral circulation, much more than on the principle of reconstructing an artery.[7]

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[2] Annals of Surgery, February, 1903.

[3] Address before the Alabama State Medical Society on "The Suture in the Surgery of the Vascular System," April, 1905.

[4] Transactions of American Surgical Association, 1905.

[5] Archiv. f. Klin. Chirurg., vol. 70, p. 430.

[6] Langenbeck's Archiv., vol. lxxix, 1906.

[7] In 1902, when my experience was limited to four personal observations, I felt that there were probably numerous cases of aneurism of the lower extremities, with edematous, cyanotic and choked limbs, in which the reconstruction of the lost artery would be necessary for the preservation of the limb. Subsequent experience with nineteen popliteal and eleven femoral aneurisms in which obliterative aneurismorrhaphy has been performed in the majority of cases, has convinced me that the cases of aneurism which demand the reconstruction of the blood vessels must be few indeed, and that the obliterative and restorative modes of intrasaccular suture, by preserving the collateral circulation undisturbed, are capable of meeting safely and efficiently all the exigencies of the situation.

I therefore submit my definition of endoaneurismorrhaphy and the operations that are derived from it.

SYNONYMS AND DEFINITIONS.

Endoaneurismorrhaphy.—The "Matas operation" (Bullock); "the radical operation for the cure of aneurism by the intrasaccular suture of the aneurismal orifices," essentially consists of two fundamental procedures: (1) the obliteration, by suture, of the vascular orifices which open into the aneurismal sac; (2) the obliteration of the sac by suture which brings its inner surfaces in apposition, or by methods of obliteration which leave the sac undisturbed and tend to secure primary healing by plastic union. In obliterating the vascular orifices that supply the sac, the parent trunk which nourishes the aneurism may be preserved or obliterated at the point of attachment according to the type of sac encountered. Hence the subdivision of endoaneurismorrhaphy into three varieties:

1.—*Obliterative endoaneurismorrhaphy* (the fundamental procedure), essentially consists in opening the sac freely without disturbing it from its surroundings and closing all visible arterial orifices within the sac, by suture, thus securing complete hemostasis and permanently stopping all further access of blood into the aneurismal cavity. The sac is obliterated by approximating its walls with buried sutures, and closing the wound with or without drainage; or, in rigid cavities, by simply infolding the overlying skin flaps and lining the cavity with them (*capitonnage* of the French) or by one of the several procedures or variations I have suggested.

The indications for the application of this obliterative suture, or fundamental procedure, are: All aneurisms in which the sac is of the fusiform type, in which there are two or more orifices of supply and in which the parent artery is entirely lost at the seat of the aneurism by blending with the aneurismal sac throughout its circumference. In these cases no attempt is made to restore the continuity of the parent artery; the blood stream is interrupted in that part of the vessel which directly opens into the sac and the arterial orifices are simply closed by suture, thus shutting off the sac from all sources of blood supply.

Up to the present time twenty-two cases illustrating this mode of procedure (obliterative endoaneurismorrhaphy) are exhibited in the group of thirty-four aneurisms contributed by American operators. Possibly several of the foreign cases are of this type, but as the contribution of Dr. Lozano has not yet appeared, we are not yet in a position to state the type of cases included in his report.

2.—*Restorative endoaneurismorrhaphy.* This variation in the procedure is solely applicable to aneurisms of the sacciform type, in which the parent trunk retains its continuity and normal outline, and the aneurism is a sac simply grafted on the vessel. By opening the sac freely and washing out the clot, the opening leading to the artery is exposed inside of the aneurism and is readily closed by a continued suture which penetrates through all the coats of the sac at the margin of the orifice of communication. By this procedure the blood supply of the sac is permanently arrested, the lumen of the parent artery remains patulous and the arterial stream supplying the limb, or dependent territory, is immediately restored through its normal channel. The sac is then obliterated by bringing its endothelial surfaces together with buried sutures and the surface wound is closed in the usual manner. Up to the present time seven operations of this type have been reported by American surgeons, all successful, and two, at least, of the foreign cases may be appropriately added to this list, making nine in all.

3.—*Reconstructive endoaneurismorrhaphy* (arterioplasty) is applicable solely to fusiform aneurisms in which the coats of the sac are firm, elastic and resistant and the two openings leading to the main artery lie on the same level, in close proximity, and are situated at the bottom of a superficial or readily accessible sac.

In aneurisms of this type, especially those of traumatic origin, the continuity of the parent artery may be restored by making a new channel out of the sac walls which can be brought together by suture over a guide (catheter or drainage tube) inserted into the proximal and distal openings of the aneurism. Before tying the last sutures, the guide is removed and the channel is left behind corresponding to the outline of the original artery. The sac is then obliterated by approximating its surfaces with buried catgut suture, as previously applied in the first and second procedures. Thus far, five cases of this operation have been reported, all by American surgeons. Two of these patients have relapsed. The first, Morris' case, was followed in six months by an amputation of the thigh, though it is recognized that a secondary operation by the obliterative method would have obviated the necessity for this sacrifice. In the second case (Danna's) when relapse occurred the sac was reopened, the obliterative method was applied with permanent and perfect success. The surgeons in the other cases (Craig Barrow of Savannah, 2; Van Lennep of Philadelphia, 1) report that their patients continue to do well, and, thus far, without relapse.[8]

SUMMARY.

Total, 34 cases of aneurisms of different types, reported by 21 American operators:

I. GEOGRAPHICAL DISTRIBUTION.

New Orleans: R. Matas, 5; J. A. Danna, 4; H. B. Gessner, 1; F. W. Parham, 1; F. W. Parham and E. D. Martin, 1; S. W. Stafford, 2; W. Kohlman and J. Newman, 1; total, 15.
New York: Robert Morris, 1; Willy Meyer, 1; Robert I. Abbe, 2; F. H. Markoe, 1; total, 5.
Lexington, Ky: W. O. Bullock, Jr., 4.
Savannah, Ga.: Craig Barrow, 2; George H. White, 2; total, 4.
Philadelphia: J. H. Gibbon, 1; Chas. H. Frazier, 1; W. B. Van Lennep, 1; total, 3.
Kansas City, Mo.: J. F. Binnie, 1.
Indianapolis: H. O. Pantzer, 1.
Puget Sound, Wash.: D. N. Carpenter, U.S.N., 1.
Foreign (classed as atypical): Le Fort (Lille), 1 (popliteal);[9] G. del Conte (Naples), 1 femoral (sacciform): R. Lozano, Saragossa, 4 (abdominal aorta, 1; subclavian, 1; popliteal, 2).

II. ANATOMIC DISTRIBUTION.

Popliteal, 19 (55 per cent.): Matas, 2; Bullock, 2; Robert Morris, 1; J. H. Binnie, 1; Craig Barrow, 1; H. O. Pantzer, 1; H. B. Gessner, 1; J. H. Gibbon, 1; J. A. Danna, 2; Willy Meyer, 1; F. W. Parham, 1; Robert Abbe, 1; F. H. Markoe, 1; S. E. Stafford, 1; Charles H. Frazier, 1; W. E. Van Lennep, 1.
Femoral, 11: Matas, 1; Bullock, 2; Danna, 2; G. R. White, 2; D. N. Carpenter, 1; Stafford, 1; Kohlman and Newman, 1; Craig Barrow, 1.
Gluteal: Robert Abbe, 1.
Brachial: Matas, 2.
Subclavian: Martin and Parham, 1.

III. SEX.

American Cases: Males, 32; Females, 2. Foreign: Female, 1 (del Conte); male, 1 (Le Fort).

Ages in 34 American cases: Youngest, 12 years; oldest, 65 years; majority between 30 and 60 years.

IV. ETIOLOGIC CLASSIFICATION.

Traumatic, 8: Matas, 2; Pantzer, 1; G. H. White, 2; W. Meyer, 1; Markoe, 1; Bullock's fourth case, 1.
Traumato-pathologic, 14: Matas, 2; Bullock, 2; Gibbon, 1; Danna, 3; Parham, 1; Abbe, 2; Carpenter, 1; Martin and Parham, 1; Van Lennep, 1.

Cases classed in this group give a distinct history of some indirect traumatism (strain, lifting, indirect falls, etc.) associated with a pathologic arterial basis (syphilitic, alcoholic, arteriosclerotic).

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[8] Craig Barrow's first case was operated on May 28, 1904; his second case, April, 1906; Van Lennep's, Jan. 17, 1906.

[9] The popliteal was extirpated after development of another aneurism in a different part of the artery.

Pathologic, 12: Matas, 1; Morris, 1; Binnie, 1; Barrow, 2; Gessner, 1; Bullock, 1; Dauna, 1; Stafford, 2; Kohlman and Newman, 1; Frazier (?).

In accordance with accepted teaching, it is more than probable that the cases grouped as "pathologic" should be classed as "traumatopathologic," as there is always some direct or indirect traumatism which determines the localization of aneurisms in conditions of general arterial disease. The distinction of "pathologic" is made in the absence of a clear, recognized, local determining cause. This distinction is useful probably in accentuating the preponderance of the pathologic over the traumatic element in the causation.

V. TYPE OF ANEURISMAL SAC.

Fusiform, 23: Matas, 4; Bullock, 4; Morris, 1; Barrow, 2; Gessner, 1; Danna, 4; Gibbon, 1; Parham, 1; Parham and Martin, 1; Carpenter, 1; Stafford, 2; Van Lennep, 1 (nearly 64 per cent.).

Sacciform, 11: Matas, 1; Binnie, 1; Pantzer, 1; White, 2; W. Meyer, 1; Abbe, 2; Markoe, 1; Frazier, 1; Kahlman and Newman, 1. Foreign, 2; (2 sacciform Le Fort and del Conte).

VI. PROCEDURE ADOPTED.

1. Obliterative Endoaneurismorrhaphy: (Applied to fusiform aneurisms) 22 out of 34 American cases: Matas, 5; Bullock, 4; Binnie, 1; Gessner, 1; Danna, 3; Gibbon, 1; Parham, 1; Abbe, 2; Stafford, 2; Martin and Parham, 1; Carpenter, 1.
2. Restorative Endoaneurismorrhaphy: (All sacciform aneurisms) 7 cases: Lumen of parent vessel restored. Pantzer, 1; White, 2; Meyer, 1; Markoe, 1; Frazier, 1; Kohlman and Newman, 1.
3. Reconstructive Endoaneurismorrhaphy (Arterioplasty), applied to fusiform aneurisms, 5 cases: R. Morris, 1; Craig Barrow, 2; J. A. Danna, 1; Van Lennep, 1.

VII. TREATMENT OF SAC.

A—Typical obliteration of the sac without drainage, according to the author's first method. Total, 10 cases: Matas, 3; Bullock, 4; Craig Barrow, 2; G. H. White, 1.

B—Atypical obliteration of the sac, without infolding skin flaps, (buried sac method): Morris, 1, Binnie, 1; Pantzer, 1; Gibbon, 1; Meyer, 1; Parham, 1; Abbe, 2; Markoe, 1; Stafford, 1; R. H. White, 1; Kohlman-Newman, 1; Frazier, 1.

C—Atypical partial obliteration of the sac by approximating walls and surrounding parts, packing and draining: Matas, 2; Danna, 4; Gessner, 1; Carpenter, 1; Stafford, 1; Martin and Parham, 1; Van Lennep, 1.

VIII. POSTOPERATIVE RESULTS.

(a) Deaths: None directly attributable to the operation. (1) One patient (Pantzer's) died fifteen days after operation from associated pyelitis and nephritic coma while the healing of the wound was progressing satisfactorily. (2) Another patient (Stafford's No. 2), a negro, aged 59, died seventy days after the obliteration of a femoral aneurism by suture. This patient was the victim of the aneurismal diathesis. The first aneurism developed in the right popliteal and was extirpated after it had ruptured, Oct. 6, 1905. While the patient was slowly recovering from an infective synovitis of the knee following the operation, he developed a second aneurism in the upper left femoral, which grew rapidly and was obliterated by intrasaccular suture on March 30, 1906. Twenty days after the last operation, and while the wound was healing satisfactorily, the artery above the obliterated aneurism dilated and ruptured at a point where a traction loop had been applied, during the operation, for hemostatic purposes. The dilatation of the artery and rupture coincided with a violent acute edema of both lungs, caused, perhaps, by pulmonary thrombus or infarct. Great cyanosis, temperature 104 F., and intense dyspnea characterized this attack, which subsided after thirty-six hours, leaving the patient in great prostration. At this juncture the artery ruptured and a profuse hemorrhage with enormous hematoma occurred. The femoral was ligated above the seat of rupture a little below Poupart's ligament. Infection and suppuration occurred, followed by gangrene of foot. Six days after this ligation (April 26) secondary hemorrhage occurred at the seat of the ligature, necessitating the ligation of the external iliac above Poupart's ligament. The gangrene of the limb was marked. May 25, 1906, amputation at middle of thigh. Bed sores developed and the patient sank exhausted and marasmic, June 6, 1906.

While these events were taking place it was noticed that the right common femoral and abdominal aorta were undergoing dilatation, which would have developed into aneurisms had the patient survived. It is to be noticed that the circulation of the limb was perfect after the obliteration of the left femoral aneurism by endoaneurismorrhaphy, and that gangrene of the foot and leg did not occur until a ligature was applied to the artery above the obliterated sac.

(b) *Secondary Hemorrhage: None,* except as it occurred (in Stafford's No. 2) from causes not directly attributable to the method.

(c) *Gangrene: None,* except in Case 2 (Stafford), where it followed the application of a secondary ligature, as above described.

IX. RELAPSES.

(a) In obliterating endoaneurismorrhaphy (22 cases), none; (b) in restorative endoaneurismorrhaphy (7 cases) none; (c) in reconstructive endoaneurismorrhaphy or arterioplasty, two relapses out of five cases.

Of the two relapses amputation was performed in one case (Morris) by demand of the patient. In Danna's case (No. 2) the aneurism was cured by obliterative suture, after the relapse (following arterioplasty), became apparent. The other three patients (Craig Barrow, 2; Van Lennep, 1) have continued to do well up to date.

Arteriovenous aneurisms treated by separate suture of artery and vein, or by distinct applications of the suture technic, as distinguished from the ligature, were reported by Zoege v. Manteufel (1895), Camaggio (1898); Gerard-Marchant (1898), Peugniez of Amiens (1900), Korte (1904), Oliver of Uruguay (1904), Danna of New Orleans (1905), and Gessner of New Orleans (May, 1906).

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DISCUSSION.

Dr. Willy Meyer, New York, reported the case of a young boy, 11 years of age, who, in cutting a stick in the woods, cut his popliteal artery by a slip of his knife. The wound was small but bled much. The boy was carried to the hotel where he was staying in a very weak condition. An improvised Esmarch bandage, a handkerchief and a stick, was applied and the nearest doctor sent for, who stitched the wound. After 12 days the boy was brought to New York, with a somewhat stiff knee. The family physician advised active and passive exercises. Four weeks later the boy noticed a throbbing tumor in the popliteal space. When Dr. Meyer first saw the patient, three months later, December, 1904, the tumor had all the characteristics of a popliteal aneurism, and having heard Dr. Matas' paper read at Albany, and being familiar with his experience with his operation, he concluded to try that method. An Esmarch bandage was applied. He cut down on the sac and found a sacculated aneurism. The sac was a large one with the opening low down, so that it was some time before he discovered just where the opening was situated. On account of this deep situation Dr. Meyer thought it best to introduce a large flexed copper sound into the lower portion of the artery, and it was pressed down by the assistant into the base of the sac so as to permit of making the suture as low as possible. After he had succeeded in running the suture across the opening, the probe was extracted and he continued the suture. After Dr. Meyer had placed the first continuous suture (silk) the crucial point came, viz., the removal of the Esmarch bandage. He was delighted to see that after its removal there was only a slight parenchymatous oozing. He closed the sac with a number of continuous sutures of chromicized catgut, and had the pleasure of seeing the whole wound heal nicely within 10 days. To-day the boy is cured entirely and uses his leg as well as he did before the operation.

Dr. R. C. McChord, Lebanon, Ky., reported a case of popliteal aneurism operated on according to the method described by Dr. Matas. The case was one of gunshot wound of the artery inflicted two years before I saw the patient. The aneurism was situated high up in the popliteal space, and at the site of the wound it was about the size of a hen's egg. It had recently burst. He constricted the leg above, cut down through the sac and stitched up the opening. But before he stitched up the sac, being a little fearful about his technic, and before closing the sac, Dr. McChord loosened the constrictor. There was a little hemorrhage. He simply took a bite down with the ligature and then proceeded to close the sac as Dr. Matas suggested. The wound healed by first intention, except one small spot where there was some infection, possibly due to faulty technic. The patient returned to his home within two weeks after the operation. The man had been home only a few days when there was a slight secondary hemorrhage. The doctors became alarmed and placed constriction above the point of bleeding for a few hours, and when the constriction was removed there was no further hemorrhage and the man made an uneventful recovery.

Dr. Stanley Stillman, San Francisco, said that he had employed this operation in one case. He emphasized the importance of thorough application of the Esmarch bandage, particularly because it is exceedingly difficult to reapply it when that is necessary. In his case, also one of popliteal aneurism, the patient stated that he had only noticed the tumor, which was about the size of a small egg, for three weeks. The sac could not be obliterated because of two reasons. There was not really a properly organized sac and the openings into the aneurism could not be closed by sutures that would hold. He advised this operation strongly, but cautioned those who attempt it to wait, in cases of recent aneurism, till the sac has become sufficiently tough to hold the sutures, and has become properly lined with endothelium.

Dr. George R. White, Savannah, Ga., has had two cases of aneurism on which he operated according to Dr. Matas' method. Both were aneurisms of the femoral artery, and both were of traumatic origin; one was caused by a stab wound and the other by a bullet wound. In both instances the operation was carried out successfully, and the patients are now at work and are as well as they ever were. He emphasized the point Dr. Matas made that the operation is not a difficult one if his description is followed closely.

Dr. Rudolph Matas said that he deeply appreciated the kind words of encouragement and praise expressed by the various speakers. He said that he realized most convincingly, however, that the good that there is in the method he suggested, especially its simplicity and safety, could never have been demonstrated without the coöperation of the 20 American surgeons who, with their characteristic alertness and keenness to test new ideas—as well as by their ability—have so quickly furnished the remarkable evidence which he submitted.

THE VALUE OF X-RAYS IN OCULAR THERAPEUTICS.

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Amid the illuminating advances that have characterized the rapid progress of medical science during a trifle more than the last decade, the spectacular and beneficent discovery of Professor Roentgen, of Wurzburg, occupies a position of acknowledged preëminence.

The classical papers which first startled the world of science have been followed by a flood of literature emanating from hosts of enthusiastic workers from almost every corner of the globe, and while the hopes and promises have to some extent failed of materialization yet the amazing therapeutic results that have been wrought up to the present moment should abundantly merit our profound appreciation and study.

Ophthalmic science has had its quota of fleet-footed workers, eager to develop the far-reaching possibilities of the newly discovered form of radiant energy. It is our purpose to institute an inquiry into the results thus far achieved and to attempt to define the present position of the *x*-ray therapeutics as applied to several important branches of ophthalmology.

When we consider the *x*-ray from a therapeutic standpoint we are, according to Freund,[1] dealing with the following forces emanating from the surface or within a vacuum tube in action: (1) heat, (2) ozone, (3) cathode rays, (4) ultra-violet rays, (5) rays composed of material particles, (6) Roentgen rays, (7) spark and brush discharges from the high tension, electric accumulation on the surface of the tube, (8) electric and electro dynamic waves, (9) waves of unknown character. Stern[2] believes the only rays that need to be considered are the *x*-rays, the unknown rays and the electric discharges from the surface of the tube.

The histological sequelæ of the *x*-ray application (Stern) are stimulation of the vaso-constrictor nerves of the blood vessels, paralysis of these nerve filaments accompanied by vascular dilatation, edema, the result of paralysis carried to a higher degree, and finally complete nerve paralysis, accompanied by destruction of tissue.

It is impossible in so brief a communication to place before you a complete summary of the brilliant work which the electro-therapeutist has achieved, but many opinions of value have been gleaned from the copious, and at times, polemic literature of the last few years. In answer to a communication addressed to many of the foremost ophthalmologists and *x*-ray experts of our country, I am able to present to you a number of hitherto unpublished opinions regarding the results of the application of this form of therapy to disease of the eyes and ocular adnexa. In the discussion to follow I hope that the various and at times divergent views expressed may be crystallized into definite and unfailing methods of technic that may make the amazing results claimed by certain observers a usual sequel of the application of this form of energy.

In a malignant disease of the eyelids and adjacent structures, radiotherapy (because of the favorable character of the resulting cicatricial tissue) finds one of the most satisfactory fields. When Steinbeck,[3] of Stockholm, exhibited before the Swedish Medical Society, a case of epithelioma, which he had cured by means of Roentgen therapy, a stimulus was given to this important work, which, notwithstanding its triumphs, must still be conceded to be in its incipiency.

My experience in a considerable group of epitheliomas, involving the eyelids and contiguous skin structures, and varying in size from a base of 10 mm. in its longer diameter to an extensive ulceration, at times embracing half of the upper and lower lids, and extending well on to the bridge of the nose, several of which were totally inoperable, has been so uniformly satisfying that I am accustomed to leave little doubt in may patient's mind regarding the certainty of a cure. In only one such case that has come under my observation was there any tendency to a recurrence at the end of about eighteen months. This was subjected to a few further treatments and has remained in perfect condition through the succeeding year.

Mayou[4] and D. Walsh (London) presented a most promising series of results before the Roentgen Society, Dec. 2, 1902, the former claiming that all cases of so-called rodent ulcer of the eyelids can be cured. The inflammation which can be produced by the *x*-ray varies, according to these authors, from a mild leucocytosis (stimulation) to an absolute destruction of tissue. Added experience seems to emphasize the opinion, early expressed, that this profound change is largely superficial, and is not produced by the rays that penetrate deeply. It is the function of the leucocytes to break up and remove all irritating substances, or to encapsulate and thus render them innocuous.

One of our foremost authorities, William Allen Pusey[5] (Chicago), reports having treated several cases of epithelioma, in which there was no involvement of the deeper orbital tissues, and all resulted in cure where sufficient treatment was permitted. No relapses have occurred, and some of the cases were treated about three years ago. John Green, Jr.,[6] St. Louis, Mo., also concludes that in epithelioma and rodent ulcer of the eyelids, *x*-ray therapy surpasses all other methods of treatment and can be relied on to cure all such cases.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

[1] Freund: "Elements of General Radio-Therapy," Vienna, page 323.

[2] Stern: "Practical Results Accomplished by Radiant Energy," New York Med. Jour., March 10, 1906.

[3] Steinbeck: Quoted from "*X*-Rays in Cancer and Other Diseases," by Richard J. Caven.

[4] Mayou: "The Use of *X*-Rays in Ophthalmic Surgery," Archives of the Roentgen Ray, January, 1903.

[5] Pusey, W. A.: "Report of Cases Treated with Roentgen Rays," Chicago Medical Recorder, April, 1902. For Dr. Pusey's technic see Chicago Medical Recorder, April, 1900, and Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.

Sweet[7] believes that it is no longer right to resort to plastic operations in these two conditions, basing his judgment on the successful results of 18 out of 20 cases treated.

John E. Weeks[6] (New York) regards the *x*-ray treatment of very great value in epithelioma and has placed at my disposal the notes of one private case of epibulbar epithelioma of very great interest.

The patient, a man aged 54, had a growth occupying the inner half of the ocular conjunctiva to the caruncle, and involved about the inner third of the cornea.

Diagnosis was confirmed by microscopic examination.

About 100 *x*-ray exposures were given, extending over a period from March, 1905 to January, 1906; the exposures averaging 7 minutes each at 10 inches from the Gundelach anticathode using a tube of medium tension. Patient is virtually well. Vision 20/40. Tissues of the globe have not suffered. The exposures were made through a tube 1¼ in. in diameter. There was no other protection.

De Schweinitz[6] (Philadelphia) has had four cases of "entire and rapid cicatrization" with no relapse. In two additional cases the results were entirely negative, or possibly the condition was aggravated. In one of the latter, excision was practiced with subsequent application of the rays, without recurrence. De Schweinitz concludes the rays should be tried for a certain period, and if the results are not good, then excision with or without plastic operation should be practiced.

Charles Lester Leonard[6] (Philadelphia) whose experience has been extensive in treatment of epitheliomas and various skin lesions involving the eyelids, regards it as uniformly and permanently successful. Baker[6] (Cleveland) writes that he has had five cases of rodent ulcer with perfect recovery. One case of special interest has been under observation for ten years, but all this time the disease was slowly progressive, not only the eye, but the cheek and temple were involved. The eye was enucleated and, later, *x*-ray applications were made for a year or more less regularly, resulting in complete cicatrization with no evidence of recurrence at the end of four years. In a sixth severe case in which both *x*-ray and radium were used, a complete cure has been effected, the curative agent being, in Baker's judgment, the Roentgen ray. In eight cases of epithelioma, the results have been entirely satisfactory, although in most of the cases the knife was used and followed by the *x*-ray. There have been no recurrences. Baker had two cases of lupus involving the eyelids that have been "very greatly improved if not entirely cured by the *x*-ray."

Hermann Knapp[6] (New York) has seen "four temporary results in epithelioma and the like." Stevenson[6] (Albert Lea, Minn.) has used the *x*-ray with success in treatment of lupus of the eyelids only. Newcomet[6] (Philadelphia) advises me that he has treated about 30 cases, few of which have shown any disposition to recur.

The names of a host of foreign and home workers in ophthalmologic or electrotherapy lines could be added, if additional testimony were needed, among them Hamer,[8] Hall,[9] Darier[10] and Bettremieux;[11] in our own country, Taylor,[6] Dixon[6] and Marple[6] (New York), St. John[6] (Hartford), Holt[6] (Portland), Black[6] (Milwaukee), Wescott[6] (Chicago), Howe[6] (Buffalo), Schamberg,[6] Hansell,[6] H. K. Pancoast,[6] S. Lewis Ziegler[6] (Philadelphia). Schamberg's case is of considerable interest, as the case involved not only the lids, but the conjunctiva as well. A perfect cure was effected without sign of recurrence at the end of two years.

S. C. Ayres[6] (Cincinnati) has had one case of epithelioma of outer and lower margin of right cornea of six years' duration. It was curetted, but soon recurred. Under *x*-ray treatment, pain was relieved and the condition improved. He was not kept under continuous treatment, and later increase in the growth compelled enucleation.

Bulson[6] (Fort Wayne) advises me that in four cases of extensive carcinoma two were cured, a third probably cured, and the fourth did not continue treatment. Woods[6] (Baltimore) believed the rays successful in preventing a recurrence after an orbital evisceration for extensive carcinomata.

Würdemann[6] reports a case of carcinoma of the orbit beginning in the skin of the external canthus. The operation consisted of exenteration of orbit and resection with partial removal of malar, superior maxillary and orbital process of the frontal bones. The patient was treated about two years by *x*-rays several times a week; a suspicious sore was removed by secondary operation, and the result was complete cure with full lining of orbit by skin.

X-RAYS IN SEVERE CASES.

As illustrative of the curative possibilities of the rays in the more extensive carcinomatous involvement of the orbital and adjacent tissues, it is only necessary to refer to cases of which this one reported by Dr. Pusey,[5] of Chicago, is a type:

Deep Carcinoma in the Orbit.—Patient of Dr. Wm. H. Wilder, treated by Dr. Pusey.

The growth involved all of the structures in and around the orbit, and the terrific intracranial pain seemed to leave little doubt of meningeal involvement.

After nearly two months of treatment and a resulting *x*-ray burn coincident with increasing pain, the case was regarded as hopeless and discharged. About six months later it was found he was still living; the mass had shrunk and lids would close. He is free from pain, eats and sleeps well.

Of the 10 cases so carefully reported by Chas. S. Bull,[12] two were extensive carcinomata. One was a case of the eyeball and orbit in which operation was advised, but declined. The case was cured by twenty-seven *x*-ray exposures. The other was a case of deep-seated carcinoma involving the nose, eyelids and orbit, likewise perfectly cured by thirty-four exposures.

As noted by George C. Harlan[6] (Philadelphia), J. W. Pancoast[6] and many others, with whom probably all of us are in accord, it must be remembered that in many of the deep-seated growths of the carcinomatous type the rays have totally failed to arrest the disease, but even in such cases there is little doubt of the pronounced anodyn effect of the exposures, and, while, as suggested by Nelson Black[6] (Milwaukee) and others, the deeper the orbital involvement the less favorable result can be expected, yet the estimate of Jackson[6]

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[6] Personal note.

[7] Sweet, William M.: "Roentgen Ray Treatment of the Eye and Its Appendages," Medicine, April, 1904.

[8] Hamer, J. F. X.: "Carcinoma palp. inf. behandel med. X-Straalen," Ned Tijdskrift v. Geneeskunde, 1904, No. 12.

[9] Hall, Edward: "Rodent Ulcer, Treated by the X-Rays," British Med. Jour., Jan. 10, 1903.

[10] Darier, A.: "Introduction à l'étude des rayons X en therapeutique oculaire," La Clin. Ophth., July 10, 1903.

[11] Bettremieux (Roubaix): "Rayons X en therapeutique oculaire," Ibid.

[12] Bull, Chas. S.: "The Treatment of Inoperable Cases of Malignant Disease of the Orbit."

(Denver) that it is of great value even in the more extensive types of orbital carcinoma can be abundantly maintained.

SARCOMA.

In a previous paper[13] I considered the use of Roentgen therapy in attacking this form of malignant neoplasm. Reference was made to the remarkable result in L. Webster Fox's case of inoperable sarcoma involving the orbit and accessory sinuses apparently cured by fifty exposures to *x*-ray. A daily treatment of five minutes' duration, with a high vacuum tube placed at 10 in. distance, containing a current of 4 amperes, was maintained for 4 weeks, the frequency of the treatment then being reduced on account of an excessive erythema.

In the same paper the gratifying reports of a number of cases of sarcoma *x*-rayed by Leonard and by Pfahler, of Philadelphia, involving the face, neck, lip, nostril and antrum were accepted as giving promise of similar brilliant results with improved technic, when the growth involved the orbit and surrounding structures. The immediate application of the method was suggested before radical operation was attempted. If unsuccessful in removal of the growth, Leonard, who has had a very wide experience, claims that its virulence will be decreased and the dangers of metastasis lessened. Other methods of attack were carefully considered in the event of failure with the *x*-ray.

I will refer now to a few additional reports of cases treated by the rays as introductory to a further discussion of this important subject.

Beclere[14] reports the case of a patient affected with sarcoma of the floor of the orbit who was cured by *x*-rays. The disease had lasted four years. Two operations had been performed, the last one including removal of the eye. All other methods of treatment had failed, but improvement set in as soon as radiotherapy was employed. Histologically, the tumor was found to be a malignant sarcoma. Beclere reports an additional case of orbital sarcoma cured by *x*-rays.

Kienbock[6] reports a sarcoma cured by *x*-rays. This case is of very unusual interest. A growth having appeared in the nose seven years before, in spite of operations oft repeated, had invaded the adjoining structures and produced exophthalmos on both sides with subsequent optic atrophy. Pain ceased after the first treatment, and after thirteen applications the growth (an endothelial sarcoma) entirely disappeared. Eyes resumed their normal appearance and vision partly returned. Grossman[6] reports a similar case which had almost entirely disappeared under the *x*-rays.

Theobold[6] (Baltimore) has had one case of marked exophthalmos (unpublished) with the diagnosis of inoperable sarcoma of the orbit—a diagnosis in which two other surgeons concurred. Under the *x*-ray treatment the case rapidly improved and after a lapse of seven months seemed to be cured. Pfahler[6] advises me that he has treated three cases of primary orbital sarcoma, with resulting disappearance of the growths. A fourth case, which was recurrent, showed no ultimate improvement.

When to these reports we add the case of Mosely,[15] orbital sarcoma, that of Pratt,[15] melanosarcoma of orbit, that of Harper,[16] melanosarcomatous pigment areas on the sclera, and that of Fox,[17] true sarcoma of the lids, all cured by radiotherapy, we surely have abundant reason for some satisfaction at the results already achieved.

Many observers have utilized the rays successfully in preventing a recurrence after the removal of malignant orbital growths, notably sarcoma, and the recent experience of Wescott[6] (Chicago) and Chas. S. Bull[12] and Marple[6] (New York) will serve to bring to our attention this important phase of the subject. Wescott advises me that he exenterated a case of orbital sarcoma, and, feeling positive that all of the disease was not removed, subjected the patient to *x*-ray treatment for three months. There was no evidence of recurrence at the end of one year. On the other hand, Bull, in his painstaking report of eight cases of orbital sarcoma, has not found radiotherapy of value as a curative agent either before or after operation. He, however, believes it distinctly effective in the relief of pain. Marple has had one case of orbital sarcoma with exenteration of the orbit. *X*-ray was used in the effort to prevent a recurrence, which it failed to do. In one of my own cases it seemed to prevent a recurrence *in loco*.

TRACHOMA.

In the treatment of the nodular formations or masses of round-cell infiltration of the conjunctiva, known as trachoma, the ophthalmologist has found one of his most difficult problems. The various remedies used may be classed under the heads of chemical or mechanical irritants. The excessive and often damaging cicatricial tissue remaining after the application of the chemical irritant classes this method as far from ideal.

The rolling, brushing and other allied methods are of unquestioned value, but the cures are frequently incomplete even with the added chemical treatment. The cure is wrought, in part, by mechanically removing the diseased masses and, in part, by the induction of a leucocytosis with subsequent cicatrization. Since the disease is probably allied to lupus, it may be caused by an undiscovered bacillus, the destruction of which by the methods noted results in pronounced betterment.

Stephen Mayou[18, 4] lauds most highly the results achieved by *x*-ray treatment of this condition, claiming (1) less deformity of the lid after treatment, (2) it is practically painless, (3) the pannus clears more thoroughly. His first case, presented before the London Ophthalmological Society early in 1902, was apparently the initial application of the method. "Instead of the white puckered conjunctiva gained by other methods, a supple non-contracted, non-scarred conjunctiva, with no obliteration of the fornices," was noted. In every one of 15 cases a perfect result was achieved. No burning of the globe occurred in any case. Two-minute exposures were given from four to six successive days, followed by a week's rest; then came semi-weekly exposures until slight photophobia began. When granules disappear, the treatment should cease, as the infiltration induced by *x*-ray will be some weeks in subsiding. The patient is seated 9 inches from the anode with a moderately soft tube and a current of 6 amperes. The metal mask formerly used is now discarded, as the patient is not exposed sufficiently to get any skin reaction.

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[13] Ring, G. Oram: "Orbital Sarcoma, with Report of a Case and a Discussion of Radical Operation, X-ray Therapy and Electro-chemical Sterilization," N. Y. Med. Jour., June 10, 1905.

[14] Beclere: "Sarcome de l'orbite gueri par les rayons-X," Gaz. des Hôp., June 14, 1904.

[15] "Radiotherapy in Ophthalmology," quoted by Allen.

[16] Harper: "Melanosarcomatous Pigment Areas on Sclera." Amer. X-Ray Jour., 1902, p. 1164.

[17] Quoted by Würdemann.

[18] Mayou: "The Treatment of Trachoma by X-Rays," Trans. of the Ophth. Soc., London, S. 10.

Stevenson and Walsh[19] selected severe cases which ordinarily required a very prolonged treatment by old methods, and they were cured in a few weeks. They report equally good results in a case treated less than two months with a high frequency current. After twenty-three painless applications of the brush discharge from a vulcanite electrode connected with a Cox's d' Arsonval apparatus, a disease disappeared that would have lingered on two or three years under ordinary treatment.

Walsh[20] (London) has treated four cases of severe double trachoma, with complete cure in two and marked improvement in the remaining two. Good effects were the same if lids were closed or everted.

Vassutinsky[21] obtained favorable effects on trachoma by means of the Roentgen rays. These rays diminished the infiltration, caused the disappearance of the granulations and of the pannus, and produced a pronounced improvement in the subjective signs of the malady. A a rule, however, trachomatous granulations disappeared but slowly under the influence of Roentgen therapy. The rays proved to be harmless in treating the eyes, no evil effects were noted in any case, nor was pain experienced by the patients. The author thinks that the rays are of service in cases in which ordinary methods of treatment fail.

Ruggero Pardo[22] reports two cases of trachoma which derived benefit from the application of the *x*-rays.

CASE 1.—The patient, aged 60, had suffered from double trachoma for three years. In the right eye was dense pannus, abundant catarrh, and congested iris. The left eye was similarly affected, but to a much less degree.

CASE 2.—The patient, aged 14, had had trachoma two years. A Crookes tube with a spark about 700 mm. was used at a distance of 45 to 30 cm. for four to ten minutes at a time. Only one eye was treated, the other being carefully protected with a metallic shield. About six applications were made in each case at intervals of three days. As a result of the treatment the conjunctiva became smoother, the secretion ceased, the pannus cleared, and there was marked improvement in vision in the first case. In the second case many of the tarsal follicles disappeared, the secretion diminished, and there was considerable improvement in the subjective sensations.

Geyser[23] maintains that a few exposures, six to eight, will suffice to bring about a perfect cure. An important consideration is to cause absorption and stimulate normal nutritional processes; nothing seems to answer the purpose any better than the direct contact of the tissues with a high-frequency vacuum tube generated by a static machine or *x*-ray coil. Complete details of technic are given in the article.

Horniker and Romanin[24] (Trieste) report the history of three successful cases of trachoma treated by *x*-rays. The methods of Mayou, Cassidy, Rayne and Pardo are compared. The method of Mayou of applying the rays directly to the everted lids was selected, as the strength of current did not have to be judged with such exactness in order to prevent skin lesions. Cassidy and Rayne applied the current to the closed lids. Notwithstanding the care exercised, dermatitis of the hands developed and, for the purpose of holding open the everted lids, Romanin devised an instrument which is carefully described and which is said to make the performance perfectly comfortable to physician and patient. He claims that one single advantage of the Pardo method which makes prominent the retrotarsal fold can likewise be obtained by his instrument by placing a compress behind the everted lid and by turning the lid holder by screws. Although eminently successful in three cases, Horniker does not attempt to decide on its final value until a larger mass of authoritative material shall have been collected.

The investigation of Heineke[25] as to the results of the application of the *x*-rays in disease of the spleen and other lymph organs in rabbits, more particularly in leukemic conditions, pointed to a destruction of lymphocytes in the follicles.

Buschke and Schmidt[26] found a cessation of proliferation of cells in kidneys and testicles, which confirmed the earlier findings of Albers Schonberg[27] concerning azoospermia. These results induced Stargardt[28] (Kiel) to investigate the results of the rays on trachoma mass. which is essentially composed of lymph follicles.

Kuhnt (Königsberg) has practiced excision of the upper retrotarsal folds for many years. It was at his clinic that Stargardt was permitted to *x*-ray the folds before excision. In the application the method of Kienbach was modified; that is to say, one long exposure (twelve minutes with soft tube distance of 5 cm.). Stargardt believes there is no danger to the conjunctiva in these exposures. Microscopically the principal change was noted in the follicles. In one instance the retrotarsal fold was excised in 16 hours; in a second, 30 hours; in a third, in 14 days. In the first and second cases highly colored masses were scattered over the whole follicle which were regarded as the remains of destroyed nuclei. These masses varied in shape and size from that of a lymphocyte to that of the smallest particle. They were mostly strongly colored with the stain, a few less intensely so, though very scarce some were non-stained. These masses lie mainly between the cells, partly in the phagocytes. The phagocytes are similar to the Villard type. Their number is increased. They are unevenly distributed over the whole follicle and do not show the regular arrangement usually seen in trachoma. In addition to the increase of phagocytes. a strong increase in Villard's giant cells was also noted. The giant cells are very plentiful, and we also find from three to six large black colored nuclei which lie in a mass of plasma substance. The decrease of threads produced by the segmentation of cells was very striking.

Cassidy and Rayne[29] (Baltimore) report the case of an artist's helper who suffered for nine years from granular lids.

Patient had been operated on twice with grattage and twice by avulsion. The usual astringent and caustic treatment was also exhausted. Treatment was begun November 8, 1902, through closed lids. Cautious tentative exposures of three minutes each, separated first at intervals of ten days, then five days, then tri-weekly exposures were given at a distance of 12 inches, and a spark gap of one-sixteenth of an inch. These treatments caused excessive lacrimation which diminished on successive exposures and finally ceased. By the thirty-fifth exposure both eyes were free from trachomatous granules. The patient's lids are now little inflamed and are not thickened. The mucous membranes are still red, but free from swelling and discharge. There are absolutely no trachomatous granules, photophobia is entirely absent, and the patient uses her eyes constantly without discomfort.

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[19] Stevenson and Walsh: "On the Curative Treatment of Trachoma by the X-ray Tube Exposure," Medical Press, 1903.

[20] Walsh: Medical Brief, No. 31, 673, 1903, also Lancet, No. 10, p. 237, 1903.

[21] Vassutinsky: "Roentgen Rays in Trachoma," Roussky Vratch, Jan. 8, 1905.

[22] Pardo: "Cases of Trachoma Treated by Roentgen Ray," Gaz. d. Ospedali, Milan, No. 13, p. 1193.

[23] Geyser, Albert C.: "The Successful Treatment of Eighteen Cases of Granular Lids by the X-ray and High Frequency Vacuum Currents," Jour. of Advanced Therapeutics, May, 1904.

[24] Horniker and Romanin: Zeitft. f. Augenhlk., 1904.

[25] Heineke: "Ueber die Einwirkung der Rontgenstrahlen auf innere Organe." Munch. med. Wochft., 1904, p. 785.

[26] Buschke and Schmidt, E.: "Tierversuche über die biologischen Wirkung der Rontgenstrahlen," V. Inter. Dermatologen-Kongress, Berlin.

[27] Albers Schonberg: "Ueber eine bischer unbekannte Wirkung der Rontgenstrahlen auf den Organismus der Tiere," Münch. med. Wochft., 1899.

[28] Stargardt, K.: "On the action of Roentgen Rays on the Trachoma Follicle," from the Eye Clinic in the University of Königsberg in Prussia. Zeitft. f Augenhk., 1905.

[29] Cassidy and Rayne: Jour. of Eye, Ear and Throat Diseases. 1903.

The effect, according to three writers, is neurotrophic. Normal tissues are stimulated to a new vigor, and pathologic tissue, always being of less resistance, assumes a retrograde metamorphosis.

At a regular meeting of the Philadelphia County Medical Society, Nov. 23, 1904, W. S. Newcomet and J. P. Krall[30] (Philadelphia) exhibited a girl of eighteen who had been subjected to all the operations for the cure of trachoma without success.

Patient was treated with the *x*-ray from July, 1903, until January 1, 1904. The inflammatory reaction was so intense that it was thought better to abandon the treatment. Later, however, it was found that she could count fingers at close range. The cornea of the eye was entirely clear and only with special illumination could fine blood vessels be seen. The eye not treated with the *x*-ray showed all the symptoms that the treated eye formerly exhibited. The condition of the patient had been present since infancy, and she had been unable to see across the room. Treatment was given every other day for five minutes for about six weeks, when a burn developed and treatment was withheld. Newcomet believed the result to be due to the accidental burn produced in the course of treatment.

H. N. Bishop[31] (London) gives the results of electrical treatment of trachoma at the Middlesex Hospital. Cases had been treated with well equipped apparatus, with rays, high-frequency currents, and radium. With regard to the *x*-rays he explains that there were two sets of rays emanating from the tube, (1) the *x*-rays proper, (2) the overflow rays that cause the severe burning of the skin which sometimes occurred. The former of these rays were used. Four cases of trachoma were treated in this manner. Two were young women. In one, fifty applications were made in five months. The right eye showed changes that might reasonably have been produced in this time without treatment, while the left, which was at first unaffected, steadily got bad. The disease subsequently cleared up in the usual manner with bluestone. None of the three other cases did any better. The seven cases treated with high-frequency currents did not improve at all.

Kassabian[6] (Philadelphia) has treated four cases in his work at the Philadelphia Hospital, two acute and two chronic. All of the photophobia and lacrimation markedly manifest in the acute cases disappeared after four or five exposures and the results achieved in all four cases were so satisfactory that Kassabian believes we have in the *x*-ray a most valuable curative agent, if properly used. Kassabian's technic in treating cases of trachoma consists in covering the Crookes' tube with a dark cloth and darkening the room. He uses adhesive plaster to fix the lids and expose the surface of the eye, to prevent the burning of the nurse's or assistant's fingers. He covers the face with a leaden sheet and treats one eye at a time through an aperture in the lead. Rapidity of action is obtained by getting the patient to keep the eye open while under treatment. There is less danger of burning the cornea than there is to the skin of the eyelid, but should a slight corneal haziness result it quickly disappears and a corneal scar will be absorbed.

W. Franklin Coleman[6] (Chicago) says that in 12 cases of trachoma his results in the treatment have been so uniformly favorable that he would not consider any other method. Coleman's first case was exposed to the *x*-ray July 1, 1903. The disease was of 20 years' standing. A high-frequency tube was used with ten minutes' exposure three times weekly. A perfect recovery resulted in six weeks. He now uses a two and a half inch spark, ten minutes' exposure at six inches with low tube, with lids closed and no mask. Every case treated has resulted in perfect cure.

Ayres[6] (Cincinnati) reports one severe case of trachoma with marked hypertrophy of conjunctiva. Three other cases, trachoma, less severe, all resulted in perfect cure. Pfahler[6] (Philadelphia) has treated 15 cases of trachoma with *x*-ray. All showed improvement, a few decided improvement. He believes the rays should be used after accepted methods have been given a fair trial. He has never seen any harm result to the eye from the exposures.

Schamberg[6] (Philadelphia) has treated one case at the Polyclinic Hospital with most satisfactory results. There were pronounced vegetations on the tarsal conjunctiva. Pain was relieved and the vegetations disappeared. In this case the eyelids were averted and the rays applied directly to the granulation. Twenty-five treatments of five minutes' duration were given twice weekly.

Jackson[6] (Denver) advises me that in his experience *x*-ray does some good and may cure acute cases, but not more quickly or certainly than older methods. It has not cured or permanently benefited the bad cases. L. Webster Fox[6] (Philadelphia) has utilized *x*-ray, but not with encouraging results. Fox prefers the older recognized remedies. Suker[6] (Chicago) states that the *x*-ray has given him no results or even encouragment in treating trachoma of any type. de Schweinitz[6] (Philadelphia) regards the results as fairly good in the few cases in which he has used the method, but considers his experience too limited to render an expression of his opinion of value. Ordinary therapeutic agents or operative measures have served him as well. With improved technic and exact dosage, the measure offers a prospect of success and should be given the fullest trial. His personal experience is limited to two cases, neither of which was as much benefited as it would have been under ordinary treatment in the same period. He has seen two cases in the care of colleagues in which the results were somewhat better than those that follow the usual applications and surgical procedures. Sweet[6] (Philadelphia) has treated a number of cases of trachoma by the *x*-rays, but did not consider the results to be any better than could be secured by the usual local measures.

VERNAL CONJUNCTIVITIS.

The utterly unsatisfactory results of all forms of treatment of this extremely intractable type of conjunctival hypertrophy determined Allport[32] (Chicago) to test the *x*-ray in a case of characteristic palpebral type.

The patient, a young lady, aged 19, living in a refined and wealthy environment, gave a history of seven years' experience with the disease. The growths were first amputated, then subjected to about eighty x-ray applications in less than three months. Photophobia, redness, itching and irritability were removed at once, and the patient apparently perfectly cured, since she has gone through two subsequent summers without any recurrence of the disease.

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[30] Newcomet and Krall: Trans. Philadelphia County Med. Soc., Nov. 23, 1904.

[31] Bishop, Harman N.: "Electrical Treatment of Trachoma," British Med. Jour., Aug. 26, 1905.

[32] Allport: "A Case of Vernal Conjunctivitis," Ophthalmic Record, October, 1903.

The case was x-rayed by Pusey, and the diagnosis confirmed by Casey Wood, Woodruff and Guilford, Chicago.

Pusey[6] has had one additional case in which the disease was cured. William Campbell Posey[6] (Philadelphia) believes that x-ray exerted decided influence on the course of the disease. He has kindly placed at my disposal a brief note of his case.

The patient, a man, aged 35, came to the Wills Eye Hospital in May, 1905, with the statement that for two years preceding, during the warm months, his eyes had annoyed him greatly with itching and smarting, increased lacrimation and great sensitiveness to light. These symptoms had subsided with the appearance of cold weather again in the autumn. On examination, it was noted that the patient was suffering from a typical attack of vernal conjunctivitis of the palpebral type, the conjunctiva being greatly infiltrated and whitened, and there being a number of flattened granulations in the conjunctiva of the upper lid. The bulbar conjunctiva was unaffected.

Antiseptic washes of boracic acid and cocain, and solutions of adrenalin, in strengths varying from 1-10,000 to 1-5,000, were prescribed. The patient was instructed also to report to the Polyclinic Hospital for the administration of the x-rays. These were continued during the summer months, the applications being made twice a week, and each seance lasting about five minutes. Subjective symptoms were apparently greatly influenced by the rays, for notwithstanding that local treatment was interrupted for a time, the itching and smarting sensations were much less in severity. After some weeks treatment the follicles underwent a change and became markedly less pronounced. While during the preceding August and September the patient had suffered great annoyance, these months were passed in great comfort. No deleterious action from the rays, either on the eye or adnexa, was manifested at any time.

Zentmeyer[6] (Philadelphia) has had two cases of vernal conjunctivitis treated by means of x-ray by Sweet, one resulting in perfect cure, the second in marked improvement.

In the first of Zentmeyer's cases, a boy of 15, the affection was in both eyes, but worse in the right. The upper lids were studded with typical flat granulations. At the limbus above and to the temporal side were the nodular swellings overlapping the cornea. When treatment was stopped, a year ago, the granulations had entirely disappeared from the lids, but a few of the nodules persisted at the limbus. He passed through last summer without any discomfort and at the present time the palpebral surfaces of the lids are normal. The few nodular swellings still remain, but have not increased during the year. The boy was so satisfied with his improvement that he did not return for further treatment.

Sweet[6] had two remaining cases, which disappeared from treatment after the subsidence of acute symptoms. de Schweinitz[6] (Philadelphia) has utilized x-ray in only one case of vernal conjunctivitis. The treatment was of short duration, and the negative result ought not to be utilized in any estimate of the value of this agent in treating this form of conjunctival diseases. Suker[6] (Chicago) has had sufficient experience to convince him that x-ray treatment of vernal conjunctivitis is of positive value. Jackson[6] (Denver) believes that x-ray sometimes diminished the discomfort, but prolonged trial has shown no curative influence.

CONGENITAL NEVI.

At this writing I am having treated a case of nevus of the left upper eyelid, which had attained considerable proportions. There is apparently being effected a rapid cure.

Stewart (Thomas S.) and Given (Ellis V. W., Philadelphia) advise me they have likewise had several apparent successes with the rays.

CHRONIC CONJUNCTIVITIS.

By courtesy of Kassabian[6] (Philadelphia) I am enabled to add to the various types of cases amenable to x-ray treatment that of chronic conjunctivitis.

The patient, a man, aged 35, had suffered for seven years, with an obstinate type of this condition. Every important method of treatment had been exhausted by the two distinguished surgeons, Knapp of New York and Jackson of Denver, whose patient he had been. At the suggestion of Dr. Schneideman of Philadelphia, and with the added recommendation of Knapp and Jackson, x-ray treatment was begun in June, 1904. During all treatments the eyes were open, there were no signs of dermatitis, the lashes and brows were not the least affected by treatment. Patient is perfectly well. He insists on exposing both eyes to the rays once a month for five minutes, which Kassabian regards as unnecessary, considering the cure complete.

In the language of Kassabian, the technic is as follows:

Induction coil (15-inch spark producing) energized with 110-volt current, mechanical interrupter 2 amperes going to primary coil. Crookes' tube with "medium vacuum" anode being at a distance of 12 to 15 inches (30 to 38 cm.). The face and chest were covered with a sheet of lead through one opening of which the patient looked towards the tube during exposure. Treatments were given for the first three consecutive months twice a week, the time of exposure being gradually increased from one to two minutes. On September 19, 1904, after twenty-four exposures, the condition was greatly improved; the conjunctiva had become pale on the eye that was treated. During October, November and December treatment was continued only once a week, exposure two and one-half minutes. Treatment was discontinued for two months (January and February, 1905) and begun again March 1, with an exposure of three minutes once a week. Blood vessels are very small and fine, conjunctiva pale and white. Regular treatment was continued three months longer.

GLIOMA.

Hilgartner[33] gives a brief note of a most extraordinary result of Roentgen ray treatment in a case of double glioma in a child aged three and one-half years. The growth in the right eye largely filled the vitreous and could easily be seen in its incipiency in the left eye. Pain was severe. Eighty-four exposures were given. Right eye shrank to two-thirds of its natural size and the growth in left eye was entirely absorbed.

Pusey's[33] results have been sufficiently encouraging to warrant his urging the use of the rays after removal of glioma and sarcoma to prevent a recurrence.

Würdemann[6] reports one case of glioma beginning in retina and extending to orbit, maxillary antrum and nasal passages. Three exenterations of the orbit were performed. X-rays were finally used for one year with a result of hindrance of development and absolute prevention of pain.

GUMMATA.

Parker, F. C.[6] (Norristown) reports a most interesting case of bilateral gumma of the orbit in a child eight years of age. Diagnosis was confirmed by microscopic examination, specific and x-ray treatment were both instituted, and it was Parker's opinion, based on the course of the case and its final cure, that the Roentgen ray applications were of very positive value.

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[33] Quoted by Pusey and Caldwell: "Therapeutics of Roentgen Ray," 609.

SCLERITIS AND EPISCLERITIS.

Pardo[22] in his long and interesting communication believes the results of *x*-ray in scleritis and episcleritis represent a real discovery inasmuch as at present there is no other direct therapeutic agent but only means amounting to a purely symptomatic treatment.

CORNEAL ULCERS.

Dennett[34] reports having observed that ulcers of the cornea are stimulated to rapid healing by the rays. Williams[34] reports a case of flat leucoma in the lower half of cornea. Exposures were given once a week for three months, then twice a week for two months, after which the scar was smaller, smoother, and less dense and vision improved.

UVEITIS.

Jackson[6] (Denver) is utilizing the rays in traumatic uveitis. Several times they have given immediate relief from pain and seemed to bring about rapid improvement. In other forms of uveitis he has not seen any marked effect from it.

TUBERCULOSIS OF CONJUNCTIVA.

Sidney Stevenson[35] reports the following case:

A poorly nourished, pallid child, aged 4, was placed under treatment November, 1902. Trachoma-like material was found in semilunar fold. Lid was half closed and thickened lower palpebral conjunctiva was strewn with miliary granulations and folds of coxcomb like tissue. Similar changes were in the superior retrotarsal fold. Tubercular bacilli were found locally. There were positive results from inoculation experiment. Thirteen *x*-ray exposures of ten minutes resulted in complete cure of the conjunctival disease. Enlarged submaxillary glands were present and were removed by operation.

CAUTION IN USE OF THE RAYS.

It is important that a note of warning should be sounded regarding the possibility of unlooked for results of a serious character which are said by competent observers occasionally to follow *x*-ray exposures. They would seem to indicate the very great importance of referring our cases to none but experts in Roentgen therapy. I have seen several cases of temporary corneal haze, conjunctivitis and marked episcleral congestion, but all such conditions subsided with the cessation in the use of the rays.

Dr. Henry K. Pancoast, chief of the *x*-ray department of the University of Pennsylvania, warns us regarding the possibility of the induction of severe conjunctivitis, ulceration and opacity of the cornea, edema of the conjunctiva and lids and optic neuritis. If the growth overlies the eyeball a hard rubber, ivory or metal eye spatula may be inserted under the lids.

In one of Sweet's cases of rodent ulcer the application of the rays was followed by the dulling of the mental faculties the following day. Wild reports a case of epithelioma in which the *x*-ray treatment was followed by the development of panophthalmitis, necessitating the removal of the globe. This must be regarded as a result so exceptional as to be unique.

Birch-Hirschfeld believes the rays capable of leading to very serious results if not skillfully applied. In his experiments on rabbits he believes he has certain proof of the existence of blepharitis with loss of hair and eyelashes, conjunctivitis keratitis profunda, and iritis. Some cases showed evidence of optic atrophy. The microscope in certain instances revealed degeneration of the ganglionic layer of the retina. In four clinical cases, marginal keratitis with vascularity was noted. These serious changes would seem to be the outcome of too lengthy exposures to the action of the rays. Indeed, Pusey of Chicago in one of his excellent early papers remarks on the possibility of producing atrophy of such highly differentiated epithelial structures as the retinal rods and cones, and regards the production of an inflammation of the conjunctiva as quite as likely as that of the skin structure. Hallopeau and Godaud[34] found the patient experienced a disagreeable impression of bright light after long exposure.

Subcutaneous extravasations of blood are said to have resulted in several instances, and Ehrmann quoted by Charles S. Bull described a telangiectatic appearance as a late result of *x*-ray exposure. A few cases of sarcoma and carcinoma by Burdick, Butler, Culey, Edwards and Pusey have been reported in which exacerbations of pain occurred as the result of the exposures.

CONCLUSIONS.

1. *X*-ray therapy marks a great advance in the treatment of superficial epithelioma and rodent ulcer of the eyelids and can usually be relied on to effect a cure.

2. If unsuccessful then electro-chemical sterilization may be utilized, or finally excision with or without plastic operation.

3. *X*-ray treatment has proven of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result.

4. A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. More radical operative procedures with subsequent ray applications being indicated in event of primary failure.

5. *X*-ray treatments usually exert an anodyn influence on malignant disease of the eyelids and orbit, but are occasionally reported to cause exacerbations of pain.

6. Noteworthy progress in the treatment of trachoma has been effected by the utilization of *x*-ray therapy. It should invariably be utilized if ordinary methods fail.

7. The weight of evidence indicates the positive value of *x*-ray treatment of vernal conjunctivitis.

8. There is evidence which points to the value of *x*-ray therapy in chronic conjunctivitis (Kassabian), scleritis, episcleritis (Pardo), traumatic uveitis (Jackson), conjunctival tuberculosis (Stevenson), corneal ulceration (Dennett), glioma (Hilgartner and Würdemann) and gummata (Parker).

9. It is believed that the rays will cure malignant disease involving the cornea and conjunctiva, provided treatment is applied sufficiently early.

10. The treatment of congenital nevi by the rays is likely to prove effective and should be exhausted before electrolysis or radical operation is considered.

11. Further testimony must be accumulated before an authoritative statement is possible of the effect of *x*-rays in painful types of iridocyclitis and glaucoma and other ocular diseases.

DISCUSSION.

Dr. George S. Dixon, New York, said that we have been for some time, and are still, passing through the experimental stage of Roentgen therapeutics, and that the earlier and many of the later, ideas of the greatest number of workers in this line must be toned down considerably. So much is heard about the success, but nothing at all of the failures, as few men care to acknowledge defeat, and for this reason the time for judging the exact value of any therapeutic measure is delayed.

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[34] Quoted by Allen: "Radiotherapy in Ophthalmology."

[35] Stevenson: "Tuberculosis of Conjunctiva." Boston Med. Jour., 1903, p. 1313.

Dr. Dixon said that his therapeutic use of the *x*-ray about the eye has been confined to the treatment of epithelioma, carcinoma, sarcoma and lupus. In epithelioma of the lids his experience has not been at all satisfactory. In cases in which the epitheliomatous growth was of the flat thin variety, not involving the deeper layers of the skin, the results were fairly good, but even after they had apparently been eradicated by the application of the ray they have recurred in from a few weeks to 13 months. In cases of epithelioma of nodular form, involving the deeper layers of the skin, and especially if they involved the deeper parts of the lid, the tarsus, for instance, the growths recurred rapidly after having been broken down and healed, or there was no benefit at all. In this connection he called attention to an interesting point, which he had not seen mentioned and which was discovered accidentally: In a patient with an epithelioma of the nodular form on the right lower lid, the growth was accidentally bruised while under *x*-ray treatment. Treatment was continued, and Dr. Dixon was rather surprised to find that the bruised portion of the tumor healed with remarkable rapidity, leaving a smooth scar with no trace of the growth beneath. This led to an experiment on the remaining nodules on the lid. By means of Knapp's trachoma forceps the remaining nodules were crushed. The lid is now almost well, though still under treatment.

In another patient, aged 44, with a tumor of the same character, the result was not so gratifying. The bruised tissue healed rapidly and a smooth scar resulted, but as rapidly as the tissue was broken down and healed the growth extended further into the surrounding skin, but not so rapidly nor so prominently as before. The invasion was probably inhibited by continued treatment. These two are the only cases in which Dr. Dixon has tried his method, and it is at least questionable whether or not it is good practice. He is inclined to think that the danger from metastasis may be considerable and probably outweighs any benefit that may be gained by crushing and healing the tumors in this manner. It has occurred to him that possibly the greatest value of the *x*-ray as applied therapeutically to the eye is in the treatment of extensive epibulbar epithelioma.

In two such cases the growth disappeared after about six months' treatment. The applications were made every other day with a medium low tube at a distance of nine inches, a Friedlander shield being used on the tube during all the exposures, which would average about seven minutes each. Periods of rest were occasionally allowed. In one case a new growth appeared suddenly in practically a new location and resisted the most persistent treatment. The *x*-ray had not the slightest effect on it and the man was finally discharged. A portion of the growth was excised for examination. Dr. Dixon hoped to find that it had reverted to papilloma, but it was still epithelioma.

In a case of recurrent carcinoma a small nodule was discovered in the orbit above the inner canthus. This is gradually becoming smaller, it can now just be felt and that is all. The case is still under treatment and there is no indication of recurrence. Dr. Dixon has treated a number of cases of sarcoma of the lid and orbit, and believes that the treatment of such growths with the *x*-ray is worse than useless because of the loss of valuable time. He has seen no beneficial result except a slight temporary decrease in the size of the tumors, and considerable amelioration of the pain, and he does not feel that the *x*-ray should be used except in inoperable cases. The only other affection about the eye which he has treated with *x*-rays is lupus vulgaris; it responds very readily. In reference to the remarks of Dr. Ring under the head regarding caution in the use of the rays, Dr. Dixon stated that it would seem that individual idiosyncrasy enters more largely into this question than the kind, condition or distance (of course excluding very short distances) of the tube or the intensity of the ray. He has had true conjunctival inflammation in but one case and he had not noted either visual or mental effects except that occasionally a patient will complain of slight vertigo immediately after treatment, but it soon passes off. He is inclined to believe that at least some of the untoward effects ascribed to the *x*-ray may have been mere coincidences.

Dr. W. F. Coleman, Chicago, stated that in his experience the use of the *x*-ray has been mostly in twelve cases of trachoma. There was recovery and for a year at least no recurrence. He said that exposure six inches from a low tube twice a week for ten minutes at a time does not entail any risk. In his earlier experiences he has had the hair entirely disappear but it recurred in six weeks; when this happens the patient has been over-rayed. Dr. Coleman agreed with Dr. Ring on the positive side of this therapeutic measure. The failures, he said, are apt to be due to faulty technic. Physicians may say that they have treated a patient, but without explaining in detail their methods the negative results are unreliable.

Dr. Charles S. Bull, New York, stated that he thinks he has been a little misunderstood as regards the value of the *x*-ray in cases of malignant disease. He thinks that it is a most important, perhaps the most valuable remedy we have in the treatment of superficial carcinomata. The deeper the disease becomes, the less value, in his opinion, is this treatment. In the inoperable cases of malignant disease of the orbit and sinuses this treatment is of great value in lessening the severe pain which does not return if the treatment is continued, but he has never seen any actual disappearance of recurring growths involving the sinuses, or in inoperable primary growths any beneficial results in the way of checking the disease. He is still hoping that as we learn more of the use of these rays we may yet get some hold on the deep sarcomatous tumors.

Dr. John E. Weeks, New York, mentioned the tolerance of the retina to the *x*-ray. In the case referred to by Dr. Dixon, the patient had a large number of exposures at a distance of ten inches from the anode of the *x*-ray tube and the retina has not been found in any way affected. Vision is just as good as when the treatment was begun. Dr. Weeks thinks that this is something that is well worth knowing.

Dr. Edward Jackson, Denver, in referring to the treatment of malignant disease, said that he has had one patient with recurrent epithelioma of the lid, recurring within a few months after excision, treated with the *x*-rays, that has now been free from evidence of disease for five years. But he thinks the cases that most strikingly illustrate the value of the method have been some unsuccessful cases, one in particular that has been under observation for five years, a carcinoma starting in the caruncle. It was excised when as large as the end of the little finger; and the pathologist reported that it was a malignant growth and would probably recur early. Only three weeks elapsed before it was evidently growing again. The *x*-ray was used, it checked the growth and led apparently to complete absorption. There remained a little nodular tissue in the scar. Dr. Stover, who applied the *x*-ray, thought there was no need to continue it further, but it was used a month or two longer. Then the ray was discontinued for six or eight months. During this time the patient was not under observation continuously and toward the end of the period the growth was evidently recurring. Treatment was resumed and the growth was again checked. Months later there was a slight increase in spite of the *x*-ray and again the tumor was excised. Again there was recurrence and the ray is still used. Dr. Jackson feels certain from watching the course of the case that the patient has lived three or four years longer than she would have lived without the employment of the *x*-ray and in complete comfort, so far as the pain is concerned. There is now quite a growth at the inner side of the eyeball. In another case in which caustics had been used and in which the eyeball was functionally destroyed, he enucleated the globe to get at the depth of the orbit. It was a slowly growing epithelioma said to have started at the inner canthus. It has now been about eighteen months since he saw the case. There is an opening into the ethmoid, lesions on the brow, and others about the ear. Several of these have healed completely and all apparently are shrinking. These cases, he said, strikingly illustrate the value of the *x*-ray. With regard to trachoma, he said that we can judge the value of any treatment by the mild cases. In the cases which have shown resistance to other methods the *x*-ray has not proven itself so good as older methods in his hands. He has tried it in several cases of vernal conjunctivitis, and, while it has produced comfort and sometimes temporary improvement, he thinks that as a cure it is worthless.

Dr. A. R. Baker, Cleveland, states that he has had a number of cases of epithelioma in which he thinks the *x*-ray has brought about recovery. He has seen several cases of sarcomatous tumors involving the sinuses in which there has apparently been no benefit, except in the relief of pain, except in one case of adenosarcoma involving the septum of the nose. He reported the case six years ago as recovered, but it recurred and an extensive operation was done, removing the growth and as much tissue as possible; in a few months there was recurrence involving the ethmoid and sphenoid sinuses. In consultation with some of the best surgeons it was decided that the case was an inoperable one, and it was turned over to an *x*-ray specialist and to the surprise of every one the patient recovered. That is five years ago and the patient is apparently enjoying good health now.

Dr. John Green, Jr., St. Louis, said that he has recently had under observation a case which illustrates the partial failure of the *x*-ray. A woman, aged 65, was operated on about thirteen years ago for mammary cancer. Six years ago she developed a cutaneous ulcer over the right ala nasi, which increased in size and resisted caustic applications. Finally a series of *x*-ray exposures succeeded in controlling the disease at that site. About two years ago, the disease oegan at the inner third of the right upper lid. Dr. Green saw her first eighteen months ago at which time there was complete immobility of the lid, with destruction of a portion of the margin. He referred her to a competent *x*-ray therapeutist who instituted treatment. In the course of the thirty seances the tumor become so much smaller that the patient could voluntarily raise the lid. In the meantime, however, a nodule appeared at the upper inner angle of the orbit which increased in size despite continuous applications of the ray. Operation was advised but refused.

Dr. Casey A. Wood, Chicago, added his testimony to that of Dr. Jackson's as to the value of the rays in the treatment of malignant tumors that are essentially fatal. He particularly referred to two he has had of secondary gliosarcoma following glioma of the retina. He had the usual experience in enucleating a number of eyes for this disease, but in one case he did an extensive evisceration and had the *x*-rays used afterward. In spite of the rays, however, the secondary tumor occurred as usual and came up to the margin of the orbit, but he was not called on for two years to do another operation, and he thinks that is of great importance. The value of the *x*-ray should not be forgotten in relieving pain and preventing the horrible edema. It helps along until the time when the meninges become affected and the patient dies from secondary invasion of the brain. If it does not cure it is at least of value as an agent of relief.

Dr. C. D. Wescott, Chicago, referred to the case of sarcoma of the orbit mentioned by Dr. Ring in which the ray was used three months and the patient was living at the end of a year. He stated that the patient is still living at the end of three years. Dr. Wescott saw the patient about a year after enucleation of the eye for sarcoma. There was a good-sized tumor which he removed by subperiosteal exenteration. The actual cautery was used on the tissues which could not be removed with scissors and curette and then the patient was subjected to the *x*-rays for three months.

Dr. W. B. Marple, New York, stated that he had one case of recurring sarcoma in which an exenteration of the orbit was done and subsequently the *x*-ray was applied to the orbital tissues. The result was entirely negative and the growth promptly recurred.

Dr. William Sweet, Philadelphia, said that he has had a number of cases of carcinoma, granular lids and vernal conjunctivitis, some of which recurred because the patients failed to return for treatment after the superficial ulcerated area had healed. Although the skin surface was completely healed, there remained a hardened mass at the site of the growth, showing that while the disease had been relieved temporarily, there were still some of the cancer cells deeply situated. In the treatment of sarcoma in the deep orbital structures Dr. Sweet said that we must not forget that active treatment without sufficient drainage is dangerous to the patient. The *x*-rays have a destructive action, and in extensive disease proper drainage must be provided, otherwise the system will be unable to elimate the broken-down tissue. Dr. Sweet has treated a number of cases of trachoma, but has failed to secure results sufficiently satisfactory to warrant the use of the rays in this disease. He has had three or four cases of vernal conjunctivitis, all of which were benefited by this treatment. One boy had typical granulations on the under surface of the lids and around the cornea. The surface of the lids became perfectly normal under the treatment and the granulations at the limbus decreased in size and number although they have not entirely disappeared.

Dr. L. Webster Fox said that since the *x*-ray plant has been established at the Medico-Chirurgical Hospital it is being used in all cases of superficial and deep growths in and about the eyelids and orbit. The first important case that was placed under such treatment was the one quoted by Dr. Ring. Since then there have been three similar cases with like results. The first evidence of benefit in these cases was the diminution in the size of the swelling and relief from pain. The first patient suffered so much that she was unconscious at times, and tetany was very pronounced. It was only with large doses of opium that rest and quiet could be obtained. After four or five applications of the *x*-ray the relief from pain and swelling was marked, and continued so throughout the treatment, until all swelling and pain disappeared. In that case, however, the patient has since had metastatic sarcoma of the liver, which caused her death. As regards the inoperable cases of sarcoma of the orbit, he said the *x*-ray should always be given a thorough trial. In the superficial cancers (the epitheliomata) the usual good results, ending in a cure have been obtained. Quite recently a case came under Dr. Fox's observation, in which two-thirds of the upper lid was destroyed. He scraped the tissues thoroughly and applied the *x*-ray for several weeks, by which time all evidence of induration had disappeared. Over this denuded surface he transplanted a flap of skin, which united perfectly. At the Medico-Chirurgical Hospital 100 cases of various inflammations of the lids from the dispensary were placed at the disposal of the *x*-ray therapeutist—the results were not satisfactory. Other means, such as grattage, sometimes bring about better results. Dr. Fox's method is to evert the lids and with a piece of ordinary gauze scrub the surface, and he thinks that the results are just as good, if not better, in the soft gelatinous papules as by any other method. He has at present an interesting case of leukosarcoma of the iris in which eight applications have been made and it looks as if the disease were slowly disappearing. If a cure can be brought about in this case it will be remarkable. Here one can observe the action of the *x*-ray directly through the transparent cornea on the growth which is now about the size and shape of a grain of wheat.

Dr. C. L. Leonard, Philadelphia, said that he is glad to note that the ophthalmologist appreciates the use of the *x*-ray and believes that it should be used by the *x*-ray therapeutist. If surgeons would appreciate that more and the medical men too they would secure better results. In the deeper growths one is able to secure perfect results. These results are coming, but they will only come with further development of technic, which we do not possess at the present time. We can hardly expect, he said, to reach the deep-seated growths that have already produced metastases. One *x*-ray specialist said that he does not consider a patient cured of malignant disease until he has died of something else and autopsy shows that the malignant disease is not there. Patients often remain apparently well for three or four years and then have recurrences. This method produces results not by removing diseased and normal tissue but by restoring the normal though altered metabolism. The cosmetic result is much better. One can not replace the hair follicles if they have been destroyed. Dr. Leonard has a patient now in whom the upper lid was more than half involved and the hair follicles were destroyed; the patient is well, but the hair can not be restored; otherwise the eyelid is like the other. Dr. Leonard agreed with Dr. Ring and Dr. Sweet that we must get rid of the broken-down tissues produced by the rays. The production of toxemia is proof of efficient treatment, but is also an indication for the cessation of treatment. The *x*-ray therapeutist learns that he must get near the production of that toxemia, but he must have drainage for the byproducts caused by the destructive process. When this is done he is approaching as closely as possible to the destruction of malignant disease and restoration to normal. We are destroying the disease *in situ*. The work is not yet perfected and we must get better results, he said, before we speak of cures. In these deep-seated growths the relief afforded by the *x*-ray treatment is a blessing to humanity. Relief from pain in these cases is constant. The patient is free from suffering without the use of narcotics which destroy the sense of perception.

Dr. D. L. Edsall, Philadelphia, declared that he is so much impressed with the importance of recognizing the great potency for harm, as well as for good, in the *x*-ray, that he should desire to emphasize the point again. A year ago in reporting the first observations that he made on the effect of the *x*-ray on metabolism, he said that it is undoubtedly the most violent known agent used for therapeutic purposes, and that this demonstrates both great possibilities for good and great potentiality for harm. Since ophthalmologists do not purposely use the *x*-ray for its general effect on metabolism, the possibilities for harm are to them of more especial importance in this regard. As indicating such harmful possibilities, he would say that he has been so unfortunate as to see, in one of his own cases and in two cases of colleagues, violent general systemic reactions to a single application of the *x*-ray. Two of these cases soon ended fatally, largely as the result of the *x*-ray exposure; while the third patient became almost moribund, but finally recovered. The last case, he emphasized especially, for it was one of chronic rheumatoid arthritis in which the direct exposure was merely to one arm from the elbow downward and it was only five minutes in duration. There was no direct exposure of the trunk, although there was a distant diffuse exposure of the whole body, as the parts not purposely exposed were not protected from exposure. This shows clearly that a very mild exposure may have an exceedingly dangerous result. He emphasized also the fact that this patient was already somewhat ill from a chronic cystitis and that the clinician in charge of him, who is a very careful man, did not recognize that the severe illness following the exposure was due to the action of the *x*-ray. Dr. Edsall, however, feels confident that it was due to this, because in a previous observation he had noted exactly the same conditions of metabolism as those which appeared in this case, in a case in which there was certainly a general violent reaction to the *x*-ray. This demonstrates also, he said, what many persons have already come to admit: namely, that occasionally dangerous reactions occur as the result of exposure to the *x*-ray, and that their relation to the *x*-ray has in many instances been entirely overlooked. It is not at all surprising, he said, that violent toxic reactions may occur as the result of *x*-ray exposures. The observations that he has made show that one exposure, even, may double the metabolic output in the next few hours; and, clearly, the necessity for metabolizing and excreting such an amount of destroyed tissue must be dangerous in a good many instances. He said that he did not desire to arouse general opposition to the use of the *x*-ray. It has been too clearly shown that it is occasionally a therapeutic agent of great temporary, and perhaps of permanent, value, and is of unquestionable diagnostic importance. He would insist, however, on the importance of employing it for therapeutic or diagnostic purposes with less recklessness than has characterized its use by many of the profession hitherto. In cases such as ophthalmologists meet it is, as a rule, sufficient to protect all parts except those that are purposely exposed; but he considers that it is extremely important to do this, in order to avoid occasional dangerous general reactions, and even if toxic reaction does not occur, we should avoid giving an unnecessary general dose of an agent that always does more than merely take a picture or influence superficial lesions. In the cases that fall into the hands of the medical clinician, the matter is even more important. In such instances, Dr. Edsall believes that it is of great importance that the patient's general condition should be thoroughly known before referring him to the *x*-ray specialist; and a careful conclusion should be reached as to whether he is a proper subject to expose at all to the *x*-ray.

Dr. G. O. Ring, Philadelphia, said with reference to Dr. Dixon's remarks on the treatment of superficial epitheliomata that his own results were somewhat at variance, inasmuch as in all of his cases there had been complete and comparatively rapid cicatrization. He had no experience with the crushing of the nodules previous to the application of the *x*-ray. He felt that Dr. Coleman's experience in the treatment of trachoma was entitled to full consideration, as the technic had probably been faultless. He would unquestionably use the rays in any intractable case. He entirely agreed with Dr. Bull as to the present limitation of the ray treatment in deep seated carcinomata and sarcomata. He has had only two cases of sarcoma, one in which there was no recurrence in loco, and another which is now under treatment; the patient is doing well, the tumor being reduced about three-fourths. Dr. Ring has had only one case of sarcoma of the iris in which there was a question of diagnosis as to one of those rare forms of congenital syphilis, tuberculosis or sarcoma. It was treated with antisyphilitic remedies and with tuberculin without result. *X*-ray treatment was begun and carried on daily, and in three weeks the growths in the iris, which had been increasing, promptly began to disappear. Two of the original nodules could be watched through the clear cornea and have now practically gone, and the third is beginning to lessen. In confirmation of Dr. Weeks' observation on retinal tolerance to the *x*-ray, he had not seen any case in which the retina showed any untoward result. Dr. Ring expressed the hope that the brilliant result in Dr. Baker's clearly inoperable case involving the accessory sinuses might with perfect technic and exact dosage be the usual sequel to the application of Roentgen therapy. Dr. Ring said that it was his purpose in the opening of the discussion to have made reference to Dr. Zentmayer's case of vernal conjunctivitis. He gave the doctor credit with using the words "perfect cure" when he preferred the word "inhibited."

THE ECONOMIC ADVISABILITY OF INAUGURATING A NATIONAL DEPARTMENT OF HEALTH.*

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This is an age of progress, intellectual, social and, above all, material—of progress so colossal that the eternal forces of Nature are gradually abandoning the long fight and one by one surrendering to the mind and hand of man. But with all that has been wrought there yet remain broad gaps in our organization which, if left unheeded, may blight the civilization itself. In the present paper an attempt is made to point out what may be regarded as the most serious hiatus in our social system and to consider a possible remedy based on more efficient organization. Societies, like skillful capitalists, should strive to invest their revenues so as to yield maximum returns. When returns are direct and may be charged for, experience has shown that the management in many cases may be judiciously entrusted to private individuals. When social investments produce conditions rather than commodities, indirect services impossible to measure as they occur unit by unit, but which nevertheless result in large substantial gains measurable in the aggregate, the management must be entrusted to national agencies, sufficient in magnitude to produce the results desired.

In an age of great things, a civilization must not be staggered by its own creations. Greater and greater things must it do because of the necessity that compels it. To falter is to lose grip, and to lose grip means a more or less slow destruction of the civilization by divers melancholy wastes.

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The salvation of the civilization and of the race lies in the hands of exceptional men. The hope of the race rests in its efficient organization for action. Efficient organization consists in compelling each individual to do that thing within his capability which has greatest value for society. To do otherwise is a great waste. To permit great wastes to go unchecked is more than a suicidal policy; for an evil more destructive than race suicide is race homicide.

There are four great wastes to-day, the more lamentable, because they are unnecessary. They are preventable death, preventable sickness, preventable conditions of low physical and mental efficiency and preventable ignorance. The magnitude of these wastes is testified to by experts competent to judge. They fall like the shades of night over the whole human race, blotting out its fairest years of happiness.

The facts are cold and bare—1,500,000 persons must die in the United States during the next twelve months; equivalent to 4,200,000 persons will be constantly sick; over 5,000,000 homes, consisting of 25,000,000 persons, will be made more or less wretched by mortality and morbidity.

We look with horror on the black plague of the middle ages. The black waste was but a passing cloud compared with the white waste visitation. Of the people living to-day over eight millions will die of tuberculosis, and the federal government does not raise a hand to help them.

The Department of Agriculture spends seven million dollars on plant health and animal health every year, but, with the exception of the splendid work done by Doctors Wiley, Atwater and Benedict, Congress does not directly appropriate one cent for promoting the physical well-being of babies. Thousands have been expended in stamping out cholera among swine, but not one dollar was ever voted for eradicating pneumonia among human beings. Hundreds of thousands are consumed in saving the lives of elm trees from the attacks of beetles; in warning farmers against blights affecting potato plants; in importing Sicilian bugs to fertilize fig blossoms in California; in ostracizing various species of weeds from the ranks of the useful plants, and in exterminating parasitic growths that prey on fruit trees. In fact, the Department of Agriculture has expended during the last ten years over forty-six millions of dollars. But not a wheel of the official machinery at Washington was ever set in motion for the alleviation or cure of diseases of the heart or kidneys, which will carry off over six millions of our entire population. Eight millions will perish of pneumonia, and the entire event is accepted by the American people with a resignation equal to that of the Hindoo, who, in the midst of indescribable filth, calmly awaits the day of the cholera.

During the next census period more than six million infants under 2 years of age will end their little spans of life while mothers sit by and watch in utter helplessness. And yet this number could probably be decreased by as much as one-half. But nothing is done.

In the United States alone, of the eighty millions living to-day, all must die, after having lived, say, a little more than 3,200,000,000 years of life, on the average slightly more than two score years. Of these years, 1,600,000,000 represents the unproductive years of childhood and training.

Consider that the burden of the unproductive years on the productive years is 20; 20, or say 100 per cent. Could the average length of life be increased to sixty years, say to 48,000,000,000 years lived by 80,000,000 of people, the burden of the unproductive years would fall to 50 per cent. In the judgment of men competent to hold opinions, this is not impossible.

The states' rights doctrine can be applied against the Department of Agriculture as effectively as against a national department for health. It is not, then, a question of constitutionality, but, rather, of whether or not such a department is needed by the nation.

The idea is by no means a new one. As far back as 1879 Dr. Benjamin Ward Richardson advocated by articles and books the establishment in Great Britain of a ministry of health. Solvay, in Belgium, has emphasized the importance of this field for government action. Sir Francis Galton, in recommending the study of the new science of eugenics, created by his own investigations, holds that the laws now being worked out by the brilliant group of mathematical biologists in England bearing on such subjects as heredity or homotyposis, reproductive selection, inheritance of longevity and mental traits, and disease causation, should become the basis of constructive action by the state. And this point of view has been the subject of much discussion at the meetings of the British Sociological Society.

Two years ago, an interdepartmental committee was appointed by the British parliament under these terms of reference: (1) "To determine the steps that should be taken to furnish the government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as do exist in certain classes, and (3) to point out the means by which it can be most effectually diminished."

The committee returned a report recommending a permanent advisory council, in substance a national department of health, along with fifty-two other constructive measures.

In America, physicians connected with the American Medical Association for a number of years have advocated that the executive cabinet include a secretary of health. The necessity for such a department has also arisen in connection with the Panama Canal. Indirectly, two medical experts are now associated with the canal organization. In 1906, Mr. Hubert Higgins, in a book entitled "Humaniculture," elaborated the advantages and necessity for national action through a thoroughly equipped national department of health. The recent book by Dr. Shadwell, a physician, on "Industrial Efficiency" tends to the same conclusions.

Certain divisions of the work of such a department are now performed by other executive departments, and these bureaus would form excellent nuclei for the organization. The names of those bureaus now engaged to some extent along lines not foreign to the purpose of such a department and their appropriations follow:

Public Health and Marine-Hospital Service (Treasury Department)	$1,290,000
Bureau of Animal Industry for the Inspection of Meat (Department of Agriculture)	1,525,000
Life-Saving Service (Treasury Department)	1,841,000
Total	$3,656,000

The logic that justifies an annual appropriation of $2,000,000 for a life-saving service against the accidents of the sea should justify protection against accidents of disease and death. Other bureaus more closely connected with health regulation than at first sight appears are:

Bureau of Labor (Department Commerce and Labor)	$ 176,000
Bureau of the Census, vital statistics (Department Commerce and Labor)	1,400,000
Bureau of Immigration (Department Commerce and Labor)	2,126,000
Total	$3,713,000

Agitation for the factory acts, the eight-hour day, regulations concerning female and child labor and immigration is justified primarily as health regulation.

The total is, in round figures, seven millions out of a total national expenditure of about $725,000,000. These bureaus should be included in the work of the health department. Many other services, however, should be added, the beginnings of some of which appear in recent bills either passed or now before Congress.

Among these bills is the Meat Inspection Bill, which provides rigid inspection of meat and meat products and regulates the sanitation of slaughter and packing houses. These regulative powers are entrusted in the bill to the Department of Agriculture, which is unfortunately already overburdened with a too diverse series of problems. Moreover, this department is necessarily more concerned with encouraging and protecting the producers in the various industries than in guaranteeing the health of the consumer. Commercially, the interests of the producers and consumers are often at variance. This service should be administered by a national department of health.

The National Quarantine Law recently passed forms the basis for a bureau of national quarantine.

The Pure Food Law provides for the rigid inspection of food and food products, as well as drinkables and medicines. Severe penalties are imposed for adulteration and false labelling. This bill extends federal powers into affairs with which the states have dealt very generally with laxity. The grave danger in state regulation lies in the strong tendency to use these laws indirectly as a protective measure against the products of other states.

There must arise many differences of opinion with respect to the practicable division of powers in the organization of a national department of health. An organization is suggested in the following paragraphs, not for the sake of occasioning argument over details which would necessarily be the subject of careful investigation, but in order to present positive prolegomena for discussion:

1. It seems desirable that a United States National Department of Health should be established, having as its head a secretary, who shall be a member of the executive cabinet.

2. The purpose of the department should be to take all measures calculated, in the judgment of experts, to decrease deaths, to decrease sickness, and to increase physical and mental efficiency of citizens.

3. It is probable that a national department of health could be advantageously made to consist of the following bureaus:

National Bureau of Infant Hygiene.
National Bureau of Education and Schools.
National Bureau of Sanitation.
National Bureau of Pure Food.
National Bureau of Registration of Physicians and Surgeons.
National Bureau of Registration of Drugs, Druggists and Drug Manufacturers.
National Bureau of Registration of Institutions of Public and Private Relief, Correction, Detention and Residence.
National Bureau of Organic Diseases.
National Bureau of Quarantine.
National Bureau of Health Information.
National Bureau of Immigration.
National Bureau of Labor Conditions.
National Bureau of Research, requiring statistics.
National Bureau of Research, requiring laboratories and equipment.

4. At the present time of vast undertakings, the magnitude of this department should not be lightly passed over. Great ends must be wrought out through adequate organization. To make headway against death, morbidity, cancer, tuberculosis, we must use dynamite and in large charges.

To equip human machinery, consisting of exceptional men, organized and kept in action for this task, with suitable apparatus and adequate supplies, at least one hundred millions of dollars should be annually appropriated by the nation.

5. The health department should receive its support:

(a) From licenses levied on persons and industries inspected, stamp taxes and registration fees.

(b) From national appropriations.

6. The scope of the work of the fourteen bureaus is briefly discussed in the following paragraphs. The organization is framed from the standpoints of (1) economy of operation, (2) effectiveness of administration, (3) adequacy of results. It is, of course, out of the question to attempt to give specific reasons for each bureau in the space allotted:

A. Bureau of Infant Hygiene.—This bureau should investigate and regulate conditions causing infant mortality. Registration of births and marriages would enable wholesale education of parents by means of pamphlets and leaflets concerning the care of the child, food, air, dress, etc., such as the model pamphlets of the Illinois Bureau of Health. Continuation classes and education of older girls in schools, as well as regulation of female employment during and after pregnancy, are recommended by the British committee; also medical certificates as to the cause of death and registration of still births. The establishment of municipal milk stations now going on in European cities should be adopted. The famous Randall's Island experiment, where sterilized milk feeding reduced infant mortality from 41.83 per cent. in 1895-7 to 16.52 per cent. in 1904, is pertinent. McCleary estimates for eleven European cities a decline from an average of 20.2 per cent. to 18.3 per cent. by partial use of municipal milk depots. The work of Dr. Goler, of Rochester, is still more striking. The damage wrought by impure milk, soothing syrups and parental ignorance is probably equivalent to a decrease of several years in average age at death of the entire population.

B. Bureau of Education, Schools and Children's Homes.—This bureau could coöperate with the local schools in (1) medical inspection of children and anthropometric measurements, (2) extension of the New York system of disease examination by permanent nurses, (3) municipal treatment of defective eyes, ears, teeth and segregation of defective children, (4) inspection of buildings used and methods of schools, children's homes, etc., from sanitary and educational standpoints, (5) systematic education of children in right living along practical lines.

C. National Bureau of Labor Conditions.—This bureau should investigate and frame legislation for proper conditions under which labor may be employed. The excellent work already being done by the present Bureau of Labor should be expanded. The length of the working day, hours of rest, etc., should have more attention, and proper regulations should be enforced.

D. Bureau of Sanitation.—The subject of sanitation and ventilation should be very thoroughly investigated, with a view to establishing standards (1) for sewerage systems of cities and towns; (2) water supply; (3) air purity, by regulating smoke and chemical pollution; (4) proportion of building and open spaces in cities; (5) condemnation of insanitary and overcrowded house property; (6) regulation of the dust danger in cities; (7) standards for factories and mines; (8) standards for public halls, theaters and public conveyances with inspection; (9) standards of sanitation for farms where dairy products are sold; (10) adequate legislation and inspection to enforce proper regulations, and wide dissemination of useful information.

E. Bureau of Pure Food.—This bureau should provide (1) standards of purity for all foods and drinkables, (2) meat and animal inspection. The beginnings of this bureau are in the Pure Food and Meat Inspection bills, now in course of agitation.

F. Bureau of National Quarantine.—The National Quarantine Act recently passed forms a precedent for such a bureau; also work done by the Public Health and Marine-Hospital Service. An appropriation of $200,000 is, however, entirely inadequate. This bureau should (1) provide means for handling epidemics with speed, (2) regulate quarantines against infectious diseases, (3) study and devise means of handling diseases transmitted by insects.

G. Bureau of Registration of Physicians and Surgeons.—This bureau should have power to require (1) that all colleges educating physicians and surgeons be under national inspection as to curriculum and training; (2) that all physicians and surgeons be required to be registered; (3) that returns be made by physicians and surgeons of records of all cases, on official blanks, showing on analysis by the department statistical records, such as average visits per illness, cases per death, etc.; that returns be made by physicians and surgeons of all organic or chronic diseases for use of the Bureau of Organic Diseases; (4) that licenses be issued barring general practitioners from treating special diseases requiring skill above that evidenced by training; (5) that the standard of the profession be raised by protecting the exceptional men and barring quacks, charlatans, etc.

H. Bureau of Registration of Druggists, Drug Stores and Manufacturers of Drugs.—This bureau should have the necessary powers (1) to regulate the standard of drugs, and to require drugs to be sold, as far as possible, in unbroken packages under seals; (2) to regulate "patent medicines" by requiring contents printed on labels, under government stamp, and severely punishing both newspapers and manufacturers for the insertion of false or fraudulent advertising matter calculated to deceive the public; (3) to regulate preparations of prescriptions by doctor and druggist, by fixing standards, and by summarily punishing substitutions; (4) to maintain competent inspectors and to enforce such regulations as shall accomplish the results; (5) to prepare and to furnish druggists, doctors, etc., with a weekly or monthly bulletin containing orders and instructions in a systematic educational campaign.

I. Bureau of Registration of Institutions of Public and Private Relief, Correction and Detention.—This bureau should investigate conditions in institutions and establish standards. The inmates should be the subject of experiments in diet, hygiene, sanitation, etc., and also of statistical inquiry. The census has recently issued a bulletin in this field.

J. Bureau of Immigration.—This bureau should include in addition to the present service, provisions for the study of races, desirable immigration, mixture of races and also distribution locally.

K. Bureau of Organic Diseases.—The data returned by physicians in compiling notifications concerning chronic and organic diseases with history should be a field for study. Means should be taken educationally (1) to ameliorate and advise by pamphlets; (2) to follow up and to study for causes and remedies; (3) to furnish practitioners with directions for treatment. Dr. Solis Cohen estimates that consumptives alone now number not fewer than 1,000,000. The importance of the work can not be overestimated.

L. Bureau of Health Information.—This bureau should adopt methods used by the Department of Agriculture, the follow-up pamphlet, etc., with a view to disseminating reliable information couched in plain language concerning right living as widely and as thoroughly as possible.

M. National Bureau of Research Requiring Statistics.—In human beings differences in habits are probably more important than difference in physical characters in determining the optimum health, and in warding off morbidity and mortality, as well as criminality. Habits should be investigated to a far greater extent than they have been hitherto. The highly exact methods of statistical analysis, involving the theories of variation, correlation and regression, should be applied to this field on a large scale. Such questions as the correlation of food habits and alcoholism with mental and physical efficiency, value of foods experimentally determined by results in connection with mental and physical efficiency rather than by laboratory theories, effects of longer or shorter labor day on efficiency, correlation of the number of open windows and cases of sickness, etc. Such questions of vital interest can be determined to a finality by the new statistical analysis. The opportunity presented by the possibility of experiment with the diet of the Army, the Navy, the inmates of houses of detention and correction, should not be lost. The preparation of all blanks in use by all other departments should be subject to the approval of this department, which should have at its head exceptional men. The vital statistics of the census should be managed by this bureau. The necessity for experts of the highest order is discussed in a subsequent section.

N. National Bureau of Research Requiring Laboratories and Apparatus.—This bureau should endeavor systematically to extend knowledge of remedies for the deadly diseases which may be advantageously pursued by laboratory methods.

The organization in vogue among modern business corporations and the practice of playing off against each other several experts engaged in independently solving the same problem should be adopted. That which can be accomplished through the organization of the world's exceptional men under the lash of failures and stimulus of great rewards is of vast magnitude.

The vital problem for the Department of Research is to make new discoveries of value at a rapid rate. New discoveries or inventions in general depend on the number of exceptional men in a society capable of such work. Exceptional men are in degrees as one in a thousand, one in a million, an Edison, one in two hundred million of a population. An art discovered by one such man becomes operative for an entire population. The necessity of employing experts can not be overemphasized. The possibilities of a civilization efficiently administered by exceptional men practically renders negative the evils of the Malthusian theory.

1. The greater the population the greater the number of exceptional men of all degrees, since exceptionality depends on a ratio to the total population.

2. The value of the work of a given exceptional man capable of producing an invention, depends on the value of the invention to the average man who uses it, multiplied by the number of users, who are in ratio to the total population.

3. Two results emerge: (a) The value of the work of an exceptional man increases directly with the growth of the population. (b) Society gains greatly through the increase in its numbers, since every member of the population on the average is served by all of the exceptional men. The value of the work of a Luther Burbank, an Edison or an Eli Whitney is incalculable.

From the standpoint of eugenics, it is desirable: (1) To select as early as possible the exceptional minds; (2) to afford these minds every opportunity of training and education; (3) to place them in operation where their exceptionality may prove advantageous to society; (4) to place in operation instantaneously the results of their work. How large are the appropriations now made for the defective children who must forever be a burden on society. How little has been done for the exceptional children who must carry by their work both the defective and the average of the population. Professional organizers understand the importance of this phase, Carnegie in his libraries and institutes, Rockefeller in the Rockefeller Institute and Chicago University. *A fortiori* the nation should provide for this necessity.

The economic reasons for establishing a National Department of Health are five:

1. To enable society to progress more rapidly under the law of increasing returns through increasing the percentage of exceptional men of each degree (many of whom are now lost through preventable accidents), in addition to increasing the total population.

2. To lessen the burden of the unproductive years on the productive years by increasing the average age at death. If we estimate the average span at 40 years, and 20 years as unproductive, the ratio of unproductive to productive years is 100 per cent. Without venturing an opinion as to the true figures after the manner of La Place, I have calculated what would be the economic gain if average span were 40, 45, 50 and 55 years and also the burden of an unproductive year at $100 and $200. The annual gains are shown under the various hypotheses. Thus if the average life-span of a class of the population can be increased from 40 to 45 years, the economic gain would be $25 to $50 per head. Assuming 40,000,000 of productive age in the United States, the burden of the unproductive years of childhood, lightened by an increase in the average life span, from 40 to 45 years would be $800,000,000 to $1,600,000,000 per annum, and an increase of ten years would result in savings of $1,320,000,000 to $2,640,000,000 per annum.

Burden of Unproductive Years on Productive Years.

Average span of life in years	40	45	50	55
At $100, per cent	100	80	67	57
Measured in dollars, per capita	$100	$ 80	$ 67	$ 57
Gain for period		20	13	10
Total gain		20	33	43
At $200	200	160	134	114
Gain for period		40	26	20
Total gain		40	66	86

3. The third economic reason for establishing a department of health is to decrease the burden of death on the productive years by increasing the age at death. If the expense of illness and death are $300, and the average age at death is 40 years, the average death expenses average $15 on the twenty productive years. Could the average age be increased to 50 years, the burden falls to $10, or a decrease of 50 per cent. For 80,000,000 of people, the saving of $1.50 per year of life would be equivalent to $120,000,000 per annum.

4. The fourth object of the plan would be to lessen the economic burden of sickness. Assuming Newholme's figure of 9 days' average illness per annum, approximately 2,000,000 years of life are lost per annum. Estimating wages at $1 a day, and all other expenses $1 a day, $1,444,000,000 loss per annum is registered by this item. Could the days of illness be cut down one-third, nearly $500,000,000 would be saved.

5. Higgins has estimated that six hundred millions are now spent on criminality in the United States. If the criminality is largely the product of the social environment, such as overcrowding, alcoholism, etc., measures which would decrease this only fractionally are worthy of consideration. A decrease of 16 2/3 per cent. would result in savings of $100,000,000 per annum.

For the last four estimates the total savings range between $1.800,000,000 and $4,000,000,000 per annum.

In addition to the economic gain, the establishment of a National Department of Health would gradually but surely diminish much of the misery and suffering that can not be measured by statistics. Sickness is a radiating center of anxiety; and often death in the prime of life closes the gates of happiness on more than one life. Let us not forget that the "bitter cry of the children" still goes up to Heaven and that civilization must hear, until at last it heeds, the imprecations of forever wasted years of millions of lives.

If progress is to be real and lasting, it must provide whatever bulwarks it can against death, sickness, misery and ignorance; and in an organization such as a National Department of Health—adequately equipped—a vast preventive machine—working ceaselessly, an attempt at least would be made to staunch those prodigal wastes of an old, yet wastrel world.

HYPERSUSCEPTIBILITY.*

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(Abstract.)

The phenomenon of hypersusceptibility has long been recognized, but has been overshadowed in modern studies on immunity. Instances of hypersusceptibility to certain infectious diseases, bacterial toxins and other substances may be found scattered through the literature. The well-known hypersusceptibility to tuberculin in animals infected with tuberculosis has received much attention, but the importance of hypersusceptibility in general pathology has not been realized.

At first glance it would appear much more important for an organism to be *hyposensitive* than *hypersensitive* to infectious processes, but a closer study of the com-

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plex problems of immunity develops the curious fact that resistance to disease may be largely gained through a process of hypersusceptibility. Whether this increased susceptibility is an essential element or only one stage in the process of resistance to disease must now engage our attention.

Von Pirquet and Schick[1] believe the immunity which an organism acquires after an attack of measles, whooping cough, etc., consists in the power of "immediate reaction;" that is, a condition of hypersensitiveness. This immediate reaction is an expression of cellular resistance rather than humeral or antitoxic immunity.

Our studies[2] on the hypersusceptibility produced in guinea-pigs by the injection of horse serum have a direct bearing on this question. We have shown that these animals may be rendered acutely sensitive to a substance which is incapable in itself of producing apparent harm.

HYPERSUSCEPTIBILITY TO HORSE SERUM.

It has long been known that the blood of certain animals is poisonous when transfused or injected into certain other species. Many instances might be cited showing that the blood serum of one animal has poisonous properties when injected into an animal of another species. But the blood serum of the horse apparently lacks such poisonous action. Very large quantities of the blood serum of the horse may be injected into man, rabbits, guinea-pigs, and many other animals without serious inconvenience, except occasionally a slight reaction at the site of inoculation. In a certain proportion of cases the injection of horse serum into man is followed by urticarial eruptions, joint pains, fever, swelling of the lymph nodes, edema, and albuminuria. This reaction, which appears after an incubation period of 8 to 13 days, has been termed by Pirquet and Schick the "serum disease." In exceptional instances sudden death has followed an injection of horse serum in man.

These studies were taken up in October, 1905, by one of us (Anderson), in order to throw light on the cause of this unfortunate accident. We have shown that ordinarily horse serum is a comparatively bland and harmless substance when injected into certain animals; but these animals may be rendered so susceptible that an injection of horse serum may produce sudden death or severe symptoms. For example, large quantities of horse serum may be injected subcutaneously or into the peritoneal cavity of a guinea-pig without apparently causing the animal the least inconvenience. But if a guinea-pig is injected with a small quantity, say .004 c.c., of horse serum and after the expiration of a certain interval is again injected with horse serum the result is usually fatal. The first injection of horse serum has sensitized the animal in such a way as to render it very susceptible to a toxic principle in horse serum. It is probable that when the guinea-pig is injected with the first, or sensitizing quantity of serum the strange proteid contained in the horse serum develops in the body of the guinea-pig "antibodies" which, when brought into contact with more horse serum given at a second injection, produce either a union or reaction, which causes the toxic action. A certain time must elapse between the first and second injections of horse serum before this toxic action is able to manifest itself. This "period of incubation" is from ten to twelve days, and corresponds suggestively with the period of incubation of the serum disease which Pirquet and Schick place at eight to thirteen days.

Guinea-pigs may be sensitized with exceedingly small quantities of horse serum. In most of our work we used quantities less than .004 c.c. and we found in one instance that .000,001 c.c. of horse serum was sufficient to render a guinea-pig susceptible. It also requires very small quantities of horse serum, when given in a second injection, to produce poisonous symptoms. The injection of 1 c.c. into the peritoneal cavity is sufficient to cause the death of a half-grown guinea-pig. The injection of .1 c.c. of horse serum subcutaneously is sufficient to produce serious symptoms. The fact that this toxic action may be developed by such small quantities of serum and the fact that exceedingly small quantities are sufficient to produce symptoms and death on a second injection, and the further fact that an immunity may be produced against this toxic action, *a priori*, places both the sensitizing and the toxic principle in the horse serum in the "hatpin group" of substances in the sense used by Ehrlich.

While at first we thought that diphtheria antitoxin had some relation to this action, we are now able to state positively that it has nothing whatever to do with the poisonous action of horse serum; further, that diphtheria antitoxin in itself is absolutely harmless. The toxic action which we have studied is caused by a principle in normal horse serum and is entirely independent of the antitoxic properties of the serum.

The chemical and vital processes of the body must be delicately balanced when we consider that the introduction into the system of a small quantity of horse serum is sufficient to break the compensation in such a way that the subsequent injection of the same substance is capable of producing sudden and serious symptoms. This remarkable phenomenon must increase our wonder of the manifold and mysterious vital phenomena which constitute life, and accentuate our ignorance of many of its fundamental processes.

An active immunity against this toxic principle may readily be established by repeated injections of horse serum, at short intervals, into a guinea-pig. Although guinea-pigs may be immunized actively in this manner, we have not yet succeeded in transferring this immunity in the blood serum or body juices to another guinea-pig. It, therefore, appears that the immune bodies, if such exist against the toxic action of horse serum, are not free in the blood and body juices contrary to the case in diphtheria.

Guinea-pigs may be sensitized to the toxic action of horse serum by feeding them with horse serum or horse meat. The fact that guinea-pigs may be rendered susceptible by the feeding of strange proteid matter opens an interesting question as to whether sensitive guinea-pigs may also be poisoned by feeding with the same serum given after a proper interval of time. If man can be sensitized in a similar way by the eating of certain proteid substances may not this throw light on those interesting and obscure cases in which the eating of fish, sea food and other articles of diet habitually causes sudden and sometimes serious symptoms?

The susceptibility to the toxic action of horse serum is transmitted from the mother guinea-pig to her young. These results on the hereditary transmission of the susceptibility to the poisonous action of horse serum in guinea-pigs may throw light on the well-known hereditary tendency to tuberculosis in children born of a tuberculous parent. There are certain analogies between the action of tuberculosis and horse serum. Both may produce a hypersusceptibility and also a certain degree of immunity. Now that we have proved this hypersusceptibility or anaphylactic action in the case of horse serum may be transmitted hereditarily in guinea-pigs, may it not throw light on the fact that tuberculosis "runs in families?"

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[1] Von Pirquet, C. F., and Schick, B.: Die Serumkrankheit, Leipzig, 1905, p. 144.

[2] Rosenau, M. J., and Anderson, John F.: "A Study of the Cause of Sudden Death Following the Injection of Horse Serum," Bulletin 29, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, Washington, April, 1906, p. 95.

Demonstrations of the hereditary transmission of acquired characters are comparatively rare in biology. While there are several recorded instances demonstrating that immunity to certain infectious diseases may be transmitted from a mother to her young, yet, as far as we know, this is the first recorded instance in which hypersensitiveness, or anaphylaxis, has been experimentally shown to be transmitted from a mother to her young.

It may be that man can not be sensitized in the same way that we have shown to be the case with guinea-pigs. In a number of instances children have been injected with antidiphtheric horse serum at short and long intervals without, so far as we are aware, causing death. Certain serums, for example, the antitubercle serum of Maragliano and the antirheumatic serum of Menzer, are habitually used by giving injections at intervals of days or weeks. In all such cases of frequent and repeated injections the amount which has been injected and the interval between the injections must be taken into account in relation to our work. Von Pirquet and Schick have shown that a second injection of horse serum into children causes an "immediate" or an "accelerated" reaction. Both the immediate and the accelerated reaction in children are characterized by symptoms of the "serum disease."

We might conclude that children may not be sensitized to the toxic action of horse serum by eating horse meat, for horse meat is a favorite article of diet in certain European countries and there is nothing on record to show that the injection of horse serum in those countries is fraught with more danger than where this diet is not used. It should be borne in mind that our work has shown that guinea-pigs may be sensitized with exceedingly minute quantities of a strange proteid, and that repeated injections cause an immunity, and it does not seem impossible that the same action may be true of food.

Man reacts to the first injection of horse serum after a period of 8 to 13 days; guinea-pigs show no reaction as a result of the first injection; both man and guinea-pigs react to a second injection. The reactions in man and the guinea-pig differ both in severity and in kind. The relation, therefore, that our observations on the guinea-pig may have in their application to man must await further study. The fact that other animals beside man and the guinea-pig react to a second injection of horse serum would seem to indicate that we are dealing with one and the same action.

We believe that our results make it probable that man may be rendered sensitive to the injection of a strange proteid, as is the case with the guinea-pig and other animals, and that this explanation must be considered as well as the *status lymphaticus*, which has heretofore been assigned as the cause of sudden death following the injection of horse serum.

Our studies do not detract from the great usefulness of diphtheria antitoxin. This sovereign remedy, when used early in the disease, decreases the death rate to almost *nil*. We can not be blind to certain inconveniences and occasional dangers in the introduction of horse serum into the system, but the benefits far outweigh the dangers. In view of these facts we are now engaged in refining diphtheria antitoxin in an attempt to eliminate this undesirable principle present in the horse serum.

DISCUSSION.

Dr. V. C. Vaughan, Ann Arbor, Mich., said that for a number of years he had been at work at poisons from bacterial cells, albumin, peptones, etc. Dr. Rosenau showed him some of his guinea-pigs inoculated with the second horse serum. They die almost exactly as Dr. Vaughan's guinea-pigs die with the isolated poison, but there is apparently this difference: With isolated poisons there is a rapid fall in temperature, and Dr. Rosenau made an experiment on one guinea-pig which practically died at the time, and there was no fall in the temperature. Every protein molecule has a poisonous group. With all the proteids he has worked with, this poisonous substance was found and has a benzine ring in it, gives the Millon test and, on being broken up with strong acids, characteristic reactions followed. This substance is a chemical nucleus of the molecule. He believes that life is molecular and that in the living cell the side-chains are the receptors. They are the side-chains which feed and break up the pabulum which comes in contact with the living cell. Oxygen is taken on and this is converted into CO_2. This is the normal metabolism. The relative distances between the atoms in the molecule are as great as the distances between the planets of the solar system. When one group gets over into range with another group and combines with it, it forms water and carbonic acid gas. That is the normal way in which the cell functionates. There is no other possible explanation of the way in which a cell feeds. By heating albumin, bacterial cells, etc., the proteid molecule is split up from the food receptors. That is the center of chemism. Dr. Vaughan thought that if Dr. Rosenau will take these proteids in the blood serum and heat them there is no doubt that he will split off this body. It is very stable. Dr. Vaughan has kept solutions for two years. They have decreased in toxicity. There is no carbohydrate in the chemical nucleus of the molecule. That is, in the side-chains which are split off. It is readily soluble in alcohol. He would call it albuminose, which is different from the ordinary albuminoses. The Rosenau-Anderson phenomenon may be explained on the ground that when you first inject the horse serum the cells of the guinea-pig split up the proteid molecule. Why doesn't the first injection kill? Because the cells of the animal body split up this substance slowly. The same is true of the isolated poison, as has been demonstrated time and time again by using many times the fatal dose. If you will take a rabbit and make him fast several days, then fill his stomach two or three times with the fatal dose, it will not kill. The poison is diffused. Now when he injects his horse serum the first time the cells of the guinea-pig decompose that proteid molecule, but so slowly that the poison which is set free has no appreciable effect on the animal. If he makes his injections every day he establishes a tolerance for the poison, so that after ten days he can inject without any effect, but when he waits ten days the cells tear the molecule to pieces quicker than before, this sets the poisons free quicker and the animal dies. Dr. Vaughan said that this is his present idea. It may be altogether wrong, but there is a wonderful field here for research. He is very certain that the phenomenon has a very direct relation to the work he has been doing, because the symptoms which he has produced are the same, unless it be on the point of temperature. He is sure Dr. Rosenau will find that when he isolates this substance it will resist up to 100 degrees. It will not do it as long as it is in the proteid molecule. The results come from the tearing off of side-chains from body cells, side-chains the functioning of which is necessary for the maintenance of life, and if one injects it directly into the blood it will kill in a few seconds or minutes, and if in the peritoneal cavity in a half-hour or so. He hoped more would take up this work.

DR. G. F. RUEDIGER, Chicago, said that about a year ago he was approached on this subject of untoward symptoms following the use of antitoxin by the representative of a manufacturer of antitoxin, who showed letters indicating that the writers got their most serious results after several injections had been given. From the reports in the literature he came to the same conclusion mentioned by Dr. Rosenau: that is, that many of the most alarming symptoms are observed after the first injection. The letters showed, however, that these doctors got very alarming symptoms, with collapse in some instances, after several injections had been given and not after the first injection. These reports are not published, as a rule.

DR. THEOBALD SMITH, Boston, said the subject had interested him since 1902, although no special effort has been made to analyze the phenomenon. He remarked that guinea-pigs which have received no preliminary doses of serum may die and that of those which have received a fairly large dose of serum at the outset nearly all are thereafter immune. The problem, therefore, is very complicated. He presented his results in the following table:

GUINEA PIGS

Preliminary treatment	Final treatment	Number treated	RESULTS			% of illness or death
			Died	Re-cover'd	No effect	
3cc—5cc diph. antitoxin	3–5cc diph. antitoxin	31	2	—	29	6.45
nothing	3–5cc diph. antitoxin	58	9	—	49	15.5
diphtheria toxin only	3–5cc diph. antitoxin	10	—	—	10	0
dipth. toxin + antitoxin (serum 1/200—1/400cc)	3 5cc diph. ant toxin	18	10	3	5	72.3

Dr. Smith said that an interval of two or three minutes elapsed between the first and second injections. None died after the first treatment. He did not know whether or not the animals were the young of guinea-pigs that had been treated.

DR. ROSENAU said that he wished that he could believe that Dr. Vaughan's explanation is the correct one, being so plain and succinct. It is very easy to expand Ehrlich's side-chain theory to fit these facts by adding, subtracting or modifying a receptor. Dr. Anderson and he had felt that they could safely let Ehrlich modify his own theory to include the new facts. With Dr. Vaughan he realized that chemistry may some day explain the complex and multiple processes constantly going on in living protoplasm. It seemed to him that science has not yet reached that stage where it can assign a definite chemical molecular structure to such a complex, highly-organized and changing substance as protoplasm. Those who constantly deal with the material sciences would like a physical or chemical explanation of life. A correct explanation of the phenomenon studied in the guinea-pig would bring nearer the solution of many problems connected with metabolism and the fundamental processes on which existence depends.

DETERMINATION OF THE NORMAL TEMPERATURE OF THE CLOSED INGUINAL FOLD OF A CHILD, AND ITS CLINICAL SIGNIFICANCE.*

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CHICAGO.

HISTORY.

The practitioner of medicine is constantly looking to science and research for methods he may use in his routine work. Most practitioners seek methods which combine two characteristics, accuracy and practicability, but these are often diametrically opposed. I have attempted to solve a problem in a manner that shall yield results at the same time accurate and easy of application to the clinical case.

Normal and pathologic conditions in the animal body are very intimately connected with, and in fact dependent on, the production, the distribution and the variation of that phenomenon called animal heat.

Medical and scientific literature is replete with all phases of this subject, and I intend to touch on only those points of measurement which may be included in the term thermometry.

The practitioner usually adopts the practice of taking the patient's temperature as one of the first steps in his routine examination. Two methods of estimation as pertains to clinical thermometry are in vogue, namely, the internal and the external. Both have their adherents and applications. Some writers contend that the only true measurement of the temperature of the body can be obtained from the internal cavities, while others state that external methods are sufficiently correct for purposes of clinical study.

The following table shows the results of observations by several authors who have made extended studies along these lines:

TABLE 1.

Maximum.		Minimum.		Mean.		Author and Place.
F.	C.	F.	C.	F.	C.	
99.05	37.2	97.7	36.5	98.42	36.9	Davy[1]: Mouth.
99.5	37.5	98.24	36.8	99.05	37.2	Gierse[2]: Mouth.
98.6	37.0	97.34	36.3	98.06	36.7	Hooper[3]: Mouth.
99.14	37.3	97.88	36.6	98.6	36.7	Hallman[4]: Mouth.
98.6	37.0	97.88	36.3	98.24	36.8	Clifford Allbutt[5]: Mouth.
100.4	38.	97.16	36.2	98.6	37.0	Wünderlich[6]: Axilla.
99.32	37.4	96.98	36.1	98.24	36.8	Leibermeister[7]: Axilla.
98.78	37.1	98.06	36.7	98.42	36.9	Damrosch[8]: Axilla.
99.32	37.4	96.98	36.1	98.06	36.7	Billet[9]: Axilla.
100.2	37.9	97.34	36.3	98.78	37.1	Billroth[10]: Axilla.
100.4	37.8	97.7	36.5	99.05	37.2	Turgenson[11]: Rectum.
98.78	37.1	97.88	36.6	98.24	36.8	Neuhaus[12]: Rectum.
99.14	37.3	98.42	36.9	98.78	37.1	Jaeger[13]: Rectum.
99.32	37.4	96.98	36.1	98.24	36.8	Nicol[14]: Rectum.
99.5	37.5	99.32	37.4	99.14	37.3	Hall[15]: Rectum.

The average of the mean observations in Table 1 for the mouth temperature is 98.47 F. (36.93 C.), for the axilla 98.43 F. (36.91 C.), for the temperature of the rectum 98.81 F. (37.12 C.). This shows that the difference between the mouth temperature and the axillary temperature is very small, approximately .04 F. (.02 C.). The variation between the axillary and rectal temperature is somewhat larger, being .38 F. (.21 C.). The maximum average for the temperature of the mouth is 99.42 F. (36.91 C.), the minimum being 98.47 F. (36.93 C.); for the axilla, maximum 99.60 F. (37.56 C.), minimum 98.42 F. (36.91 C.), and for the rectum, maximum 99.33 F. (37.41 C.), minimum 98.69 F. (37.05 C.).

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Physiology, Northwestern University Medical School.

1. Davy: Phil. Trans., London, 1845, part 2, p. 319.
2. Gierse: "Quænam sit ratio caloris organici, etc." Halae, 1842, p. 40.
3. Hooper: Med. Times and Gaz., London, 1866, vol. ii, p. 483.
4. Hallmann: Quoted from Landois Lehrbuch d. Physiol. Aufl. 3, S. 406.
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6. Wünderlich: Medical Thermometry, p. 95.
7. Leibermeister: "Handbuch d. Path. u. Therap. d. Fieberd," 1875, p. 78.
8. Damrosch: Deuts. Klinik, Berlin, 1862, vol. ii, p. 331.
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11. Turgensen: "Die Korper warme des gesunden Menschen," Leipsig, 1873.
12. Neuhauss: Virchow's Arch., 1893, vol. cxxxiv, p. 365.
13. Jaeger: Deuts. arch. f. klin. Med., Leipsig, 1881.
14. Nicol: Quoted.
15. Hall: "Text-Book of Physiology."

Many authors quote higher readings, especially for the rectal temperature, and also declare that the difference between the rectal and axillary temperature is greater, while a few are under the above figures. My observations regarding rectal temperature closely correspond with the results of the above table, with the exception that the range of variation was greater, due to the fact that the temperature range of children is more variable than that of adults.

It can not be denied that for purposes of accuracy the natural closed cavities of the body give more constant and reliable results than surface temperatures, or the artificially closed cavities as the axilla, or the groin.

The surface of the body naturally responds more quickly to the variations in temperature of the surrounding medium, and in some instances the variation is considerable. For instance, in the case of rigor the surface temperature falls several degrees, while the internal temperature is steadily rising. This is further shown by the tests made during the defervescence of fevers, in which case the temperature of the blood falls, while the surface remains at fever heat. A very rapid fall of temperature in an external part likewise corresponds to a very rapid rise in the internal parts. In the vast majority of cases the external cavities of the body, as the axilla and the groin, if properly closed for a few minutes, soon approximate the internal temperature of the body.

In taking the temperature of infants, to which class of patients I now confine my attention, we are confronted by an inability to use the ordinary oral method employed so extensively in adults, and so we are forced to rely on some other means for estimating the body temperature.

METHODS.

The following methods are being used or have been suggested by various authors:

1. Internal surfaces..............rectum, vagina
2. External surfaces................axilla, groin
3. Freshly voided urine.

The first or rectal temperature has been the accepted method and probably gives the most constant and reliable results. It has always enjoyed the greatest popularity in the practice in hospitals and institutions, while the practitioner in the private home has often made objections to it, as it is sometimes repulsive to his other patients or friends in the home. An oral temperature for the mother, following a rectal temperature for the child is likely to raise a suspicion in the mind of the former that her esthetic interests are not properly guarded by the physician. It is sometimes no justification to say that separate thermometers are kept for each purpose or that the instrument has been properly cleansed, for, in fact, that necessary procedure is sometimes neglected.

Objections are also raised to this method, as it can seldom be repeated often enough for the exigencies of many cases unless the physician is in constant attendance or is assisted by a professional nurse. It is not safe to intrust an unskilled hand with the introduction of the thermometer into the rectal cavity of an infant, for injury to the rectum has been reported in several cases from careless manipulation of the instrument both by means of force and by breakage. A rectal fistula with the introduction of septic material would present a serious condition in an infant. The rectal temperature necessitates an unnecessary exposure to cold and drafts, and is often entirely unreliable, due to contact with or the introduction of the bulb of the thermometer into a mass of feces.

Still lesss suitable is the method of taking the temperature in the vagina. The taking of the temperature of the freshly voided urine is only mentioned to be condemned.

We are left now to the consideration of the last two methods, external temperatures, taken in the temporarily closed cavities, namely, the axilla and groin. The temperature of the well-closed axilla has probably been the most used and convenient method employed by the practitioner for many years in those cases in which he did not wish, for any reason, to take a rectal temperature. The use of the thermometer in this location is not attended with many difficulties and it overcomes many of the objections to the former procedures. It is also shown by Table 1 to be approximately correct, varying from .38 F. to .21 C. from the rectal temperature.

The temperature of the groin, which has been suggested at various times by numerous authors and employed in practice by a few, possesses many advantages and gives results somewhat similar to those of the axilla. The literature to date does not give any complete records of clinical observations of temperatures taken in the groin nor does one find any description of the technic which would seem to possess many points of interest or value.

I present the following observations made on 175 individual cases: a. The age of the patients varied from 4 months to 5 years. b. Normal cases were used so far as possible. c. Mean readings were taken in all cases used as a basis for the determination of the normal temperature of the groin. d. For comparative results in the groin and rectum, individual readings were largely used without reference to number or time. e. In all observations identical conditions were obtained in each case, and these same conditions were produced so far as possible in all cases as a whole. f. The thermometers used in this work were the ordinary one-half minute self-registering clinical thermometers corrected to the same standard instrument.

TECHNIC.

The following technic was used in these cases:

I. Rectal method.
    1. The ordinary technic was used. The bulb of the thermometer was introduced well into the rectum and the readings recorded when the mercury became stationary.
    2. The child was exposed as little as possible.

II. Inguinal method.
    1. The clothing was loosened, but not removed, so as to be free from the groin.
    2. The groin was wiped dry with a towel to remove all secretions from the skin.
    3. The thermometer was placed deep in the inguinal fold and the leg allowed to return to its natural position of adduction.
    4. Readings were taken *in situ* until the maximum reading was reached.

TABLE 2.

Case.	Morning 8-10 a. m.		Night 3 5 p.m.		Mean.		Place.
	F.	C.	F.	C.	F.	C.	
1. Age 2 years	98.72	37.1	99.1	37.3	98.91	37.1	Rectum.
	98.5	36.9	98.62	37.0	98.56	36.9	Groin.
2. Age 9 mos.	98.9	37.15	99.0	37.2	98.95	37.1	R.
	98.64	37.0	98.5	36.9	98.57	36.9	G.
3. Age 4 years	99 0	37.2	98.7	37.1	98.8	37.1	R.
	98.8	37.1	98.6	37.0	98.7	37.1	G.
4. Age 18 mo.	98.2	36.8	98.5	37.0	98.35	37.1	R.
	97.7	36.5	97.9	36.6	98.0	36.6	G.
5. Age 3 years	100.1	37 8	100.4	38.0	100.15	37.9	R.
	99.8	37.7	99.8	37.7	99.8	37.7	G.
6. Age 1 year.	97 9	36 6	98.0	37.2	97.95	36.6	R.
	97.7	36 5	97.9	36.6	98.0	36.6	G.
7. Age 4 mos.	99.4	37.4	99.1	37.3	99.25	37.3	R.
	99.4	37.4	99.0	37.2	99.2	37.3	G.
8. Age 6 mos.	98.6	37.0	98.65	37.0	98.62	37.6	R.
	98.	36.7	98.2	36.8	98.1	36.7	G.
9. Age 2 years	99.1	37.3	99.3	37.4	99.2	37.3	R.
	98.6	37.0	98.7	37.1	98.65	37.0	G.
10. Age 1 year.	98.8	37.1	98.7	37.1	98.71	37.1	R.
	98.6	37.0	98.6	37.0	98.6	37.0	G.

TABLE 3.

Age.	Rectum. F.	Rectum. C.	Time.	Groin. F.	Groin. C.	Time
18 months	98.8	31.1	4 min.	98.6	37.	6½ min.
1 year	99.32	37.4	3 min.	99.0	37.2	7 min.
4 years	98.06	36.7	3½ min.	97.8	36.6	5½ min.
6 months	99.1	37.3	5 min.	99.0	37.2	5½ min.
9 months	97.8	36.6	4½ min.	97.49	36.4	6 min.
4½ years	98.0	36.7	4 min.	97.6	36.5	6½ min.
2 years	98.78	37.1	6 min.	98.65	37.0	7 min.
1 year	100.04	37.8	3 min.	99.5	37.5	5½ min.
8 months	99.0	37.25	3¼ min.	98.7	37.1	8 min.
18 months	98 8	36.7	4½ min.	98.5	37.0	4¾ min.
3 years	97.9	36.6	5½ min.	97.4	36.3	6½ min.
10 months	98.05	36.7	5 min.	98.0	36.7	6 min.
4 years	99.0	37.2	3½ min.	98.4	36.9	8 min.
5 years	99.14	37.3	4 min.	99.0	37.2	5 min.
4 months	100.2	37.9	3 min.	100.0	37.8	4½ min.
18 months	98.2	36.8	3¼ min.	97.4	36.3	3½ min.
2½ years	98.42	36.9	4½ min.	98.1	36.7	5½ min.
1 year	98.6	37.0	3 min.	98.1	37.7	7 min.
10 months	99.1	37.3	3½ min.	98.9	37.1	6½ min.
3 months	97.8	36.6	4½ min.	97.6	36.4	5 min.

RESULTS.

The few cases given above in Tables 2 and 3, selected at random from the entire number, will show that the difference between internal temperature (rectum) and external temperature (groin) is comparatively small.

The results of the entire number of mean cases under observation show that the average difference between the temperature of the rectum and the closed groin is .34 F. (.18 C.) while the normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.). The greatest difference found in any one case was 1.5 F., while the majority of the cases ranged close to average found. In a number of readings the results of the groin and rectal readings were the same, while in a few cases the inguinal temperature was higher by a fraction of a degree. In most of these cases the lower rectal temperature was found to be due to the contact of the thermometer bulb with fecal masses. In such cases the readings were discarded as not representing the true rectal temperature.

The time element, which is an important one, was carefully worked out and recorded. It was found that with the above technic the rectal method required three and one-half minutes for a complete register of the thermometer, while the inguinal method required six and three-quarters minutes. We did not find that so long a time was necessary for correct results as some authors quote for external reading.

The clinical ease of application of the two methods offers interesting results. The great majority of cases under observation were obtained from hospitals and public institutions, and so we were not forced to face the objections which many practitioners meet with in the employment of rectal temperature. We were impressed with the great facility and ease of the inguinal method. The natural attitude of the child while retaining the thermometer in the closed groin made the usual struggling and crying unnecessary, and with but few exceptions the temperature of the groin was taken without any resistance or disturbance from the child.

It was not found necessary to hold the thermometer in the hand during the process, for the natural close apposition of the thigh to the body retained the instrument in place without any trouble, with the exception of a few cases which showed extreme emaciation. In such a condition more satisfactory results may be obtained from the internal than from the external method. If it is necessary to use the external method the groin possesses obvious advantages over the axilla.

It was not feasible to consider the influence of cold or of extreme heat on the body surface as in sudden chilling or in a rapid rise in the atmospheric temperature, as the patient was protected in all cases, but a rise of .2 F. was observed in the inguinal temperature of one child directly after a warm bath.

With the thermometer in the groin and the leg retained in apposition to the body either by the hand of the nurse or the doctor, the time required for the register of the thermometer can be employed with advantage to a further study of the case.

The inguinal method is absolutely safe for the employment of the mother or the non-professional nurse, the only requisites being an acquaintance with a few simple rules of technic and an ability to read correctly a thermometer scale.

SUMMARY.

a. The normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.).

b. The variation of the inguinal temperature from the rectal temperature approximates one-third of a degree F. or two-fifths of a degree C., the average variation being .34 F. (.18 C.). That is, the inguinal temperature is approximately one-third of a degree F. (two-fifths C.) below rectal temperature.

c. The usual variation between the temperature of the rectum and groin is so small as to be practically disregarded for clinical purposes.

d. The absence of many objectionable features of the rectal method and the ease and reliability of the groin method gives the latter several points of advantage over the rectal method. These advantages of the groin method would recommend it not only as applicable in hospital practice in pediatrics, but more especially in home practice among children.[16]

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[16] For further literature on the subject the reader may consult Schofer: "Text-book of Physiology"; Cohen: "System of Physiologic Therapeutics"; Vierordt's "Physical Diagnosis"; Rotch: "Pediatrics"; Holt: "Diseases of Children"; Boilean: Lancet, Lond., 1888, vol. ii, p. 204; Starr: "Diseases of Children"; Ashby and White: "Diseases of Children"; Landois and Sterling: "Physiology"; Ringer and Stewart: "Proceedings Royal Society." London, 1877; vol. xxvi, p. 186; Crombie: Indian Am. Med. Sc., Calcutta, 1873, vol. xvi; Oertmann: Arch. f. d. ges. Physiol., Bonn. 1878, vol. xvi; Lorain: "De la temperature du corps humane." Paris, 1877, vol. i, p. 434; Redord: "Etudes de thermometrie clinique," 1874, p. 20; Davy: "Researches." London, 1839, vol. i, p. 199.

Skill Acquired by Long and Diligent Application.—In this day of "workless" methods of doing things, remarks the *Western Medical Review*, it will be wise to realize that there are certain ends which can only be obtained by conscientious as well as conscious efforts. There is no method of attaining skill and accuracy of diagnosis except that method which involves long and painstaking mental and manual education.

Special Article

A FORGOTTEN WORTHY, DR. DIEGO ALVAREZ CHANCA, OF SEVILLE, SPAIN.

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With Christopher Columbus, on his second voyage of discovery to America, in the year 1493, there came Dr. Diego Alvarez Chanca, a distinguished practitioner of much learning and professional skill, who held the position of physician-in-ordinary to the King and Queen of Castile and Aragon, and had attended their first-born child, Princess Isabella (who afterward became Queen of Portugal) during a serious illness the year before. He was a native of the city of Seville, and had been especially appointed by the Spanish monarch to accompany that expedition, not only on account of its great political and commercial importance, but also because among the 1,500 persons who came over from Europe to America in that fleet were several distinguished personages and a large number of aristocratic young gentlemen, restless and daring warriors who had done excellent service in the war just ended against the Moors. As an able practitioner, he saved the life of Christopher Columbus, who suffered a very dangerous attack of typhus fever on one occasion and pernicious malarial fever on another occasion, as well as the lives of many Spanish hidalgos who were at the point of death as victims of disease during their stay at the island of Hispaniola or Haiti, as the aborigines called it.

The second expedition was altogether different from the one sent out the previous year in quest of a new passage to the Indies. Instead of the three small caravels, carrying only 120 persons, which accomplished the most transcendent event in the history of humanity—the discovery of the western hemisphere—this flotilla was composed of three great galleons or carracks and fourteen caravels of different sizes. It was well provided with all the requisites for the establishment of a permanent settlement in the land that had been discovered the year before. Even 20 horses for as many lancers (which played a most terrorizing influence among the American Indians) were also on board those vessels.

On their arrival at the island of Hispaniola or Santo Domingo—where the year before Columbus had left 38 men in an improvised fortress, constructed with the remains of the caravel *Santa Maria*, wrecked on the reefs of the shore—Dr. Chanca wrote in the Spanish language of the fifteenth century his famous letter to the Municipal Council or *Cabildo* of his native city, which manuscript is unquestionably the first written document about the flora, the fauna, the ethnology and the anthropology of America.

Dr. Chanca's letter was written at the port of Isabella, during the last days of January, 1494: it left that port February 2, in care of Don Antonio de Torres, commander of the twelve vessels sent back by Columbus to Spain with the news of the discoveries, and arrived there April 8, 1494.

On his return to Spain Dr. Chanca published, in the year 1506, a treatise entitled "Para curar el mal de costado," (The Treatment of Pleurisy) and a commentatorial work in Latin, criticising the book entitled "De Conservanda Juventute et Retardanda Senectute," whose author was another celebrated Spanish physician named Dr. Arnaldo de Villanova. The title of the second work of Dr. Chanca is "Commentum novum in Parabolis divi Arnaldi de Villanova," which was printed in Seville, the year 1514.

Here now follow some scattered paragraphs, translated by me from the original Spanish letter of Dr. Diego Alvarez Chanca, addressed to the municipal authorities of the city of Seville, considered by competent judges to be a most remarkable document, and the best description of the first part of the second voyage of Christopher Columbus to America. I have added a few explanatory notes:

"Since the occurrences which I relate in private letters to other persons are not of such general interest as those which are contained in this epistle, I have resolved to give you a complete narrative of the events of our voyage, as well as to treat of other matters which form the subject of my petition to you. The news I have to communicate is as follows:

The expedition which their Catholic Majesties sent, by divine permission, from Spain to the Indies, under the command of Christopher Columbus, admiral of the ocean, left Cadiz on the twenty-fith day of September, in the year 1493, with wind and weather favorable for the voyage. This wind lasted two days, during which time we managed to make nearly fifty leagues. The weather then changing, we made little or no progress for the next two days; it pleased God, after this, to restore us fine weather, so that in two days more we reached the island of Great Canary. Here we put into harbor, which we were obliged to do to repair one of the ships that made a great deal of water. We remained all that day, and on the following set sail again, but were several times becalmed, so that four or five days more passed before we reached the island of Gomera. We had to remain at Gomera one day to lay in our stores of meat, wood, and as much water to drink as we could stow, preparatory for the long voyage that we expected to make without seeing land.[1] Thus it happened that through the delay at these two ports, and being calmed the day after leaving Gomera, we spent nineteen or twenty days before we arrived at the island of Ferro.[2]

After this we had, by the goodness of God, a return to fine weather, more continuous than any fleet ever enjoyed during so long a voyage: so that leaving Ferro on the thirteenth day of October, within twenty days we came in sight of land, but we should have seen it in fourteen or fifteen days if the ship *Capitana*[3] had been as good a sailer as the other vessels, for many times the others had to shorten sail because they were leaving us much behind. During all this time we had great fortune, for throughout the voyage we encountered no storm, with the exception of one on St. Simon's eve, which for four hours put us in considerable danger.[4]

On the first Sunday after All Saints' day, namely, the third of November, about dawn, a pilot of the *Capitana* cried out: "The reward, I see land!"[5] The joy of the people was so great, that it was wonderful to hear their cries and exclamations of pleasure; and they had good reason to be delighted, for they had become so wearied of bad living, and of working the water out of the leaky ships, that all sighed most anxiously for land. The pilots of the fleet reckoned on that day that between the time of leaving the island of Ferro and first reaching land, we had made 800 leagues;[6] others said 780, so that the difference was not great, and 300 more between Ferro and Cadiz, made in all 1,100 leagues.[7] I do not, therefore, feel now as one who had not seen enough water.

On the morning of the aforesaid Sunday we saw lying before us an island, and soon on the right hand another appeared. The first was high and mountainous on the side nearest to us; the other was flat and very thickly wooded. As soon as the light of day became brighter other islands began to appear on the right and on the left of us, so that that day there were six of them to be seen lying in different directions, and most of them of considerable size. . . .

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[1] From that Island of Gomera Columbus embarked eight pigs, bulls, cows and calves, sheep and goats, fowls and pigeons, seeds of oranges, lemons, bergamots, citrons, pomegranates, dates, grapes, olives, melons and other European fruits, as well as all kinds of orchard and garden vegetables. All these were the origin of their species in the New World. The expedition likewise carried implements of husbandry, shipped before leaving Spain.

[2] This is the southwesternmost of the group of the Canary Islands, formerly called the Fortunate Islands, and is named in Spanish *Hierro*.

[3] That vessel was a golleon of 400 tons' burden, that carried the admiral's flag, and in which Dr. Chanca made the trip.

[4] They believed themselves in much peril, as they certainly were in such a sudden and fierce storm, accompanied by heavy rain, rapid lightning and great peals of thunder, which are so frequent in the tropics, until they beheld several of those lambent flames called by sailors "St. Elmo's tapers," playing about the tops of the masts and gliding along the rigging, which are occasionally seen about tempest-tossed vessels during a highly electric state of the atmosphere. The sailors consider that phenomenon as of good omen.

[5] The Spanish government had offered a reward in money to the first person who would see land in this voyage.

[6] That is to say, 2,400 Spanish miles, or about 2,057 English miles.

[7] Three thousand three hundred Spanish miles, equivalent to about 2,829 English miles.

This island of Marigalante is filled with an astonishing thick growth of wood; that variety of trees being unknown to us, some bearing fruit and some others flowers. It was surprising to see that, and, indeed, every spot was covered with verdure.

We found there a tree whose leaf had the finest smell of cloves that I have ever met with. It was in shape like a laurel leaf, but not so large; I think it was really a species of laurel.[8] There were wild fruits of various kinds, some of which our men, not very prudently, tasted; and on only touching them with their tongues, their mouths and cheeks became swollen, and they suffered such a great heat and pain that they seemed by their actions as if they were crazy, and felt obliged to resort to cooling applications to ease the pain and discomfort.[9] . . .

These islanders appear to us to be more civilized than those those who had hitherto been seen before, for although all Indians have houses made of straw, yet the dwellings of these people are constructed in a much superior fashion, better stocked with provisions, and exhibit more evidence of industry, both on the part of the men and of the women. They had a considerable quantity of cotton, already spun and prepared for spinning, and many cotton blankets, so well woven as to be in no way inferior to similar ones made in our country.[10] . . .

We were able to distinguish which of the women were natives of these islands and which captives, by the distinction that a Caribbee woman wore on each leg two bands of rings of woven cotton, one fastened around the knee and the other around the ankle, by this means making the calves of their legs look big and the above-mentioned parts small, which I imagine they do because they believe this sort of adornment makes them pretty and graceful; by that peculiarity we distinguish them.

The captive women told us that the Caribbee men use them with such cruelty as would scarcely be believed; and that they eat the children which they bear to them, only bringing up those which they have by their native wives. Such of their male enemies as they can take away alive, they bring here to their homes to make a feast of them, and those who are killed in battle they eat up after the fighting is over. They claim the flesh of man is so good to eat that nothing like it can be compared to it in the world; and this is very evident, for of the human bones we found in their houses everything that could be gnawed had already been gnawed, so that nothing else remained of them but what was too hard to be eaten. In one of the houses we went in we found the neck of a man undergoing the process of cooking in a pot, preparatory for eating it.[11]

The habits of these Caribbees are beastly.

There are three islands: this one on which we are is called by the natives Turuqueira;[12] the other, which was the first we saw, is named Cayre,[13] and the third Ayay.[14] There is a general resemblance among the natives of these three islands, as if they were of the same lineage. They do no harm to one another, but each and all of them wage war against the inhabitants of other neighboring islands, and for this purpose sometimes they go as far as 150 leagues in their canoes,[15] which are a narrow kind of boats, each made out of a single trunk of a tree. Their arms are arrows, in place of iron weapons, and as they have no iron, some of them point their arrows with a sharpened piece of tortoise-shell, and others make their arrow heads of fish spines, which are naturally barbed like coarse saws. These arms are dangerous weapons only to naked people like the Indians, causing death or severe injury, but to men of our nation they are not much to be feared.[16] . . .

When the Caribbees take any boys as prisoners of war, they cut off their male organs, fatten them until they grow up to manhood and then, when they wish to make a great feast, they kill and eat them up, for they say the flesh of boys and women is not good to eat. Three of those boys thus mutilated came fleeing to us when the visited the houses.[17]

The difference between these Caribbees and the other Indians, with respect to dress, consists in wearing the hair very long, while the others have it clipt irregularly; also because they engrave in their heads innumerable cross-like marks and different devices, each according to his fancy; and they make those marks with sharpened bamboo sticks. All of them, both the Caribbee and the other Indians, are beardless, so that it is a marvellous thing to find one of these men with a beard. The Caribbees whom we have taken prisoners, have their eyes and eyebrows stained circularly around, which I think they do for ostentation, and also because it gives them a ferocious appearance. . . .

Here almost terminate the group of islands, which on the side toward Spain had not been seen before by the Admiral,[18] although we regard, as a matter of certainty, that there is land more than forty leagues beyond the southernmost of these newly-discovered islands.[19] We believe this to be the case, because two days before we saw the first island[20] we had observed some birds called "rabihorcados," which are marine birds of prey that do not sit nor sleep on the water, making circumvolutions high up in the air at the close of evening, with the object of taking their reckoning of where they are and flying after that in a straight line towards land to sleep.[21] These birds could not have been going to spend the night at more than twelve or fifteen leagues' distance from where they were, because it was already late in the evening, and the direction they took in their flight was toward the south. From all this we concluded there was land in that direction still undiscovered; but we did not go in search of it because it would have taken us out of our intended route. I hope that in a few more voyages it will be discovered.[22] . . .

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[8] Probably it was the *Kalmia angustifolia* or "Laurier des Montagnes," as it is called in the French West India Islands.

[9] I believe those poisonous fruits were a species of small apple called in Spanish *manzanillo*, or in English manchineel tree (*Hippomane mancinella*), which is still to be found in the West India Islands. The fruit of the manchineel tree produces similar effects to those here described by Dr. Chanca, also vomiting and purging. The shadow cast by the foliage of this wild tree raises a blister on the skin, the same as the guao (*Rhus metopium*), which is a wild shrub, very abundant in the Antilles.

[10] The Caribbee Indians possessed also the art of making household utensils of clay, which they baked in kilns like the potters of Europe.

[11] Mr. Justin Winsor, the accomplished librarian of Harvard College, in his "Christopher Columbus," referring to the Caribbee Indians, makes the following interesting remarks: "The contiguity of these two races, the fierce Carib and the timid tribes of the more northern islands (the Lucayans) has long puzzled the ethnologist. Irving indulged in some rambling notions of the origin of the Carib, derived from observations of the early students of the obscure relations of the American peoples. Larger inquiries and more scientific observations since Irving's time have been given to the subject, still without bringing the question to recognizable bearings. The craniology of the Caribs is scantily known, and there is much yet to be divulged. The race in its purity has long been extinct. Lucien de Rosny in an anthropologic study of the Antilles published by the French Society of Ethnology in 1886, has amassed considerable data for future deductions."

[12] This was the island of Guadeloupe, named by Columbus *Nuestra Senora de la Guadalupe*, in remembrance of the famous sanctuary of Our Lady of Guadalupe, in the province of Extremadura, Spain.

[13] This was the island of Dominica, so called by Columbus from having been discovered on a Sunday (*Dies Dominica*). It is 29 miles long and 13 miles in its greatest breadth, situated at 15 degrees 25 minutes north latitude and 61 degrees 15 minutes west from Greenwich Observatory. It has an area of 291 square miles and belongs to England.

[14] This must have been the island now known as Martinique, though Dr. Chanca does not mention in his letter having been there. It is situated 30 miles south by west of the island of Dominica and 20 miles north of the island of St. Lucia.

[15] That is to say, 450 Spanish miles, or about 376 English miles, which means as far as Porto Rico, Santo Domingo and Cuba to the North, and Trinidad, Curaçao and the coast of South America to the South.

[16] Dr. Chanca did not know at that date that the arrow points of the Caribbees were poisoned with the juice of a plant, probably the inspissated sap of the manchineel tree.

[17] Herr Alexander von Humboldt, in his "Personal Narrative of Travels to the Equinoctial Regions of America," speaking about the Caribbees, makes the following instructive observations: "Reproaches addressed to the natives on the abominable practice which we here discuss, produce no effect; it is as if a Brahmin, traveling in Europe, were to reproach us with the habit of feeding on the flesh of animals. In the eyes of the Indian of the Guaisia, the Chernvichæna was a being entirely different from himself, and one whom he thought it was no more unjust to kill, than the jaguars of the forest. It was merely from a sense of propriety that, while he remained in the mission, he would eat only the same food as the fathers. The natives, if they return to their tribe (*irse al monte*), or find themselves pressed by hunger, soon resume their old habits of anthropophagy. And why should we be so much astonished at this inconstancy in the tribes of the Orinoco, when we are reminded, by terrible and well-ascertained examples, of what has passed among civilized nations in times of great scarcity? In Egypt, in the thirteenth century, the habit of eating human flesh pervaded all classes of society; extraordinary snares were spread for physicians in particular. They were called to attend persons who pretended to be sick, but who were only hungry; and it was not in order to be consulted, but devoured. An historian of great veracity, Abd-allatif, has related how a practice, which at first inspired dread and horror, soon occasioned not the slightest surprise."

[18] Dr. Chanca refers here to the island called by the aborigines Borinquen, which is the island we know to-day as Porto Rico, and named by Columbus San Juan Bautista (St. John the Baptist). The date of its discovery was Saturday, Nov. 16, 1493. There ended the Caribbee islands, the first account of whose fierce and savage inhabitants was received with eager curiosity by the learned of Europe.

The country is very remarkable, and contains a vast number of large rivers and extensive chains of mountains, with broad, open valleys, and the mountains are very high. It does not look as if the grass is ever cut throughout the whole year. I do not think that they have any winter here, for at Christmas we found many bird-nests, some containing the young birds and the others the egg. No four-footed animal has ever been seen in this, nor in any of the other islands, except some dogs of various colors, as in our country, but in shape and size like lap-dogs. Of wild, ferocious beasts, there are none.[23]

I came near forgetting to mention another four-footed little animal, in the color of its hair, size, and fur, like a rabbit, but with long tail and feet similar to those of a rat.[24] These animals climb up the trees,[25] and many of our men who have eaten them say their taste is very good. There are many snakes, small in size, also lizards, but not so many, for the Indians consider them as great a luxury as we do pheasants. These lizards are of the same size as ours, but different in shape. In a small adjacent island, close by a harbor, which we named Monte Cristo, where we stayed several days,[26] our men saw an enormous kind of lizard, which they said was as large around the body as a calf, and the tail shaped like a lance.[27] They often went out to kill it, but bulky as it was it disappeared in the thicket and got into the sea, so that they could not catch it. . . .

There are, both in this and in the other islands, an infinite number of birds like those we have in our country, and many others, such as we had never seen. No kind of domestic fowl has been found here, with the exception of some ducks in the houses of the island Turuqueira. Those ducks were in size larger than the ones we have in Spain, though smaller than geese, very pretty, with flat crest, and most of them as white as snow, but some also black. . . .

Fish is abundant here, an article of food of which we were in great need, for our provision of meat was running short, and it is a singualr kind of fish, more wholesome than those we have in Spain. The climate does not allow the fish to be kept from one day to another, for all animal food speedily becomes unwholesome on account of the great heat and dampness. . . .

Large quantities of vegetables have been planted, and they certainly attain a more luxuriant growth in eight days here than they would in Spain in twenty.

We are frequently visited here by a great number of Indians, accompanied by their caciques, who are their captains or chiefs, and many women. They all come loaded with *ages*, a sort of turnip, very excellent food, which they cook and prepare in various ways. This food is very nutritious, and has proved of the greatest benefit to us all after the privations we endured when at sea, which in truth were more severe than man ever suffered. . . .

The little time that we have spent on land has been so much occupied in seeking a place to establish the settlement,[28] and in providing ourselves with things we needed,[29] that we have had little opportunity of becoming acquainted with the natural productions of the soil. In spite of this drawback, we have already seen many marvellous things. For instance: trees bearing wool, of a sufficiently fine quality (according to those who are acquainted with that industrial art) to be woven into good cloth.[30] And of this kind of tree there are so many, that we might load our vessels with wool, though it is somewhat difficult to gather it because these trees are very thorny, but some means can easily be found to overcome that difficulty.

There are also cotton trees as large as peach trees, which all the year round produce cotton, and in abundance.[31] We found trees which produce wax, as good both in color and smell as bees-wax, and equally useful for burning; indeed, with very little difference between the one and the other.[32] There is a vast number of trees which yield surprisingly fine turpentine.[33] Tar is found in abundance, of very good quality, too.[34] We discovered trees which, in my opinion, bear nutmegs, but at present without fruit on them, and I say so because the bark tastes and smells like nutmegs.[35] I saw one root of ginger, which an Indian was carrying around his neck.[36] There is aloes too, though not of the same kind as the one we are acquainted with in Spain, but, nevertheless, a species of aloes that we doctors use.[37] A sort of cinnamon has likewise been found, but, to speak truthfully, it is not of such a fine quality as the one we have in Spain; or, perhaps, this is so because now it is not the proper season to gather it, or the soil in which it was found growing in this vicinity is not well adapted.[38] We have also seen here some yellow mirabolans.[39] At this season they are lying under the trees, and as the ground is very damp they are all rotten, and have a very bitter taste, due, in my opinion, to their state of decomposition: but the flavor of those parts which in spite of that have remained sound, is the same as that of the genuine mirabolan. There is, besides, very good kind of mastic.[40] . . .

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[19] It is truly admirable how nearly exact was this calculation of Dr. Chanca, for the comparatively large island of Trinidad, and the north coast of Venezuela, are about that distance from Martinique, the southernmost of those just discovered islands.

[20] The island of Dominica.

[21] They were frigate or man-o'-war birds (*Tachypetes aquila*), a peculiarity of which is that they persecute and compel the much larger marine birds, common pelicans (*Pelicanus onocrotalus*), to throw up what they have swallowed, and eat it themselves.

[22] And that land was in fact discovered, as predicted by the learned author of this important historical document, in the very next voyage of Columbus. On July 31, 1498, he discovered the island of Trinidad and caught a glimpse of *terra firma* at the delta of the Orinoco river.

[23] The cayman and the crocodile are the most dangerous animals found.

[24] This little animal is the *hutia* or *jutia*, as it is called in Spanish after its Indian name, a sort of mountain rat still plentiful in those islands. There are two distinct varieties: one, large in size, called *jutia conga* (*Capromys Fournieri*), and the other, small in size, named *jutia carabali* (*Capromys Poeyi*).

[25] The present poor country people of those islands roast and eat them the same as little pigs, and their taste is really good. During the recent struggle for independence in Cuba, the patriot soldiers were compelled. on account of the scarcity and poor quality of their armament, together with lack of ammunitions of war, to live in the woods, and there they killed almost all the jutias to provide themselves with food.

[26] This small island is called now Cabras or Goat Island.

[27] This big kind of lizard was nothing else but an alligator, which is the corrupted English word from the Spanish *el lagarto* (*Alligator lucius*).

[28] They found at last a convenient place, in the selection of which the professional advice of Dr. Chanca was duly consulted. It was on the shore of a good bay on the north coast, on high ground, with two rivers of potable water near by, and the back part well closed by the thick growth of an impassible forest that protected it from being set on fire by the Indians on a night attack. There in that spot was immediately commenced the building up of the very first Christian town of the New World, to which Columbus gave the appropriate name of Isabella, his great protectress. The ruins of the stone buildings in a solitary waste constitute to-day the melancholy relic of that historical locality.

[29] The principal of those things needed were fresh vegetables and fish, and the expeditionists soon got them. The vegetable gardens planted were speedily clothed in green, producing plentifully onions and pumpkins, radishes and beets. Sugar-cane, the first ever planted in American soil, and brought by those colonizers from the Canary Islands, had also been sown, and came up splendidly.

[30] The tree to which reference is made here is called *ceiba* in Spanish, *pojot* in the French West India islands, and "five-leaved silk-cotton-tree" in English (*Bombax ceiba*, Lin.). It grows to an immense size, is beautiful in appearance, and has its seeds enveloped in a cottony substance, light as feather, which fly in the air to a great distance.

[31] Probably the species known now as Sea Island cotton, still to be found wild in some localities in Cuba, Porto Rico and Santo Domingo. All varieties of *Gossypium* require a dry and sandy soil, and generally the plant flourishes most luxuriantly near the seacoast.

[32] This tree is the wax-palm (*Ceroxylon andicola*), the stem of which is covered with a secretion consisting of two-thirds resin and one-third wax.

[33] One of those trees, besides the many varieties of pine-trees (genus *Pinus*), was called by the native Indians *hóbo* or *jóbo* (*Spondias lutea* or *Décandrie pentagynie*), which is the "mombain" with yellow fruit of the French botanists, a bulky tree belonging to the *Terebinthaceæ* family, very abundant in the Antilles and resembling somewhat the cedar.

[34] More correctly asphalt or mineral pitch, of which there are several lakes in the Antilles, notably the one in the island of Trinidad, about three miles in circumference.

[35] A species of *Myristica*, but certainly not the Myristica moschata of the Molucca islands. Probably it was the tree called by the aborigines *caumaná*, whose leaves have a smell like that of fennel, the bark a sweet taste, and in general appearance resembles the nutmeg tree.

In our present position, we are in the neighborhood of many mines of gold, not any one of which, we are told, is more than twenty or twenty-five leagues off. The Indians say that some of them are in Niti, a place in the possession of Caomabó, that Indian king who killed the Christians;[41] other mines are located in another place called Cibao, which, if it please God, we shall see with our own eyes before many days have passed; indeed, we should go there at once were it not because we have so many things to attend to that there are not enough men among us to do it at present. And this is in consequence of one-third of our people having fallen sick within four or five days after we landed here, which misfortune, I think, has happened principally on account of the toil and privations of the journey, to which must be added the variableness of the climate;[42] but I trust in our Lord to be able to restore all the sick to health.[43]

None of the natives of all these islands we have visited possess any iron. They have many implements, also hatchets and axes, all made of stone, which are so handsome and well finished that it is a wonder how they can contrive to make them without employing iron. . . .

Their principal food consists of a sort of bread made of the root of a herb, half way between a tree and grass,[44] and the *age*, which I have already described as being a kind of turnip, and a very good food certainly it is.[45] They use, to season it, a vegetable called *agi*,[46] which they also employ to give a sharp taste to the fish and such birds as they can manage to catch, of the infinite variety there are in this island, dishes, all of them, that they prepare in different ways. They have, besides, a kind of grain, in appearance like hazelnuts, very good to eat.[47] They eat all the snakes, lizards, spiders, and worms that they find on the ground, so that, according to my judgment, their bestiality is greater than that of any beast on the face of the earth. . . .

The admiral had, at one time, determined to leave the search for the mines until he had first dispatched the ships that were to return to Spain, on account of the great sickness which had prevailed among our men;[48] but afterward he resolved to send two detachments under the command of two captains, one to Cibao,[49] and the other to Niti,[50] places where, as I have already stated, Caonabó lived and ruled. These two detachments in effect departed, and one of them returned on the twentieth of the month, while the other did so on the following day. The party that went to Cibao saw gold in so many places that one scarcely dares to state the fact, for, in truth, they found it in more than fifty brooks and rivers, as well as on their banks; so that the captain said that anybody who wished to seek for gold throughout that province, would be sure to find as much as he wanted. He brought with him specimens from the different localities, that is to say, from the sand of the rivers and their banks.[51]

It is generally believed that by digging as we know how, the gold will be found in greater compact masses, for the Indians neither know how to dig nor have they any means of digging the ground more than to a hand's depth. The other captain who went to the place called Niti, returned likewise with news of a great quantity of gold found in three or four localities, of which he also brought some specimens with him.[52] Thus, surely, the King and Queen may henceforth regard themselves as the most prosperous and wealthy sovereigns on earth, because never yet, since the creation of this world, has such a thing been seen or read of. On the return of the ships on the next voyage, they certainly will be able to carry back such a quantity of gold as will fill with amazement all who hear of it.

Here I think I shall do well to break off my narrative. And I believe that those who do not know me, and hear of these things that I relate to you, may consider me prolix and somewhat an exaggerator, but God is witness that I have not exceeded by one iota the bounds of truth."

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EDITOR'S NOTE: Dr. Carl H. von Klein, Chicago, gives us the following additional information:

Dr. Chanca was appointed physician to Columbus' fleet on his second expedition by a dispatch of May 23, 1493. And on May 24 the chief accountants were instructed to pay him salary and rations as scrivener in the Indies. He became the physician of the colonies, for which Columbus credited him in his memorial to the monarchs as doing good service in his profession at a sacrifice of a large emolument which his practice brought to him in Seville. It is principally through Dr. Chanca that we have any history of Columbus' second voyage. He wrote a letter on the history of the voyage, which was sent by him to the Cathedral Chapter of Seville. The original is thought to be lost, but Navarrete in his "Historia de la Reyes Catolicos," in 1825, copied a transcript which belonged to a collection formed by Father Antonio de Aspa, a monk at the monastery of the Mejorada, where Columbus is known to have deposited some of his papers. The transcript is now in the Royal Academy of History, Madrid. Navarrete quotes a letter from Columbus to the king in reference to Dr. Chanca as it appears in a work entitled "Commentum in parabolis divi Arnoldi de Villanova ad illustris-simum, etc.," Sevilla, 1514, in fol. It read as follows:

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[36] Truly, this must have been the dry, wrinkled rhizome of the ginger-plant (*Zinziber officinalis*), so well known in Jamaica.

[37] The species called Barbadoes aloes (*Aloes hepatica*), which is still considered of an inferior quality to *Aloes socotrina*.

[38] That was probably the wild American cinnamon (*Nectandra cinnamoides*), or perhaps the white cinnamon of Winter (*Canella alba*).

[39] They most likely were the fruit of the *Myrabolanus citrino* of Gartner.

[40] A valuable resin exuding from the mastic-tree (*Pistacia lenticus*).

[41] This Indian chief was a Caribbee by birth and ruled over the province of Hispaniola, called by the natives *Mangana*, in which were the mountains named Cibao. He was the cacique who killed the 38 men left by Columbus in that island on his return to Spain from his first voyage of discovery to America.

[42] The climate suddenly changes in those West India islands from being very hot and dry to comparatively cool and very damp, due to long-continued and heavy rain.

[43] Columbus himself was also sick with malarial fever for a few days, and seven months later suffered a dangerous malady, which I have ventured to diagnose as typhus or "ship fever" in my monograph on "The Medical History of Christopher Columbus," (which is the first and only one existing), read before the First Pan-American Medical Congress, held at Washington, D. C., in 1893, and published in the English language in THE JOURNAL A. M. A., May 5, 1894, and in the Dublin Jour. Med. Sci., August and September, 1894. It has also been published in other languages.

[44] I think Dr. Chanca alludes here to the maize or Indian corn (*Zea mays*), of which the aborigines of Hayti made a kind of bread.

[45] This farinaceous root is the *yuca*, called in English yucca or Adam's needle, also known as Barbadoes nut, a fibrous tuber, very esculent, of which there are in the West Indies two well-known kinds, the sweet (*Yucca gloriosa*) and the sour (*Yucca filamentosa*), this last one being cathartic and somewhat poisonous. It contains a large quantity of starch, which is obtained from the juice of the grated yucca, and from the fibrous residue is prepared the *casabe* or cassava (a corruption of the Spanish word) in the shape of very large, round and thin sort of crackers, called in Spanish *tortas de casabe*. This old kind of Indian bread is still made in Cuba, Porto Rico, Santo Domingo, etc., and is very much relished.

[46] Red pepper, called *chilli* in Mexico (*Capsicum frutescens*).

[47] It was not a grain at all, but the palmiche (in Spanish), which is the small nut of the royal palm-tree, growing in bunches like the fruit of the date-palm. It is very much used in Cuba, Porto Rico, Santo Domingo and the other West India islands to fatten pigs with. Very likely the Indians ate it as food, and from that fact Dr. Chanca got his notion of its being a grain. Really, that nut looks like a small, green hazel-nut.

[48] The expeditionists in great number were suffering from malarial fevers, about one-third of them, as Dr. Chanca states. That disease was in those days very little known, and much less its prevention and treatment. The miraculous *pulvis febrifugus orbis americani*, also called then with the names of "Jesuits' powders" and "Countess's powders" (*los polvos de la condesa*), were not yet known to Europeans. The existence, and the wonderfully curative virtue of the mysterious "quinquina" (a corruption of the indigenous Peruvian word *kina-kina*, which signifies "the bark" *par excellence*, and was the remedy that saved the lives of Charles II of England, Louis XIV of France, and Friedrich the Great of Germany, was then only known to the aborigines of the undiscovered kingdom of Peru.

[49] In the Locayan language that word meant "stone mountain."

[50] The fertile valley later called by the Spaniards *La vega real*.

[51] One of these specimens of gold was a nugget that weighed 9 ounces.

[52] Those specimens of gold from the valley called Niti were fewer in number and of less value than the ones brought out from the mountains of Cibao. The captains of those two small detachments of Spanish soldiers were two brave young hidalgos, one named Alonso de Ojeda, who started with only fifteen soldiers, and the other, Ginés de Gorbalán, who was sent back to Spain by Columbus right after his return from this expedition to Niti, as a witness of the marvelous richness of Hispaniola. He took away with him to Spain the large nugget of gold weighing 9 ounces.

"You will inform their Highnesses of the continual labor that Doctor Chanca has undergone, from the prodigious number of sick and the scarcity of provisions, and that, in spite of all this, he exhibits the greatest zeal and kindness in everything that relates to his profession. As their Highnesses have entrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from anyone, and does not receive anything from his position equal to what he did and could still do in Spain, where he lived peaceably and at ease, in a very different style from what he does here; and, although he declares that he earned more in Spain, exclusive of the pay which he received from their Highnesses), I have, nevertheless, not ventured to place to the credit of his account more than 50,000 maravedis per annum, as the sum which he is to receive for his yearly labor during the time of his stay in this country. I beg their Highnesses to give their sanction to this salary, exclusive of his maintenance while here; and I do so, because he asserts that all the medical men who attend their Highnesses in the royal yachts, or in any of their expeditions, are accustomed to receive by right the day's pay out of the annual salary of each individual. Let this be as it may, I am informed for certain, that on whatever service they are engaged, it is the custom to give them a certain fixed sum, settled at the will and by order of their Highnesses, as compensation for the said day's pay. You will, therefore, beg their Highnesses to decide this matter, as well with respect to the annual pay as to the above-mentioned usage, so that the said doctor may be reasonably satisfied."

The following reply was made to Columbus' letter: "Their Highnesses acknowledge the justice of Doctor Chanca's observations, and it is their wish that the Admiral shall pay him the sum which he has allowed him, exclusive of his fixed annual salary. With respect to the day's pay allowed to medical men it is not the custom to authorize them to receive it, except when they are in personal attendance on our Lord, the King." Nothing is known of the previous life of Dr. Chanca. The contribution of Dr. Ybarra will add a valuable page to the medical history of America.

Clinical Notes

INTRASACCULAR SUTURE OF ANEURISMS.

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It is now four years since Matas, of New Orleans, gave to the profession the result of his reasoning and experience in the treatment of aneurisms. Proceeding on well-known grounds that serous surfaces, when brought together and held together will form adhesions, and that these adhesions in time become firm and unyielding, the intima of all vascular structures being made up of endothelium or rather lined with it, it was thought and subsequently proved by him that this membrane would behave in the same way as does the peritoneum, the adhesive properties of which enable the surgeon to perform many operations on the abdominal viscera which would otherwise be impossible. The chief question to be settled before the principle could be generally adopted was: Are the adhesions so formed strong enough to resist the blood pressure behind them? This point can only be settled by the combined experience of surgeons, and this is my reason for making this report.

My own experience with the operation of suture within the sac of the aneurism now includes four cases, three of which have already been made public.[1] A fourth case more fully reported herein completes my list. Before taking up the last one of my series, however, I shall review briefly my previously reported cases.

HISTORIES OF PREVIOUS CASES.

Case 1.—Traumatic fusiform aneurism of femoral artery.

Patient.—E. C., colored, aged 35.

History.—A wagon passed over the thigh in September, 1902, and symptoms began shortly afterward.

Operation.—The patient was operated on Feb. 23, 1903. A large aneurism of the femoral artery the size of a cocoanut was found. There were two openings in the bottom of the sac, separated by about an inch. The operation of intrasaccular occlusion was carried out step by step according to the original directions of the author of the method. No. 2 chromic gut sutures were used to close the vessels and for reinforcing sutures. There was a mild infection of the skin incision.

Postoperative History.—The leg and foot were warm and painless; there were no symptoms of impaired circulation. The patient was well fourteen months after operation.

Case 2.—Pathologic fusiform aneurism, popliteal artery.

Patient.—B. B., colored, aged 50, was a porter in a stove store and was accustomed to lift heavy weights.

History.—There was no definite history of injury. The first symptoms appeared eighteen months before operation.

Operation.—On June 4 the patient was operated on. The sac held about a quart of blood; the sac wall was thick and friable. There were two openings within the sac, separated by about an inch. The tourniquet broke during the operation and an extemporized tourniquet was made of the irrigator tube. The openings in the sac were closed by suture. The openings were on the outer wall of the sac nearer the superficial than the deep surface. A slight variation was necessary in the subsequent technic, due to the eccentric location of the vascular orifices.

Postoperative History.—The wound was dressed on the third day. Temperature was 104 and suppuration was profuse, coming from within the sac. Drainage was instituted and this gradually subsided. The wound healed in four weeks. There was no swelling or coldness or other symptom of impaired circulation in the leg or foot. This man is well to-day, never having had any trouble with his leg since leaving the hospital. Infection in this case was due to faulty sterilization after using the unsterilized irrigator tube.

Case 3.—Traumatico-pathologico-fusiform aneurism of the popliteal artery.

Patient.—W. B., colored, aged 34, a laborer, gave a history of syphilis. There was no distinct history of trauma. Tumor and pulsation were noticed three or four months before admission to the hospital.

Operation.—The Matas operation was performed July 29, 1904. The tumor was small, about the size of a goose egg. There were two openings on the inner wall of the sac, and these were sutured with No. 1 chromic catgut. The same variation as in Case 2 was used in this case. The sac wall was thick and friable in this case also.

Postoperative History.—The case ran an afebrile course. The wound healed by primary union. Some swelling of the leg persisted for two months after leaving the hospital. This patient is well to-day.

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[1] Amer. Med., Aug. 29, 1903; Trans. Amer. Surg. Assoc., 1905. In a report by Dr. Matas.

HISTORY OF PRESENT CASE.

Case 4.—Traumatico-pathologic aneurism, femoral artery.

Patient.—D. C., colored, aged 65, stated that during the Civil War he had syphilis. Arteries were moderately hard.

History of Aneurism.—He states that about a month before admission to the hospital he noticed a small lump, about the size of the end of his thumb, in the upper inner front part of his right thigh; he says that it was rather painful, but that it did not keep him from his work. He says also that there was no apparent increase in its size until one of his fellow workmen fell against his thigh; it then began to grow very rapidly and became very painful. This was about two weeks ago. Dec. 28, 1905, there was a large pulsating tumor, somewhat irregular in form, measuring 4x5 inches in its greatest diameters, the long diameter being transverse.

Jan. 8, 1906. The tumor was considerably enlarged since last examination; it consisted distinctly of two parts, divided by a slight, nearly vertical groove, the inner part being larger and more diffuse, the outer part more prominent. Approximate measurements at this time were: Longest vertical measurement, 4½ inches; longest transverse, 6½ inches.

Operation.—Jan. 8, 1906, an incision nearly vertical was made over constriction between masses of the tumor. The constriction was found to correspond to the inner border of the sartorius muscle. This was pulled aside, the sac incised and a quart or more of blood and fibrin turned out. The sac was cleansed and scrubbed. The sac walls were indefinite. Openings were sought and proximal opening was found at the upper end of the incision, hardly more than a quarter of an inch beneath the skin; it had been slightly cut in opening the sac. The intima had become detached from the middle coat and looked like a vein within the lumen of the artery, protruding slightly beyond it. An attempt was made to tie this separately, but the ligature cut through. The distal opening was found fully two and a half inches away from the proximal opening, lying slightly deeper, but presenting nothing unusual in appearance. The openings were then closed by chromic gut sutures and reinforced. On account of the openings being so superficial, the incision was greatly narrowed when these were closed. Approximation of the inner part of the sac was accomplished by retention sutures of chromic gut, four in number, passed from skin to sac, through floor of sac, back through the skin and tied over gauze pads. The outer part of the sac was not so treated, because of its small size and because I thought that compression from without would accomplish the desired result. Hemostasis was perfect. The incision was closed without drainage.

Postoperative History.—The patient's temperature and pulse were normal throughout. The wound was dressed on the seventh day and two or three drams of seropurulent fluid escaped. This was found to come from the outer part of the sac, or that part which had not been occluded by retention sutures. A gauze drain was inserted and the wound redressed daily, as the discharge in a few days had become entirely purulent. Twenty-one days after the operation the discharge had ceased and the wound healed. There was never any symptom of impaired circulation.

Feb. 22, 1906. Patient has been home three weeks and reports himself "well."

July 6, 1906. Patient is well.

DISCUSSION OF OPERATIVE PROCEDURES.

For convenience of consideration, it may be stated that the method of intrasaccular suture of aneurisms has developed three distinct procedures: 1. Intrasaccular occlusion, the Matas operation; 2. Intrasaccular repair; 3. Intrasaccular reconstruction.

1. Intrasaccular occlusion is, in most cases, the method of choice, being adapted to fusiform aneurisms or those presenting two openings within the sac, also to those sacculated aneurisms in which the single opening is very large. It is the method first employed by Matas and the method from which the other two are derived. The distinctive features of this operation consist in closing the mouths of the artery within the sac by means of closely placed catgut stitches, reinforcing the same by a Lembert suture embracing the walls of the sac, and finally, by bringing together all of the remaining sac wall and holding it together by means of retention sutures. This method has been so successful on the face of the returns that there seems but little excuse for any derivative operations except on theoretical grounds.

2. Intrasaccular repair, as its name would indicate, is the application of intrasaccular suture to the repair of the ruptured artery. It is applicable only to sacculated aneurisms, or to those presenting a single opening within the sac. It consists in closing the opening of the artery into the sac by means of Lembert sutures, and encroaching on the lumen of the vessel by utilizing the sac wall contiguous to the opening for this purpose.

This operation is applicable to both true and false aneurisms, and the record of five cases so treated without any of the usual unfavorable sequelæ would seem to show conclusively that this operation has a place in the treatment of aneurisms.

I mentioned false aneurisms because sacculated aneurisms of directly traumatic origin (gunshot wounds, stab wounds, etc.) belong usually to this class. Leave these cases alone, and if they do not bleed to death, the cells of the connective tissue confining the hematoma will take on endothelial characters and there will be formed an aneurismal sac, a false one it may be, but one that will adapt itself to plastic usages.

3. Intrasaccular reconstruction is the third procedure. In some cases of fusiform aneurisms, those having two openings within the sac, the advisability of attempting to restore the arterial wall was, and is still under consideration by some. In reporting my first case of aneurism treated by endoaneurismorrhaphy, I disapproved of such attempts on theoretical grounds. This adverse opinion has been strengthened by my further observation of the interiors of aneurisms and by the failures of attempts as reported by Matas, himself, in his collection. To my mind it is irrational to conceive that by sewing together the remains of a deceased, worn-out, broken-down vessel, one is going to get an artery. Follow the so-called successful cases and in all, unless as may happen, a thrombus forms at the site of the suture. I predict recurrence sooner or later. The suggestion that reconstruction of the parent trunk in cases of fusiform aneurisms may be tried as a temporizing expedient, seems to me to be contraindicated, unless it be in cases of abdominal aneurisms; but even here I should prefer to occlude. I should not be surprised at any time to learn that the abdominal aorta had been successfully occluded by intrasaccular suture. I certainly believe that intrasaccular occlusion offers most to the victims of aneurism of the abdominal aorta. Again, as regards intrasaccular reconstruction, I regret that this method was ever suggested by the author of endoaneurismorrhaphy because the failures which are bound to follow the one will keep the other from at once occupying the place it deserves. Careless reviewing in the medical journals is responsible for many misconceptions as regards intrasaccular suture; a glaring example of such misunderstanding is to be found in an article[2] by O. von Frisch on the treatment of peripheral aneurisms, in which, after giving the results in nineteen cases operated on in the clinic of Professor von Eiselsberg, he divides the treatment into non-radical and radical. The Matas method is classed as non-radical and is disposed of thus:

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[2] Archiv. f. klin. Chir., vol. lxxix, No. 2, 1906.

"Von den in neuerer Zeit empfohlener Operationsmethoden verdient die von Matas angegebene, wonach die Gerinnsel aus dem Aneurisma entfernt werden und aus dem Rest des Sackes mit Catgutnaht ein neues Arterienrohr gebildet wird, durch das Bestreben die normalen Verhaltnisse wieder herzustellen, besondere Aufmerksamkeit."

The reviewer regards the method as irrational and unsafe. The report in itself is interesting as showing the results obtained by a single operator, employing methods other than intrasaccular suture, viz. ligation, or extirpation or some modification thereof. The number of cases treated was 19; gangrene occurred in 2 cases; local necrosis in 4; contraction of knee in 1; not heard from, 3; recurrence, 1; death, 1.

Compare this with the results obtained in thirty cases of aneurisms treated by sixteen surgeons employing the intrasaccular suture.[3] The number of cases treated was 30; 21 of these cases were treated by intrasaccular occlusion; 5 by intrasaccular repair; 4 by intrasaccular reconstruction.

Among the twenty-one cases of intrasaccular occlusion, there were no deaths from operation, no recurrence, no gangrene, and only one instance of local necrosis. Among the five cases of intrasaccular repair, there were no deaths from operation, no gangrene, no local necrosis, no recurrence. Among the four cases of intrasaccular reconstruction, there were no deaths from operation, no gangrene, or local necrosis, but there were two recurrences (one requiring amputation, the other a secondary intrasaccular occlusion).

These results speak for themselves. Of course, as cases multiply some failures are inevitable, but facts and figures seem to show that by means of intrasaccular suture they will be reduced to a minimum. In conclusion, I would say that I have found the method simple and easy of performance, and I intend to employ it in every case of operable aneurism I may have, outside of the chest, unless there be some positive contraindication.

ANEURISM: OPERATION, RECOVERY.

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Patient.—F. M., aged 29, German by birth, left the U. S. Navy seven years ago and since then has worked as longshoreman and as tapman at the smelter.

History.—He gives a doubtful history of syphilis in 1898. In February, 1905, he was burned on the chest and face (first degree) and the right upper arm (second degree).

On St. Patrick's day, 1900, he had a row with the police in a dance house. He slipped and struck his left knee on the edge of a deep wooden gutter; slept in the police station on the cement floor (drunk), and the next morning his leg (back of the knee and calf), was "swollen as big as his thigh." He went to the hospital; there was no mark or bruise on the leg, but it was swollen from the back of the knee up to the back of the thigh, and remained so (in spite of massage and liniment) for nearly seven weeks. When he left the hospital at that time the general swelling had gone down, except for a "swelling about the size of a hazel nut," in the left popliteal space. It was stated that: "Now and then his leg hurt him a little, but he was apparently well except for the slight swelling."

Some time in the last of January, 1905, he noticed that his leg became a little stiff after sitting still and that the lump was growing more rapidly. It was then the size of a walnut. (Then he was burned, as stated above, and was in the hospital.) In September, 1905, the lump was decidedly bigger and he was in misery all the time—"could count the pulse beats in the swelling." The calf of the leg has always been a little larger since the injury five years ago—but since January, 1905, it has been decidedly larger, and is now much larger than the right, and especially when he walked it had a tired feeling, and he sometimes had to stop and rest.

Examination.—He was a well-built, well-nourished man, in good general physical health. A swelling back of the knee occupied the popliteal space, which bulged backward so as to make a smooth convex surface from side to side, instead of the normal scaphoid depression. The swelling pulsated in all directions synchronously with the pulse, and a well-marked bruit could be heard over it. The left leg below the knee was nearly one inch larger in circumference than the right, and he complained of the full tense feeling of this leg, particularly when he first goes to bed at night.

Operation.—Oct. 30, 1905, with the assistance of Drs. Green and McCreery, I operated on him at the Fanny C. Paddock Memorial Hospital at Tacoma. A tourniquet was placed around the left thigh, tightly enough to control the circulation, but it was thought better to pass a provisional loop around the popliteal artery at its origin; by drawing on this loop the pulsation could be stopped without help from the tourniquet.

I cut directly down on the aneurism sac (pushing the nerve to one side) and having thoroughly exposed it to view on the posterior surface, opened it from top to bottom, allowing some blood and some recent clots to escape. I then removed a considerable quantity of old, hardened fibrinous blood-clot which reinforced the wall of the sac proper, forming a dense, firm lining which was closely adherent to and separated with difficulty from the true wall. The sac, when thoroughly empty, was about as large as a duck egg, and showed very clearly on its deep surface two main openings from one and one-half to two inches apart, respectively, to the proximal and distal portions of the popliteal artery; there were also several other openings into branches. There was no difficulty in constructing an artery from the wall of the sac; no tube was used to secure the proper caliber. A full curved needle and continuous chromic No. 1 catgut suture was used.

After two rows of continuous suture had been placed, the assistant slacked up on the tension loop used to control the hemorrhage and allowed blood to flow through the newly made vessel; it leaked considerably between the stitches at the distal end, showing me where more stitches closely placed were needed. This was done, the circulation was tried again and found satisfactory. Perhaps had this test been made and the weak spots reinforced by other operators their results would have been satisfactory and permanent.

Instead of folding and refolding the superfluous parts of the wall of the sac to reinforce the suture line of the newly made artery, the redundant walls of the sac were sewed together by continuous layer sutures of catgut to secure extensive reinforcing approximation of the endothelial surfaces outside of the original suture line, being careful at the same time to close the openings of the smaller arterial branches passing from the sac. Loosening the control loop, which the assistant had held throughout the operation just tightly enough to prevent hemorrhage into the sac, pulsation was immediately felt, plainly and distinctly in the dorsalis pedis artery. The deeper wound was closed with tension sutures of silkworm gut and the skin by horse hair. The leg and thigh in full extension were enclosed in a voluminous cotton dressing with a snugly placed bandage and a long posterior splint.

Result.—There was an uninterrupted recovery and in three weeks the man walked out of the hospital; his only complaint was a swelling of the leg, which, though much less than before the operation, still persisted and appeared to be due to the varicose condition of some of the veins—due to the original obstruction from pressure of the aneurism.

Remarks.—Eight months after the operation the result of the operation was apparently perfect.

This Matas operation is remarkably simple and efficient—characteristic of the work of a master mind.

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[3] Matas: Trans. Amer. Surg. Assoc., 1905.

New and Non-Official Remedies

The following articles have been tentatively accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in the proposed annual, "New and Non-official Remedies." Their acceptance has been based largely on evidence supplied by the manufacturer or his agent, but to some extent on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before final acceptance and publication in book form.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

BROMIPIN.

TEN PER CENT. BROMINIZED SESAME OIL, MERCK.

Bromipin is a bromine addition product of sesame oil, containing 10 per cent. of bromine in organic combination.

It is prepared by the action of bromine chloride on sesame oil, in sufficient quantities, theoretically calculated, to produce the required brominization.

It is a yellow, oily liquid, having a purely oleaginous taste, and having a sp. gr. of 0.995 to 0.997.

If to 1 Cc. of bromipin in 10 Cc. of chloroform a few drops of phenolphthalein solution are added, the addition of one drop of half normal potassium hydroxide V. S. should produce a red color (limit of acidity). Estimation of bromine: 1 Gm. of bromipin is boiled with a solution of 2 Gm. of potassium hydroxide in 10 Cc. of alcohol until saponified. The solution is evaporated on a water bath, the residue is charred and the char is repeatedly extracted with small portions of water, and these are passed through a filter. To the filtrate 5 Cc. of nitric acid, 15 Cc. of tenth-normal silver nitrate V. S. and 1 Cc. ferric-ammonium sulphate test solution are added and the excess of silver nitrate is determined with tenth-normal ammonium sulphocyanate V. S. 1 Cc. tenth-normal silver nitrate = 0.007936 Gm. of bromine.

Actions and Uses.—Bromipin acts like the bromides, but as it yields its bromine more slowly it is thought to have less tendency to produce brominism. The combination is not broken up in the stomach, but a portion of the bromine is split off as soon as the oil enters the intestine. The oil with the remaining bromine is easily absorbed, and, similarly to other fats, is largely deposited in the tissues, where it is slowly split up. It is said to be more lasting in its action than the bromides.

Dosage.—4 Cc. (1 fluidram), increased in cases of epilepsy to from 8 to 32 Cc. (2 to 8 fluidrams); in emulsion with peppermint water and syrup, or pure, flavored with oil of peppermint.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patent No. 96,495.

BROMIPIN—33 1-3 PER CENT.

A 33 1-3 per cent. brominized sesame oil.

This preparation is also offered in capsules containing each 2 Gm., and as tablets of bromipin (bromipin solidum saccaratum) containing 1.2 Gm. of 33 1/3 per cent. brominized sesame oil, corresponding in bromine content to a teaspoonful of bromipin 10 per cent.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). U. S. patent No. 774,224; German patent, No. 150,763.

BUTYL-CHLORAL HYDRATE.

TRICHLORBUTYLIDENE GLYCOL. CROTON CHLORAL HYDRATE. CHLORAL BUTYLICUM.

This compound, $CH_3.CHCl.CCl_2.CH(OH)_2=C_4H_7O_2Cl_3$, is official in the British Pharmacopeia as Butylchloral Hydras.

Actions and Uses.—Its action is similar to that of chloral, except that it is said to be less depressing and more analgetic. It has been especially recommended for facial neuralgia.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains).

CALCIUM ICHTHYOL.

A derivative of ichthyol in which calcium is substituted for ammonium.

It is a brown, tasteless powder, insoluble in water, and containing 2.5 per cent. of calcium.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

CALOMELOL.

COLLOIDAL CALOMEL.

A soluble colloidal form of calomel, containing albuminoids.

According to the patent it is prepared by acting on a solution of sodium chloride in presence of a proteid with mercurous nitrate and precipitating the water soluble colloidal calomel by means of alcohol. The precipitate is washed with alcohol, redissolved in water with the aid of a little alkali, and from this solution the colloidal calomel is obtained either by evaporation or by precipitation with alcohol.

It forms a white-gray, odorless and tasteless powder, containing 80 per cent. of mercurous chloride and 20 per cent. of proteids. It is soluble in water, forming an opalescent solution; insoluble in alcohol, ether and benzene. It is precipitated from its aqueous solutions by acids, the precipitate being redissolved by alkalies.

It is incompatible with soluble hydroxides, carbonates, iodides, oxidizing agents, etc.

Actions and Uses.—Its action is the same as that of calomel, but it is claimed to be superior because of its solubility in water, acting more rapidly and efficiently. Calomelol is claimed to be non-irritant and particularly non-toxic. The indications for its use are the same as for calomel.

Dosage.—Internally the same as calomel. Externally it is used as a dusting powder, mixed with an equal quantity of starch or of a mixture of starch and zinc oxide, or in the form of calomelol ointment. It should be guarded from the light.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 740,855. U. S. trademark.

CALOMELOL OINTMENT.

An ointment containing 28 per cent. of mercury in the soluble form of calomelol (which see) and 2 per cent. in the insoluble form.

It is prepared by combining 45 parts of calomelol with sufficient lard to make 100 parts.

Actions and Uses.—It is a substitute for mercurial ointment, over which it has the advantage of cleanliness, and it is claimed to be distinctly superior as an inunction in syphilis, etc.

Dosage.—6 Gm. (90 grains) daily for inunction in syphilis.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 740,855.

CASCARA EVACUANT.

A preparation said to contain a bitterless glucoside, obtained from the bark of *Rhamnus purshiana*, with aromatics.

The bark, which has been stored two years or more, is exhausted with water, the liquid extract concentrated, and the bitter glucosidal substances removed, leaving the bitterless principles which constitute the active ingredients of the preparation.

It is a dark red brown liquid, with an odor and taste suggesting licorice, it being slightly and persistently, but not unpleasantly, bitter.

The glucosidal nature may be shown by the following: If precipitated from the aqueous alkaline solution by acids and redissolved in water it does not reduce Fehling's solution, but if redissolved in water, boiled with an acid and neutralized, it reduces that reagent. The glucoside is soluble in water, slightly soluble in alcohol, insoluble in ethyl acetate, chloroform, ether, benzol and benzin. The aqueous solution is colored red by alkalies, the alkaline solution may be partially precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution.

Actions and Uses.—It is claimed that this preparation possesses the laxative properties of cascara sagrada without the bitterness which characterizes the ordinary extract. It is recommended for the treatment of chronic constipation, for which cascara sagrada is one of the best medicinal agents.

Dosage.—As a laxative, 0.6 to 1 Cc. (10 to 15 minims) three times a day; as a purgative, 1.3 to 2 Cc. (20 to 30 minims) morning and evening. 4 Cc. (1 fluidram) may be given in obstinate cases.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CASCARA TONIC LAXATIVE GLOBULES

Each globule is said to contain 0.2 Gm. (30 grains) of the bitter glucosides of *Rhamnus Purshiana* suspended in a bland fixed oil, to which aromatics have been added.

The bark of *Rhamnus Purshiana*, stored not less than two years, is exhausted with water, the liquid evaporated and the extract treated with a solvent which extracts the bitter glucosides, which are mixed with a fixed oil and dispensed in capsules.

The capsules are nearly black in color and contain a fixed oil in which the extract is partly suspended, partly precipitated as a sticky, black extract of an intensely and persistently bitter taste. The odor is fragrant.

The fixed oil may be removed by ether in which the glucosidal bodies are almost insoluble, and the nature of the latter may be tested as follows: Its hydro-alcoholic solution does not reduce Fehling's solution at once, but after boiling the precipitated glucosides with dilute acids and neutralizing, the resulting product does reduce that reagent.

The aqueous solution is colored purplish red by alkalies; from the alkaline solution a yellow substance is precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution. The glucosides are partially soluble in water, ethyl acetate, and in 25 per cent. alcohol, entirely soluble in alcohol of from 50 to 80 per cent. by volume, only slightly soluble in chloroform, ether, benzene or petroleum benzin.

Actions and Uses.—The manufacturers claim that it combines the laxative action of cascara with tonic properties of the bitter principle with the advantage of concealment of the disagreeable taste.

Dosage.—One or two globules to be taken before retiring.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHINAPHENIN.

PHENETIDIN QUININECARBONIC ACID ESTER.

Chinaphenin, $CO(NH.C_6H_4OC_2H_5)(C_{20}H_{23}N_2O_2) = C_{29}H_{33}N_3O_4$, is the quinine carbonic acid ester of phenetidin.

It is prepared by the action of quinine on p-ethoxyphenyl carbamic acid chloride.

It is a white, odorless and tasteless powder, difficultly soluble in water, but readily soluble in alcohol, ether, chloroform, benzene. Acids dissolve it with the formation of soluble salts.

It gives the thalleioquin reaction for quinine salts, but forms a yellow herapathite.

It is decomposed by acids with the liberation of quinine.

Actions and Uses.—Chinaphenin combines the antiperiodic properties of quinine with the analgesic power of phenacetin, with the advantage of tastelessness and asserted freedom from symptoms of cinchonism produced by the administration of the two remedies in simple mixture. It is recommended in febrile diseases, especially la grippe; in spasmodic conditions, such as whooping-cough; in certain forms of malaria and in neuralgia.

Dosage.—Adult: 0.3 to 0.6 Gm. (5 to 10 grains) ordinarily, or 1.5 to 2 Gm. (22 to 30 grains), given in two doses as an antipyretic in neuralgia and malaria; in whooping-cough, 0.13 to 0.3 Gm. (2 to 5 grains), according to age.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 637,839. Vereinigte Chininfabriken. Zimmer & Co., Frankfurt a. M. German patent No. 109,259.

CHLORBUTANOL.

TRICHLOR-TERTIARY-BUTYLALCOHOL. ACETONE-CHLOROFORM.

Chlorbutanol is 1,1,1-trichlor-2-methyl-propan-2-ol, $CCl_3.C(OH)(CH_3).CH_3 = C_4H_7OCl_3$, produced by the reaction of acetone on chloroform.

Made by the action of caustic alkalies on a mixture of chloroform and acetone. It is a white, crystalline, volatile compound having a camphoraceous odor and taste. It is soluble in water (8-1000), in oils, and glycerin; very soluble in alcohol, ether, benzin, glacial acetic acid, chloroform and acetone.

Actions and Uses.—It is said to be absorbed unchanged, but to be decomposed in the body. It is a local anesthetic with an action weaker than that of cocaine, but sufficient to prevent vomiting from gastric irritation. Its antiseptic action is said to be fifteen times as strong as that of boric acid. It acts on the central nervous system similarly to chloral, and although the claim has been made that hypnotic doses are without effect on the circulation and respiration, independent observers have described a fall of blood pressure and interference with respiration in animals, and consider it fully as dangerous as chloral. In man 100 grains caused severe symptoms, but recovery occurred. It is claimed that no habit is induced, but this may be referable to its restricted employment. It is recommended as a mild local anesthetic, in dentistry, etc., as a preservative for hypodermic solutions, for insomnia, vomiting, and for spasmodic conditions. It is also said to be useful as introductory to general anesthesia, lessening excitement and nausea.

Dosage.—The dose is from 0.3 to 1.5 Gm. (5 to 20 grains) dry or in capsules. Hypodermically as a local anesthetic a saturated aqueous solution may be used.

CHLORETONE.

A name applied to chlorbutanol, which see.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHLORETONE INHALANT.

Chloretone (chlorbutanol), 1 Gm.; camphor, 2.5 Gm.; menthol, 2.5 Gm.; oil of cinnamon, 0.5 Gm.; refined liquid petroleum, 93.5 Gm.

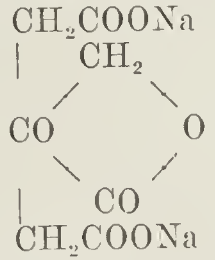
Actions and Uses.—An anodyne, antiseptic, and emollient solution for use by inhalation as a very fine spray or nebula.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CITARIN.

SODIUM ANHYDROMETHYLENE CITRATE.

Citarin,



$= Na_2C_7H_6O_7$, is the normal sodium salt of anhydromethylene-citric acid.

Anhydromethylene-citric acid is obtained by reacting on citric acid with paraformaldehyde (Schering, German patent 129,255) or with chlormethyl alcohol, CH_2ClOH (German patent 150,949). The sodium salt is obtained by treating the acid with sodium hydroxide solution and precipitating the resulting salt with alcohol (U. S. patent 715,329).

It is a white, granular, somewhat hygroscopic powder, having a faintly saline and acidulous taste, and a slightly acid reaction. It is readily soluble in about 1.5 parts of water, but insoluble in alcohol. Its solutions split off formaldehyde when heated, particularly in the presence of alkalies, and mineral acids separate from its concentrated solutions methylenecitric acid.

Formaldehyde can be demonstrated by means of Jorrisson's reaction, or by sodium nitrite and sulphuric acid, or by silver nitrate and soda solution.

It is incompatible with acids and alkalies and is decomposed by heat.

Actions and Uses.—This is one of the compounds which it is claimed increase the elimination of uric acid by forming very soluble compounds with that substance. It has been recommended for gout and chronic rheumatism.

Dosage.—1 to 2 Gm. (15 to 30 grains), largely diluted with water.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 715,239.

(*To be continued.*)

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SATURDAY, SEPTEMBER 29, 1906.

HYPERSUSCEPTIBILITY AND TRANSMITTED IMMUNITY.

The valuable paper of Rosenau and Anderson on hypersusceptibility, which was presented at the recent session of the American Medical Association in Boston, and of which the authors' abstract appears in this issue, calls fresh attention to a most important "immunity reaction." We are all familiar with the occasional examples of individual and family hypersusceptibility which may be manifested against many drugs and certain infections. This is a natural hypersusceptibility. Since the time of Koch, however, facts concerning a peculiar acquired hypersusceptibility have been gradually accumulating.

The tuberculous individual, for unknown reasons, acquires a delicate susceptibility to an injection of tuberculin which the non-tuberculous does not possess. Experience in the immunization of animals with toxins and bacteria has brought to light other examples in which the immunizing process resulted in heightened susceptibility to the substance injected, rather than immunity. Animals which have endured prolonged immunization with tetanus or diphtheria toxin may suddenly prove intolerant to further immunization even with small doses, and death is not uncommonly the result of this acquired susceptibility. The seemingly paradoxical fact that liberal amounts of antitoxin may be present in the serum of such animals has furnished the subject of immunity with one of its knottiest problems. Behring described the condition as one of "histogenous hypersusceptibility" which manifested itself in spite of the presence of antitoxin in the blood. Wassermann explained it by the assumption that the immunization brings about a heightened "avidity" on the part of the cell receptors for the toxin, which is so great that the toxin combines with the cells rather than with the antitoxin which is present in the blood of the animal. Other examples of a similar character are known.

The hypersusceptibility which forms the subject of the paper by Rosenau and Anderson may or may not be identical in principle with that alluded to above. It is all the more striking in this respect, at least, that it involves an acquired susceptibility to a substance, horse serum, which in itself on first injection appears to be non-toxic. It seems to have been the experience of a number of investigators that animals do not stand prolonged immunization with various albuminous substances, although the latter have little or no toxicity when injected in single large doses. It is probable that the many fatalities which occur in the attempt to produce immune cytotoxic serums depend on a similar principle. Arthus, in 1903 (*Société de Biologie*) published observations showing the toxicity of repeated injections of horse serum into the rabbit. Pirquet and Schick had shown also the toxicity of a second injection of antitoxin or horse serum in relation to the "serum disease." It is learned from a recent publication by Otto[1] that Theobald Smith had noted the frequent toxicity of a second injection of horse serum as early as 1902, and it was through the suggestion of Smith that Otto undertook a study of the subject. That Smith's attention had been called to the phenomenon was also brought out in the discussion which followed the reading of the paper. This fact would seem to detract nothing from the originality of the work of Rosenau and Anderson, however, since they apparently encountered the phenomenon independently.

The results obtained by Rosenau and Anderson coincide in all essential respects with those of Otto. A study of the details of their experiments[2] indicates the thoroughness with which the work was conducted, and their conclusions are based on a very extensive material.

The phenomenon has a direct and important bearing on the serum disease of Pirquet and Schick, and throws probable light on the disturbing results which occasionally (rarely) follow the administration of antitoxin in man. They prove conclusively, as does Otto, that the untoward effects which may be caused by an antitoxic serum are absolutely independent of the antitoxin which the serum contains.

It is probable that a satisfactory explanation of the phenomenon has not yet been reached. That the hypersusceptibility is "histogenous" was demonstrated by Rosenau and Anderson; it is not a property which resides in the serum of the animals. The explanation offered by Vaughan in this discussion is interesting, but is difficult of proof.

The work is important not only because of its bearing on serum intoxication, but also because of its relation to the general subject of hypersusceptibility to infectious diseases. It is probable that the phenomenon, which seems destined to be known as the Theobald Smith phenomenon, in pursuance of the precedent set by Otto, will prove to be another instance in which a problem of primary theoretical interest may yield results of great practical value.

Other important work from the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service is found in the last bulletin, just issued.[3] In this bulletin Anderson confirms the work of some previous observers (Wernicke and others) concerning the ability of the female guinea-pig to transmit an original immunity to diphtheria to her offspring. In the experiments conducted by Anderson, the surprising observation was made that a guinea-pig which had been treated with a mixture of diphtheria toxin and antitoxin transmitted distinct immunity to her offspring, whereas animals which had been treated with the toxin alone transmitted no such immunity. This seems not to have been explained satisfactorily as yet. The transmitted immunity appeared in each of four successive litters, but was not passed into the third generation.

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[1] Das Theobald Smithsche Phänomenon der Serum Ueberempfindlichkeit, v. Leuthold Gedenkschrift, vol. 1.

[2] Bulletin 29 of the Hygienic Laboratory, U. S. P. H. and M. H. Service.

Emphasis is placed on the importance of this transmitted immunity, as well as on the transmitted hypersusceptibility to serum (Rosenau and Anderson) in the testing of toxins and antitoxins by manufacturers of serums. The value of an antitoxin may be greatly overestimated, on the one hand, by testing it on a guinea-pig which has inherited an immunity to diphtheria from its mother; on the other hand, the results of the tests for bacterial or toxic impurities may be equally erroneous if they are performed on guinea-pigs which have inherited a fatal susceptibility to serum from a "used" mother.

It is worthy of comment that the government, in maintaining laboratories for practical purposes, has found it necessary to place these laboratories under the direction of men who have the investigative spirit, and to encourage this spirit by providing facilities for pure research. Experience has taught well the lesson that the practical when thoroughly divorced from the theoretical ceases to be practical.

A NATIONAL DEPARTMENT OF HEALTH.

The government is designed for the welfare of the people, and in a government like ours, of the whole people, one of the first considerations in the people's welfare is their health; material resources are secondary. Without an able-bodied race, no country can prosper, and it is the favoring health conditions of the temperate zones that have made the races inhabiting them the rulers of the world. With the artificial conditions of civilization, however, the problem of the public health comes more and more to the front, and the old *laissez faire* methods show their deficiencies. More than one country at the present time is seeking methods and means to check the degenerative tendencies that threaten them, and the question whether our civilization is to last seems largely to depend on the success of these efforts.

The paper of Professor Norton, published in this issue of The Journal, puts forth the economic side of the question as fully and fairly as any publication of its compass that has lately appeared. Coming from a nonmedical man, it is an encouraging sign. Professor Norton shows how great a waste exists at the present time from preventable deaths, sickness and conditions of physical and mental inefficiency, due largely to the lack of a wise general governmental supervision. We have our pure food laws and our quarantine laws which go a certain way toward checking these evils, but they are, after all, only a beginning of what is needful. We have a great deal of government in regard to health matters, but it is local, unsystematized and often conflicting in different sections of the country and is distributed also, so far as it relates to national affairs, under different departments of the government, thus preventing the best results. The plea for a national department of health could be, to a certain extent, met by the consolidation under a single head of already existing bureaus without a great additional expense, but completeness and full efficiency would demand more than this.

The plan laid out by Professor Norton covers a much broader field, and, while it may not be absolutely realizable at once, the consolidation of the existing bureaus would be a great step in advance and could be enlarged on as wisdom and experience would dictate. The work done on less than a million and a half by the Public Health and Marine-Hospital Service is itself an indication of what a wise expenditure of only a moderate amount of public funds can accomplish. The protection of our southern coast from yellow fever, which it has practically accomplished, is worth annually many times the whole cost of that department, but this is a local service which principally benefits a section and not the whole country. An intelligent direction of health matters, including far more than that bureau at present has under its control, would be of still more widespread and general advantage. A considerable amount of the work done under the Agricultural Department, which is of the utmost value, including, for example, the admirable work of Dr. Wiley and that now assigned it under the pure food law, should properly be consolidated with the sanitary functions of other departments. Then a cabinet officer with expert knowledge of health matters could administer all these and other new departments to much better advantage than under the present system.

The value of an intelligent health administration to the power of the nation in war was never better exemplified than in the recent Russo-Japanese war, and the victories of peace are likewise dependent on the preservation of the national health efficiency. It is not only the man behind the gun, but the man behind everything else tending to national prosperity that counts, and the sound mind in the sound body is a real element in national as well as individual prosperity. How far criminality is concerned with disease is an important social question, and we know what the tendencies of certain sociological thinkers are on this matter. Leaving all extreme ideas aside, there is no question but that a healthy people, other things being equal, is more amenable to moral improvement than one in whom disease conditions prevail. A department of health, exercising a wise supervision over all subjects of national bodily welfare, could thus indirectly, at least, be a valuable adjunct to good government.

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[3] Maternal Transmission of Immunity to Diphtheria Toxin and Hypersusceptibility to Horse Serum in the Same Individual. Bulletin 30, Hygienic Laboratory, U. S. P. H. and M. H. Service.

The importance of health matters to any civilized country is greatly enlarged at the present time by the vastly increased facilities for communication, and sanitary questions of international importance are constantly arising. The importance of the office is still further magnified and its necessity as a special department with a cabinet officer at its head is strongly accented by the international complications arising involving sanitary questions of the highest importance. Moreover, as this country becomes more and more a world power the scope of such a department is greatly widened. For these, in addition to the economic reasons so well stated by Professor Norton, the advisability of such a department is all the more obvious. We can hardly add to the economic argument so well stated in the article, excepting by emphasizing the important truth that what is right is also profitable. Righteousness exalteth a nation, and governmental attention to the physical salvation of the people is, if anything else is, in the line of practical and political righteousness.

THE AMERICAN MEDICAL DIRECTORY—A PRELIMINARY STATEMENT.

One of the apparently new lines of work inaugurated by the American Medical Association is the compilation and publication of a Medical Directory, based on material drawn from the official records of the various state licensing boards. We say "apparently" advisedly, for this feature of the Association's activity is only an extension of a work in which it has always been interested, namely, the elevation of the personnel of the profession and the safeguarding of the public health through the elimination of those who, either on account of lack of proper training, or owing to deficient mental or moral endowment, are unfit to practice medicine. Almost from the time of its organization the Association has striven for the accomplishment of these ends.[1] It has repeatedly declared in favor of the state laws regulating the practice of medicine and establishing examining and licensing boards. It has always favored the enforcement of these laws.

The practice of medicine in a civilized community is something more than the pursuit of a private business or calling. As Huxley showed, the physician bears a peculiar relation to the state, which justifies the civil government in demanding a certain amount of preparation and a demonstration of fitness from each candidate before allowing him to practice medicine. This principle, comparatively new in Huxley's day, is now universally recognized. Each state and territory now has a law establishing and maintaining a board for this purpose. No one is allowed to assume responsibility for the lives and health of the public, unless he is first granted a license by a board of the state in which he desires to practice. This law is of benefit to the profession by keeping the unfit out of its ranks; it is of much greater benefit to the public by protecting it against the untrained and the unprincipled.

The regulation and protection of public health is one of the police powers reserved by the constitution to the state. Each board, therefore, has jurisdiction only over the territory of the state which created it. Any coöperation between state boards is, necessarily, purely voluntary. It is to the interest of the public as well as of the profession that there be as much uniformity as possible in the standards of these boards and that each be cognizant of the work of the others. Our state laws regulating medical practice are, to-day, an absolute necessity. It will also be conceded that state licensing boards have wrought a marked improvement in the medical profession and have also been of great benefit to the public. The need of to-day, however, is closer relation, more coöperation and greater uniformity among the state boards. Such coöperation must be voluntary and can only be brought about by demonstrating the value which each board can be to the others. Since the work of the licensing body is the acceptance of the fit and the rejection of the unfit, the greatest service which any board can render is to share with the other boards the knowledge and experience it has gained, regarding those whom it has accepted or rejected. Some attempts have been made along this line. Of 70 licensing bodies, 22 have published, at different times, a list of those licensed to practice in their state. Some of these reports are excellent and are a credit to the boards issuing them; but their circulation usually has been confined to the states which issued them and to members of other boards to whom they have been sent. In some cases, they have been buried in the annual reports of the board. With a few exceptions, they have been published at long intervals and the various editions have not been accessible to the public nor, in many cases, to the profession. With limited means and large responsibilities, the average board is not able to expend much money in revising or printing its records.

Now, a law is of no value unless it can be enforced. It can not be enforced unless it is possible to detect violations of it. There must, therefore, be some ready means of ascertaining whether or not a given physician has complied with the law. In some states, it is practically impossible to determine this point; in many more, it is difficult and expensive. In most states, in order to ascertain the legal standing of a physician, it is necessary to write to. or to call on, the secretary of the state board. In a number of states, even this would not suffice, since the records are kept by the various county clerks. In one state, there are 67 counties, each with its separate register of licensed physicians. In one of these counties, there are over 7,000 names on the records; in another county there are over 3,000. These names are entered in the order in which the applications were made, without alphabetical arrangement or index. To determine positively, whether or not a physician is licensed to practice medicine in this state might require the examination of every name on the 67 county records. Such an amount of work makes the enforcement of the law impossible. In another state, where, previous to 1890, a similar system of registration was in force, it would be necessary to examine the records of the state board, which only go back to 1890, and then to examine the records of each of the 22 counties in the state. Who is responsible for the enforcement of the registration law in states which depend on county officials for their records of medical practitioners? The county clerk is supposed to be, but his sole interest is the collection of a fee for each license which he registers. Since it can not be proved that a given individual has violated the law, it is manifestly impossible to convict him.

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[1] Dr. Bartles introduced the following resolution: "Resolved, That the union of the business of teaching and licensing in the same hands is wrong in principle and liable to great abuse in practice. Instead of conferring the right to license on medical colleges, and state and county medical societies, it should be restricted to one board in each state, composed in fair proportion of representatives from its medical colleges and the profession at large, and the pay for whose services as examiners should in no degree depend on the number licensed by them."—Proceedings A. M. A., May 5, 1846, vol. 1, p. 19.

The weak point in our system of medical legislation is that each state is a separate unit, keeping its own records, issuing its own licenses and publishing its own roster, if it does so, without any reference to other states. It has been recognized that immense good would result if all the information collected by the various state boards could be properly arranged and placed at the disposal of all of the boards, to be used for the benefit of the profession and the public. But there has been no systematic effort made to inaugurate such a work. It is evident that it is fundamental and that it must eventually be done by some one. It is obviously unreasonable to expect any one state board to assume the labor and expense of this work. It is equally out of the question to expect the general government to undertake it. It is too expensive and unremunerative for private enterprise. The medical profession itself, therefore, is the only agent left to undertake it. It has hitherto been impossible for the profession to undertake this task, owing to the lack of funds and incomplete organization. These two obstacles having been removed by the work of the past few years, it was decided at the Portland session that the time had come for the organized profession to take up this needed reform.

Accordingly, in September, 1905, correspondence was entered into with the secretary of each licensing board; the objects of the Association were clearly set forth; the advantages which would accrue to each board were explained and the coöperation of each board was requested. Without exception, this was given cheerfully and willingly. Complete copies of the official records of the board, containing the names of all physicians licensed to practice medicine, were obtained. These names were properly arranged and indexed. In states having a county system of registration, it was necessary to secure copies of the records from each county clerk. This work showed clearly the great need of a reform such as the Association had undertaken. Almost without exception, those records which were kept by county clerks or by lay officials were found to be in a deplorable condition of inaccuracy and incompleteness. In some cases, obtaining the desired information entailed much labor and expense and required much patience. Eventually, however, complete copies of the records of all licensing or registering bodies were secured. At the same time, arrangements were made by which these records are kept corrected up to date, through reports furnished by the secretary of each board, following examinations.

Arrangements are also being made by which each secretary will send to this department information regarding physicians whose licenses have been revoked or who have attempted to deceive the board by means of false statements or by forged or altered diplomas or credentials. This matter will be distributed to each board by the Association. In this way, each board will profit by the experiences of all.

Turning now to the medical colleges, we find a condition similar to that which obtains among registering boards. There has been, heretofore, no central bureau for collecting and preserving information regarding medical graduates. When a college became extinct, its records were often irrevocably lost. There has been no way of verifying statements regarding graduates, and consequently, in many cases, both the public and the profession have been imposed on. Accordingly, arrangements have been made with the existing medical colleges by which the names of all graduates for the past five years have been obtained, thus supplementing a list of previous graduates already in the hands of the Association. Hereafter, the name of each new graduate, with biographical information regarding him, will be obtained by the Association at the time he receives his degree. This will thereafter be preserved in permanent form. Colleges that request it will be provided, at any time, with information in the possession of the Association.

It will thus be seen that the Association, in the last year, has compiled a complete list of legally qualified physicians and a fairly complete list of medical graduates. This material is now stored in the vaults of the Association. Such a work has never before been undertaken. This department of the Association is now in a position to supply information regarding practicing physicians either to the state boards or others. The immediate response of every one of the secretaries of the state boards shows that they appreciate the need of such a work. The Association has established what is practically a central bureau of information regarding the medical profession of the entire country. It is now possible for the secretary of every state board, as well as every state health officer, to avail himself of any information in the possession of any of the 70 boards. The Association now has, for the first time in its history, a legal basis for the compilation and publication of personal and biographical matter relating to the profession.

It will thus be seen that the Directory is only a secondary and subsidiary matter, which is subordinate to a much greater work which the Association has undertaken. The American Medical Directory is a compilation of a part of the facts regarding each physician as they now appear on the records of the Association. The consideration of medical directories in general, as well as of the points of difference between the American Medical Directory and other directories, will be reserved for future discussion.

COMMERCIALISM AND DRUG ADULTERATION.

The New York City Board of Health has recently shown by careful investigation that a considerable portion of the drugs which have been sold in the past year and even those which enter into the composition of physicians' prescriptions are either below grade in quality or are absolute substitutions of cheaper for more expensive materials in order to secure more profit for the dealer. It is, of course, an extremely sad state of affairs when human life and illness and suffering are trifled with in this manner for the paltry difference in profits that may thus accrue. The discovery has given rise to no little pessimistic discussion in the newspapers, as if this were the first time that any such unfortunate lapse from rectitude had been noted and as if our generation were by that so much worse than any of its predecessors. The adulteration of drugs, however, has nearly always been a source of difficulty in the practice of medicine, and this is only another example of a very human tendency.

The reason for the present manifestation of human fallibility is not far to seek. In recent years druggists have come to be tradesmen much more than they used to be. The apothecaries were a guild in the olden times and are supposed to preserve a considerable degree of professional spirit. Unfortunately, the custom of selling various proprietary medicines at cut rates in order to attract custom has led more and more to the invasion of a thoroughly commercial spirit into the drug business. Not satisfied with cutting rates on "patent medicines," some druggists have advertised cut rates also in the filling of prescriptions. As a rule, this could be accomplished profitably only by purchasing drugs from the wholesaler at prices cheaper than they could be furnished if they were of the proper standard of purity, or else by substituting cheaper drugs for those named in many prescriptions. The wholesaler is to blame as much, if not more, than the retail druggist, and it is to be hoped that the punishment for the offences discovered will be meted out to the real culprits in the case.

It would be eminently desirable, however, that the modern druggist should make much more of a specialty of prescription filling than of the many side issues which now occupy so much space and attract so much attention in the apothecary shops. Physicians can do much to bring about an improvement in this matter by encouraging patients to take prescriptions to such pharmacists as properly maintain their professional dignity as apothecaries and do not allow the commercial spirit to obtrude itself unreasonably in their business.

STATE SOCIETY AUXILIARY COMMITTEE.

At the last meeting of the Ohio State Medical Association the following by-law was adopted: "At the annual meeting for the election of officers each component society shall appoint one of its members as a member of the Auxiliary Committee on Public Policy and Legislation, and the secretary shall send his name and address at once to the secretary of the State Medical Association. The Committee on Public Policy and Legislation of the State Medical Association shall formulate the duties of this Auxiliary Committee and supply each member with a printed copy." It is the intention to have this committee look after the interests of the public and of the medical profession by assisting in the suppression of the "patent-medicine" evil, prosecuting fraudulent and illegal practitioners by inaugurating a system of registration, abolishing medico-political partisanship from public office, and assisting the proper public authorities in the suppression of criminal abortion. The work of this committee is an important one, and by having its members distributed over all parts of the state the results of the work done in this direction by the state association will become more effective and far reaching than ever before. Other state societies may well follow in the footsteps of the Ohio association by providing for the appointment of similar committees. It is certainly a step in the right direction.

A MODERN SUPERSTITION.

It is usually supposed that nowadays education has practically done away with superstition, and that whatever manifestations of it are left are to be found only among the ignorant and almost exclusively among the foreign immigrants into this country who have not had the opportunities that have been provided here. The recent automobile race on Long Island, however, almost provided another striking example of the influence of superstition even on educated people. There were to have been fifteen contestants, but fortunately the number was reduced to twelve before the race actually took place. Last year, with more contestants in it, though the different machines were numbered in rotation, the number thirteen was not given out, because it was understood that the drivers objected to riding with so dread a talisman on their cars. They are perfectly willing to risk their lives making records of over sixty miles an hour on an ordinary road, but they are not willing to take the awful added danger that would be incurred by identifying themselves with the number thirteen. It is well known now that most of the passenger steamers, at least those which leave the eastern ports of the United States, do not have state-rooms numbered thirteen because of the objection which many passengers have to traveling in such a room. Many of the hotels that have been built recently have eliminated the number thirteen from their series of rooms for a similar reason. Is it any wonder that with this senseless superstition still rampant, people should continue to think that various peculiar methods of treatment and even nonsensical remedies will relieve them of their pains and ills? What is needed, evidently, is not education in general, but specific training in a state of mind and a development of character that will prevent the domination of such foolish remains of the ignorance of former generations.

NEO-VITALISM.

A considerable portion of the recent opening address[1] of Professor Gotch before the Section on Physiology of the British Association for the Advancement of Science was given to an attack on "neo-vitalism." The principal point made against it was the objection to the admission that physico-chemical explanations must necessarily be insufficient to explain the vital phenomena, and the claim that such admission obstructs physiologic progress. This seems to us equivalent to a confession of weakness and, as it were, an inference that human knowledge is exhaustible or must be assumed so to be in order to encourage the workers. Why should the admission of the fact that there will always be something ahead of us to be explained be a discouragement to the physiologist any more than it is to the astronomer to recognize the fact that he can not look forward to the establishment of the limits of the universe or of infinite space? Has the work of those investigators who have admitted their limitations—men like Pasteur and Faraday, for example, not to mention a host of other workers—been any less fruitful in chemical and bio-chemical research than it would have been but for such recognition? It seems to us doubtful. It would be more modest in physiologists who oppose neo-vitalism so strenuously to profess a little agnosticism in the matter if they are unable to accept the unwelcome element of "mysticism" which they seem to think the doctrine involves. It would also be more scientific, it seems to us, to use less of the argument of expediency against the use of the term. It may be an assumption to say that life is always going to be unexplainable, and there are certain objections to the use of the term vital force which, we think, would be more properly made by the so-called mystics than by their opponents. It is, however, equally an assumption to claim that it will be thus explainable and is also lacking in proof.

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[1] Nature, Aug. 23, 1906.

Medical News

CONNECTICUT.

New Hospital for Waterbury.—It is announced that $31,006 has been raised for the erection of a Roman Catholic hospital in Waterbury and that the site for the institution has been purchased.

Communicable Diseases.—During August 4 cases of smallpox were reported from two towns; 45 cases of measles from 20 towns; 35 cases of scarlet fever from 22 towns; 2 cases of cerebrospinal fever from one town; 127 cases of diphtheria from 2 towns; 50 or more cases of whooping-cough in 19 towns; 213 cases of typhoid fever in 36 towns, and 37 cases of consumption in 21 towns.

August Deaths.—During August, 1,639 deaths were reported in the state, equivalent to an annual death rate of 19.5 per 1.000. The deaths from infectious diseases numbered 231, or 14.1 per cent. of the total mortality. The principal death causes were: Diarrheal diseases, 337; diseases of the nervous system, 156; consumption, 123; accidents and violence, 110; heart disease, 105; pneumonia, 44; whooping-cough, 39; typhoid fever, 30; diphtheria. 16; measles, 7; scarlet fever, 6; malarial fever, 5, and erysipelas and cerebrospinal fever, each 2.

DISTRICT OF COLUMBIA.

Physicians for the Poor.—The secretary of the district board of charities has recommended that an allotment of $8.030 be made for hiring 22 physicians, at the rate of $1 per day, and that $2,370 be allotted for medicines, nursing and other incidental expenses, for the next fiscal year, beginning July, 1907.

Must Not Drive Fast.—Dr. Milton H. Prosperi, Washington, brought before the district branch of the police court, charged with fast driving, claimed in extenuation that when a physician is making an emergency call he should be allowed to drive faster than the police regulations allow. He was informed that he must observe the law against driving at an excessive speed and was fined $20, which was paid promptly.

Typhoid Fever.—Washington is suffering from an epidemic of typhoid fever, which is remarkable, as it has come immediately on the completion of a three-million-dollar filter plant, whose purpose is to render the water supply pure and sanitary. Dr. Lloyd McGruder believes that the infection is due to a contaminated milk supply, but Dr. William C. Woodward, district health officer, takes issue with Dr. McGruder, and states that every plant from which milk is shipped into the district is systematically inspected by officers of the health department and that in the absence of a laboratory no bacteriologic examination can be made of the milk supply.

Hospital News.—Work is being pushed for the early construction of the Walter Reed U. S. A. General Hospital. The building, which is to cost $200,000, will be constructed of red brick, will be 193 feet long by 25 feet wide, and will be about 125 feet from the ground to the top of the central dome.——Potomac Hospital, which was organized in April last and opened to the public by the colored physicians of the city, for giving free medical treatment to the worthy poor, without regard for race, creed or sex, has proven to be too small for the needs of its applicants, and it is now the hope of the directors to equip and maintain a larger general hospital. More than 1,200 patients have been treated in the hospital up to this time.

GEORGIA.

Hospital Notes.—The city council of Columbus has advertised for bids for the removal of the city hospital from its present site to a more desirable location, and it is probable that an entirely new hospital will be erected with a nurses' training school in connection.——The Atlanta School of Medicine announces the opening of its own hospital, at the corner of Bartow and Cain streets, on October 1. Two wards, with accommodation for 16 patients, have been built during the summer.

College Notes.—The Atlanta School of Medicine opened for enrollment, September 15, and lectures will begin September 26. It has been decided by the faculty that all courses shall be in separate calendar years and the length of the term has been increased from six to seven months. The new building is practically completed and ready for use.——The new building of the Atlanta College of Physicians and Surgeons, erected at a cost of $75,000, will be ready for occupancy about October 1. ——The Carnegie donation will be used in fitting up the old Southern College building, which is to be known in the future as the Carnegie Pathologic Institute.

Personal.—Dr. Marion M. Hull has been elected professor of materia medica and therapeutics at the Atlanta School of Medicine, vice Dr. Charles D. Hurt, deceased.——Dr. William S. Elkin has been elected professor of gynecology and obstetrics in the Atlanta College of Physicians and Surgeons, vice Dr. Hunter P. Cooper, deceased.——Dr. Frank M. Ridley, La Grange, has been appointed chief surgeon of the West Point Route, to succeed the late Dr. Hunter P. Cooper.——Dr. Karl H. Hall, Atlanta, has been appointed assistant surgeon, with the rank of first lieutenant, in the Governor's Light Artillery, which is officially known as the Second Field Battery, N.G.,Ga.

ILLINOIS.

Diphtheria.—Kewanee reports a number of cases of diphtheria with two deaths, and many cases of so-called "sore throat."

Itinerant Vendors.—The State Board of Health has officially warned all municipalities to refrain from issuing licenses to itinerant vendors of drugs, who do not hold licenses issued by the board, according to the provision of the statutes.

Personal.—Dr. Charles E. Crawford, Rockford, has been reelected physician of Winnebago County.——Dr. A. D. Winsor has been appointed resident physician of the Maplewood Sanatorium, Jacksonville, vice Dr. Albert H. Dollear, resigned.

Treatment for Consumptives.—The Ottawa tent colony has decided to build a new infirmary 150 feet long by 20 feet wide. ——In the quarterly bulletin of the State Board of Charities the exceptionally beneficial results of the tent colonies at the various state insane hospitals for consumptive patients are given in detail. The tent colony at the Illinois Hospital for the Incurable Insane, Bartonville, shows a per capita cost of only $50 per year.

Chicago.

Cocain Users Fined.—Two negroes charged with using cocain were each fined $10 and costs September 20. Four other men arrested at the same time and place were discharged.

Addition to Hospital.—The Washington Park Hospital Association have the plans prepared for a three-story addition to the institution, to be erected on a lot 50 feet by 150 feet adjoining the hospital.

Trust Deed Given.—The Post Graduate Medical School, through its president, Dr. W. Franklin Coleman, has given a trust deed on its buildings and grounds to secure a loan of $24.000 for five years at 5½ per cent.

Maternity Hospital Planned.—The free maternity department of the American Daughters of the Revolution has made plans for a maternity hospital for the North Side, to be located near Lincoln Park, and to have accommodations for about 15 patients.

Personal.—Dr. and Mrs. Henry P. Newman leave October 1 for San Diego, Cal., for the winter.——Dr. and Mrs. Frederick Tiec have returned from abroad.——Dr. William Ewart, London, who has been visiting Chicago, has started for Boston on his way home.

Increase in Typhoid Fever.—The health department has noticed a serious increase in typhoid fever, due, it is believed, to milk, contaminated by polluted water used in washing the cans and other receptacles. The department has closed one infected milk depot and has excluded the milk from two dairy farms, pending examination.

Deaths of the Week.—During the week ended September 22, 582 deaths were reported, equivalent to an annual death rate of 14.81 per 1,000. During the corresponding week of 1905 512 deaths were reported. Acute intestinal diseases caused 122 deaths; consumption, 78; Bright's disease, 44; violence, including suicide, 39; heart disease, 36; pneumonia, 35, and cancer, 25.

Physicians Play Golf.—At the annual tournament of the Chicago Physicians' Golf Association Dr. Charles W. Heywood, Riverside, defeated Dr. William E. Code for the championship; in the second flight finals Dr. William H. Wilder was victorious; Dr. J. C. Hollister won the third flight honors, and Dr. William A. Pusey the honors in the fifth set. At the annual election Dr. John Ridlon was chosen president.

INDIANA.

Urges Detention Hospital.—Dr. Everett E. Hodgin, police surgeon of Indianapolis, urges the city to take steps toward the establishment of a detention hospital for the care of insane patients, as at present there are few facilities for the care of the mentally deranged.

Hospital Opens.—The new hospital of the State College of Physicians and Surgeons, Indianapolis, affiliated with the State University of Indiana, was opened September 15, when 15 patients were removed from Camp Benjamin Harrison to the institution. At the formal opening the attorney-general, the mayor and the president of the university were among those who made addresses.

Births and Deaths of the Year.—The report of the births and deaths in the state in 1905, recently published by the State Board of Health, show that 44.114 births occurred, or 16.65 per 1,000. The largest number of births occurred during July and the smallest number in December. Plural births numbered 184. During the year 36.502 deaths occurred, equivalent to an annual death rate of 13.78 per 1.000. Of the deaths, 19,064 were males and 17,438 were females; 35,096 were white and 1,406 were colored. An interesting feature of the report is that 385 of the decedents were more than 90 years of age.

Typhoid Fever.—Dr. F. Sheldon Hunter, Bedford, secretary of the Lawrence County board of health, has investigated the typhoid-fever situation in Mitchell. He obtained samples from the three public wells, each of which was found to contain typhoid germs. It was reported that Mitchell had 74 cases of typhoid fever, but Dr. Hunter says that only 21 cases have been reported to him.——Reports of a typhoid-fever epidemic near Van Buren have been greatly overdrawn, according to the county health officer, who says that only 3 cases have been reported. Seven cases of fever reported to him a few days before were not typhoid, but malaria.

August Diseases and Deaths.—There was a lower mortality and less sickness in August, 1906, than in the corresponding month of 1905, according to the report of the State Board of Health. Diarrheal diseases were most prevalent. The order of prevalence was as follows: Diarrhea, cholera morbus, typhoid fever, cholera infantum, rheumatism, tonsillitis, dysentery, intermittent and remittent fever, bronchitis, inflammation of the bowels, scarlet fever, "typho-malarial" fever, influenza, diphtheria, pleurisy, pneumonia, whooping-cough, erysipelas, cerebrospinal meningitis, measles, puerperal fever and smallpox. During the month 3,000 deaths were reported, as compared with 3.073 in August, 1905, indicating respectively annual death rates per 1.000 of 13.3 and 13.6. Of the total deaths, 641, or 22.6 per cent., were of infants under one year and 691 of persons over 65 years. Tuberculosis caused 351 deaths. There were 32 fewer deaths from typhoid fever than in August, 1905. Smallpox was prevalent in mild form in four counties, 46 cases being reported. Violence caused 192 deaths, 7 of which were homicides and 22 suicides; of the latter, 6 were from gunshot wounds and 12 from poisoning. Of the accidental deaths, 46 were caused by railway and trolley car accidents, 25 by drowning, 9 by lightning and electricity, 29 by falls and crushing injuries, 9 by burns and scalds and 5 by sunstroke.

IOWA.

Typhoid Fever.—An epidemic of typhoid fever is reported at Storm Lake.——The health officers of Fort Dodge and Ames sound emphatic notes of warning to the residents of these cities regarding typhoid fever, warning them to have their drinking water analyzed, and advising as a routine measure that all drinking water be boiled.

Personal.—Dr. William B. La Force, Ottumwa, has been elected professor of gynecology and abdominal surgery in the Keokuk Medical College, College of Physicians and Surgeons, and has moved to Keokuk.——Dr. Thomas Farquhar, Early, has moved to Spokane, Wash.——Dr. Harold Bailey, Waterloo, has returned after six months in the London hospitals.——Dr. and Mrs. Albert H. Blocklinger, Dubuque, have returned after two years in Europe.

KANSAS.

Physicians Use Automobiles.—Out of the 82 licenses issued for automobiles in Topeka up to September 21, 14 were issued to physicians.

Typhoid Fever at Fort Riley.—It is reported that typhoid fever is prevalent at Fort Riley, and that as the chief medical officer of the camp deems its presence a menace to the health of other organizations, Company H, Thirtieth United States Infantry, in which 4 cases have occurred, has left for Fort Reno, Okla.

To Test River Water.—The secretary of the State Board of Health has signed contracts with the officers of the United States Geological Survey for an examination of the Kansas streams, looking after the solution of the problems of water supply, pollution and sanitation. The government will spend $1,500 and the state an equal amount in making this survey.

College Opens.—The Medical Department of Washburn University, Topeka, opened for the year September 4. Five faculty changes are announced: Dr. John B. Town has been appointed lecturer on embryology; Dr. F. J. Mahon Ernest, instructor in pathology; Dr. Charles B. Van Horn, lecturer on anatomy; Dr. Robert B. Stewart, instructor in clinical medicine, and Dr. Elizabeth Ernest, superintendent of the dispensary.

To Check Consumption.—Dr. S. Jay Crumbine, Topeka, secretary of the State Board of Health, has prepared for general distribution, a pamphlet on the subject of tuberculosis, whose object is to stop the spread of the disease, and warn the people of the dangers arising from it. The pamphlet contains these rules to be followed by state and county officers and employés in the state:

All persons in state and county employ are positively forbidden to spit on the floors.

Rooms, hallways, corridors and lavatories shall be freely aired and effectually cleaned at least once a day, and not during working hours.

Spittoons shall receive a daily cleansing with very hot water, and when placed ready for use must contain a small quantity of water.

Dust must be removed as completely as possible by means of dampened cloths or mops. It should never be needlessly stirred up by a broom or duster, as this practice only spreads the dust and germs.

Floors of tiling, brick or stone must be frequently scoured with soap and water.

The senior clerks in charge of workrooms will take measures to secure during working hours the admission of as much fresh air and sunshine as the conditions will permit.

The use of individual drinking glasses is recommended.

Persons in state employ who suffer from pulmonary tuberculosis should be separated, when possible, from others while at work.

Home advice for consumptives:

Sleep alone.

Use no hangings, upholstered furniture or useless floor coverings in your sleeping room.

Whitewashed or painted walls are preferable to those covered with wall paper.

Expose the bedroom freely to the outside air when not occupied, and sleep with the windows open. Spend as much time as possible in the open air, and use the bedroom only at night.

Do not be afraid of cold weather as long as the body is protected, and be especially careful to keep the feet dry.

Keep the body warmly clad and guard against sudden changes in the weather.

Take plenty of nourishing food. Consumptives often need more nutriment than they are inclined to take. Milk, eggs and fatty foods are especially valuable, when they can be assimilated.

There is no known medicine that can cure consumption. Medicines for the relief of cough and other symptoms of the disease should be taken only on the advice of a physician.

MARYLAND.

Typhoid Fever.—Burkettville, six miles south of Middletown, with a population of less than 800, reports 16 cases of typhoid fever, with one death.

English Surgeon in Annapolis.—Staff Surgeon Alexander Gaskill, Royal Navy, who is in America studying naval hospital methods, visited the U. S. Naval Academy, Annapolis, September 20, and inspected the government hospital in process of construction.

Physician Injured.—Dr. Claiborne H. Mannar, Rockville, was seriously injured in a runaway accident near Halpine, August 23. He was kicked by his horse, breaking his jaw and causing severe cuts and contusions of the face. He was taken to a hospital in Washington and is reported to be improving.

Baltimore.

Typhoid Fever.—During the week ended September 15, 63 cases of typhoid fever were reported, and during the week ended September 22, 51 cases.

College Opens.—The Baltimore Medical College opened for its 1906-07 session September 21 with an address by Dr. David Street on "The History of Medicine."

Personal.—Dr. Thomas Shearer is in London.——Dr. William Green has returned from a prolonged trip to northern health resorts.——Drs. Randolph Winslow and J. Mason Hundley returned from Europe September 16.——Dr. Harry Adler has been unanimously elected president of the Hebrew Hospital and Asylum.——Dr. Roland B. Whitridge sailed from Genoa on his return from Europe, September 20.——Dr. Howard A. Kelly sailed from New York for Europe, September 12.

Hospital News.—An appropriation for $25,000 has been allowed for the erection of a hospital for infectious diseases, adjoining Bay View.——Johns Hopkins Hospital is considering the erection of a new building for the children's ward, to be three stories high, 204 feet frontage, with two wings, and to cost about $250,000.——Dr. Frank G. Moyer has obtained a permit to erect a four-story brick sanatorium at 1500 Eutaw Place.——The St. Agnes Hospital announces the following appointments on its staff: Dr. Joseph C. Bloodgood and Alexius McGlannan, surgeons, and Dr. Guy L. Hunner, gynecologist.

MASSACHUSETTS.

Harvard Dedication.—The new buildings of the Harvard Medical School, Boston, described in The Journal, July 7, page 50, were dedicated September 25 and 26. The program of exercises included addresses by President Eliot, Dean Richardson, Professors J. Collins Warren, Thomas Dwight and Frederick C. Shattuck, and Mr. Charles A. Coolidge, representing the architects. The exercises were followed by demonstrations in the different laboratories. On September 26 at 11 a. m. an academic session was held at the University of Cambridge, with an oration by Prof. William H. Welch of Johns Hopkins University. Honorary degrees were conferred on several notable members of the profession. Many distinguished guests from American and foreign universities and scientific bodies were present. The officers of the alumni association gave an informal reception on Tuesday evening to the alumni and guests, and on Wednesday at 1:30 p. m. the triennial dinner was held in Memorial Hall at Cambridge. Speeches were by President Eliot, Governor Guild, members of the faculty of medicine, as well as by several invited guests. A further account will appear next week.

MICHIGAN.

College Opens.—The Grand Rapids Medical College opened for the school year September 17.

Hospital Founded.—By the will of the late James L. Hurley, Flint, about $40,000 will be available to establish a hospital in Flint, to be named in his honor.

Typhoid Epidemic.—The secretary of the State Board of Health is conducting an investigation as to the cause of the recent epidemic of typhoid fever in Traverse City, where 150 cases of the disease are said to have occurred.——An epidemic of typhoid fever is reported by the health officer of Menominee.

Wayne County Society.—At the annual meeting of the Wayne County Medical Society, the following officers were elected and installed: President, Dr. J. Henry Carstens; vice-president, Dr. William F. Metcalf; secretary and treasurer, Walter D. Ford, and directors, Drs. Frank B. Tibbals, Guy L. Kiefer, H. Wellington Yates, George W. Wagner and Louis J. Hirschmann.

Personal.—Dr. David J. Hale, Fairplain, has returned from Panama.——Dr. Fannie Draper, Jackson, sails for China October 11.——Dr. Robert L. Kennedy, Detroit, has been appointed superintendent of the State Tuberculosis Sanatorium, to assume charge December 1.——Dr. James D. Kennedy and Dr. William H. Price, Detroit, sailed from New York for Europe, August 24.

Ill and Injured.—Dr. Joseph Poposkey, Grand Rapids, sustained a fracture of the left ankle in a runaway accident September 10.——Dr. LeRoy Lewis, Bay City, is at the Lewis Hospital, suffering from a fracture of the arm due to a fall. ——Dr. James C. Abrams, Calumet, has been confined to his house for two weeks with congestion of the brain.——Dr. A. Curtiss, Big Rapids, was struck by a truck on a station platform at Clear Water, Minn., and sustained a fractured rib.

MISSOURI.

Funds Needed to Complete Hospital.—Of the $225,000 of bonds voted for the erection of a new city hospital building in Kansas City, it is reported that less than $20,000 remain, and it is anticipated that $100,000 more will be required before the institution can be made habitable.

Temporary Restraining Order Served.—Dr. Christian H. Eyermann, St. Louis, threatened by the State Board of Health with revocation of his license, because of advertising to cure appendicitis by electricity, has obtained a temporary restraining order against the board, denying to that body the right to revoke Dr. Eyermann's license as a physician and surgeon.

NEW YORK.

Physicians Try to Aid Patrick.—A petition signed by 3,500 physicians of New York State has been presented to the governor asking that a commission of experts be appointed for the purpose of settling the disputed medical point in the Patrick case. Patrick was sentenced to die for the murder of William M. Rice of New York City, and the case is now on appeal before the United States Supreme Court. The point raised, on which the expert testimony was so conflicting, was whether the congestion of the lungs might not have been the result of the embalming fluid and not of the chloroform which it was alleged had been administered under the direction of Patrick.

New York City.

Personal.—Dr. Henry P. Loomis arrived from Europe on the *Baltic* September 20.——Dr. and Mrs. Edward L. Keyes, Jr., sailed for Europe on the *Nieuw Amsterdam* September 19.

Death from Typhus.—Because of the death of a child from typhus fever in the steerage, the *Cretic* was held at quarantine and all passengers were subjected to a rigid examination; the first and second cabin passengers were allowed to land, but the steerage passengers were detained.

Change at St. Gregory's Hospital.—It has been announced by Ballington Booth that the Volunteers of America and St. Gregory's Society have effected a union in the management of St. Gregory's Hospital in Gold Street. The building has been remodeled and equipped during the past year at a cost of $10,000.

Less Typhoid in Brooklyn.—It is announced by the Board of Health that while there were 689 cases of typhoid reported up to the present time last year, there have been only 173 cases reported thus far the present season. This is attributed to the effect of the advice of the department to boil all drinking water.

Amend Sanitary Code.—At the meeting of the Board of Health September 19, important amendments to the sanitary code were adopted in compliance with the new pure-food law. One of the amended provisions of the code is that no person shall have, sell or offer for sale any food which is adulterated or misbranded, and the term food is defined to include every article of food and every beverage used by man, and all confectionery. The code defines adulterations very minutely.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 15, 351 cases of pulmonary tuberculosis, with 150 deaths; 184 cases of diphtheria, with 19 deaths; 134 cases of typhoid fever, with 18 deaths; 74 cases of scarlet fever, with 4 deaths; 53 cases of measles, with 2 deaths; 38 cases of whooping cough, with 7 deaths; 14 cases of cerebrospinal meningitis, with 5 deaths; 2 cases of smallpox and 6 of varicella, a total of 856 cases and 205 deaths.

The Trachoma Problem.—It is asserted by Dr. John C. Lester assistant surgeon of the New York Eye and Ear Infirmary, that the cases of trachoma in the public schools are so numerous that the hospitals are utterly unable to cope with them. This is attributed to the filthy conditions of the tenement-house regions, especially on the East Side, one-third of the school children there being afflicted with trachoma. It is stated that one-quarter of the school children of Brooklyn are affected. The Board of Health is coping with the situation as best it can, but the situation is said to be serious unless more hospitals are established.

NORTH CAROLINA.

Personal.—Dr. P. L. Murphy has been re-elected superintendent of the State Hospital at Morganton.——Dr. Andrew J. Crowell has returned to Charlotte after a three months' stay abroad.——Dr. H. J. Williams, Jr., Winston, has gone to Edinburgh for a year's study. He expects to locate eventually in Cape Town, South Africa.

Vital Statistics.—During July 278 deaths were reported, equivalent to an annual death rate of 18.3 per 1,000. Diarrheal diseases and typhoid fever led in the death causes. During the month measles were reported from 11 counties; whooping-cough from 30 counties; scarlet fever from 4 counties; diphtheria from 10 counties; typhoid fever from 64 counties; malarial fever from 17 counties; cerebrospinal meningitis from 6 counties; peritonitis from 2 counties; pneumonia from 7 counties, and smallpox from 13 counties.

College Sessions Begin.—The annual session of the North Carolina Medical College, Charlotte, opened September 8, with an unusually large enrolment. The additions to the faculty include Dr. Edward C. Register, professor of practice of medicine, and Dr. George W. Pressly, professor of the principles of surgery. The work on the new building is progressing rapidly.——The fifth annual session of the Medical Department of the University of North Carolina, Raleigh, opened September 14 with an address on "The Value of Character to the Professional Man," by Dr. Augustus W. Knox, professor of surgery.

OHIO.

Diphtheria.—Carlton is reported to have 125 cases of diphtheria and the churches and schools have been closed.——The school at Story and Fairview school, east of Piqua, have been closed on account of diphtheria.

Violated Medical Law.—Mrs. Lida Hazlitt, Richmond, Ind., was arraigned at Springfield, Ohio, for practicing medicine without a certificate, was found guilty of violation of the state medical law, and was fined $30 and costs, which was paid.

Section on Pathology.—Dr. Otto V. Hoffman, Dayton, advocates the inauguration of a special section in the Ohio State Medical Association for the study of pathology, along lines similar to those of the pathologic exhibits, held at the annual meetings of the national association and several of the state medical societies.

Typhoid.—Cincinnati reports 40 cases of typhoid fever for the week ended September 14.—The Columbus Board of Health has instructed the health officer, Dr. McKendrie C. Smith, to enforce the state law against physicians who do not report the cases of typhoid fever in their care. The law provides a fine of not less than $100 for the first offense.

Personal.—Dr. Martin Stamm, Fremont, left August 20 for a tour of the world. A banquet was tendered him by the medical profession of the city August 17.——Dr. Mark Milliken, health officer of Hamilton, has returned from a trip to Colorado.——Dr. Charles W. Baker has resigned as a member of the East Liverpool Board of Health.——Dr. Myron J. Ewing and family, Findlay, left for their new home in Oregon September 8.

Endowment for Library.—By the will of the late James Patterson Walker, surgeon-general, Bengal service, his library, collected during a long term of service in India and other parts of the world, has been bequeathed to the Lloyd Library of Cincinnati, together with an endowment of $30,000 in cash, to be devoted to the encouragement of original research in the practice of medicine and pharmacy, with special reference to the specific action of medicines.

Medical College Opens.—The fifteenth annual session of the Ohio Medical University, Columbus, was opened September 11. Introductory remarks were made by the chancellor, Dr. James U. Barnhill, Columbus, and addresses were made on behalf of the trustees and the faculty. The faculty changes were as follows: Dr. Henry A. Rodebaugh, instructor in nervous diseases; Dr. Albertus C. Wolfe, formerly professor of diseases of the nose and throat, professor of therapeutics; Dr. C. E. Pfeifer, instructor in dietetics; Dr. P. M. Wright, instructor in therapeutics; Dr. Harry M. Snively, assistant to the chair of physiology, and Dr. Howard M. Brundage, assistant to the chair of anatomy.

PENNSYLVANIA.

Fire Loss.—The house of Dr. John W. Groff, Harleysville, was struck by lightning and destroyed, September 13. The loss was about $5,000.

Will Equip Hospital Room.—Dr. Will L. Shindel, Sunbury, has advised the building committee of the Sunbury Hospital that he will equip and furnish a private room in memory of his father, the late Dr. Daniel W. Shindel.

Typhoid Fever.—Nanticoke, which suffered from an epidemic of typhoid fever last year, reported on September 11, 16 cases, with two deaths.——During the five days ended September 14, 89 cases of typhoid fever were reported to the bureau of health of Pittsburg.

Ill and Injured.—Dr. Charles D. Hunt, Williamsport, was rendered unconscious by being thrown from his carriage, September 15.——Dr. Simon P. Earnest, Belmont, who was recently operated on at the West Penn Hospital, Pittsburg, is making satisfactory progress toward recovery.

Personal.—Dr. Andrew B. Gloninger, Lebanon, sailed for Antwerp, September 10.——Dr. Herbert Fox has been appointed supervisor of the state laboratory by State Health Officer Dixon.——Dr. Sydney J. Repplier, Reading, who has been appointed physician to the United States minister to Morocco and Algeria, left August 29 for Algiers and Fez.

Vaccination Not Compulsory.—The attorney-general declared September 12 that parents can not be compelled to have their children vaccinated. A teacher is compelled to refuse to admit unvaccinated children to the public schools, or those who have not presented a certificate of successful vaccination or of having had smallpox. When children have been refused admission to schools under these circumstances and have been sent home, parents can not be fined for having their children out of school.

Philadelphia.

Bequests.—By the will of the late Mary A. Fry, the Home for Consumptives will receive $2,000.——A bequest of $500 was made to the Wills Eye Hospital by the late Annie E. Hamilton.

Personal.—Dr. Ross B. Patterson has been appointed subdean of Jefferson Medical College.——Dr. Thomas F. Neil has been appointed superintendent of the Blair County Hospital for the Insane.——Dr. John H. Trinder has been appointed resident physician of Girard College.

Health Report.—The total number of deaths reported for the week ended September 15 aggregated 500. This is an increase of 101 over the number reported in the corresponding period of last year, and an increase of 11 over the number reported last week. The principal causes of death were: Typhoid fever, 16; pertussis, 11; consumption, 62; cancer, 23; alcoholism, 6; apoplexy, 20; heart disease, 34; acute respiratory disease, 36; enteritis, 57; hepatic cirrhosis, 5; appendicitis, 4; Bright's disease, 40; congenital debility, 10; suicide, 4; accidents, 16, and marasmus, 16. There were 162 cases of contagious disease reported, with 20 deaths, as compared with 176 cases and 20 deaths reported in the previous week.

GENERAL.

Personal.—Brigadier General Robert M. O'Reilly, who has been surgeon general of the Army for the past four years, was reappointed to that office by direction of the President of the United States.

Health Conditions of Cuba.—Passed Assistant Surgeon von Ezdorf reports that for the week ending September 11, 5 cases of suspected yellow fever and 9 cases of dengue were reported in Havana. He states that he has been informed that the conduct of sanitary work, particularly in eradicating yellow fever, will not be discontinued, although the country is engaged in suppressing a revolution.

Pennsylvania Surgeons Meet.—The Association of Surgeons of the Pennsylvania Lines held its twenty-fifth annual meeting in Pittsburg, September 13. The following officers were elected: Dr. Richard J. Morgan, Van Wert, Ohio, president; Dr. Adam M. Beers, Newcomerstown, Ohio, vice-president; Dr. Stewart L. McCurdy, Pittsburg, secretary and treasurer, and Drs. A. I. Bouffleur, Chicago, and James G. Carr, Coshocton, Ohio, members of the executive committee.

American Surgeon in Danger.—Assistant Surgeon Walter Robertson of the United States Public Health and Marine-Hospital Service, stationed at La Ceiba, Honduras, was, according to newspaper reports, threatened with assassination as the result of reporting a case of yellow fever. For over a week he dared not leave the consulate, and during that time fifty Americans guarded the consulate to prevent an attack by the natives.

Homeopaths Elect Officers.—At the annual session of the American Institute of Homeopathy, in Atlantic City, September 13, the following officers were elected: President, Dr. E. B. Hooker, Hartford, Conn.; vice-presidents, Drs. James W. Ward, San Francisco, and W. E. Reilly, Fulton, Mo.; secretary, Dr. Frank Kraft, Cleveland; treasurer, Dr. T. Franklin Smith, New York; registrar, Dr. J. H. Bald, Bay City, Mich.; necrologist, Dr. C. B. Kinyon, Ann Arbor, Mich.; member of the board of censors, Dr. G. H. Quay, Cleveland.

Missouri Valley Meeting.—The Medical Society of the Missouri Valley held its nineteenth annual meeting in Council Bluffs, Iowa, September 6 and 7. About 100 physicians were present. It was decided to hold the next session in Omaha, in March, 1907. The following officers were elected: Dr. O. Beverly Campbell, St. Joseph, Mo., president; Drs. William F. Milroy, Omaha, and C. O. Thienhaus, Milwaukee, vice-presidents; Dr. Charles Wood Fassett, St. Joseph, Mo., secretary (re-elected), and Dr. Donald Macrae, Council Bluffs, Iowa, treasurer (re-elected).

To Purify State Streams.—The representatives of the state health and sanitary engineering departments of New Jersey, Pennsylvania and New York held a joint meeting in Atlantic City, September 14, and adopted plans for the three states by united action to stop the pollution of the Delaware River. New Jersey has been at work five years on this project and has already accomplished much on the upper waters by compelling cities and towns to install modern sewerage disposal plants. Pennsylvania and New York have started on the same course, but the three states agreed that by working together the desired object can be more easily obtained. Those at the conference were: Col. Charles W. Fuller, chairman of the sewerage commission of New Jersey; Dr. Samuel G. Dixon, state health commissioner of Pennsylvania; Herbert Snow, chief sanitary engineer, Department of Health, Pennsylvania; Harry M. Herbert, engineer of New Jersey commission; Theodore Horton, engineer, New York Department of Health; A. H. Seymour, secretary, New York Commission of Health, and Wilbur Morse, secretary, Pennsylvania Commission of Health.

Cholera in the Philippines.—A particularly disquieting feature of the situation in the provinces, according to *Public Health Reports*, is that cholera has traveled overland over the new road which has recently been opened from the province of Laguna to the sea. The disease made its appearance almost simultaneously at the ports of Pagbilao and Lucena, in the province of Tayabas. Owing to the fact that it is impossible to give that careful attention to outgoing vessels leaving these ports which is given to vessels leaving Manila, it is feared that the disease may be carried by small sailing vessels to nearby islands, from which it may again spread throughout the Philippine Archipelago, as was the case in 1902. The bureau of health has taken vigorous measures to combat the outbreak at the ports of Tayabas province. While the disease has not been entirely stamped out in the ports, yet there has been a reduction in the number of cases and no spread to other ports. The impression is that if the disease can be confined to the same territory which it has occupied during the past year, which section is embraced within an area of 75 miles from Manila, the chances of entirely eradicating it during the next dry season are very good; but if the disease should now gain another foothold in the southern islands it would probably be several years before it could be successfully eradicated.

CANADA.

Typhoid Fever in Montreal.—A total of 63 cases of contagious diseases was reported in Montreal during the week ended September 8. Thirty of these were typhoid fever; 15 were tuberculosis.

Personal.—Dr. R. D. Sanson, Calgary, Alberta, is visiting in Toronto.——Dr. W. D. Ferris, Edmonton, Alberta, has been visiting in Vancouver.——Dr. R. H. Craig and Dr. Austin Irvine, Montreal, have returned home from a trip to Toronto, New York and Atlantic City.——Dr. R. A. Pyne, minister of education for Ontario, has returned from a three months' trip to the old country.——Drs. McMurtry, McDonald and Scott, Montreal, are leaving for China as medical missionaries. Dr. McDonald, who has been in the field before, works specially in Canton, whence come most of the Chinese in Montreal.

Tuberculosis Sanatorium for British Columbia.—The Rev. Dr. Moore of Ottawa, secretary of the Canadian Association for the Prevention of Consumption, has been in British Columbia in the interests of his association. At a public meeting, September 7, Dr. Underhill, the health officer of Vancouver, and Dr. C. J. Fagan, Victoria, the health officers of the province, and Dr. Moore made addresses. Dr. Fagan said that the lieutenant-governor, Mr. Dunsmuir, had contributed $10.000 for a sanatorium for the province; that the provincial government had given $5.000; the Canadian Pacific Railway, $5.000, and numerous private individuals, $2,500. It is desired to raise $50.000 before the work is proceeded with.

Proposed Department of Public Health in Ontario.—About a year ago, in a paper read before the annual meeting of the Ontario Medical Association, Dr. Charles A. Hodgetts, secretary of the Ontario Board of Health, advocated the creation of a separate department of public health under a responsible minister. The matter was fully discussed at a meeting of the Ontario cabinet recently. If such step is taken it is likely that the Hon. Dr. Willoughby, a minister now without portfolio, will be placed at the head of the department, and the present secretary, Dr. Hodgetts, made deputy minister. As the board of health is to be reorganized, it is altogether likely that it will take shape in the direction above indicated.

FOREIGN.

Nostrum Regulations in Australia.—The regulations of the Victoria (Australia) board of health with regard to the labeling of secret remedies containing poisons will go into effect Jan. 1, 1907, instead of October, 1906, in order to give British and American manufacturers time to comply with the new requirements.

Central Office for Research on the Brain.—It is announced that the Senckenburg Neurologic Institute at Frankfurt a. M., Germany, has been appointed the headquarters for international research on the brain. The committee making the appointment is an offshoot of the International Association of Academies of Science.

Prizes for Nursing Mothers.—The city of Leipsic, Germany, has decided to give money prizes to women who nurse their infants. Prizes are also to be given to midwives who distinguish themselves by aiding and persuading women to nurse their children. The prizes are supposed to take the place of any loss of earning capacity because of nursing.

Pawlow to Lecture in London.—The sixth Huxley lecture will be delivered October 1 at London by Prof. I. P. Pawlow, professor of physiology at St. Petersburg. His subject is to be "Recent Advances in Science and Their Bearing on Medicine and Surgery." It will be remembered that he received one of the Nobel prizes in 1904, for his classic discoveries in the physiology of digestion.

Plague in Turkey.—Consul Jewett writes from Trebizond that 4 cases of plague, with 1 fatal, were reported in the prison at that place, August 8. Eight cases and 3 deaths were officially reported up to and including August 18. The prison is situated near the other government buildings in the center of the city. It contains 700 prisoners crowded together in seven rooms that give not more than 10 square feet of floor space for each inmate. The sanitary condition of the prison is of the worst type. As the local authorities were dilatory, the consuls of the nine powers represented at Trebizond held a meeting and requested the governor-general to adopt vigorous measures to protect foreigners and commerce.

Effect of Plague and Malaria on the Birth Rate in India.—The sanitary authorities in the Punjab state that the influence of plague on the birth rate is of an indirect and general nature only; and that in spite of the fact that there were 334,897 deaths from plague in 1905, the birth rate in the Punjab rose from 41.5 to 44.4 per thousand of the population. The *Journal of Tropical Medicine* states that it is quite noticeable that more women than men die of plague in the Punjab, a fact probably owing to women being secluded indoors and therefore more in contact with the sources of infection. The birth rate would seem to be lessened more markedly by the prevalence of malaria than of plague. A severe malarial outbreak in the autumn is reported to affect the birth rate in the following year more than any other form of disease. For four years in succession the death rate in the Punjab has been higher than the birth rate; and the Punjab has recently had the highest death rate of any district of India, amounting to no less than 47.55 per thousand.

Syphilis in Turkey.—The Constantinople correspondent of the *Lancet* states that the spread of syphilis and venereal diseases is reported from several parts of Sivas. The sanitary inspector of the province has asked the central authorities of Constantinople promptly to adopt all the necessary measures in order to check the propagation of the malady and to treat the sufferers. It is intended to build in Sivas itself a hospital with 50 beds for syphilitic and venereal patients. Two medical men will be appointed with a salary of $60 a month. Their duty will be to visit all the contaminated localities and to render gratuitous assistance to all seeking such. They will also receive a proportionate sum for traveling expenses and for drugs and instruments. Similar measures have been adopted in other provinces.

The Antiquackery Campaign.—The efforts of those interested in the antiquackery movement in Germany have already borne fruit, as can be seen by the various numbers of the organ of the Antiquackery Society, *Hygienische Blätter.* The last number relates that a "nature healer" has recently been sentenced by the Elberfeld court under the following circumstances: He had prescribed homeopathic pills and warm baths to a woman with uterine cancer who had been urgently advised by her physician to have the growth removed at once. After the death of the woman the nature healer was condemned by the court to nine months' imprisonment. Another sign of progress is shown in the action of the Frankfurt "*Kleine Presse,*" a lay paper, which received an advertisement for insertion accompanied by a considerable sum of money, setting forth the virtues of "coza powder," a cure for inebriety sent out by the "Coza Institute" in London. The advertisement stated that free samples would be sent on demand. The paper sent for a free sample under another address; with the sample came two boxes of the powder, C. O. D., for $5. The boxes were returned by the consignee, but by return mail one box was sent him with the statement, "one box alone is sufficient to cure in many cases," price $2.50. The paper returned the advertisement and the accompanying money, declining to do business with the Coza Institute, but writing up the affair in detail for its news columns, with appropriate comment.

LONDON LETTER.

(From Our Regular Correspondent.)

Infantile Mortality and Health Visitors.

The value of women as health visitors has been proved by an experiment at Limehouse, one of the poorest districts of the East End of London, where the infantile mortality stood at an alarming height. For some time the proposal to appoint health visitors was under consideration, but the borough council would not incur the expense. The need for a health visitor was so great, because of the ignorance among mothers as to the rearing of babies, that a private individual agreed to pay the salary of such an officer for two years. Her duty was to visit the homes of the mothers and give instructions as to the proper feeding of infants. At first she was looked on with suspicion, which she conquered by tact and ability. Reporting on her work the health officer says: "She visited and revisited the homes of 721 infants, 74 of whom died under the age of one year. The rate of mortality among the infants she visited was, therefore, 102 per 1,000 births. This is very satisfactory, considering that the area was selected on account of its high mortality and that the infant mortality for the whole district was 185 per 1,000 births." She pointed out the disadvantages of the bottle with the long tube and diminished the extent to which it was used. She also did her best to abolish the use of the dummy teat which, no matter how dirty, was inserted into the child's mouth whenever it cried and the feeding bottle was not at hand.

Mistakes in the Diagnosis of Fevers.

The annual report of the Metropolitan Asylums Board for 1905 contains the usual statement of the mistakes made by doctors in sending cases into the fever hospitals. Of the total admissions 9 per cent. (as compared with 10.7 in 1904) were found not to be suffering from the diseases mentioned on the medical certificates on which they were removed to hospital. There were 975 cases wrongly certified as scarlet fever. Of these, 96 were measles, 90 rubella, 106 tonsillitis, 147 erythema, 143 had no obvious disease and 149 were not diagnosed. There were 908 cases wrongly certified as diphtheria. Of these, 52 were measles, 544 tonsillitis, 55 had no obvious disease and 22 were not diagnosed. There were 247 cases wrongly certified as typhoid fever. Of these, 27 were influenza, 6 general tuberculosis, 64 pneumonia and 6 had no obvious disease. In the case of smallpox the mistakes formed a high proportion: 32 out of 74 admissions. The explanation is obvious. In recent years smallpox has become so rare that many doctors have never had an opportunity of seeing a case.

Lunacy in Ireland.

The special report of the inspectors in lunacy as to the large increase of lunacy in Ireland has been issued. The following conclusions have been arrived at: 1. The population of the country has decreased, but, while the number of insane has increased, the statistics do not offer precise grounds to put forward a definite opinion. 2. Without affirming that there has been no increase the inspectors conclude that the increased number is largely due to accumulation in public asylums. 3. The increase has occurred among the poor. 4. The increased number in asylums is due to accumulation and decreased discharges and deaths, to widening of medical opinion as to insane persons who should be confined, to the greater confidence in asylum treatment and the increase in the number and accessibility of asylums, to the great longevity owing to improved sanitations, and to the influx of returned emigrants broken down mentally. 5. The statistics of insanity in other countries, more, even, than those in Ireland, point to the fact that, notwithstanding their undoubted intellectual gifts, the Celtic race is prone to mental disease. 6. Next to heredity, intemperance heads the list of causes of insanity. General paralysis of the insane is on the increase, though in the rural districts it is practically absent.

The Use of Diachylon as an Abortifacient.

The use of lead as an abortifacient is a practice which was unknown in this country until 1893, when it was first described by Dr. Pope of Leicester, who reported two fatal cases. Subsequently other cases were published, principally in the Midlands. In 1901 the process extended to Sheffield, where it became very prevalent. The lead was taken in the form of diachylon plaster or in patent "female pills." In and around Nottingham an increasing use of diachylon as an abortifacient among the working classes has been recently observed. The attention of the city authorities was directed to the subject, and it was found that in cases of abortion pills described as "Mrs. Seagrave's pills" had been taken. Mrs. Seagrave (*alias* Wardle) was found to be doing an extensive trade in the sale of these pills, both to married and to unmarried women. A box of pills was obtained by an agent of the health department and found to contain from 50 to 70 per cent. of diachylon, aloes and an outer coating of boric acid. The pills were roughly made and varied in weight from 1½ to 5 grains. Mrs. Wardle was arrested and a large quantity of pills and implements for making them were found in her house. She was brought before the magistrates and three witnesses were produced who had bought pills from her, became seriously ill after taking them and aborted. The medical evidence showed that they suffered from lead poisoning. Mrs. Wardle was committed for trial at the assizes, where the women who had purchased the pills stated that she had instructed them to take a dose of Epsom salts, fasting in the morning, then four of the pills, and four of the pills again at night. For the defense it was stated that Mrs. Wardle had no idea that the pills were harmful and that she had sold them not for the purpose of procuring abortion. but only as "female pills" to be taken in cases of irregular and suppressed menstruation. Several witnesses were called, both male and female. who stated that they had taken the pills and derived benefit from them for such ailments as bad backs, internal pains and anemia. To rebut the last statement the health officer was called and stated that anemia was one of the earliest and most constant symptoms of lead poisoning and that lead would aggravate instead of benefiting anemia. The judge in summing up said that it was difficult to reconcile Mrs. Wardle's statement that she was not aware of the harmful effects of diachylon with the fact that she had advised her clients in every instance to take Epsom salts, which were an acknowledged eliminator of lead. She must have known that diachylon contained lead. She was found guilty, but recommended to mercy, and sentenced to eighteen months' hard labor. The judge said that he wished it to be clearly understood that the offense was a felony for which the maximum penalty was penal servitude for life.

VIENNA LETTER.

(From Our Regular Correspondent.)

Union of Medical Representative Clubs in Austria.

An important evolution in the organization of medical practitioners took place a short time ago when at a meeting of the delegates of nearly all the medical clubs a uniform and unanimous basis for work was arrived at. In order to understand the difficulties and obstacles that have prevented hitherto a complete organization of the profession in our dual empire, Austro-Hungary, it must be kept in mind that no fewer than nine different nations and languages are combined to form this one realm. Racial and religious differences were so powerful, even in the capital itself, that the 2,800 doctors of Vienna were not found unanimous in the fight against bureaucratic arrogance two years ago, when the governor dissolved the "Aerztekammer" and ordered a new election of that medical representative body. Matters have improved since, and the organization has proved such an influential agent in attaining minor results that at last all obstacles have been overthrown and now the entire body of the practitioners in Austria, some 12,000 men, are practically brought under one hat. In all matters pertaining to the general condition of medical men, to hospital education, appointments, to ethics and legislative representation the newly formed union will proceed hand in hand with the clubs and accept the ideas proffered by each single rural branch. The first trial of the working order of the union was made in the organization of the strike of the country practitioners of Lower Austria, when the union had to prevent "blacklegging," in which endeavor it had full success. Although the conflict between the country doctors and the state is still raging, not a single case of strikebreaking has been noticed. There are two more points where the union will have to show its power. One is contract practice, which a law promulgated 18 years ago made compulsory for all persons employed in factories and business concerns. Through the absence of even the rudiments of organization at that time, medical influence could not be brought to bear on the proposed bill, and the interests of the doctors were sacrificed to the convenience of the tradesman. The present year has already seen the first conflict between the organization and some clubs. The other point, where a change is urgently wanted, is the condition of the hospital staff, which, in its majority, is unpaid, except the professors and senior assistants. As the "output" of the universities is so large, the numerous M.D.'s turned out yearly are glad to be able to work at a hospital. Thus the state employs the hands and minds of hundreds of young doctors without paying for it. This increases the difficulties, which are already large enough, in the path of the young doctor, who is anxious to find his living by work for which he has been educated. The union will take the matter in its hands and will most likely cause a strike among the juniors until the state finds the money.

A New Children's Hospital.

By a munificent gift from a private individual, a new hospital for children has been erected at a cost of about 600,000 kronen ($120,000). It has been added as a separate pavilion to the existing Franz Joseph Hospital, so as to save the expense of a separate administrative staff, but otherwise it is quite an independent hospital, equipped with all the latest and most modern appliances for scientific work. At present it will accommodate 100 in-patients, but its capacity will shortly be increased to thrice this number. It is meant first for emergency cases, and will be open free of charge to all such

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Correspondence

Somnos.

We give space to the following letter so that the H. K. Mulford Company cannot say that we are not treating it fairly. although much of the letter is a repetition of what has been stated before. There is no use in attempting to befog the question:

Philadelphia, Sept. 19, 1906.

To the Editor:—Had your report of the findings on "Somnos" (Elixir Trichlorethidene Propenyl Ether, Mulford) been confined to that product, we might not have felt called on to address this letter of protest, even though prejudice is shown in the treatment of the subject.

You have seen fit, in The Journal of the American Medical Association, September 15, to attack the integrity of the H. K. Mulford Company and seriously to injure our reputation as a manufacturing house. To this we take strong exception. As your charges are based on what we have said on labels and in advertising circulars concerning "Somnos," we herewith briefly relate the history of its introduction:

Some six years ago two chemists, Dr. Albert C. Barnes, a graduate of the University of Pennsylvania, and Dr. Herman Hille, a graduate of the University of Heidelberg, who were at that time engaged in original research in our scientific department, presented to us a chemical product to which they gave the name chlorethanal alcoholate, as expressing its chemical description, and the symbolic formula $C_9H_{11}O_6Cl_9$, giving its composition. A study was made of its physiologic properties and sufficient clinical data obtained to convince us that we had an important drug which had never before been investigated as a therapeutic agent

Realizing the importance of having these experiments verified by impartial and competent observers, we communicated with the University of Pennsylvania, July 30, 1902, requesting that physiologic experiments be undertaken on this product, and Dr. Colin C. Stewart, then one of the demonstrators in that institution, and now associate professor of physiology at Dartmouth Medical College, undertook the work.

Following are copies of several letters written by us in correspondence with Dr. Stewart at the time:

July 30, 1902.

Dr. C. C. Stewart, University of Pennsylvania, care Physiological Department.

Dear Sir:—Will you kindly advise if you are in a position to take up the investigation of a product (Somnos) which we have. and determine its physiologic action. We are desirous of having our own laboratory tests confirmed.

Will be glad to have you communicate with us at an early date.

February 4, 1903.

Dr. C. C. Stewart, Physiological Department, University of Pennsylvania.

Dear Sir:—We are particularly anxious to have the experiments at some reliable institution or hospital carried out in connection with the physiologic work you are doing—the remedy is one of such importance to the physician that its complete physiologic action should be determined at as early date as possible.

Dr. Stewart's experiments and investigations covered a period of about a year, and fully verified our claims, namely, that Somnos was a hypnotic, differing essentially from chloral in that in medicinal dosage it had no depressing effect on the heart and circulation, amounts equivalent to over 1,000 c.c. (33 fl. oz.) of the elixir (Somnos) for a 150-pound man having been injected intravenously in animals without lethal effect, the lethal dose at that time not being determined. We were, therefore, amply justified in making the claims which appeared on labels and in our brochure on "Somnos."

In December, 1905, we submitted Somnos to the American Pharmacologic Society, Prof. Reynold Webb Wilcox, president of the association having become interested in the clinical use of Somnos, having used the drug since May, 1904, in the treatment of seventy-two cases. Samuel P. Sadtler, Ph.D., LL.D., professor of chemistry at the Philadelphia College of Pharmacy, chemical editor of the U. S. Dispensatory, one of the committee of revision of the U. S. Pharmacopeia, and one of your Comcil on Pharmacy and Chemistry, was selected by the society to verify the chemical claims for the product. He substantiated the claims of our chemist and found it to be chlorethanal alcoholate, a definite chemical compound, with the symbolic formula $C_8H_{11}O_6Cl_9$, as claimed and devoid of free chloral. This verified our claim that chlorethanal alcoholate is a synthetic compound. Dr. Sadtler, however, suggested that the name "trichlorethidene propenyl ether" be used in place of chlorethanal alcoholate, since the latter was usually used to designate compounds of ethyl alcohol and not polyatomic alcohol.

Up to this time we had expressed the chemical composition of Somnos in technical language, not for the purpose of deceiving the medical profession, as charged by you, but to protect our interests, since the product was not patented.

Professor Sadtler's report, covering four months' investigation, was published in Bulletin No. 1 of the American Pharmacologic Society, and copies sent to you.

After Professor Sadtler's report was published in the bulletin we changed our labels and literature to conform to his suggestions by using the name trichlorethidene propenyl ether in place of chlorethanal alcoholate.

Following are copies of the label used prior to the report and subsequent to it:

EXHIBIT 1.

MULFORD'S SOMNOS,

(Chlorethanal alcoholate) $C_8H_{11}O_6Cl_9$.

Reliable and Safe Hypnotic and Cerebral Sedative.

Indications: In insomnia Somnos is the ideal hypnotic. It is especially valuable in the sleeplessness attendant upon hysteria, "nervousness," neuralgia, typhoid fever, pneumonia, la grippe, alcoholism and mental diseases.

Directions: One to two tablespoonfuls in a half glass of water or milk one or two hours before bedtime, repeated if required. For children, one-half to one teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

EXHIBIT 2.

MULFORD'S SOMNOS (word-mark).

(Elixir Trichlorethidene Propenyl Ether)
(Formerly known as Chlorethanal Alcoholate).
Hypnotic, Cerebral Sedative and Antispasmodic.

Dose.—Adults, as a hypnotic, 1 to 2 tablespoonfuls repeated every hour or two, or as required. As a sedative, dessert to tablespoonful in a half glass of water or milk. Children ¼ to 1 teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

Prof. Colin C. Stewart was engaged by the society for the physiologic investigation. His report, published in the bulletin, shows that the elixir (Somnos), is not depressant, even when given in six times the prescribed hypnotic dose; that the lethal dose, judging from its effect on dogs, is not less than 16½ fluid ounces. This report verified his previous investigations, made at the University of Pennsylvania in 1902 and 1903.

Professor Stewart's earlier work was published, but by his request was afterward withdrawn. You, however, were advised that the work had been done and fully acquainted therewith. Furthermore, you were furnished a copy of Professor Sadtler's report and a copy of Professor Wilcox's clinical report.

You state that we refused to be guided by your suggestion, yet we had no knowledge of the result of your investigation until your virulent attack was made in THE JOURNAL, September 1 and 15. From a communication received under date of Feb. 21, 1906, and signed by you, we quote:

> Three preparations are mentioned (in your advertisement) that have not been acted on (by the Council) Protan, Proferrin and Somnos, but my opinion is that that they will be approved for advertising in the form in which they now appear in the copy.

From the fact that an advertisement was accepted and published, inference is natural that our claims for Somnos had been found correct.

In you issue of September 15 you state:

> The attention of the officers of the Company was called to the matter (of Somnos), and it was hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts. This they did not seem inclined to do, at least they did not do it.

Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished. No request was received from you to modify our literature in any way. How could you make such a request before you had your data? Why should we modify our claims when we were possessed of the facts mentioned, and in addition possessed voluntary communications from physicians above reproach supporting our stand?

On receipt of Professor Sadtler's report, our labels and literature were changed at once to conform therewith, and you were advised thereof. We did not change our labels and literature after statements had appeared in THE JOURNAL that Somnos is a mixture of chloral and glycerin, or a combination of the two held together so loosely as practically to amount to the same thing, because the only way to determine the truth of this statement was by physiologic and chemical investigations, and then we had in our hands such data to support our claims.

Prof. Colin C. Stewart's report states:

> In many instances in dogs it has been found impossible, within the limits of human endurance, to produce death in the manner described. Thus in one case 114 c.c. of the elixir (Somnos) were injected intravenously, and 30 c.c. administered by the stomach, in the course of three and three-quarter hours without fatal result. This total of 144 c.c. for the animal in question represented a dose of 11.75 c.c. per kilo, or fifty-one times the prescribed dose of 0.23 c.c. per kilo, corresponding to a dose for a 70 kilo man of 822.5 c.c. of Somnos, containing 45.24 gm. (696.7 grains) trichlorethidene propenyl ether, chemically equivalent to 42.02 gm. (647.1 grains) hydrated chloral.
>
> In two other dogs (II and III) the lethal doses were 68 c.c. and 108 c.c. respectively, corresponding to thirty-three and fifty-seven times the prescribed dose of 0.23 c.c. per kilo of body-weight
>
> This is equivalent to doses, for a 70 kilo man, of 532.2 c.c. and 919.2 c.c. Somnos, containing respectively 29.27 gm (450.8 grains) and 50.56 gm. (778.6 grains) trichlorethidene propenyl ether, chemically equivalent to 27.18 gm. (418.6 grains) and 46.96 gm. (723.2 grains) of hydrated chloral.
>
> The lowest lethal dose for dogs, representing for a 70 kilo (150 pounds) man 488 c.c., of Somnos, contains 26.83 gm. (413.2 grains) of thrichlorethidene propenyl ether, chemically equivalent to 24.92 gm. (383.8 grains) of hydrated chloral.

These results could not have followed if Somnos was a mere solution or mixture of chloral in glycerin, or if Somnos resolved itself into chloral and glycerin on being taken. What hypnotic drug can with safety be administered in thirty-three times the normal dose?

Tests were not made with equivalent amounts of chloral for the reason that Somnos is not chloral, nor does it contain any free or uncombined chloral.

If reports made to us are correct, our conclusions must stand; if they have been incorrect, we are interested, and will gladly subscribe to results if observations are from competent observers.

The above statement regarding the commercial introduction of trichlorethidene propenyl ether (Somnos) is true; therefore, you and the Council should withdraw the charge of fraudulent intent. It would seem also a mere measure of justice that the Council publish the names of the investigators who did the work on which its report is founded. The question of the therapeutic value of any drug can only be settled by a collective investigation of the product in which the observations of competent investigators are repeatedly verified, and we are perfectly willing to abide by the results of such an investigation.

We now ask you to retract your statements:

1. That our house has "stooped to dishonest or unfair practices."
2. That Somnos is not a definite chemical product.
3. That Somnos contains free or uncombined chloral.

How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored? Further than this, how can you subscribe to the statement that we have refused information when your letter files and ours, show abundant proof that the same has been fully offered and sent you.

We are justified in asking that the question of the pharmacologic and therapeutic results be submitted to a body of competent experts in physiologic therapeutics, to be mutually agreed on, and the results published in The Journal.

H. K. Mulford Company,
Milton Campbell, President.

The Journal is asked to retract the following statements:

(1) "That our house has stooped to dishonest or unfair practices."

(2) "That Somnos is not a definite chemical product."

(3) "That Somnos contains free or uncombined chloral."

Replying to 2 and 3 first. We have in no place claimed that Somnos is not a chemical compound, but have repeatedly referred to it as such; and we have never asserted that it contains free chloral, or chloral hydrate. We have only claimed that which the H. K. Mulford Company itself now admits to be the case, viz.: That Somnos is an unstable compound of chloral and glycerin which decomposes into its elements, chloral and glycerin, at about 104° F. Sadtler, in his report on the chemistry of Somnos, says:

> The isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable owing to its instability.

The Council has shown that the physiologic effects of chloral glycerate (Somnos) are identical with those of a corresponding amount of chloral hydrate. Mulford's letter states that Prof. C. C. Stewart (who performed the physiologic tests for the firm) did not make tests "with equivalent amounts of chloral." So long as the physiologic action of Somnos is the same as that of an equivalent amount of chloral (and the H. K. Mulford Company admits that it has no experiments to disprove this conclusion of the Council) it matters little whether or not it is a definite compound. We repeat that we have only stated what Mulford now admits: viz., that Somnos is an unstable compound. In fact, Frænkel in "Arzneimittelsynthese," p. 444, Edition 1906, states of chloral derivatives:

> Only such compounds from which chloral is easily regenerated have the hypnotic effect, whereas more stable compounds have often a strong toxic effect, without the equivalent hypnotic effect of chloral.

Also, p. 446:

> Only such chloral derivatives act as hypnotics from which the organism can split off the active chloral. The others act, owing to their chlorin content, as poisons, but not as hypnotics.

If the H. K. Mulford Company does not like the first alternative, we are satisfied to let it take the second.

It is requested that we retract our statement that "To say the least, it has not been honest and square in the matter." We would like to believe that the firm wanted to be "honest and square," and that it was misled in some way. How can we, however, when we consider the following:

While it was possible to express in simple English what this preparation is, "chloral glycerate" or "an unstable compound of chloral and glycerin," the firm put it out under the name "chlorethanal alcoholate"—a name which it now admits to be incorrect or misleading.

Apparently no thought was given to the physician on whom rested the responsibility of prescribing the drug; and this is a grave responsibility, both moral and legal, when it concerns a drug so toxic as chloral hydrate. Was this "honest" or "square"? Later, although admitting that Somnos is an unstable compound of chloral and glycerin and even pointing out the analogy between it and the compounds of chloral with water (ordinary chloral hydrate) and alcohol (chloral alcoholate) the firm, instead of stating this plainly to the physician, calls it "trichlorethidene propenyl ether"—a name which will not enlighten one physician in ten thousand, whereas the obvious name, chloral glycerate, would not be misunderstood by one physician in ten thousand.

Chloral plus water makes chloral hydrate.
Chloral plus alcohol makes chloral alcoholate.
Chloral plus glycerin makes chloral glycerate.

We are told:

> Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished.

What was desired and hoped for was that the H. K. Mulford Company would publish to physicians a "plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts." This it did not do and has not done.

The letter states:

> We had expressed the chemical composition of Somnos in technical language . . . to protect our interests.

This then is the firm's excuse for using as a description of Somnos chemical terms unintelligible to physicians. Accepting the truthfulness of this excuse we leave it to others to judge of its sufficiency. In plain English, terms are used that a chemist could understand, at least if he were sufficiently interested to look into the matter, but which not one physician in ten thousand could decipher. The chemist, however, and not the physician is the one who would imitate the preparation if any one did. To put it in other words, the H. K. Mulford Company claims that to protect itself against chemists it uses a nomenclature which chemists can understand, but which is unintelligible to physicians. But accepting this as the reason, it shows to what extent the spirit of gain is affecting our sense of right and wrong, when such an excuse can be calmly offered for not informing physicians of the character of the preparation.

So far as we can discover from the literature, Somnos was put on the market without a word to indicate whether it was a 5 per cent or a 20 per cent or a 50 per cent solution, or the pure chloral glycerate. Somnos was offered to physicians in such a way as not to indicate to them in any intelligible fashion that it was in any way related to chloral. Physicians must have prescribed it under the impression that it was the pure substance, since the synonym "chlorethanal alcoholate, $C_6H_{11}O_6Cl_3$." appeared directly under the name "Somnos" on the label and in the circulars. Was this "honest" or "square"?

The firm has been claiming that Somnos possesses "the hypnotic qualities of chloral without its untoward effects;" that it has "no toxicology;" that it is "harmless in twenty times the dose prescribed," etc., etc. (see brochure "Somnos"). It now states (see above letter) that "tests were not made with equivalent amounts of chloral" and C. C. Stewart (their own expert) states "twenty times the normal dose must be considered as an extremely dangerous quantity." Was it "honest" or "square" to the physician to make such reckless statements about the harmlessness of Somnos?

The letter asks:

> How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored?

To this we answer: (1) Prof. Sadtler's work confirms what we have been maintaining, viz., that Somnos is an unstable compound of chloral and glycerin: Sadtler says that "the isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable, owing to its instability," although he is satisfied that he showed that such a compound exists. (2) To show that we did not ignore C. C. Stewart's report, we quote the following from the article, the "Pharmacology of Somnos," The Journal, A. M. A., Sept. 15, 1906, p. 873:

> The writer (Stewart) states, page 19 (*Bull. Amer. Pharm. Soc.*): "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose must be considered as an extremely dangerous quantity." .

To this we added:

> Yet this firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed."

We also commented on the fact that Stewart reports no experiments on the toxicity of chloral hydrate. We considered every statement Stewart makes and repeated his experiments and found that while large amounts of Somnos may be injected into animals, slightly larger amounts of a 5 per cent solution of hydrated chloral could be given before death resulted. The experiments of the Council show that chloral hydrate is safe up to a certain point and Somnos is safe up to the same point. Equivalent doses have practically the same effect in producing sleep, in depressing the heart's action, in depressing the temperature, and in producing death. Bearing the above in mind, and remembering that the firm admits now that no comparative tests were made with chloral hydrate, was it "honest" and "square" to publish the following comparative statements, which we copy from Mulford's advertising booklet, "Somnos:"

CHLORAL HYDRATE.	SOMNOS.
Acute poisoning.	Harmless in twenty times dose prescribed.
Deep coma.	Coma unknown.
Weak, irregular, slow, feeble pulse.	Heart never depressed, pulse strong, regular and full.
Diminished respiration and lividity.	Respiratory center stimulated, rather than enfeebled.
Destruction of red corpuscles.	No effect on the blood.
Abolition of reflexes.	Cerebral effects never so profound.
Skin cold.	Skin warm.
Temperature subnormal.	Temperature uninfluenced.
Chronic poisoning.	No toxemia.
Craving soon established.	Craving never established.
Gastrointestinal irritation.	Always absent.
Erythematous eruptions.	Unknown.
Dyspnea.	Respiration ever calm.
Disturbed mental equilibrium.	Mentality clear, sensorium normal.
Somnos has no Toxicology.	Somnos habit is unknown.

(3) As regards Professor Wilcox's report, we prefer to postpone comment until physicians compare the results obtained with a 5 per cent. elixir of chloral hydrate with those obtained with Somnos (a 5 per cent. elixir of chloral glycerate). So long as the strength of Somnos was held as a "trade secret," comparisons with other hypnotics had little value. Professor Wilcox closes his report by saying, "evidently, we are closely approaching the standard hypnotic which I postulated in 1897." In a circular issued by Parke, Davis & Co. we read this, also written by Professor Wilcox in 1900: "Chloretone is our closest approximation to that theoretical hypnotic toward which we have been led through a study of the working hypothesis of the sleep-phenomenon."

As regards Mulford's proposition to have our experimental observations repeated and verified by competent investigators, we should gladly welcome such an investigation and publish the results, of course, provided that the investigation be carried out in scientific detail and parallel experiments be made with equivalent quantities of chloral hydrate and chloral glycerate (Somnos). We would suggest as a first, and presumably a final, step, that Professor Stewart, who has already done the experimental work for the H. K. Mulford Company, be requested to carry out the parallel experiments.

Finally, we suggest that physicians who are in the habit of using Somnos compare the action of Somnos with that of chloral hydrate, remembering that 15 c.c. (one tablespoonful) of Somnos contains the equivalent of 0.75 gm. (12 grs.) of chloral hydrate.

Tastes of Mosquitoes.

Philadelphia, Sept. 15, 1906.

To the Editor:—The editorial reference in The Journal, September 15, page 865, to some observations on the preferences of mosquitoes in the matter of clothes, leads me to call attention to a source of error in such experiments. Some years ago a bulletin of the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service detailed experiments on different colored stuffs with a view of determining if mosquitoes possess color preferences. I have not the bulletin at hand, but my recollection is that yellow was found to be least sought.

The error that enters into such tests is that the avoidance of some colors may be due to the odor of the dyestuff and not to the color. Many of the yellow colors now in use are nitro-derivatives, and even a very minute exhalation of a nitro-compound would be likely to be objectionable to the insect. Apart from this, many of the coal-tar dyes have perceptible odors, particularly when warm. Henry Leffmann.

Interstate Reciprocity and Frauds in Medical Schools.

San Francisco, Sept. 18, 1906.

To the Editor:—In The Journal, September 1, is a letter from Dr. Dudley Tait bearing the above title. The first portion of Dr. Tait's letter will be passed over and only that portion reviewed which deals with the case of Mr. Painton and the College of Physicians and Surgeons of San Francisco.

A portion of the truth may sometimes be so manipulated as to be more unjust and a greater misrepresentation than a direct falsehood. Mr. Painton is a graduate of an accredited high school. He is also a graduate of one of the California state normal schools. In addition to that, he has done much post-graduate work in scientific and literary branches. That places him above the required standard of the present California medical law in regard to his preliminary education. At the time that Mr. Painton matriculated in the College of Physicians and Surgeons he was justly entitled to advanced standing in certain branches, which advanced standing was not then prohibited, either by law or by regulation of the state board. The College of Physicians and Surgeons was then giving a continuous course of instruction, which plan of instruction is still in vogue in some of the leading medical schools of the United States. Since then, the course has been changed to conform to the requirements of the Association of American Medical Colleges. Mr. Painton, being poor in pocket, had to earn his own way. He did teach a portion of each of two years. In addition to the credits to which he was entitled, he took the summer courses, doing some work in both the medical and pharmacy departments, taking all the regular examinations in each portion of the work he pursued. In the medical department he took all the work required by the rules of the Association of American Medical Colleges, in addition to the credits which he might have claimed by reason of his studies previous to matriculating in medical college. He did this during the first two years of his course. The change in the course necessitated his taking the last two years' work at a time in the year which precluded his teaching. In these last two years he proved himself a good and intelligent student. He passed all his examinations and received no conditions. All these facts the college records show. Dr. Tait did not consult the records nor any member of the college faculty before writing his letter.

A word is necessary concerning catalogues. It is a well-known fact that a college catalogue is not an official record of either time of study or proficiency, but a mere list of the students matriculated by a college. This is true of all colleges. There is not a university or college catalogue on earth in which many faults might not be found. It is a mere announcement, and has no legal standing such as has the records of the college. Many students matriculate, and are catalogued, in every school in this country every year, who may not remain in school a month. That has nothing to do with the standing of the college or the proficiency of the student.

In view of all these facts, is it just to brand a respectable man as a fraud, because in the first place he is poor and has to earn his own way, and in the second place because he did his studying at one season of the year rather than another? Must a college be condemned because one individual finds fault with its catalogue, and that without any knowledge of the records of that college? Must a man be branded as a fraud because his work is ignored for the reason that it was done in the summer months rather than in the winter months? It is a gross injustice for one individual to accuse a man of fraud because his work was done in a different manner from that in which it is now done. The making of a law or a regulation of an examining board retroactive is contrary to the intent of any law or regulation. Nothing but a retroactive construction of the regulations of the state board could have denied to Mr. Painton the right to take his examination. Had he been admitted to the examination, there is no reason to doubt his ability to have passed the examination in a highly creditable manner.

Ethan H. Smith.

Interstate Reciprocity in Medical Licensure.

Muncie, Ind., Sept. 13, 1906.

To the Editor:—Interstate reciprocity in medical licensure is of such importance to the medical profession that it should be well understood. Recognizing the excellent professional worth and influence of my good friend, Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, and believing that he is in error in certain particulars in his discussion of reciprocity in The Journal, Aug. 25, 1906, I desire to discuss the same subject briefly.

The doctor admits that in the enactment of medical laws in the several states, the idea of protecting the people was made so prominent that the least benefit or convenience of the physician was not considered. For this reason and because under the constitution of the Union we can have no such thing as a national medical practice act, license under which would extend to the entire nation, thousands of good men are professional prisoners, each in his own state. For these men there are two sources of professional liberty: One is reciprocity between the states; the other is a re-test of qualification by examination in each state in which they desire to practice. The former plan is more practicable and equitable than the latter. When a man has once submitted to all the tests of qualification of his own state, and in doing so has submitted to the test of qualification required at that time in the states in which he may in future desire to practice, there is no good reason why he should be required to submit again and again to the inconveniences of re-examinations, provided satisfactory documentary evidence of the adequacy of the former test is furnished.

The doctor is all mixed up on the meaning of reciprocity. He sees the term, and hence the question, only in its political and commercial meaning. It has a broader meaning than he gives it. To reciprocate means: "To return an equivalent; to make a return in kind; to give and receive favors and benefits mutually."

Interstate reciprocity in medical licensure means, as now in practice under the rules of the American Confederation of Reciprocating Examining and Licensing Medical Boards, an agreement by each state in the compact, to admit to medical licensure without re-examination, any licentiate of any other state, who has submitted to all the tests of qualification, required at the time of such test, by the state where the license is sought. The rules of the confederation, and such independent rules as each state may employ, are for the purpose of determining and making reasonably sure that each applicant is competent and worthy. Each state extending this courtesy to a sister state asks in return, and has a right to expect, a reciprocation of the courtesy. Reciprocity is not a requirement of the law in any state, but it is a discretionary privilege extended by the law to the state medical boards. If the law in any state does not permit this privilege, then that state can not have reciprocity and the law should be amended.

The proposition that "Reciprocity is impracticable unless it conserves the needs of society, and protects the community from charlatanisms," implies that if it does these, it is practicable. I hope to show that these are two of the things that it does accomplish.

When state boards are in proper reciprocal relation they are under agreement to aid each other reciprocally in preventing charlatans from skipping from one state to another for the purpose of deceiving and defrauding the afflicted. When the states are in proper reciprocal relation any board would be venal that would knowingly recommend to a sister state a scoundrel or an incompetent. The purpose of reciprocity and the actual effect among the 25 states now in the confederation, tends as a rule, to keep at home, where they are known, the professional vampires who have unfortunately obtained a legal right to practice, and to furnish professional liberty to the clean, competent men of the profession.

Reciprocity between states, according to the compact of the American Confederation of Reciprocating Boards, provides for just such reciprocal assistance and information as will enable a state board to mark the charlatan and to deny him recognition. The Ohio board does not know the charlatans of Indiana, but, Ohio and Indiana being in a reciprocity compact, Indiana furnishes Ohio information as to the moral and professional character of each man who desires to go from Indiana to Ohio on reciprocity, and Ohio reciprocates this favor. No state left to itself can as well protect itself as when it has the aid and coöperation of other states. Some medical vampires can pass a state board examination who could not get reciprocity and should not have it.

The doctor says that: "Reciprocity confers exclusive privileges on certain persons." In another paragraph he says that "reciprocity does not discriminate." Of course he could not be right in both statements. He is right, however, in one. Reciprocity does confer exclusive privileges on certain persons that are worthy and well qualified, and the vicious and incompetent are excluded.

Dr. Harvey says that under reciprocity in medical licensure "Maine would say to New Hampshire, we will permit your physicians to locate in Maine and will grant them a license without imposing any restrictions whatever as to their qualification, provided you will receive our physicians on the same conditions," and then knocks down this man of straw of his own production by calling it "free trade." This statement reveals the whole trouble with those who oppose reciprocity, namely: a complete misunderstanding of the basic requirements of reciprocity in medical licensure, which is uniform adequate qualification. No state board holding membership in the American Confederation of Reciprocating Boards would consider for a minute an applicant for reciprocal endorsement who could not establish his competency by incontestable evidence. The evidence must include the history of his preliminary and medical education; his moral and professional character, and his endorsement and recommendation by the board before which he furnished final test of qualification. If Dr. Harvey had known this, his Maine-New Hampshire illustration certainly would not have appeared in print. His hypothesis being wrong, his conclusions can not be right. The truth is that no two states under their laws could have such an agreement, nor hold membership in the confederation of reciprocating boards under such practice. Qualification is the chief corner-stone of medical reciprocity as set out in the constitution and by-laws of the American confederation and provided for by the several qualifications adopted by the confederation.

The statement that "reciprocity favors the admission into a state of high requirements, ignorant and incapable men from states of low requirements," is made in support of the proposition that "reciprocity deteriorates the standard of medical education." If this were true, then it would deteriorate the standard of medical education as contended, but the very reverse is true, because a state having high legal requirements admits, under reciprocity, only those who have submitted to like high requirements in the state from which they come. Neither a state nor individual is eligible to the privileges of reciprocity except by meeting the standard of the state whose license is sought. Hence all the advantages, privileges and benefits of reciprocity can be and are being used as incentives to bring up the standard of the states of low requirements. A reciprocity privilege is a badge of qualification, and hence of honor, and not to be despised by the profession.

Just here permit the suggestion that under the compact of the American Confederation of Reciprocating Boards, the rights of each individual board in each state are duly respected. Each board reserves the right to sit in judgment in the case of each applicant. Under this compact, a board in considering the rights of an applicant for registration by reciprocity can draw on the board of any sister state for information and facts relative to the applicant, and in no other way can so full information be obtained.

The argument is made that if reciprocity be adopted that unless all holding license in a state be admitted to equal privileges of reciprocity without regard to qualification, that it would be unconstitutional. This is erroneous, because reciprocity between the states, as provided for by law, is a discretionary privilege, extended to the state boards, and not a mandatory requirement; besides, the exclusion of the incompetent and vicious, and the admission of the competent and worthy by a reciprocity agreement between the states, is not "class legislation," as contended, no more than the same would be when done by state legislature, and none question the right of the legislature to exclude the incompetent.

The contention that reciprocity would be inequitable because some state boards are too lenient in the examination of applicants as shown by the small per cent. of failures, while others scrupulously perform their full duty as evidenced by the large number of failures, should be considered in the light of all the facts. It must be remembered that under the laws in some states the boards are required to examine all applicants, regardless of previous preparation or qualification. An applicant must be examined regardless of the kind of college in which he has studied, or even if he has attended no college. He may be a graduate or he may not. He may never have seen a medical college; he may know nothing of medicine. Of course, a large per cent. of this class of undergraduates would fail. In other states, as in Indiana, only graduates of good colleges; men who have studied medicine four full years, and passed a satisfactory examination before a competent faculty and graduated; having previously acquired adequate preliminary education, are eligible to examination before the state boards. Of this class of high-grade graduates in medicine a smaller per cent. will fail. Again, it should not be forgotten that an examining board, under certain conditions, may be unjustly exacting.

On the hypothesis, however, that an evil does exist, I ask how is it to be corrected? Can it be done by leaving the boards to themselves? Or can it be sooner remedied by a reciprocity compact between the boards whereby the influence of all the states can be employed in demanding and assisting in its correction? Neither the state medical examining board nor the profession in any state will long submit to the odium of exclusion from rights and privileges because of inferiority of the law, or dereliction of duty by the board. Hence, reciprocity, with the light of publicity attending it, is the best possible remedy for an evil of this kind. No American physician should be satisfied because some states have reached a high standard of medical education, but should strive to bring all to the same high plane.

Under the rules of reciprocity, as now established and practiced, a state board can not only ask for the certified facts as to the registration of an applicant in the state from which he comes, but can demand the evidence of his qualification as given in his test before the state board where his primary registration occurred, including his examination papers. Hence, under reciprocity each state board must show its hand.

This fact kills Dr. Harvey's illustration of the young man who, following the line of least resistance, takes his examination in an easy state, and then attempts to go by reciprocity into one of more stringent requirements. The light of publicity is the best remedy for an evil. Reciprocity furnishes publicity and turns on the light, and tends to secure uniformity in medical education, legislation and administration.

If the New York wife seeking divorce in the Dakotas were compelled to take with her certified evidence from the New York courts with a recommendation from the New York authorities that the divorce be granted, in order to secure the decree of divorce in Dakota, she would probably stay at home and behave herself, as the quack must do under reciprocity.

The argument is submitted that reciprocity is of "limited usefulness." So is everything else. All men would not need the advantage of reciprocity, and there are some men in every state who could not get it, but deserving men who want reciprocity, and are entitled to it, should not be deprived of it on this account. Reciprocity can not be general and universal, in the sense of including states that do not furnish adequate tests of competency, or individuals that are unworthy or incompetent.

During the last few years more than 1,000 excellent men, representing a majority of the states of the Union, have obtained reciprocity in medical licensure, showing that reciprocity has at least a degree of practicability.

As a substitute for reciprocity, it is contended that the several state boards should be given "discretionary powers," to be exercised in the interest of "experienced and notable men of the profession." The reciprocity provision in the medical laws gives discretionary power; not, however, to be used arbitrarily in the interest of "experienced and notable men in the profession," but to be used in accordance with fixed and definite principles and rules of equity agreed on by all the states in the compact, so that uniformity may obtain and that all competent and worthy men may be treated alike, whether "notable" or not. Hundreds of the best men of the profession are quiet and unobtrusive, not known outside their own state, but can furnish incontestable proof of splendid competency. Reciprocity takes care of these men as effectually as it does of the "experienced and notable men of the profession," such as "professors and teachers in the medical colleges."

Again, it is claimed that reciprocity is in violation of the doctrine of "state sovereignty" and, hence, impracticable. It is difficult to understand just what is meant by this, or how state sovereignty could prevent a state from exercising its legitimate rights. One would think that a believer in state sovereignty would not question the right of a state to establish the necessary rules for the reciprocal recognition of the official acts of other states. To talk about state sovereignty, and then turn about and say that the states have not the right to make a reciprocity agreement, is inconsistent. State sovereignty, if it means anything, means the right of the state to do anything in the interest of its people which does not conflict with the organic law of the nation, nor abridge the rights of the people of other states. State sovereignty favors reciprocity between the states if it has anything to do with it at all.

W. A. Spurgeon,
President of the American Confederation of Reciprocating, Examining and Licensing Medical Boards.

State Board Results in the Educational Number.

Springfield, Ill., Sept. 17, 1906.

To the Editor:—Please allow me space to dwell further on the erroneous conceptions which may be gained by the casual reader through a misinterpretation of the significance of the data in the Educational Number of The Journal, August 25.

I have now before me a printed postal card which I believe has been sent broadcast, bearing the bold-faced caption, "Failures of Chicago Graduates," and giving a list of the different medical colleges of Chicago with the percentages of failures of their students before the "different state medical examining boards throughout the United States during the year 1905." The Journal, Aug. 25, 1906, is quoted as the authority for the figures.

This card shows the National Medical University as the Chicago medical college established over five years having the smallest percentage of failures, with the Northwestern University Medical School and Rush Medical College in the second and third place, respectively. The reader, conversant with the standing of the two older colleges among the medical institutions of the state, is at first skeptical, but on referring to your Educational Number (Table A) he finds that the author of this card is fully supported by your figures, and was guilty of no misrepresentation when he quoted The Journal as his authority.

This incident illustrates forcefully the danger of the publication of deductions drawn from data whose figures are not uniform in significance. To the vast majority of the readers of The Journal to whose attention this card may come, the statements on the card are fully substantiated by reference to your Table A, and they will not take the trouble to go further to ascertain the exact facts. We have here, in short, a very widely promulgated misconception, for which The Journal is unfortunately made to stand sponsor.

It is true, as you have said, that your readers were cautioned, in the editorial accompanying these data, to consider the conditions surrounding their origin, but it is my impression that a very large percentage of those who glanced over the deductions of your tables paid little or no attention to their discussion and explanation. The average reader is prone to accept conclusions, especially when based on figures, with little concern as to their source.

On an analysis of your figures we find that the National Medical University, the school credited with the highest standing, had 24 applicants who appeared before but 7 examining boards. One of these applicants failed to pass an examination. Northwestern University Medical School had 191 applicants before 27 boards, and 10 of these failed to pass an examination. Rush Medical College had 254 applicants before 30 boards, and 21 failed to pass an examination.

Of the failures of Northwestern 6 were before boards which rejected from 25 to 50 per cent. of all applicants from other states. Of the failures of Rush Medical College 10 were before boards rejecting 25 per cent. or more of applicants from other states. The National had but 1 gradute before any board which rejected more than 25 per cent. of applicants, and that one failed.

As I said in my communication in The Journal, September 15, "we might as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination."

It is obvious that percentages drawn from the successes and failures of the National Medical University and the other two institutions are in no way comparable. I am not prepared to say what success the graduates of the school given highest place would have attained before a larger number of boards, but for 1905 the percentage is based on results before an insufficient number to give an adequate idea of the standing of any school. Still The Journal, through the publication of these deductions and percentages, is compelled to stand sponsor for statements which are very widely promulgated and used to influence the young men of the country in the selection of the place for their medical education. James A. Egan,
Secretary, Illinois State Board of Health.

Editor's Note: Our correspondent refers to a postal card which, although anonymous, leaves little doubt as to its source. It is to be noted how skilfully its author, by the use of the words "colleges established five years or more," omitted one college, an evening school, which happens to have a still lower percentage, by reason of having had only one graduate examined outside of Illinois and he failing. A college that had received, in an exceptional year, and often from a combination of circumstances, an unusually low percentage of failures could hardly be blamed for taking advantage of it, since another opportunity might never occur. That it should send out anonymous statements, for the purpose of conveying a wrong impression, as the cards referred to doubtless were sent out, only adds to the suspicion with which at least one Chicago college is regarded. This suspicion our correspondent seems to share. If the suspicion is not well founded, why is it not as fair for one college to be shown up as having received a low percentage as another? As to the figures being insufficient, the college had 29 graduates, 24 of whom took the examination. This would seem to be a large enough proportion for a fair basis for figuring the percentage.

The statistics published are uniform except in degree in which they never could be uniform, and therefore could never be strictly "uniform in significance." Because a casual reader may form a wrong conclusion or because a college so inclined may publish half-truths for selfish purposes, are not good reasons for withholding from publication statistics which are of absolute value to the careful reader.

While there are bound to be differences between the percentages of the same college from year to year, each year hereafter will furnish larger totals from which to make deductions and then the deductions, of course, will have added value. For the past three years the figures for Chicago colleges are as shown in the accompanying table. It will be noted that the college which appears first on the anonymous postal card takes a back seat at this table.

Book Notices

Problems in Animal Metabolism. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Cloth. Pp. 205. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

If one may judge by the activities of writers and publishers, our English colleagues appreciate—somewhat better than we seem to do—the importance of recent progress in biologic chemistry for the solution of medical problems. Recently we reviewed in these columns two books written with the object of rendering these advances accessible to medical readers; namely, Mann's "Chemistry of the Proteids," and Hill's "Recent Advances in Physiology and Biochemistry." Of similar purport is this book by Leathes, which is based on a course of lectures given in the physiologic laboratory of London University with the object of presenting to medical students in correlated form the results of recent studies in biologic chemistry, in so far as they apply to human physiology and to medicine. An introductory chapter discusses briefly the modern theories and discoveries concerning the chemistry of the proteids and other constituents of the animal body, as well as the essential features of enzyme action. The metabolism of carbohydrates, fats and proteids is then considered, together with a separate chapter on the metabolism of cyclic compounds. Included in these chapters are brief discussions of the metabolic abnormalities, such as glycosuria, pentosuria, alkapton uria, cystinuria, acetonuria, etc. As this book is based on a series of lectures given for the purpose of popularizing an intricate subject the material has been handled with the object of emphasizing principles rather than of exhaustively considering all of the known facts. The author has succeeded well in accomplishing this purpose, and the physician who desires to familiarize himself with the progress in the fundamental principles of animal metabolism will find in this book an attractive and concise discussion of the subject. One is impressed with the excellent selection of illustrative examples used by the author in explaining various theories and hypotheses. On the other hand, a tendency to form exceedingly involved sentences robs these essays of much of that clearness

TABLE SHOWING RESULTS OBTAINED BY GRADUATES OF CHICAGO COLLEGES IN EXAMINATIONS BY STATE EXAMINING BOARDS HELD DURING THE YEARS 1903, 1904 AND 1905.

	Chicago Colleges.	Examined in all States.				Examined in Illinois.				Examined in Other States.				No. of States Examining.
		Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	
1	Northwestern Univ. Med. School	477	460	17	3.6	217	217	0	0.	260	243	17	6.5	29
2	Rush Medical College	784	732	52	6.6	359	357	2	0.6	425	375	50	11.8	29
3	Coll. of Physicians and Surgeons	790	729	61	7.7	450	447	3	0.7	340	282	58	17.1	31
4	Hering Medical College	55	50	5	9.0	30	29	1	3.3	25	21	4	16.0	17
5	American Med. Missionary College	48	43	5	10.4	11	11	0	0.	37	32	5	13.5	20
6	Hahnemann Medical College	204	182	22	10.7	132	129	3	2.3	72	53	19	26.4	23
7	American Coll. of Med. and Surg.	77	65	12	15.6	60	55	5	8.3	17	10	7	41.2	9
8	Jenner Med. Coll.	54	44	10	18.5	49	42	7	14.3	5	2	3	60.0	5
9	Bennett Medical College	77	62	15	19.5	45	43	2	4.4	32	19	13	40.6	17
10	National Med. University	65	51	14	21.5	49	39	10	20.4	16	12	4	25.0	9
11	Illinois Med. College	164	121	43	26.2	69	61	8	11.6	95	60	35	36.8	32
12	College of Medicine and Surgery	63	39	24	38.1	52	36	16	30.8	11	3	8	72.7	8
	Dearborn Med. Coll.*	47	46	1	3.4	46	46	0	0.	1	0	1	100.0	2
	Totals	2905	2624	281	9.7	1569	1512	57	3.7	1336	1112	224	16.7	

* Unclassified, since figures are for two years only, and all but one were examined in Illinois.

which is so essential to a successful popularization of technical topics, and partially offsets the admirable selection of the subject matter.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Whitthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology at Cornell University, and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition. Pp. 996. Price, $6.00. New York. Cloth. William Wood & Co., 1906.

In this volume are considered the various topics of pure medical jurisprudence. The legal relations of physicians and surgeons to their patients, as witnesses and in suits for malpractice, with a synopsis of the laws of the various states on these subjects, form the section on medical jurisprudence proper. This is followed by the thanatologic division of forensic medicine, including the legal status of the dead body, the powers and duties of coroners, autopsies, personal identity, the time of death, and the action of heat, cold and starvation. Numerous cases are cited illustrating the various subjects.

Marriages

August H. Gorenflo, M.D., to Miss Hattie Clippert, both of Detroit, September 12.

John W. Hoffman, M.D., to Miss Edna MacPherson, both of Detroit, September 26.

George C. Wallace, M.D., to Mrs. Jane B. Odell, both of Detroit, September 15.

Marion T. Benson, M.D., to Miss Sallie May Bagley, both of Atlanta, Ga., September 12.

Henry Adsit, M.D., Hornell, N. Y., to Miss Peachy P. Brown, at Baltimore, September 15.

J. Henry Dowd, M.D., to Miss Louise Lyman, both of Buffalo, N. Y., September 17.

Clarence L. Six, M.D., to Miss Genevieve Peters, both of Stockton, Cal., September 3.

John L. Halliday, M.D., to Miss Tacy Graff, both of Wellington, Kan., September 22.

Homer L. D. Jenkins, M.D., Hughes Springs, Tex., to Miss Ella B. Keasler, September 2.

Edgar D. Rush, M.D., Celina, Ohio, to Miss Eva Morton, of Fletcher, Ohio, September 10.

Lewis Clyde Bixler, M.D., Pittsburg, to Miss Ida Evans, of Easton, Pa., September 19.

Ralph A. Dalbey, M.D., Youngstown, Ohio, to Miss Centell, of Philadelphia, September 19.

Paul Guilford, M.D., to Miss Ethel Margaret Hamline, both of Chicago, September 19.

Robert S. McCombs, M.D., Philadelphia, to Miss Richenda Pratt, of Carlisle, Pa., September 8.

Samuel L. Adair, Jr., M.D., to Miss Grace Ethel Thompson, both of New Washington, Ind., September 15.

Stanley A. E. Brallier, M.D., Conemaugh, Pa., to Miss Emma Hillock, of Philadelphia, recently.

William Cammack, M.D., Salem, Iowa, to Libbie Seymour, M.D., of Iowa City, Iowa, September 12.

Joseph G. Mahoney, M.D., Shelton, Conn., to Miss M. C. Fahy, of New Haven, Conn., September 6.

Irving Wagoner Metz, M.D., Springfield, Ill., to Miss Edith Mabel Thorp, of Havana, Ill., September 26.

Francis Le Roy Satterlee, M.D., to Miss Mary Philipse Iselin, both of New York City, September 19.

Clarence J. Whalen, M.D., Wellsville, N. Y., to Miss Lena Loughley, of Coudersport, N. Y., September 11.

Simon F. Earnest, M.D., Philadelphia, to Miss Emma J. Meily, of Deodate, Pa., at Annville, Pa., September 7.

James H. Hartwell, M.D., to Miss Mary Lewis Dicksin, both of Stewartsville, Va., at Roanoke, Va., September 15.

Albert J. Underhill, M.D., Baltimore, to Miss Carrie Robb Brown, on Miles River, near Royal Oak, Md., September 15.

Benjamin C. Stevens, M.D., Logansport, Ind., to Miss Alice Mertz, of Burnettsville, Ind., at Riverside, Ill., September 18.

A. C. Wollenberg, assistant surgeon, U.S.P.H.&M.-H. Service, to Miss Florence Zoe Allen, of Detroit, September 22.

Lieutenant Frank Thomas Woodbury, assistant surgeon U.S. Army, to Mrs. Caroline Townsend Fremont, at Manila, P. I., September 12.

Deaths

Philip Skinner Wales, M.D. University of Maryland School of Medicine, Baltimore, 1856; captain and medical director, United States Navy, retired; surgeon general of the Navy from 1879 to 1884; who entered the service, Aug. 7, 1856, and attained his present grade Oct. 15, 1881, serving eight years and five months at sea and twenty-one years and two months on shore duty, and was retired Feb. 27, 1896, died suddenly from cancer of the intestines in the Hotel de St. James et d'Albany, Paris, September 15. His body will be embalmed and brought to Annapolis, Md., for burial.

Henry H. Ruger, M.D. Jefferson Medical College, Philadelphia, 1865; a pioneer citizen of Devil's Lake, N. D., who served from 1876 to 1882 at Fort Abercrombie, Fort Totten, various Missouri River posts and in a number of military expeditions against the Indians west of the Missouri; county commissioner of Ramsey County for many years; representative in the Territorial Assembly in 1885; examining surgeon of the pension department and health officer of Ramsey County, died at his home in Devil's Lake, September 12, aged 67.

Walter C. Jackson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1852, who played a prominent part during the yellow-fever epidemic in Montgomery, Ala., in 1853, and was a resident of that city until his death; once president of the city board of health and for several terms a member of the common council; one of the oldest and best known practitioners of Montgomery, died at his home in that city, September 20, after an illness of three days, aged 79.

Henry Halbert Deming, M.D. Chicago Medical College, 1868; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society; one of the founders and at one time president of the Chicago Hospital; formerly a practitioner of Pana, Ill., but for a number of years a well known and esteemed physician of Chicago, residing on the South Side, died suddenly while making a professional call, September 22, from angina pectoris, aged 61.

J. R. Anders, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1904, who went to Central American ports last winter as representative of the Mississippi Board of Health, with the party of southern health officials to study sanitary and quarantine conditions, and who was in charge of Rosetta during the yellow-fever epidemic last year, died at his home in Gloster, Miss., September 15, from typhoid fever, after an illnes of several weeks.

Sherman T. Brown, M.D. Gross Medical College, Denver, Colo., 1897; a member of the American Medical Association; demonstrator in anatomy in Gross Medical College and one of the most prominent young surgeons of Denver, was taken ill with appendicitis while performing an appendicectomy in Mercy Hospital, and died in that institution Septemebr 15, three days after operation, from postoperative pneumonia, aged 32.

William Henry Lilly, M.D. New York University, New York City, 1860; assistant surgeon and later surgeon of the Fifty-second North Carolina Infantry, C.S.A., in the Civil War; a member and once vice-president of the Medical Society of the State of North Carolina; for 37 years a resident of Concord, N. C., and one of its most prominent physicians, died at his home in that city, September 12, after an invalidism of about a year, aged 72.

Evander J. Goodsell, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1880; a member of the American Medical Association and one of the oldest and best-known practitioners of Norwalk, Ohio, died at Lakeside Hospital, Cleveland, September 19, a short time after an operation for gangrenous appendicitis and intestinal obstruction.

George F. Lightfoot, M.D., New York Homeopathic Medical College and Hospital, New York City, 1891; formerly a member of the board of health and health officer of Kearney, N. J.; a practitioner of Arlington, N. J., died in St. Michael's Hospital, Newark, N. J., September 17, from kidney disease, after an illness of several years, aged 41.

Leonard Darling White, M.D. Harvard University Medical School, Boston, 1883; for many years a member of the board of health of Uxbridge, Mass., and for the last 10 years assistant medical examiner; a member of the Thurber Medical Society of Milford, died suddenly at his home in Uxbridge, September 18, from heart disease, aged 47.

Frank W. Selman, M.D. Medical College of Indiana, Indianapolis, 1903; assistant surgeon Third Infantry, Ind.N.G.; secretary of the board of health of Greenfield, Ind., and a member of the Hancock County Medical Association, died suddenly at his home in Greenfield, September 11, from cerebral hemorrhage, aged 25.

Samuel G. Courtney Pinckney, M.D. College of Physicians and Surgeons in the City of New York, 1893; a specialist in nervous disorders and part owner of the Peachtree Sanitarium, Atlanta, Ga., died at Grandview-on-the-Hudson, September 20, from pulmonary disease, after an illness of a year, aged 37.

Jay Greenwood Wilson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1867; United States consul at Ponce, Porto Rico, and later a special inspector of customs in the United States treasury department, died at his home in Washington, D. C., September 10, aged 66.

John M. Lefevre, M.D. McGill University, Medical Department, Montreal, 1879; gold medalist of his class; chief surgeon of the Western division of the Canadian Pacific Railway, died at his home in Vancouver, B. C., September 17, after a short illness, from nephritis, aged 53.

Pinckney McDonald Bruner, M.D. Medical College of Alabama, Mobile, 1861, for two terms a representative to the legislature from Conecuh County, died at his home in Evergreen, Ala., September 11, after an illness of several months, aged 74.

Edwin B. Payne (Years of Practice, N. D.); a veteran of the Civil War; the first physician of McHenry County, and for 12 years coroner of that county, died at his home in Towner, N. D., August 15, from dropsy, after an illness of six months, aged 62.

Arthur Knight, M.D. Eclectic Medical Institute, Cincinnati, 1876; a veteran of the Civil War, and since then a practitioner of Sauquoit, N. Y., died at his home, September 16, from cerebral hemorrhage, after an illness of more than two years aged 65.

Thomas J. Williams, M.D. Rush Medical College, Chicago, 1893; interne in Cook County Hospital in 1894 and 1895; physician of Leadville and of Lake County, Colo., shot and killed himself in his office in Leadville, September 19, aged 43.

William M. Oates, M.D. College of Physicians and Surgeons, Baltimore, Md., 1894, health officer of Bridgeport, Ohio, died at the North Wheeling (W. Va.) Hospital, September 18, from typhoid fever, after an illness of two weeks, aged 34.

James F. Munn, M.D. College of Medicine, Syracuse (N. Y.) University, 1881, for 25 years a practitioner of Syracuse, died September 16, at the Hospital of the Good Shepherd in that city, from uremia, after a long illness, aged 55.

Joseph Lyle Thornton, M.D. Medical College of Ohio, Cincinnati, 1862, a pioneer educator of Ohio, died at his country home, near Middletown, Ohio, August 17, from arteriosclerosis, after an illness of six months, aged 79.

Dennis J. McCabe, M.D. New York University, New York City, 1898, was thrown from his carriage in a runaway accident near his home in Berlin, N. H., September 16, and died three-quarters of an hour later.

John S. McNaught, M.D. College of Physicians and Surgeons in the City of New York, 1846; a prominent and esteemed practitioner of Hobart, N. Y., died at his home in that city, September 8, aged 87.

William A. Dole, M.D. Jefferson Medical College, Philadelphia, 1901, a practitioner of Lyndon, Kan., for five years, was killed in a runaway accident two miles southeast of Lyndon, September 16.

George M. Reed, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, died at his home in Massillon, Ohio, September 8, after a lingering illness, aged 58.

Edward A. Wheeler, M.D. Bellevue Hospital Medical College, New York City, 1879, a member of the Kings County Medical Society, died suddenly at his home in Brooklyn, September 19, aged 55.

Levi J. Enders, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1876, died at his home in Williamstown, Pa., after a short illness, September 11, aged 52.

Blake Bigelow, M.D. University of Vermont, Medical Department, Burlington, 1883, of St. Regis Falls, N. Y., died in a hospital in Boston, September 13, from nephritis, aged 45.

Solomon S. Bachman, M.D. Long Island College Hospital, Brooklyn, 1870, for many years a practitioner of Easton, Pa., died at his home in Philadelphia, September 10, aged 69.

Aaron V. Talbert, M.D. Cincinnati Medical College, 1846, died at his home in Pasadena, Cal., July 4, from carcinoma of the stomach, after an illness of six weeks, aged 80.

Daniel Henry Brown, M.D. Medical College of Indiana, Indianapolis, 1900, a colored physician of Indianapolis, died at his home in that city, September 19, aged 32.

Guy M. Brothers, M.D. Medical College of Indiana, Indianapolis, 1904, committed suicide at his home in New Paris, Ind., by taking cocain, September 19, aged 33.

Harvey R. Benham, M.D. Eclectic Medical Institute, Cincinnati, 1853, died at his home in Richmond, Ind., September 15, from senile debility, aged 83.

David H. Crisp, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1846, died at his home in Uvalde, Texas, June 25.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A SENSITIVE TEST FOR ALBUMIN.

PADUCAH, KY., Sept. 14, 1906.

To the Editor:—In Volume XLVII No. 10, pp. 816 of THE JOURNAL, there is an excerpt from an article by Tognetti in the *Gazetta degli Ospedali*, Milan, describing a sensitive test for albumin. I want to know how long he allows the specimen to stand before deciding. He says "gradually throws down in a yellowish-white precipitate."

HARRY A. SMITH.

ANSWER.—In addition to the description on page 816 we quote from the author as follows: "If there is no albumin in the urine, the opaque appearance, produced by the addition of the tanno-alcohol mixture and heating, vanishes as the hydrochloric acid is added. If, on the other hand, there is albumin in the urine, the opaque appearance persists even after the hydrochloric acid has been added, and in the course of about a quarter of an hour a yellowish white precipitate accumulates in the bottom of the test-tube."

COLEY'S SERUM FOR INOPERABLE SARCOMA.

——, MICH., Sept. 18, 1906.

To the Editor:—Please inform me through THE JOURNAL what Coley's serum for inoperable sarcoma consists of and how and where it can be secured? Do you know anything about its success?

S.

ANSWER.—Coley's serum is a mixture of toxins obtained by cultivating the germs of erysipelas for three weeks in cacao broth, inoculating this culture with *Bacillus prodigiosus*, and cultivating for four weeks longer. The mixture is then sterilized at 136° F. and the liquid used for hypodermic injection. The dose is 1 to 8 minims, beginning with a small dose and gradually increasing. The injections may be followed by high fever and the method is not entirely free from danger. A few persons have been reported as apparently cured by this method and some regard it with favor for postoperative treatment to prevent recurrence. The general opinion, however, seems to be that the treatment should be applied only to inoperable cases, and then must be regarded merely as an experiment. The serum is listed in the catalogue of Parke, Davis & Co., but we do not find it in that of any other firm.

HOW TO SUBSCRIBE TO FRENCH MEDICAL JOURNALS.

SAN ANGELO, TEXAS, ——.

To the Editor:—1. Please inform me as to the subscription price of the following French journals and the addresses of the subscription agencies to which the money must be sent: *Bulletin de l'Académie de Médecine, Presse Médicale, Semaine Médicale.*

O. H. JOHNSON.

ANSWER.—*Bulletin de l'Académie de Médicine:* publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price, 20 francs, which is approximately $4,00 in United States currency and includes postage.

The *Presse Médicale* is a bi-weekly journal; publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price 15 francs, which is approximately $3.00 in United States currency, and includes postage.

Semaine Médicale, edited and published by Dr. de Maurans, 53 avenue de Villiers, Paris, France. Subscription price, 10 francs, which is approximately $2.00 in United States currency, and includes postage.

A very convenient way of sending the money is by a postoffice money order made payable to the publisher of the journal.

METHOD OF FUMIGATING WITH FORMALDEHYD.

Mankato, Minn., Sept. 13, 1906.

To the Editor:—Kindly give me the method of fumigating by formaldehyd by using permanganate of potash. I have heard much of the method and have consulted many authorities without success, so I take the liberty of asking you.

John M. Edwards.

Wardsville, Ont., Can., Sept. 23, 1906.

To the Editor:—What is the cheapest and best chemical method of liberating formaldehyd gas for fumigating purposes? Is it considered as good as using one of the generators now on the market?

W. H. Rennie, M.D.

Answer.—These questions were answered in The Journal, July 14, 1906, page 139. A discussion on the relative amounts of the ingredients, consisting of letters from representatives of the state boards of health of Iowa and Illinois, will be found in The Journal July 28, page 288, and August 18, page 523. A further note on an experimental comparison of methods was printed September 22, page 952.

ALCOHOLIC STRENGTH OF COCAIN HYPODERMIC SOLUTIONS.

Fisherville, Ont., Can., Sept. 18, 1906.

To the Editor:—What proportion of alcohol (98 per cent. strength) should be added to a cocain or eucain B. solution for injection in the gums for tooth extraction in order to preserve the solution thoroughly? What would be the greatest alcoholic strength of a solution that could be used for hypodermic purposes that would not prove dangerously irritating or annoying?

M. D. Baker.

Answer.—Alcohol in 10 per cent. solution will inhibit the growth of bacteria, according to W. H. Park ("Bacteriology in Medicine and Surgery"). Bartholow states that alcohol may be used hypodermically in the dilute form as whisky or brandy ("Materia Medica and Therapeutics," 10th edition). H. C. Wood ("Hare's System of Practical Therapeutics," 2d edition) says that 10 minims of tincture of digitalis (made with diluted alcohol) can be injected without causing serious local trouble. It is probable, therefore, that from 40 to 50 per cent. of alcohol could be used for hypodermic purposes without irritating. If properly made, solutions of cocain keep for some time without addition of an antiseptic. Probably chloroform water as a vehicle or phenol (1 minim of a 5 per cent. solution to 4 ounces) as used in the Schleich method, would be preferable to alcohol. It is preferable not to try to keep solutions of these substances long, but to make them fresh when needed.

CONTINUOUS WATER BATHS FOR BURNS.

New York, Sept. 10, 1906.

To the Editor:—In The Journal, September 8, in your answer to Dr. Burr's inquiry you speak of the disuse of the method for treating burns, which is attributed to Hebra. Permit me to state that the method has by no means been abandoned; on the contrary, it is still appreciated as the ideal one in extensive burns, only the American colleagues are not familiar with it. As the matter merits attention, I wish to give a few notes of historical studies which I have collected on the continuous bath in extensive burns.

Sept. 14, 1857, a fire broke out in the pyrotechnical laboratory in Frankfort on the Main. Of twenty persons burnt, seven had perished in the flames or died from inhaling obnoxious gases. Among the thirteen remaining who were taken to the hospital different degrees of combustion presented themselves. All these cases were treated by Dr. G. Passavant and all except those with burns on the head alone were given the continuous warm bath, according to the extent of the injury—the partial or the full bath. This is the first record I can find in literature of treatment of burns by the continuous warm water bath.

We see Passavant has treated extensive burns with the continuous bath in the year 1857 (his first publication of the method appeared in the year 1858), but Hebra writes in the *Allgemeine Wiener Medizinische Zeitung*, 1861, No. 43: "The continuous full bath given for therapeutic purposes and kept up for days, weeks and months has, as far as I am aware, never been tried or carried out by any one." He says he has made use of this method in three cases during the year 1860. His experience in the treatment of such injuries by means of ointments and caustics had been most unsatisfactory, and these sad experiences gave him the idea to make use of the continuous warm bath in case of extensive burns. He does not mention Passavant, whose article appeared in the best known German medical journal of that period, namely, the *Deutsche Klinik*, 1858, Nos. 36, 38 and 39. In the text-books—and I have examined a great many—Passavant is not spoken of either, but all credit of having introduced the method is given to Hebra.

Passavant says that he had had already good results before the year 1857 by using these baths in cases of combustion, and that he had been induced to utilize them in such cases on account of the analogy between the wounds of combustion and other wounds in which he had found the bath effective, and finally because he considered that the drawbacks attached to other methods of treatment of burns could be avoided by employing the continuous warm water bath. The injured, even those who had sustained extensive burns, suffered at first comparatively little, but after a while most violent pain. The action of the continuous bath is manifold. It gives almost immediate and even complete relief from such pain and can be considered as the most excellent anodyne. Even if it offered no other advantages it would be of great value on account of this soothing effect when the pains are most excruciating. Another advantage of the warm water treatment is that the water penetrates the burnt tissues, in consequence of which they remain moist and soft. Without the immersion the cuticle which has been destroyed in its whole depth would harden and form an impenetrable cover over the underlying parts. Immersed in water, tissues which have become gangrenous cannot dry up, but remain moist. They detach themselves easily and are washed away after having become detached. Thus the wound is constantly kept clean. There is no accumulation of pus, no crusts of desiccated wound secretion, and which is most essential, no dressing is required. The patient has not to suffer the often painful procedure of change of dressing. Langenbeck, who in the year 1850, introduced continuous immersion as a method of treating surgical wounds, characterized it as the mildest method, not requiring dressing, securing clean wounds in a way which could not be surpassed by any other method.

Concerning further and most essential advantages of the continuous warm bath in case of burns we have to study the physiologic action of the warm bath on circulation and innervation in general. I may be permitted to refer to the chapter on the continuous warm bath in my book, "Carbonic Acid in Medicine." Here I will only call attention to a few points. Since we, thanks to recent investigations, know more of the physiologic effect of the warm bath on circulation and innervation, we can explain better its importance, especially in severe burns. There are certainly many cases which would prove fatal without the advantage of this means, while with the aid of the continuous warm bath they make a good recovery. We know the serious effect of extensive burns on the nervous system, and here the continuous warm bath must be considered as the best of all remedies.

When a part of the body is placed in warm water, the nerve ends of the skin become irritated. This irritation is transmitted to the vasomotor nerves and is followed by dilatation of the blood vessels, and consequently by acceleration of the circulation. This accelerated blood circulation facilitates the elimination of the products of inflammation and infection, and with the removal of pyrogen substances and toxins through the general circulation, fever will be reduced. The warm baths are a means to stimulate metabolism, the principal desideratum when we have to deal with severe injuries needing great recuperative power. In a more elaborate paper I am preparing I intend to deal more fully with these points, and also to give the most interesting history of the therapeutic use of the continuous bath. Here only a few notes: Research in the history of the continuous bath as a therapeutic measure shows that its introduction has been ascribed to two German surgeons, Fritz and von Walther, who lived during the latter part of the eighteenth and the first quarter of the nineteenth centuries; others ascribe it to Baudelocque, the great obstetrician of the time of Napoleon I. Baudelocque made use of it in peritonitis. His method was revived by Noeggerath in the German Hospital of New York, but abandoned again after Noeggerath's departure.

The first who used the continuous bath in surgery seems to have been Paulus of Ægina, who lived in the seventh century under the reign of Heraclius, the Byzantine emperor. Paulus had patients, operated on for hernia, especially children, submersed in warm water for seven consecutive days in order to prevent inflammatory symptoms.

All these early advocates of the continuous bath, beginning with Paulus of Ægina, and later on Stromeyer and Langenbeck, in the explanation of the effects of the continuous bath pronounced—although they did not say the name—antiseptic principles. All who have had experience with it will confess that it is still the most reliable antiseptic in extensive burns.

The continuous bath in therapeutics has not been appreciated as it should have been by American physicians. Dr. Dent, whose death we have reason to lament, was the first to introduce it in this country in the treatment of insane.

A. Rose.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 22, 1906:

Lyster, Wm. J. L., asst.-surgeon, granted two months' and twenty-four days' leave of absence, about Oct. 6, 1906.

Miller, R. B., asst.-surgeon, granted 15 days' leave of absence.

LeWald, Leon T., asst.-surgeon, left Fort Slocum, N. Y., on seven days' leave of absence.

Fife, James D., asst.-surgeon, ordered to accompany Companies B and D, 4th Infantry, from Fort Slocum, N. Y., to Fort Mackenzie, Wyo.

Harvey, Philip F., asst.-surgeon-general, granted leave of absence for fifteen days.

Miller, E. W., asst.-surgeon, granted five days' leave of absence.

Carter, E. C., surgeon, granted 15 days' leave of absence.

Robbins, C. P., asst.-surgeon, will, on arrival at Madison Barracks, N. Y., with troops from Mt. Gretna, Pa., proceed to his proper station, Fort Ethan Allen, Vt.

Byars, Caspar R., contract surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Ethan Allen, Vt., for duty.

Harris, Herbert I., contract surgeon, ordered to Fort Riley, Kan., to accompany troops marching to Fort Snelling, Minn.

Macy, Fred S., contract surgeon, ordered from Fort Ethan Allen, Vt., to his proper station, Fort Adams, R. I., and granted leave of absence to Oct. 1, 1906.

Shellenberger, James E., contract surgeon, granted sick leave of absence for one month, with permission to apply for an extension of two months.

Porter, Elias H., contract surgeon, ordered from Fort Reno, Okla., to Fort Logan H. Roots, Ark., for temporary duty.

Gregory, Verdo B., contract surgeon, granted leave of absence for three months, with permission to visit the United States.

Stone, Frank P., contract surgeon, granted an extension of seven days to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, week ending Sept. 22, 1906:

Moore, J. M. surgeon, detached from *Franklin* and to *Newark*.

Bogan, F. M., P. A. surgeon, detached from *Marietta* and to New York Hospital for treatment.

Brown, J. L., asst.-surgeon, to duty with Recruiting Party No. 3.

Richardson, F. A., acting asst.-surgeon, home and await orders.

Iden, J. H., P. A. surgeon, to *Newark*.

Hoyt, R. E., P. A. surgeon, to Naval Academy, Annapolis, Md.

Asst.-Surgeons W. E. Schaller, I. F. Cohen, J. B. Kaufman, M. H. Ames, T. W. Raison, J. M. Minter, J. Flint, A. H. Allen, P. E. Garrison, J. O. Downey, A. H. Robnett, R. C. Ransdell, W. S. Kuder, J. P. Haynes, H. Butts, C. K. Winn, A. McK. Jones and H. L. Smith and Acting Asst.-Surgeons R. I. Longabaugh, W. G. Steadman, H. L. Dollard, E. P. Huff, M. C. Baker, F. D. Chappelear and E. E. Curtis to Naval Medical School, Washington.

Norton, O. D., surgeon, detached from *Yankee* and to *Missouri*.

R. M. Kennedy, surgeon, detached from *Missouri*, and to Bureau of Medicine and Surgery.

Wm. Seaman, P. A. surgeon, detached from Boston yard and to *Prairie*.

Murphy, J. F., P. A. surgeon, from Omaha Recruiting Office to *Georgia*.

W. H. Bell, surgeon, and Asst.-Surgeon J. P. DeBruler, report to Surgeon General, special duty.

C. C. Grieve, asst.-surgeon, to Omaha Navy Recruiting Office.

Dean, F. W. S., asst.-surgeon, to New York Navy Yard.

Dykes, J. R., asst.-surgeon, from New York Navy Yard to New Orleans Naval Station.

Block, W. H., acting asst.-surgeon, from New Orleans Naval Station to Navy Recruiting Party No. 4.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 19, 1906:

Stoner, G. W., surgeon, granted four days' leave of absence from September 8, under the provisions of Paragraph 189 of the Regulations.

Clark, Taliaferro, P. A. surgeon, granted leave of absence for two months from September 15.

Billings, W. C., P. A. surgeon, relieved from duty on the U. S. S. *Rush*, and directed to proceed to Vancouver, B. C., for duty in connection with the examination of aliens.

Korn, W. A., P. A. surgeon, relieved from duty at Perth Amboy, N. J., and directed to proceed to Reedy Island Quarantine Station and assume command of the service at that port.

Holt, J. M., P. A. surgeon, relieved from duty at San Francisco and directed to proceed to Columbia River Quarantine Station, Astoria, Ore., assuming command of the service at that port.

Glover, M. W., P. A. surgeon, relieved from duty at Vancouver, B. C., and directed to proceed to Sitka, Alaska, for duty on the U. S. S. *Rush*, relieving P. A. Surgeon W. C. Billings.

McCoy, G. W., P. A. surgeon, granted leave of absence for two months from October 4.

Smith, F. C., asst.-surgeon, relieved from duty at Detroit, and directed to proceed to Perth Amboy Quarantine Station, N. J., and assume command of the service at that port.

Ashford, F. A., asst.-surgeon, directed to proceed from Ellis Island, N. Y., to Philadelphia, for temporary duty.

McKeon, F. H., asst.-surgeon, relieved from temporary duty at Columbia River Quarantine Station and directed to proceed to San Francisco for duty and assignment to quarters.

Miller, W. W., asst.-surgeon, directed to proceed to Ellis Island, N. Y., reporting to the Medical Officer in command for duty.

Wallenberg, R. A. C., asst.-surgeon, directed to report to the medical officer in command at Detroit, for duty and assignment to quarters.

Bean, L. C., acting asst.-surgeon, granted leave of absence for eight days from September 11.

Nute, A. J., acting asst.-surgeon, granted leave of absence for seventeen days from September 25.

Allen, G. C., pharmacist, granted leave of absence for two months, from September 28, 1906, without pay.

Van Ness, G. I., Jr., pharmacist, directed to report to Surgeon P. M. Carrington, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

BOARD CONVENED.

A board was convened to meet at Fort Stanton, N. M., on the call of the chairman, for the examination of Pharmacist G. I. Van Ness, Jr., to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: Surgeon P. M. Carrington, chairman; P. A. surgeon L. D. Fricks, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 21, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Sept. 1-8, 4 cases, 1 death.
Massachusetts: Lawrence, Sept. 1-8, 1 case.
Montana: State, July 1-31, 90 cases.
New York: New York, Aug. 25-Sept. 15, 7 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 28-Aug. 4, 24 cases.

Brazil: Rio de Janeiro, July 29-Aug. 12, 4 cases.

Chile: Antofagasta, Aug. 12-19, 47 cases, 9 deaths; Coquimbo, July 14-27, 12 cases, 3 deaths.

India: Bombay, Aug. 7-14, 2 deaths; Calcutta, July 28-Aug. 4, 3 deaths; Karachi, Aug. 5-12, 2 cases, 1 death; Madras, Aug. 4-10, 2 cases, 2 deaths; Rangoon July 28-Aug. 4, 1 case, 1 death.

Italy, General: Aug. 17-23, 6 cases.

Russia: Odessa, Aug. 19-25, 5 cases, 1 death.

Siberia: Vladivostok, July 21-28, 3 cases, 1 death.

Spain: Barcelona, Aug. 21-31, 8 deaths.

Turkey: Constantinople, Aug. 20-27, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 29-Aug. 5, 1 case, 1 death.

Cuba: Habana, Sept. 5-18, 2 cases.

Honduras: Ceiba, Aug. 5-Sept. 1, present.

Mexico: Merida, Aug. 25-Sept. 8, 4 cases, 3 deaths; Tuxtepec, Aug. 26-Sept. 10, 10 cases, 6 deaths; Vera Cruz, Sept. 3, 1 case, imported.

CHOLERA—FOREIGN.

India: Bombay, Aug. 7-14, 77 deaths; Calcutta, July 28-Aug. 4, 6 deaths; Madras, Aug. 4-10, 5 deaths.

PLAGUE.

Brazil: Rio de Janeiro, July 29-Aug. 12, 5 cases, 2 deaths.

Egypt: Alexandria, Aug. 17-23, 10 cases, 3 deaths; Suez, Aug. 18-23, 3 cases, 2 deaths.

India: Bombay, Aug. 7-14, 33 deaths; Calcutta, July 28-Aug. 4, 17 deaths; Karachi, Aug. 5-12, 6 cases, 6 deaths; Rangoon, July 28-Aug. 4, 136 deaths.

Mauritius: July 6-13, 1 case, 1 death.

Turkey: Trebizond, Aug. 8-13, 8 cases, 3 deaths.

Medical Organization

CONCLUSIONS FROM A COMPARATIVE STUDY OF THE STATUS OF THE MEDICAL PROFESSION IN GREAT BRITAIN AND THE UNITED STATES.

J. N. McCormack, M.D.
Chairman of the Committee on Organization of the American Medical Association.
BOWLING GREEN, KY.

A good part of my vacation has been spent in the small towns and country districts of England, Ireland and Scotland, and I have been interested in such a study of professional conditions there as would enable me to institute practical comparisons between them and those existing in our own country. I made few inquiries into these matters in the large centers of population in Great Britain, because they are already so well understood, and on the Continent, both because my time was mainly spent in the large cities or resorts and because of a lack of familiarity with the language of the respective countries.

To begin with, my former impressions were confirmed that our physicians and surgeons of the first rank will bear more than favorable comparison with those of any other land. Especially in everyday practical work, as distinguished from the research work of the laboratory, our men have a power of individual initiative, of resource, dash—to use that term in its best sense—both in medicine and surgery, not excelled in any other part of the world.

On the other hand, I got the impression, even more distinctly, that, as the result of high standards of requirements, so long established as to be fixed policies of both the profession and of government, the rank and file of medical men in Europe have had such advantages in both preliminary and professional education that there is an entire absence of the illiterate, hopeless element which forms such a large substratum in almost every community with us, and which, in spite of the rapid advance in requirements in the last few years, must continue as a perplexity and reproach to the organized profession, and a danger to the people dependent on them, until removed by time and the hand of a kind providence. Here, probably about in equal proportion as among the highly educated classes with us, a physician may be a failure for lack of practical knowledge, of the common sense essential to real success in any vocation, but, at least, he is not an ignorant loon, who does violence to his mother tongue every time he opens his mouth or writes a prescription. His preliminary and technical education have not only been such as to develop all that was possible in him, but to give him a respect for his profession, and to command a respect for it in his community, in striking contrast with what is common with a varying but considerable percentage of the profession in many sections of our own country who never should have been considered for admission to its ranks.

Because it deserves it, for the reasons stated, the profession as a whole occupies a very much higher place in the public estimation than with us. The evidence of this is seen on every hand. Health and medical legislation are far more advanced than with us, and the laws are more easily enforced, because of the solid and intelligent support of the courts and other official classes, as well as the habit of respect and obedience which these conditions naturally have engendered. Contrary to a general impression, quackery, in the forms so flagrant and offensive with us, is practically unknown here. There is some quackery, it is true, some "patent-medicine" advertising, but, as compared with what we have in most states, it is so quiet and subdued as to be almost respectable. It has no hold on their highly educated clergy, little influence with the press, and none, so far as I was able to gather, over the officials corresponding to our governors, congressmen and senators. In the same way, and for the same reasons, Christian science and other similar fads and fancies, which have taken such a hold on the educated and wealthy classes in many sections of our country as to cripple the profession greatly in its efforts to secure and enforce legislation necessary for the protection of the most vital interests of the people, and to rob it of the cream of the support to which it is so justly entitled, are subjected to authoritative scientific tests, if considered worthy of notice at all, in which the profession has a trusted voice and influence. This is illustrated in the case of Keeley, who has found it impossible to secure the support of the educated classes, which here, in contrast with our side again, always includes the official classes. I have verified this information by constant examinations of the advertising columns of the newspapers and magazines. No form of quackery can for long rob any people without the aid of its press and clergy, and our profession can not too soon be awakened to the importance of bending every energy in enlisting these agencies in the support of honest scientific medicine.

Although the cost of living is much less here, the profession is better supported than with us. In my judgment, this is because the profession deserves it. The fees are certainly better on an average, than in the older sections of our country, and the collections, in which most of our physicians are especially weak and unsystematic, are far better. This is partly because the profession has been longer and better organized, and both it and the people better trained in such matters, and probably still more because the line is sharply defined as to charity practice. The employment of medical men on fairly remunerative salaries to attend the poor is an established system, and those unable to pay for services go to the hospitals or on the rates, except of course, the worthy classes, God's poor, who find the doctor their best friend in every land. Special training is required of health officials, in addition to the ordinary medical course, but once a competent man has passed the examination and been appointed to public position, the tenure is more certain and is free from political control.

It is almost a universal custom here for physicians to dispense their own drugs, especially in the towns and country districts. Nearly all offices are in the residences and usually there is an assistant to aid in dispensing and in dressings, often some member of the family who has been given special training for such duties. This, and the usual limitation of his practice to a small area, make the life of a medical man far easier than with us, and, being near his family and library, his opportunities for social and literary enjoyment are far greater. As a result of these advantages and of his high preliminary training, nearly every one of them was found more or less enthusiastic in some special scientific or literary study outside of his profession. One was a botanist, another an ethnologist or archaeologist or linguist, and the effect on the individual, on the profession as a whole, and on the community could not but be for the best.

The pleasant thought in connection with this whole matter was that it has required the continuous efforts of generations of devoted medical men, often under difficulties as great as any which can ever confront us, to bring about the present comparatively favorable, but far from ideal, conditions. They have never had any advancement in the same length of time to compare with what ours has been within the last quarter of a century. In the light of their experience and our own, we only need to maintain and to foster such wise and conservative policies for another generation as will constantly command the confidence and coördinate the efforts of every honest and worthy interest of the profession to enable us to contend generously for supremacy and to take the lead in scientific medicine, as our people hope to do in all our other relations.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2.
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

Under the presidency of Dr. John Young Brown, St. Louis.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Robert T. Morris, New York City; vice-presidents, Drs. George W. Crile, Cleveland, Ohio, and Charles L. Bonifield, Cincinnati; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg, Pa. (re-elected).

The time and place of next meeting were left to the executive council.

After the transaction of routine business the reading of papers was begun.

Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Capsule.

Dr. Howard W. Longyear, Detroit, said the ligament is described as formed by an aggregation of fine fasciculi originating in and being identical with the fibrous tissue forming the framework of the fatty capsule of the kidney, which, after enveloping the kidney in a fine network, passes downward and are inserted into the posterior wall of the ascending colon on the right side, and the descending colon on the left side. Its structure, as well as its action, may be compared to that of the network covering a balloon, the cords of which descend downward and support the car. The kidney is the balloon and the cecum the car; the kidney descends or not, according to the laxity of its supports and the degree of traction exerted on it by the cecum. Dr. Longyear claimed that the traction thus exerted on the kidney by the bowel is the prime factor in the causation of nephroptosis, and as the duodenum is also displaced by reason of its adherence to the fatty capsule, the first object of attainment in any operative procedure should be the suspension of the bowel. To do this he isolates the nephrocolic ligament through the usual incision (though shorter) in the loin and suspends the bowel by overlapping and sewing flaps made from Gerota's capsule through the loop of the ligament. This also holds the kidney in suspension, but this object he considered second in importance to the suspension of the bowel.

Fixation of the Kidney by Shortening of the Nephrocolic Ligament.

Dr. Charles A. L. Reed, Cincinnati, presented a brief clinical report of cases operated on by the application of the principle, but a modification of the technic, as presented by Dr. Longyear at the meeting last year. The essential modification of the technic consists of the control of the nephrocolic ligament through an oblique incision in the intercostal interval.

The Technic of Kidney Fixation.

Dr. J. Henry Carstens, Detroit, pointed out that to fix a kidney permanently it is necessary to resect the fibrous capsule and to fix this firmly to the muscle as near to the normal position as possible. Only in this way can a kidney be firmly and permanently fixed. He described a simple operation which he said could be done in 10 minutes through a very small opening, and that it would give permanent results, and it seemed to him an ideal method of permanently fixing a kidney.

DISCUSSION ON THE KIDNEY SYMPOSIUM.

Dr. Herman E. Hayd, Buffalo, described various methods he had resorted to for fixing a kidney. He said it is not possible to fix a kidney unless one delivers it so as to produce a certain amount of adhesive union between the kidney and the loose structures which it has occupied so long.

Dr. Earl Harlan, Cincinnati, said that to understand the subject of dislocated kidney thoroughly one should be familiar with the normal anatomic relations of the surrounding organs, the nerve supply and circulation of the parts, and have a correct knowledge of the attachments and relations of the peritoneum. He called attention to the very wide range of pathologic anatomy attendant on kidney dislocations, and showed that any operative procedures, which have for their intention the correction of the numerous symptoms connected with this trouble, must be based on a correct rearrangement of the normal anatomy of the parts in the right upper quadrant. He described at length an operative technic which he had found satisfactory, inasmuch as it was based on the normal anatomy of this region.

These papers were further discussed by Drs. James F. Baldwin, Columbus, Ohio; John B. Murphy, Chicago, and Joseph Price, Philadelphia, all of whom described methods of anchoring loose kidneys.

(*To be continued.*)

WASHINGTON STATE MEDICAL ASSOCIATION.

Seventeenth Annual Meeting, held in Spokane, Sept. 11-13, 1906.

Under the presidency of Dr. George W. Libby, Spokane.

Better Care of the Insane Needed.

In the address of welcome Governor Mead stated that the insane hospitals of the state have been carried on on a purely utilitarian basis, and that he believes that no expense should be spared for suitable salaries for those who take care of the insane, as the state should have the benefit of the best medical service that can be furnished. He also said that the state can do a great deal more good than has been done in the prevention of tuberculosis.

In his annual address the president, Dr. George W. Libby, characterized the system of caring for the insane as inadequate, crude and even suggesting barbarism, and said that the laws by which the unfortunates are committed to the care of the state are not characteristic of the twentieth century civilization, but are relics of the dark ages. In his opinion, to determine whether an individual should be committed to an insane asylum, the investigation should be conducted by a commission composed of at least three physicians, one of whom should be an alienist and should visit the patient in his home. He also favored the establishment of a separate institution for the criminal insane.

To Prevent Blindness of Infants.

The association adopted resolutions favoring the passing of a law providing that any nurse who shall notice any inflammation of the eyes of an infant up to the time the child is two weeks old shall report the case to a competent physician, the penalty for failure to make such report being a fine of not more than $100 or imprisonment for six months, or both.

Supervision of Sanitary Works and Water Supplies.

The sanitary engineer of the State Board of Health also proposed a law, making it prohibitory for any municipalities, corporations or public institutions or persons to introduce a new system of water supply or sewerage in the state of Washington unless the plan for such proposed water supply or outlet for such proposed sewerage system shall have been examined and approved by the Washington State Board of Health.

The association favored the adoption of a uniform standard of medical examinations.

A resolution was passed asking that the state legislature fix the fee of physicians for examining persons charged with insanity at $10.

Election of Officers.

The following officers were elected: Dr. James H. Lyons, Seattle, president; Drs. Edwin L. Kimball, Spokane, and Ellsworth E. Shaw, Walla Walla, vice-presidents; Dr. Curtis H. Thomson, Seattle, secretary; Dr. George H. McGreer, Tacoma, treasurer, and Drs. Frank A. Scott of Pierce County, Hiram M. Read, King County, F. H. Luce, Lincoln County, James R. Yocom, Tacoma County, Robert L. Thompson, Spokane County, Henry W. Dewey, Pierce County, George W. Overmeyer, Pacific County, Lemon R. Markley, Whatcom County, Wilson Johnston, Whitman County, and C. N. Suttner, Walla Walla County, members of judicial council. The 1907 meeting of the association will be held in Seattle.

ST. LOUIS MEDICAL SOCIETY.

Meeting held Sept. 15, 1906.

The President, Dr. George Homan, in the Chair.

DEDICATION OF NEW MEDICAL AUDITORIUM.

The auditorium is located on a piece of ground adjoining the St. Louis Medical Library Building, Thirty-fifth and Pine streets. It is built in amphitheater form, with about 400 opera chairs and room for many more seats for special occasions. It has a handsome beamed ceiling and dependent chain chandeliers. The walls are polished brick.

Introductory Address by President.

Dr. Homan said in part: "Three score and ten years ago, lacking a few months, this society was ordained by an act of the General Assembly of Missouri, the expressed purpose of such legislation being the improvement of medical literature and science, and to give dignity, permanency and usefulness to this body. This body has never had a roof above it that could be called its own. The exercises arranged for this evening are in celebration of the fact that finally this reproach has been put away.

"That the present happy achievement was made possible may, it is believed, without invidious reflection, be traced to the wisdom of the society in 1895 in the selection of its treasurer who, on his induction into office, found claims amounting to several hundred dollars, and almost nothing in the treasury with which to meet this indebtedness. But gradually, by prudence, thrift and good management, better business methods were introduced; and, after eight years of such faithful service, when he was called to the presidency, a very comfortable bank account had been accumulated to the credit of the society, and from this nest egg has sprung the edifice in which we are now assembled. The funds thus made available for investment in this property have been supplemented by contributions secured chiefly from the membership, and while the individual response to this appeal has been liberal as a rule, all things considered, still the names of very many of our members have not as yet appeared in the list of givers to this cause, but the hope is confidently indulged that such oversights and omissions will promptly be repaired when the situation is better understood.

"There are present here to-night some who have come down from a former professional generation, and who have personal knowledge of the vicissitudes and embarrassments that beset and confronted the organized profession here in earlier years, progress being hindered perhaps by bickering or belligerency, often due to mere misunderstanding or imperfect acquaintance, and leading to occurrences that were regrettable and sometimes even injurious to the advancement of scientific work and the promotion of lasting harmony among brethren.

"Happily for us of to-day, a more pacific spirit seems now to be in the air, a disposition to cultivate peace that extends even to nations which are rivals and competitors in many fields, and if this spirit can be brought sensibly to bear in the sharp contentions of races and governments, there is small excuse for a different manifestation among those so advanced in humane civilization as the medical profession is universally conceded to be.

"As the climate of feeling and opinion generally appears to have become more moderate, this occasion presents a most fitting opportunity to express the sincere hope that no wrongful or unkind contention between members may ever be brought across the threshold of this building; that the supreme, the controlling obligation of thorough, honest, unflagging scientific work shall never be lost sight of within these walls; that the doors shall never be closed to the truth, howsoever unwelcome it may appear at the time or by whom presented; that this roof-tree shall be broad enough to afford hospitality and welcome to every honest thinker who believes that he has a new message to deliver for the betterment of his fellow-men—in short, that here is a temple dedicated to truth, science, progress; consecrated to peace, concord, unity, good will, so that the generations yet to come may be the better for our lives and labors, and gratefully say: 'They are justified in their works; they builded even better than they knew!'"

Early History of Society.

Dr. LeGrand Atwood, one of the oldest living members of the society, said, among other things, that his acquaintance with the society dates back to 1846, when he first attended its meetings. The first discussion he had heard on the floor of the society was one between Drs. Johnston, Hammond and McPheeters. These men were faithful to the requirements of the profession. He said that the first attempt at organization of this society occurred on Dec. 25, 1835, when a meeting was held in the old Masonic Hall in this city. Dr. William Carr Lane was once president of the society. Dr. Lane was elected eight times mayor of the city of St. Louis, only refusing the office again because of stress of professional labor. The speaker called attention to the greatness of Dr. Lane from a medical as well as from a civic standpoint, and said that he hoped that at some future time the physicians would succeed in having a monument erected to him in City Hall Square. At the meeting above alluded to the society was formed and organized. At a meeting on Jan. 2, 1836, the constitution was adopted. The officers for 1836 were: Dr. J. G. Farrar, president; Dr. Lane, vice-president; Dr. B. B. Brown, recording secretary, and Dr. Y. B. Bouting, treasurer. On Jan. 15, 1836, the by-laws were drafted and adopted. The first paper read before the society in regular session assembled was entitled "Does Epidemic Contagious Puerperal Fever Exist in St. Louis?"

Dr. Farrar was the first American physician in St. Louis. The other physicians were French. On Sept. 24, 1836, the St. Louis Medical Society appointed a committee to confer with the faculty of the St. Louis University, relative to the establishment of a medical school in this city. Later in the same year the society took up the matter of disciplining some members who were advertising in the daily papers. The society also took up the matter of keeping a record of births and deaths, which forms the basis of the present-day mortality records of the health department. Dr. Barnett at this time offered a resolution governing the sale of milk, which is the first attempt at pure-food legislation here. A committee took up the matter of preventing the spread of contagious diseases.

In 1850 the society adopted the Code of Ethics of the American Medical Association. In 1877 the society adopted a resolution that only medical men be appointed health commissioners of the city. In 1887 Dr. McPheeters introduced a resolution calling for the creation of a real estate and building committee, for the purpose of securing a permanent home for the society. The project was dropped on account of inability to secure money enough to buy the property.

Reports of Committees.

Dr. R. M. Funkhouser, chairman of the finance committee, reported briefly that there was a small balance of the money subscribed by the members remaining, but that several thousand dollars had been borrowed from the bank to complete the building of the auditorium. He stated that he was ready to receive new subscriptions to cover this loan.

Dr. Pinckney French, chairman of the committee on business affairs, received the keys of the building from the president and addressed the members on the need of paying off the loan spoken of by Dr. Funkhouser. Dr. French proved that his reputation as a financier was well grounded by obtaining practically all the needed money, he leading off with a generous subscription, followed by Drs. Outten and Homan and others.

Dr. A. R. Kiefer, chairman of the building committee, and Dr. John C. Morfit, chairman of the committee of arrangements, also reported.

Medical Profession of St. Louis of To-day.

Dr. W. B. Outten ascribed the difficulties in the past in the way of unification of the city's profession to the Civil War and its political effect thereafter. He said that up to 1864 the profession was powerful, influential and united in its work in St. Louis, that St. Louis was a great medical center, but that from 1864 to 1895 elements adverse to the St. Louis medical profession took deep root and hampered the work. He said that in spite of the great adversity and strife in the ranks of the profession, the St. Louis Medical College lived on. He rendered a tribute to this college for its unflinching spirit in times of adversity. For the future he predicted great things of the St. Louis Medical Society and the profession of that city.

Future of the Medical Profession of St. Louis.

Dr. W. G. Moore called attention to the altruistic work of the men who have attended regularly the meetings of the city and state societies, men who have gone by circuitous roads of travel to state meetings, neglecting their business purely for the purpose of maintaining an organization. He spoke of the great work of organization of local and county societies, which has been so well stimulated by the American Medical Association. He said that this society will become the society of the young men before him. The young men must perpetuate it.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

(*Continued from page 956.*)

The Russian Red Cross.

Col. Valery Havard, assistant surgeon-general U.S.A., described the origin, development and history of the Russian Red Cross Society, which was founded during the Crimean War as the "Committee of the Exaltation of the Cross." In 1867 the name was changed to "Russian Society for the Assistance of Sick and Wounded Soldiers," and in 1876 the society assumed its present name. The society was organized under the laws of the empire and has active and honorary members, contributors and benefactors. The executive power is vested in a central committee, to which state and local committees report. For the work of the society during the Russo-Japanese War, Manchuria and eastern Siberia were divided into five zones, and the work undertaken included the establishment of supply depots, transportation of the sick and wounded, assistance to the medical military service, direction of the relief of the sick and wounded, and the organization of feeding stations. The author believes that such societies are invaluable and indispensable in war, and that a Red Cross society to be efficient must be not only well organized, but every member should acquire a practical knowledge of first-aid and should have had experience in the handling of patients.

Tendon Tissue versus Catgut.

Col. Nicholas Senn, surgeon-general, Ill.N.G., gave a history of ligatures and suture material. The first animal ligatures were introduced by Dr. Paul Eve, Nashville, Tenn., and Dr. Christian Linde, Oshkosh, Wis., who used for this purpose split deer tendon. Lord Lister was the first to show the way to the successful employment of antisepsis in suture and ligature material, and the principles which he taught still remain. Silk, silver wire, horsehair and silkworm gut will continue as substances for removable sutures, but can not hold their present position as material for buried sutures. The material known as catgut is not the intestine of the cat, but is made from the small intestine of the sheep, and is open to the objection that it is exceedingly difficult to sterilize and render aseptic. Tendon tissue, in the author's opinion, is preferable to catgut, because it is made of straight fibers running parallel with each other; and because it is obtained from the cleanest part of the animal. It is stronger than catgut, which is made up largely of muscular tissue. It does not loosen as does catgut under the influence of moisture, and tendon material can be made aseptic by the same methods as catgut. In 1878 Ischiguro, surgeon general of Japan, made a report on whale tendon, which he advocated for suture material. The so-called kangaroo tendon, which had a great vogue, is not made from the tendon of the kangaroo, but from a smaller animal of the same family, the wallaby. The author advocated the use of the tendons of the arctic sea animals, the narwhal, walrus, whale, etc. The tendons on either side of the spine are used for this purpose, and in the case of the narwhal they can be split into fine threads, four feet or more in length. The walrus tendon is coarser, but possesses similar advantages, and the same applies to the tendon from the back of the whale. Dr. Senn has used this coarser tendon with success in operations for the radical cure of hernia and recommends its use for suture and ligature material on account of the abundance of the supply and the inexpensiveness when once on the market. He stated that he obtained in the arctic region last summer a supply of tendon material sufficient for the use of a large hospital for an entire year, in exchange for a pound or two of powder.

Identification by Finger Prints.

Surgeon Charles P. Wertenbaker, U.S.P.H.&M.-H.S., called attention to the fact that no two persons have identical finger prints, and spoke of the interest in the development of the identification of individuals by this means. The method consists in taking an impression of the lines or markings on the thumb or one or more of the fingers. The thumb is pressed lightly on an ordinary rubber stamp pad and then pressed firmly on the surface which is intended to receive the impression. The value of the system results in the fact that the lines of the fingers of no two persons are alike and that the lines of the fingers of an individual are unchanged from the date of his birth until the time of his death. The markings of the right and left hands are practically the same, except that the lines run in opposite directions. The marks of all fingers also are practically the same. Identification by the use of finger prints has been in use in China for several centuries. In India the British government adopted identification by finger prints in lieu of signatures in legal documents, receipts, etc., many years ago, because of the difficulty in securing the names of individuals which, under the peculiar conditions existing there, frequently changed. Last summer while on duty during the yellow-fever epidemic in the South Dr. Wertenbaker employed this method to prevent the transferring of certificates of persons traveling in certain portions of the South, to show that they had not been exposed to the infection of yellow fever. This practice, which was general, he completely stopped by adopting the following method of identification: A description of the individual, giving his nationality, age, height, color of hair and eyes and special marks; the signature and the impression of the ball of the right thumb. Finger marks may be classified as open loops, closed loops, "S" loops, whorls, and varieties combining the previously named classes. The United States Army has recently ordered that the thumb and finger-print system of identification be introduced in the recruitments for the Army, supplanting the outline figure card, and the finger prints, together with the photograph, now form a part of the descriptive card of each recruit. Dr. Wertenbaker considers this method less complicated and more sure than the Bertillon method of examination.

Splenic Abscess Following Malaria.

Surgeon William H. Bell. U.S.N., read a paper based on three cases of splenic abscess, following as a complication to grave malarial infection. He discussed the pathogenesis of the condition and emphasized malaria as a disease important in the etiology of splenic abscess, demonstrating theoretically why the conditions should be of frequent occurrence. He suggested a procedure for direct experiment to determine the tenability of the theoretical premises, and concluded with a review of the symptoms and signs of the disease, and remarks on prognosis and treatment.

(To be continued.)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25 1906.

(Continued from page 959.)

SECTION OF ANATOMY.

Arthur Robinson, M.D., Birmingham, the president, in his introductory remarks on "The Teaching of Anatomy in Universities and Public Schools," gave a sketch of the history of the teaching of anatomy. Men of an inquisitive turn of mind first studied it, so that they might know as much as possible about themselves and their fellows. They probably hoped that a knowledge of the structure and arrangements of the various parts of the body would be of service in the attempt to meet and avoid those infirmities and diseases which they knew to be the precursors and the possible causes of death. The knowledge thus acquired was utilized by those who undertook the treatment of injuries and diseases of the human body, and gradually the study of the details of human anatomy passed into the hands of priests, who provided for the bodies as well as for the souls of their flocks, and later into the hands of the members of the medical profession.

There is still a tendency in some quarters to decry the wider knowledge of anatomy as a science and to insist that the medical student shall be taught only the technical details of the human anatomy, that is, the position of organs and parts and their relationships to each other. Nothing could be more harmful to the best interests of the medical profession and the public than the adoption of such a view. It would result in the medical man becoming a mere mechanic, who can do well what he has been taught to do or has seen done, but who is absolutely useless when he desires to do something that requires general as well as special knowledge. Fortunately there are many broad-minded men in the profession who have recognized that the man who has a wide knowledge of general principles is better adapted to meet unexpected circumstances than the one who is provided merely with a memory of certain observed facts. Consequently, the teaching of anatomy in a large number of institutions has passed into the hands of men who are enthusiasts in its teaching and study, and have spent the greater portion of their lives in the study of the subject. This should be still more the case in the future. This forward movement is attended by the danger that specialists occasionally lose sight of the practical application of their work and teach only its more interesting features from a scientific viewpoint. This danger will be avoided if the electing bodies of teaching institutions employ as teachers only men who have been through the medical curriculum and understand the needs of the profession.

Teachers of anatomy should also habitually take part in the meetings of medical associations, and thus keep in touch with the general knowledge of the profession and its relationship to their special branch. The object of the medical curriculum is to give the student a wide knowledge of the principles on which he must rely in the practice of his profession, a sufficient knowledge of the details to prevent the making of any serious mistake, and a sufficiency of general knowledge to enable him to take his place as an accepted member of a medical community. It should, therefore, be the object of the anatomist to avoid engaging the student in a superfluity of details. He should insist on a sound knowledge of the general relationship of the most important parts of the body, and a good knowledge of the general principles which underly these relationships and the advantages derived from them. He should make his students acquainted with the general laws of growth and development and abnormal conditions produced by deviations from these laws. He should draw attention to the relation of man to other animals in all cases where such relations are evident. In addition, he should see that his students acquire a sufficient knowledge of the details of the various parts of the body and their relationship to enable them to cope successfully with any emergency of daily life, but he should impress on his students that it is more important that they know the various principles on which the various systems or organs are constructed and those on which they are modified, than that they should memorize the details, which may be found at any time in the numerous text-books.

SECTION OF PHYSIOLOGY.

Proteid Nomenclature.

Prof. W. D. Halliburton, M.D., F.R.C.S., the president, in his introductory remarks considered the question of proteid nomenclature. The recommendations of the Chemical Society of London, several years ago, have never been universally adopted by those who write or speak English. This committee suggested the termination of *ol* for alcohols, *ine* for basic substances, and *in* for materials of more indefinite structure. In America, where some support should have been anticipated, the non-conforming conscience has asserted itself with the resultant tendency toward Germanizing rather than Anglicizing chemical names. Thus creatine is spelled kreatin; sulphur, sulfur, and the final e in chlorides, sulphates and other salts is usually absent. He then took up the change in the chemical conception of the proteids and the selection of a general name for the entire group of albuminous compounds. The term "proteid," used in England, is restricted to a sub-group (the conjugated proteids) by the Germans; the word "albuminoid," employed by analytical chemists in England and by French physiologists in the same sense, is restricted to the heterogeneous group of which gelatin and keratin are instances, by German and English physiologists. The word "albumin" is very generally bestowed on a sub-group, and its adoption as a family name would make worse the present confusion. After much deliberation "protein" was recommended as a general name, and the following sub-classes were suggested:

1. Protamines.
2. Histones.
3. Albumins.
4. Globulins.
5. Sclero-proteins.
6. Phospho-proteins.
7. Conjugated Proteins.
    (a) Gluco-proteins (for example, mucin.)
    (b) Nucleo-proteins.
    (c) Chromo-proteins (for example, hemoglobin.)

For classes 3 and 4 no general term has been found which will prove acceptable, "heat-coagulable proteins" and "albugin" were suggested, but universally disapproved. The committee also recommended that the products of protein hydrolysis be classified as follows:

1. Infra-proteins, to replace albuminates, the termination of which implies a salt and so is objectionable.
2. Proteoses, which include albumose, globulose, gelatose, etc.
3. Peptones. It was proposed that this should be restricted to those further products of hydrolysis, which cannot be salted out from solution, but which nevertheless, still give the biuret reaction.
4. Polypeptides. These substances are still lower down, not as a rule, giving the biuret reaction, but their exact relations to peptones is still undetermined.

Transplantation of Blood Vessels and Organs.

Dr. Alexis Carrel explained his experiments in the transplantation of blood vessels and organs in animals and presented two dogs and two cats in which he had transplanted kidneys belonging to other animals, sacrificed in the interests of science. Dr. Carrel said that he had already succeeded in having dogs live 17 days after the operation. He had also experimented by cutting off limbs of cats and guinea-pigs, and replacing them, the animals doing well afterward. Experiments have not, thus far, been made in transplanting organs on the human subject.

(*To be continued.*)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Fifty-sixth Annual Meeting, held in Bedford Springs, Sept. 10-13, 1906.

The President, Dr. William H. Hartzell, Allentown, in the Chair.

(*Continued from page 947.*)

Address of Welcome.

Dr. W. P. S. Henry, Everett, president of the Bedford County Medical Society, urged on the members the importance of organization, and stated that medicine and surgery maintain their position in the front rank mainly because of the disposition of the members of the profession to congregate in their work.

Address of President.

Dr. William H. Hartzell, Allentown, stated that when the society last met at Bedford Springs, 19 years ago, the membership was 800, whereas now it is over 4,500, which increase he attributed to the increased feeling of unity among the profession. He urged the necessity for further enlightenment of the public in hygiene and sanitation, because thereby the mortality from many diseases, such as typhoid and tuberculosis, will be decreased. He pointed out the necessity for the correction of the dispensary abuse, and condemned contract practice for lodges, etc. He also reviewed the advances made in the various domains of medicine, particularly in surgery and laboratory diagnosis.

Treatment of Inebriates and Dipsomaniacs.

Dr. Theodore Diller, Pittsburg, commented on the Act of Assembly of April 9, 1903, providing for the commitment and detention of inebriates and drug habitués, and stated that in order to make the act effective there is needed a hospital or asylum for commitment. He described in detail various state hospitals, particularly those in Iowa and Massachusetts. He believes that the lack of such a hospital is the means of causing many inebriates, etc., to become inmates of quack institutions.

DISCUSSION.

Dr. John B. Carrell, Hatboro, stated that he had communicated with various authorities on this subject, and the consensus of opinion seemed to be that a separate institution is necessary. The opinion as to permanent cures varies widely, ranging from 1 or 2 to 75 or 80 per cent., and that the most common etiologic factor is an unstable nervous system produced through heredity and wrong notions of sociability.

Dr. Lowell M. Gates, Scranton, believed that a comparatively short time, a few weeks or months, is necessary to cure these cases, provided they would not afterward be subjected to temptation. The best results would be obtained by the enactment of prohibitory laws in this direction.

Dr. Charles K. Mills, Philadelphia, stated that a separate institution should be established, and that the predisposing cause to inebriety is the hereditary condition of the inebriate and his family.

Dr. Charles W. Burr, Philadelphia, recited the provisions and practice under the Pennsylvania law for the commitment of the inebriate, referring particularly to the fact that no provision is made for those who can not afford to pay. He does not feel, however, that separate institutions are absolutely necessary, but that the inebriate can be treated successfully in the insane hospitals under proper regulations. Only a few of the cases can be cured, some being of such a character that a radical cure is not possible.

Dr. Fremont W. Frankhauser, Reading, felt that more good would be accomplished by prophylactic measures, preventing the acquirement of the habit, than by curative procedures.

Dr. Henry Beates, Jr., Philadelphia, stated that in these conditions the patient, having as a foundation an unstable nervous system, is the victim of an emotional state, and what is needed for the cure is compulsory restraint, and the education of the nervous system so that it can resist temptation.

SECTION ON SURGERY.

Address in Surgery.

Dr. William L. Estes, South Bethlehem, chairman of this section, considered, particularly, the preventability and cure of syphilis and carcinoma, the first being accomplished by educating the public in the doctrines of cleanliness and sterilization and the amenability to treatment of venereal diseases in their early stages; the education of pupils in the higher schools along the lines of sociology; the requirement of aseptic practices in barber shops and other public places; the latter by the education of the physician to the necessity of prompt diagnosis and early radical removal.

Advances in Surgery of the Nervous System.

Dr. Theodore H. Weisenburg, Philadelphia, urged the necessity for the surgeon knowing more of the anatomy of the nervous system, and stated that exploratory operation for the relief of intracranial pressure, headache, etc., is justified as a palliative measure, even if radical removal of the causative factor is not possible.

SYMPOSIUM: SURGERY OF THE HEAD AND SPINE.

Cranial Injuries.

Dr. Daniel A. Webb, Scranton, considered late cerebellar abscesses of traumatic origin, and after referring to the literature of the subject, particularly the diagnosis and the relation of trauma to the abscess, stated that the only treatment for the condition is operative. He reported the case of a miner, 29 years of age, who six years previously had suffered a cranial injury by a fall of coal. When admitted to the hospital he was suffering from headache and difficulty in articulation. The case was diagnosed as one of cerebellar tumor, but after death it was discovered to be a deep-seated abscess of the middle lobe.

Fracture of Base of Skull Resulting from Direct Violence Through Inferior Maxilla.

Dr. Alexander G. Fell, Wilkes-Barre, cited the case of a man, aged 25, who during a fire fell from a porch, a distance of 20 feet, striking on the point of the inferior maxilla, causing a complete, compound, comminuted fracture between the median line and the left mental foramen.

Present Status of Cranial Surgery.

Dr. Charles H. Frazier, Philadelphia, reviewed the general progress made during the past decade, and considered particularly the surgery of epilepsy; of hemorrhage of the newborn and in childhood; of the cranial nerves; of tumors, and urged that if operation was to be done at all, it should be performed early.

Unusual Case of Trauma of Head, Exhibiting Symptoms of Astereognosis.

Drs. John H. W. Rhein and Edward Martin, Philadelphia, reported this case, which followed an attack of acute otitis media. After cleaning out the cavity and washing it with pure carbolic acid (which was afterward neutralized with alcohol), the man made a good recovery.

Impaired Cerebral Development Due to Other Than Cranial Causes.

Dr. Ernest Laplace, Philadelphia, mentioned adenoids, tongue-tie and phimosis, which conditions, he said, should be corrected as promptly as possible where no brain lesion is found. Eighty-two cases which have come under his care resulted very satisfactorily.

DISCUSSION.

Dr. Charles K. Mills, Philadelphia, stated that headache is a more valuable diagnostic symptom in brain abscess than in tumor. Operation for brain tumor should be performed so soon as there are sufficient symptoms to diagnose the case.

Dr. Charles W. Burr, Philadelphia, urged the importance of earlier diagnosis and more prompt surgical interference in cases of brain tumor.

Dr. William G. Spiller, Philadelphia, urged the importance of differentiation as to location of the lesion, whether cortical or subcortical. He also recommended the removal of a portion of the bone in cases of enlargement of the bones of the skull, and reported two cases, one a syphilitic tumor and the other a tumor following an injury in which each patient made a good recovery.

Dr. Levi J. Hammond, Philadelphia, felt that those cases with a history of suppurating middle ear, loss of flesh, lowering of pulse and disturbance between relation of pulse and temperature strongly suggest cerebellar tumors.

Dr. William L. Rodman, Philadelphia, reported the case of a man suffering from constant vomiting, which had been diagnosed by the local physicians as a diseased condition of the stomach, but which after death proved to be an extensive tumor of the right half of the cerebellum. He believes that in most cases the peripheral operation is to be preferred to the more general one.

Dr. George W. Guthrie, Wilkes-Barre, stated that he had almost invariably secured good results in the treatment of traumatic injuries of the brain, while the contrary had been almost as uniformly the case in traumatic injuries of the spinal cord.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Chairman's Address.

Dr. Samuel D. Risley, Philadelphia, said that the society had taken an important step toward the fulfillment of its ideals, for the advancement of scientific medicine, by providing for the classification and division of its work by creating sections. Formerly only such subjects as are of general interest were presented. When special subjects were introduced it had the effect of driving out of the room those of the auditors not interested in the particular organ under consideration. Therefore, members working in special fields would seek other avenues than the state society for the presentation of their results. Dr. Risley advocated that a change should be made in the rule that compels the sole publication of papers in the journal of the society, as he thought that it prevents the presentation before that body of fresh or original work, the publication of which might be deferred for an entire year. He also made a plea for physicians not to become exclusively interested in their specialties, but to keep up with the advances in general medicine and surgery; and also not to be ignorant or indifferent to the specific affections of other organs than the one selected for the special field of endeavor. The general practitioner also can not afford to ignore the increase of knowledge to be gained by attendance on the work of the section on specialties.

Local Infection from the Conjunctiva and the Lachrymal Passages.

Dr. Edward A. Shumway, Philadelphia, said that infection after operation is now known to depend on the presence of micro-organisms within the conjunctival sac. The bacteria that are normally present there are greatly increased in number by inflammation of the conjunctiva and the lachrymal passages. Infections of the eyeball fall into two classes: those that involve the cornea in the form of ulcers, and those that involve the entire ball. Ulcers of the cornea are produced by a great variety of organisms. Infection, in the majority of cases, presupposes an injury to the corneal epithelium. Infection of the globe may result from the perforation of ulcers, or may follow penetrating injuries or operation during which the eyeball is opened. It is probably not possible for bacteria to pass upward from the nasal chambers through the lachrymal passages to the eye; but, in the presence of a stricture of the duct, the sac forms an excellent breeding ground for the organisms, and these readily overflow on the conjunctiva. The treatment of even minor injuries is, therefore, of considerable importance. Dr. Shumway described the treatment fully.

(To be continued.)

Travel Notes

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.
Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.
CHICAGO.

(*Continued from page 962.*)

SANITATION IN JOHANNESBURG—DISEASES OF CENTRAL SOUTH AFRICA.

The great diamond mines of Kimberley and the richest gold mines in the world at Johannesburg are only fifteen hours apart by rail. Nature has deposited here within this limited space her richest treasures in the very heart of what was but a few years ago the Dark Continent. These mining cities are situated on the highest elevation of the interior plateau of South Africa, and the diseases prevailing here are representative of the diseases of that part of Africa. Thanks to Dr. Charles Porter, the health officer of Johannesburg, I was given every facility to get a good insight into this subject, besides familiarizing myself with sanitary matters in the city of Johannesburg. The city has about 210,000 inhabitants, 80,000 whites, the same number of negroes, and 50,000 Chinese. Dr. Porter is the busiest man in the city. He has made sanitation his specialty since his graduation in medicine. For several years he was health officer of an important city in England, and came here to take the position at a salary of $10,000 per year, and with the understanding that his work should not be hampered by politics. He is the most enthusiastic and energetic health officer I have ever met. He works without a let-up from morning until night. I spent a whole forenoon with him in visiting his various establishments, destructor, sewage compound, lazaretto and isolation hospital, scattered over a considerable part of the outskirts of the city, and I became deeply impressed with his knowledge of sanitation and the efficiency of his work. A large disinfection plant with the most improved sterilizers is in operation in connection with the lazaretto. The destructor, where all garbage is cremated, was of special interest to me. Part of the ashes from the destructor entered into the composition of an artificial stone used for paving sidewalks and sewer pipes, both of which are manufactured on the premises, and are a source of considerable income to the city. The sewage is collected in carts by a small army of blacks who live in a compound adjacent to the disinfecting station. From a common point, the sewage is conveyed to a safe distance from the city and tipped into abandoned mines or other available places. Dr. Porter's next great project will be the building of a model abattoir, for which he has already selected the site and material and drawn the plans. He is paid a large salary, but it is well invested for the improvement and health of the city.

In his annual report for the year 1903, an admirable publication, he has this to say of the causes and prevalence of pneumonia: "It is, however, generally agreed that pneumonia is an infectious disease and that it is predisposed to by devitalizing influences of any kind, such as irregularities and excesses of life, insanitary environment, overcrowding and air pollution, as well as by inferior and insufficient food, and neglect of precaution against the sudden changes of temperature characteristic of the South African climate. Furthermore, there can be little doubt that the very great amount of dust with which Johannesburg is liable to be afflicted in the dry season, has had a very considerable share in the production of the disease, and this view is confirmed by the fact that dust taken in May in Market Street and Fox Street has been shown to be as sharp, angular and irritating as that taken from the mine slopes. Finally, as the 'spit' of pneumonia patients swarms with the germs of the disease, there is little doubt that the disgusting habit of spitting, especially inside dwellings, bars and public vehicles, is an appreciable factor in spreading the disease." In the mortality statistics for that year, diarrhea and dysentery are credited with 157 deaths, including 108 children under 1 year of age; pneumonia with 115, and "Rock drill pneumonia," or miner's phthisis, with 52. There can be no question as to the direct etiologic relationship of street and mine dust to bronchitis, pneumonia and tuberculosis, at least as a predisposing cause, by preparing by their mechanical irritation, a point of least resistance in which the essential microbic cause, pus microbes, pneumococci and the bacilli of tuberculosis locate, multiply and exercise their specific pathogenic effects, producing the characteristic type of inflammation. The health reports in Johannesburg, published in excellent form by Dr. Porter, are interesting in showing the kind of diseases physicians have to deal with on the high mountain plateau of South Africa.

The water supply of Johannesburg is obtained from wells 60 to 90 feet deep, drilled in the solid rock, and yielding an abundance of pure potable water. During one of the outbreaks of typhoid fever, Dr. Porter traced the infection to one of the wells, which had become contaminated through a fissure in a rock which led into the well. There are other sources of typhoid infection in the city; the removal of night soil in carts, the dust and the ignorance of the natives regarding matters of health, have contributed their share in propagating the disease, in a place supplied with water, usually free from typhoid germs. Through the energetic influence of the officer of health, a hotbed of disease was removed from the very center of the city, where a large settlement of blacks lived in filthy crowded huts. By prompt action of the city council, the recommendation of Dr. Porter to condemn the huts, remunerate the natives for their loss and colonize them outside of the city limits, was adopted and carried out, and the cleared space has now become a desirable place for private residences and business establishments, and the natives have been likewise benefited by the change.

During the year 795 cases of typhoid fever were reported to the health office, 710 whites and 85 blacks. Of the white patients, 206 were persons who either came into Johannesburg suffering from the disease, or developed it in two or three days after arrival. The total case mortality for the whites was about 13.8 per cent., while for the blacks it was 56.5 per cent., but the total number of blacks attacked (85) is hardly large enough to allow any safe conclusion to be drawn. The excessively high mortality among the blacks was, in all probability, due to the fact that only grave cases were seen by physicians, as well as improper diet and lack of nursing.

A glance at the tables giving an account of infectious diseases reported during the year, gives a good idea of the prevalence of these diseases, not only in Johannesburg, but all over the central part of South Africa and Cape Colony. The whole number of cases reported was 1,775. Among these I will give the figures of the more important diseases only; Typhoid fever, 795; gastric and typho-malarial fever, 5; malaria, 56; scarlet fever, 220; chickenpox, 155; puerperal fever and puerperal sepsis, 20; dysentery, 402; diphtheria, 66; membranous croup, 7, and erysipelas, 48. In this list two cases of leprosy are included. These figures show conclusively that the high plateau region of South Africa is almost free from tropical diseases, and that its healthfulness compares favorably with that of any other country. The climate is delightful, the air dry and bracing, the nights cool, and the day heat, even in midsummer, not distressing.

JOHANNESBURG HOSPITAL.

Johannesburg Hospital is the only general hospital in the city. A small hospital for the employés of the Rhodesia Railroad I did not visit. The Johannesburg Hospital is eighteen years old, has undergone many important changes since that time, and has been enlarged with the growing needs for accommodations for the increasing number of ill and injured. The hospital occupies a commanding position on one of the many hills of the city, and is surrounded by large grounds made attractive by paths, trees, shrubs and flowers. The hospital at present has accommodations for 380 patients. A large number of private rooms and a few small private wards are a source of material revenue with which to defray the heavy expenses of the institution. The main building and wings are two stories high and constructed of brick. The blacks are housed in two one-story cottages in the rear. In the ward for black women I counted only 13 patients. The number of black male patients in another ward was much larger.

I was much pleased to find a free bed in one of the general wards for Europeans in memory of the late President Kruger, established and to be maintained by friends of the deceased. The report of the hospital for the last year makes the following allusion to this: "As a memorial to the late President Kruger, about $1,000 was collected by several lady residents of the town and handed over to the board for the purpose of maintaining a bed in the free male wards. The board's thanks having been conveyed to the organizers, the bed was formally opened by General Beyers in the presence of the hospital board and staff, Dec. 21, 1904, and a brass plate giving the designation of the bed placed at its head."

Mr. G. E. Murray, F.R.C.S., does most of the operating and, so far as I could learn, is the most prominent surgeon in the city. We found him in the capacious operating room, which is well lighted and fairly well equipped, engaged in an operation for femoral hernia. His principal assistant was one of the sisters of the hospital, who has charge of the operating room. Mr. Murray used iodized catgut exclusively for buried sutures and ligatures, and is well pleased with the results, as since he has adopted this material, stitch abscesses in aseptic wounds are almost unknown. A few cases of cancer in the black have been observed in this hospital, but no cases of appendicitis.

It is a little strange, that in this city with more than 100 doctors, the hospital has not opened its doors so freely as it should to physicians who do not belong to the staff. A movement is now on foot to remedy this lack of hospital space by the building of another hospital for the outsiders, and this is certainly an effort in the right direction. The nursing is in care of 25 Anglican Sisters and 80 pupil nurses. A new nurses' home is on the way to completion at an expense of more than $100,000. The nurses have to undergo a course of instruction and training extending over three years before they can come up for the final examination. Graduate nurses in private practice are paid $25 a week. This liberal pay of private nurses is a great incentive for young women to enter the training school. The annual report of the hospital for 1905 shows that the whole number of indoor and outdoor patients, paying and free, was 12,398, of which 7,919 were outdoor patients. Of the 4,459 indoor patients, 3,256 were whites and 1,203 colored, and of these, 1,915 paid full hospital fees, 74 partial fees and 2,470 were treated free of charge. The average percentage of white-paying patients was 44, and of colored 44, certainly a good showing for the latter.

The government grant in aid for the year amounted to $75,000. I will omit reference to the medical statistics of the hospital, as it would be largely a repetition of what I have quoted from the report of the officer of health, Dr. Porter. A few notes from the surgical statistics will be of interest. Of 18 cases of attempted suicide, all Europeans, 7 died; of 253 cases of fractures of all kinds, the injury or its complications proved fatal in 25; out of 5 cases of intestinal obstruction, all white patients, only one died. Hernia appears with 40 cases, with 3 deaths, and strangulated hernia with 9 cases and 2 deaths. Appendicitis is credited with 52 cases, and of these patients 4 died. Pelvic surgery takes a conspicuous position in the surgical statistics and is headed by salpingitis with 26 cases in the white and only 2 in the black, with 2 deaths. Vesicovaginal fistula occurred five times. Among the rare operations, we noted one for pancreatic cyst and one for exstrophy of the bladder. Nowhere in Africa does stone in the bladder or kidney appear to be common. In this list we find only 2 cases of stone in the bladder and none of stone of the kidney. Of 25 cases of stricture of the urethra, only 2 were in colored patients. It is a very noteworthy fact that all cases of congenital and acquired deformity were white patients. These cases were 6 of harelip and cleft palate, 1 of spina bifida, 5 of clubfoot, 2 of hammertoe and 1 hypospadias. The surgical statistics cover almost the entire field of surgery, and the results certainly speak well for the operators of Johannesburg.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen in every-day practice.]

Intestinal Dyspepsia—A Correction.

In The Journal, Sept. 22, 1906, page 964, second column, near the bottom, the word *salve* appears in place of *salol*. Although the procedure would be harmless, we trust that none of our readers have made internal application of the external remedy inadvertently suggested. The prescription should read:

For putrefactive diarrhea with abdominal pain:

℞.	Bismuthi subgal.	ʒii	8	
	Salol	gr. xxiv	1	65
	Ext. opii (denarcotized)	gr. iii		20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

Tertiary Syphilis.

In the treatment of the tertiary stage of syphilis J. C. Wilson, in *Applied Therapeutics*, states that the iodids are of more benefit than the mercurials. Unless the mercurials are administered with the iodids, however, the patient will in most cases suffer a relapse. The quickest and most positive results are, as a rule, obtained by combining the two, which produces a combined effect on the syphilitic virus that is not obtained by one of these preparations when given alone. The administration of the iodid, according to Wilson, hinders the elimination of the mercury by the kidney, so that a longer time is required for the process, as the mercury remains stored in the tissues and prevents relapses.

A course of potassium iodid should not be continued too long, and if improvement is not shown by its administration by the end of six weeks or two months, some other treatment should be instituted. Whether the iodids should be combined with the mercury or given separately, as well as the size of the dose to be given, should be governed by the character of the lesions, their extent and the part of the body involved. If the patient should be suffering from the skin eruptions of late syphilis, the mercury and iodids should be combined, and iron should be added if anemia is present. The author recommends the following combinations:

℞.	Hydrarg. chloridi corros	gr. i		06
	Kalii iodidi	ʒii	8	
	Syr. ferri iodidi	fʒiv	15	
	Syr. sarsap. comp	f℥iii	90	
	Aquæ q. s. ad	f℥vi	180	

M. Sig.: One tablespoonful three times a day after meals, in water.

Mercuric iodid may be substituted for the corrosive sublimate as follows:

℞.	Hydrarg. iodidi rubri	gr. iii		20
	Potassii iodidi	ʒii	8	
	Syr. sarsaparillæ co	f℥iii	90	
	Aquæ q. s. ad	f℥vi	180	

M. Sig.: One tablespoonful in water three times a day.

When a tonic is indicated in conjunction with the specific treatment, Wilson recommends the following combination:

℞.	Hydrarg. chloridi corros	gr. i		06
	Tinct. ferri chloridi	fʒii	8	
	Liq. arsenii chloridi	gtt. xlviii	3	20
	Potassii iodidi	ʒii	8	
	Syr. zingiberis	f℥iii	90	
	Aquæ q. s.	f℥vi	180	

M. Sig.: One tablespoonful three times a day, in water.

Patients who suffer from pain in the bones, constant headache or syphilitic disease of the nervous system, may be given by preference, potassium iodid in doses of 20 to 60 grains (1.30 to 4.00) three times a day, beginning with small doses and gradually increasing the dose. In cases of gumma of the skin or subcutaneous tissue, corrosive sublimate should be given hypodermically and at the same time potassium iodid should be given internally in doses of 20 grains each (1.30)

The best local application under these conditions when ulceration has not taken place, is the blue ointment, with gentle pressure made by means of a bandage properly applied. If ulceration should take place the author recommends the following ointment:

R.	Cerati resinæ co.			
	Ung. iodoformi, āā	ʒii	8	
	Balsami Peru	ʒi	4	
	Unguenti petrolati q. s. ad	℥i	30	

M. Ft. unguentum. Sig.: Apply locally.

Affections of the mucous membranes should be treated locally precisely as in the secondary period. If deep ulceration exists the iodids should be given in large doses. The proper care must be taken to keep the ulcer clean, and for this purpose he recommends Dobell's solution, followed by a local application of silver nitrate and this followed by a spray, as follows:

R.	Thymol	gr. iss		09
	Menthol			
	Camphoræ, āā	gr. v		30
	Liq. petrolati	f℥i	30	

M. Sig.: To be used as a spray in the atomizer.

Benefit is derived from touching the ulcers with the tincture of iodin and the use of a gargle of the infusion of marshmallow. When the tertiary syphilis affects the tendons or their sheaths prolonged treatment is necessary. Locally the tincture of iodin is recommended, followed later by the following ointment:

R.	Ichthyoli	gr. viii		50
	Unguenti hydrargi			
	Unguenti belladonnæ, āā	ʒiii	12	
	Unguenti petrolati	ʒii	8	

M. Ft. unguentum. Sig.: Apply locally.

Syphilis involving the brain, spinal cord and special nerves, mercury and the iodid should both be employed, combined with suitable tonics.

To aid digestion and promote constructive metamorphosis, Wilson recommends the following pill:

R.	Acidi arsenosi			
	Strych. sulphatis			
	Auri et sodii chloridi, āā	gr. i		06
	Pepsini	gr. xl	2	65

M. Ft. pil. No. xx. Sig.: One after each meal.

The gold and strychnia should be continued for not less than six months. Iron should be added, if necessary.

In the treatment of hereditary syphilis, according to some authorities, the treatment should not be started until symptoms manifest themselves. Others state that a healthy child of a syphilitic father requires no treatment; if the mother was previously syphilitic, but has been free from all symptoms during the period of pregnancy, the child requires no treatment, but if the mother has recently been syphilitic, especially if symptoms of syphilis have been present during pregnancy, the child should receive treatment without delay. Wilson recommends the mercurial inunction as the best and most reliable treatment. Two drams (8.00) of the ointment may be spread on a piece of muslin or lint and applied to the child's body as a belly-band. This band should reach from the axilla to the groin and allowed to remain in place for three days, when it should be removed and the child's body gently washed with soap and water, followed by another application of the ointment. In this way trouble rarely arises. He speaks of mercury with chalk as a good preparation, given in doses of grain 1/12 each (.005), three times a day, by dropping it on the infant's tongue.

Corrosive sublimate in doses of grain 1/150 each (.0004) is also recommended, but is as a rule too irritating to the intestinal canal to be used for any length of time. The tannate of mercury is frequently of service, and this preparation is, as a rule, well borne by children, administered in milk. If marked tertiary symptoms arise, potassium iodid should be given in doses of from grain ½ (.03) to grain 1 (.06), in conjunction with the mercury.

Taylor and Bumstead recommend the following combination:

R.	Hydrarg. iodidi rubri	gr. i		06
	Potassii iodidi	ʒiv	15	
	Syr. sarsap. comp.			
	Aquæ. āā	f℥ii	60	

M. Sig.: Five drops morning and evening for a child one month old, increasing the dose one drop every five days. If the child is over 5 years of age, one teaspoonful may be given three times a day.

Spartein.

In an abstract in the *Ohio State Med. Jour.*, Petty states that disappointment in the results obtained from the administration of spartein is due to the insufficient dosage. Most authorities recommend doses of grain 1/6 to 1/3 (.01 to .02) each. He states that the dose hypodermically should be 1½ grains (.09) and not less than 2 grains (.12) by the mouth can be relied on. Like quinin, it is regarded by Petty as nontoxic, and also its effects are definite. He regards it as the ideal heart tonic, decreasing the frequency and increasing the force of the heart's action like digitalis, but at the same time it relieves the burden of the heart by reducing the arterial tension through dilatation of the superficial and deep capillaries. It thus acts as a very efficient diuretic. Its effect lasts for six to twelve hours after administration. He recommends it in the treatment of irregular heart action, given in 2-grain doses (.12) by the mouth and repeated once in two or three hours, and then not oftener than once in four to six hours. In considering its action as a dilator of arterioles and as a heart tonic, thus allowing more oxygen in the lungs and in producing diuresis, Petty regards this preparation as of great service in cardiac failure of pneumonia.

Incompatibilities of Some of the Newer Remedies.

In the report of the committee on newer remedies of the New York State Pharmaceutical Association, according to the *Pharm. Record*, the task of avoiding incompatibilities in the use of the newer remedies of synthetic origin is becoming greater with the increasing number of these preparations. In this connection it is stated that a great many physicians are inclined to prescribe a large number of these preparations in wafers. Many of these preparations are unsuitable for prescribing in wafer form because they attract moisture, which softens the wafers. Among these are mentioned sodium bromid, calcium chlorid, strontium chlorid, chloral, the glycerophosphates, piperazin and the dry vegetable extracts. Iodids should not be prescribed in wafer form, as they decompose or change color.

The fact is also mentioned that many solid preparations when combined produce a liquid, as, for instance, camphor combined with naphthol makes a liquid.

Antipyrin and sodium salicylate when combined give rise to a semi-liquid substance. Antipyrin when combined with chloral gives rise to an oily liquid and similarly when combined with betanaphthol, salol, resorcin, phenol, pyrogallol, thymol or urethane.

Acetanilid is incompatible with chloral, thymol, resorcin or menthol.

Betanaphthol is incompatible with antipyrin, camphor, menthol, phenol or urethane.

Camphor monobromid is incompatible with chloral, phenol, salol and thymol. Camphor should not be combined with betanaphthol, chloral, phenol, pyrogallol, resorcin, salol, thymol or urethane.

Chloral is not compatible with acetanilid, camphor, camphor bromid, menthol phenacetin, phenol, salol, thymol or urethane.

Menthol can not be mixed with naphthol, pyrogallol, resorcin, salol, thymol or urethane.

Sodium salicylate should never be combined with antipyrin and phenol.

Phenacetin is incompatible with naphthol, chloral and phenol. While phenol decomposes antipyrin, naphthol, camphor, chloral, menthol, sodium salicylate, pyrogallol, resorcin, salol, thymol and urethane.

Pyrogallol is incompatible with antipyrin, camphor, menthol and phenol.

Resorcin, according to these reports, forms new compounds with acetanilid, camphor monobromid, naphthol, menthol, phenol and urethane.

Salol shows some chemical change with antipyrin, camphor, camphor bromid, chloral, phenacetin, pyrogallol and thymol.

Thymol is incompatible with acetanilid, antipyrin and camphor; also with chloral, menthol, phenol, salol and urethane.

Urethane shows changes with antipyrin, naphthol, camphor, chloral, phenol, pyrogallol, resorcin, salicylic acid, salol and thymol.

The report also speaks of the great care necessary in preparing mixtures of syrups containing acacia with certain phenol derivatives, as incompatibilities are liable to occur as the result of the presence of an oxidizing ferment in the gum, which may produce chemical changes by producing either a precipitation or at least a change in color as syrup of acacia gives a blue color to the resin of guaiac; a somewhat pinkish color with phenol, a grayish color with betanaphthol, a yellowish-brown color with pyrocatechin; and a deposit of crystals of oxymorphin with morphin hydrochlorid.

Syrup of acacia, it must be remembered, is also incompatible with eserin, adrenalin, syrup of tar and liquid preparations of aloes.

Medicolegal

Admissible Evidence as to Value of Physician's Services.

The Supreme Court of Colorado says that but one question was presented for determination in the case of Sills vs. Cochems: Is testimony tending to show that plaintiff was busily engaged in the practice of his profession admissible in an action brought by a physician to recover judgment for the value of professional services rendered, where the price to be charged for such services was not agreed on?

It is said that "when an attorney sues on a quantum meruit (as much as he deserved) for professional services, his professional standing is a proper subject of inquiry as affecting the value of his services. And the amount of his professional business may be inquired into, as tending to show his professional standing." Weeks on Attorneys at Law, 681; Phelps vs. Hunt, 40 Conn., 97. Counsel called the court's attention to no case, and it knows of none, wherein it is held that a different rule should obtain in determining the value of a physician's services. The same reasoning which prompts the doctrine as to attorneys seems to warrant its application to physicians.

The value of professional services may depend very considerably on the character and standing of him who performs them. In the first place there are diversities of gifts. The period of time passed in the profession, the experience acquired, degree of skill and the faculty of using professional knowledge make great differences in individuals. The services of some are worth more than the services of others, because they will command more. Should a question arise as to the value of services, in an action brought by a physician to recover fees, where the nature of the services performed makes the possession of certain qualifications to constitute an important element in the value of those services, as in this case where the plaintiff was called because of his peculiar skill as a diagnostician, evidence of professional standing is clearly admissible and is entitled to consideration.

The fact that the plaintiff was extremely busy tended to show his professional standing, and tended to show, in connection with other testimony concerning the length of time he had practiced medicine in that community, his experience, which gave him the requisite knowledge and ability to properly diagnose and prescribe the necessary medicines for diseased persons. If constant practice in the art of his profession renders a practitioner more capable than he otherwise would be, the extent of such a practice is a matter which may be properly inquired into for the purpose of determining the value of the services rendered.

Duty of Injured Person as to Employing Physician.

The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Co. vs. Johnson, a personal injury case brought by the latter party, that the jury was instructed to the effect that it was the duty of the plaintiff to exercise that degree of care that an ordinarily prudent person would have exercised under the same or similar circumstances to employ a physician or physicians, and to secure proper treatment for his injuries, and that if he failed in this respect and his injuries were thereby increased that he could not recover for such increased injuries. This charge announced a correct proposition of law.

May Contract Against Future Professional Competition.

The Supreme Court of Tennessee says, in the case of Turner vs. Abbott, that its examination of the authorities has not confirmed the suggestion of counsel that a contract inhibiting future professional competition is not valid, unless at the time the party inhibited has an established practice or professional good will or a mercantile business which may be made the subject of sale. On the contrary, the court finds numerous cases, English and American, where a clerk or employé, teacher or salesman, on entering the service of a tradesman, manufacturer, or professional man, has been bound by a lawful contract not to engage in a competitive business with his employer. In the present case, the defendant was paid for his services as an assistant dentist, at a salary of $100 per month, which was large compensation to a young man who had just graduated, and under the authorities it was perfectly competent for the parties to make a contract that he would not open an office or practice dentistry in competition with the complainant when he ceased to work for the complainant in the town where the latter then was located and its immediate vicinity. The court thinks that this contract was reasonable and not oppressive; nor was it in any way detrimental to the interests of the public. In other words, it holds that such a contract is not in unlawful restraint of trade or against public policy, but is valid and enforceable. It says, besides what is above stated, that the general rule on this subject, deducible from the authorities, is that a contract in general restraint of trade, that is, not to engage in one's trade or profession at any place in the realm, is void as being contrary to public policy; but a contract not to engage in one's business or profession at a particular place, or for a period of time, is not invalid as being contrary to public policy, but such contracts will be upheld and enforced. And in this case the court affirms a decree restraining the defendant from the practice of dentistry in the town in question or its vicinity, in violation of the contract above mentioned.

Death of Minor from Anesthetic Administered for Operation Without Father's Consent.

The Supreme Court of Michigan says that the case of Bakker vs. Welsh and another was brought by a father, after being appointed administrator of the estate of his son who had died on an operating table at a hospital while chloroform was being administered preparatory to the removal of a tumor on his left ear about the size of a dove's egg. The claim was stated to be under what is known by the lawyers and the courts as the "Death Act." The son was 17 years old, and lived with his father on a farm. The record, instead of disclosing want of skill in the operation, showed quite the contrary. The principal point, therefore, presented was: Were the defendants liable in this action because they engaged in this operation without obtaining the consent of the father?

Counsel for the plaintiff were very frank with the court, it says, and stated in brief: "We are unable to aid the court by reference to any decisions in point. We have devoted much time and research to this interesting question, but have been unable to find any decisions of a higher court either supporting or opposing the plaintiff's contention, and we will therefore have to be content by calling the court's attention to such general reasoning as leads us to take the view herein contended for." They then argued at length and with a good deal of force that, as the father is the natural guardian of the child and is entitled to his custody and his services, he can not be deprived of them without his consent. "We contend," they said, "that it is wrong in every sense, except in cases of emergency, for a physician and surgeon to enter on a dangerous operation, or, as in this case, the administration of an anesthetic, conceded to be always accompanied with danger that death may result, without the knowledge and consent of the parent or guardian. It is against public policy and the sacred rights we have in our children that surgeons should take them in charge without our knowledge and send to us a corpse as the first notice or intimation of their relation to the case."

On the part of the defendants it was contended: (1) Consent of the father was unnecessary. (2) The lack of consent was not the cause of the boy's death, hence not actionable. (3) That if it were, the action did not survive under the death act. (4) That the action, if any, was in the father, not in the administrator. But the court does not think it necessary to a disposition of the case to decide all of the defenses interposed by the defendants.

The record, the court says, showed a young fellow almost grown into manhood, who has been for a considerable period of time, while living with his father, afflicted with a tumor. He has attempted, while at home, to have it removed by absorption. It does disappear, but after a time it reappears. He goes up to a large city, and with an aunt and two sisters, all adults, submits to examination, receives some advice, and goes back to his father with an agreement to return later to receive the report of the expert who is to make the microscopic examination. He returns accordingly, and with at least some of his adult relatives arranges to have a surgical operation of a not very dangerous character performed. Preparations are made for its performance. There is nothing in the record to indicate that, if the consent of father had been asked, it would not have been freely given. There is nothing in the record to indicate to the physicians, before entering on the operation, that the father did not approve of his son's going with his aunt and adult sisters, and consulting a physician as to his ailment, and following his advice. The court thinks it would be altogether too harsh a rule to say that under the circumstances disclosed by this record, in a suit under the statute declared on, the defendants should be held liable because they did not obtain the consent of the father to the administration of the anesthetic. Judgment for the defendants affirmed.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

Boston Medical and Surgical Journal.

September 13.

1 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. V. C. Vaughan, Ann Arbor.
2 *Artificial Nauheim Baths in Chronic Heart Cases. P. K. Brown, San Francisco.
3 Systemic Infection Through the Tonsils. J. L. Goodale, Boston.
4 Problems of Venereal Prophylaxis; Remedial Suggestions Relating to It. A. L. Wolbarst, New York.
5 Septic Infection Through the Fauces. G. A. Leland, Boston.

2. **Artificial Nauheim Baths in Heart Disease.**—The bath employed by Brown is merely a bicarbonate of soda and acid sodium sulphate bath without the chlorids. He says that the cases peculiarly fitted for Nauheim treatment are those in which the heart muscle acts insufficiently, either from dilatation, poor blood supply or arteriosclerosis with changes in the muscle; poisoning, notably tobacco poisoning, and fatty changes of moderate degree. Brown does not believe that the use of resisted movements with the Nauheim baths is essential. They are often very tiresome to the patient and are dangerous in bad cases, unless given by a person who understands fully the purposes of them and who realizes that every case is a law in itself. In his experience Brown has found it best to give these exercises an hour or two before the bath, and when this is not possible, a number of hours after the bath. He has found massage in connection with the treatments of advantage, particularly when the temperature of the bath was below 90.

New York Medical Journal.

September 15.

6 *The Ataxic Rectum. C. F. Martin, Philadelphia.
7 Palatable Medication. H. B. Sheffield, New York.
8 Ocular Insufficiency and Some of Its Results. E. M. Alger, New York.
9 Rheumatic Cricoarytenoid Ankylosis. H. P. Moseley, New York.
10 Physical Training a Factor in Psychologic Development. M. W. Barr, Elwyn, Pa.
11 *Rational Treatment of Diabetes Mellitus. T. S. Hart, New York.
12 The Diseased Faucial Tonsil as a Causal Factor in Respiratory and Gastric Diseases. A. R. Solenberger, Colorado Springs, Colo.
13 Case of Ectopic Gestation with Bilateral Suppurative Salpingitis and Adenomyoma of the Uterus. S. E. Tracy, Philadelphia.
14 *Instillation of Carbolic Acid into the Eye from a Medicine Dropper Through Mistake. J. C. Carter, Denison, Texas.
15 The Kidney of Pregnancy. D. W. Prentiss, Washington, D. C.

6. **Ataxic Rectum.**—On examining a number of tabetic cases, Martin found that all showed a sensory paralysis of the external sphincter, although considerable power seemed to remain in the internal sphincter. In three cases of tabes another peculiarity was noted, which was that when the finger was withdrawn the anus did not immediately contract, but remained patulous. Martin says that inasmuch as the rectal and vesical symptoms come on early in the course of tabes, a paralyzed external sphincter, with a history of persistent constipation, should suggest to the mind of the examiner the necessity of trying the other reflexes. The addition of bladder disturbances may be considered very suggestive of some changes taking place in the spinal cord, interfering with the transmission of voluntary impulses from the brain. The disturbance of the other reflexes, such as the loss of knee jerk, poor station, and impaired papillary reflexes, will frequently clear up the diagnosis.

Martin has found that the treatment of these cases of ataxic constipation is decidedly unsatisfactory. Probably the best results can be obtained by the regular administration of mild laxatives. The patient should be encouraged to make periodic attempts at stool, and should try the effect of massage over the colon and the lower abdomen. The administration of small doses of the alkaloid of the ripe seed of the calabar bean seems to stimulate peristalsis to a certain extent. A morning dose of sodium bicarbonate seems to work well when the case is a mild one. When there is a persistent tendency toward attacks of fecal impaction the patient should take a high colonic injection of cold or cool water in the morning. This is to empty the lower bowel so as to rid the patient of the annoyance of the pressure of feces in the rectum. In addition to the care of the alimentary tract, attention should be paid to the urinary tract, and a constant lookout kept for any symptoms pointing to urinary retention or vesical paralysis.

11. **Treatment of Diabetes Mellitus.**—Hart defines diabetes mellitus as a disease of faulty metabolism characterized by a deficient power of oxidation resulting in the incomplete combustion of the carbohydrates and fats of the food and of the tissues. Hart protests against the belief that urine with its specific gravity of 1020 can not contain sugar. He refers to 50 instances in which the specific gravity was from 1006 to 1018 in each of which sugar had been demonstrated. All treatment instituted must be directed toward improving the powers of oxidation. It is Hart's custom to give the patient written instructions for his dietary for each meal for a week, each day cutting off a little more carbohydrate food, until on the seventh day the diet is composed of a definite quantity of fats and proteids only. The diet for this day is as follows and is termed the "standard diet:" Breakfast: 150 c.c. of coffee with two teaspoonfuls of thick, sweet cream, two poached eggs, four slices of bacon, and butter. Dinner (midday): 150 c.c. of clear bouillon; broiled fish with mayonnaise dressing; roast beef, 200 grams; spinach or asparagus, salad of lettuce and tomatoes with French dressing, cream cheese, 20 grams; butter; one small cup of black coffee. Supper: Beefsteak, 200 grams; eggs, scrambled, without flour; cup of tea; string beans, lettuce salad with French or mayonnaise dressing. For the next two days the patient continues on the standard diet to which is added an "accessory diet" of 100 grams of wheat bread equally divided between the morning and midday meals. The twenty-four hours' urine is collected and examined. If glucose is present the patient is allowed the standard diet plus a diminished accessory diet, e. g., 80 grams of wheat bread. If the glucose is absent he is given the standard diet plus an increased accessory diet, e. g., 120 grams of wheat bread. A study of the individual case is all important.

14.—A report of this case appeared in THE JOURNAL, July 7, 1906, page 37.

Medical Record, New York.

September 15.

16 *How May the Medical and Teaching Professions Co-operate to Improve the Moral, Mental, and Physical Condition of the Young? S. A. Knopf, New York.
17 *Clinical Observations Concerning the Nasal Passages and the Relation They Bear to the Organs of Sight and Hearing. A. G. Bryant, Boston.
18 *A New Axis-Traction Apparatus. A. C. Jacobson, Brooklyn, N. Y.
19 *Results from the Bloodless Reduction of Congenital Hip Dislocation. W. G. Stern, Cleveland, Ohio.
20 *An Unrecognized Etiologic Factor in the Summer Diarrheas of Infants. J. L. Walsh, Caseville, Mich.

16. See abstract in THE JOURNAL, July 28, 1906. page 301.

17. **Relation of Nasal Passages to Eyes and Ears.**—Bryant emphasizes the necessity of attending to the first symptoms of nasal and nasopharyngeal obstructions which are so often the causal factor in producing cerebral symptoms, and many diseases of the eye, ear, larynx, chest as well as stomachic and intestinal disorders, and more general disturbances, nervous and reflex conditions.

18. **New Axis-Traction Apparatus.**—Jacobson's apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank-handle for operating the power-producing mechanism; a hand-wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points, a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum on which it is held and around which it is guided by a metal case containing an aperture into which the tape passes and which does not itself revolve; a small axle on which the gear revolves, and a dynamometer, one of the needles of which is pushed along as an index by the needle proper, remaining at the maximum point reached during the operation for later reference. The needle is true to the scale, whether traveling up or down. The apparatus is made chiefly of an aluminum composition, and weighs about five pounds. This instrument enables the accoucheur to employ measured, steady and precise axis-traction, with a minimum of force and no expenditure of physical energy on his part.

19. **Results from Bloodless Reduction of Congenital Hip Dislocation.**—Stern reports statistics, gathered from operators scattered all over the world, which very nearly agree with those as first given out by Lorenz as his own experience. The number of hips reported as successfully operated on since 1900 is 2,593. Ideal results, restitutiones completæ, 48.98 per cent.; anatomic restitutions, 41.76 per cent., 1,084; excellent functional results, 7.22 per cent., 187. Good function from transpositions, 39.98 per cent., 1,036. Failure, redislocation, band function, 12.10 per cent., 314. The discrepancy between failures and good results (about 1 per cent.) is due to inaccuracy of many of the reports. Individual operators have had far better results. These latter results will and must be attained through careful and painstaking work, combined with increasing experience and advanced methods.

20. **Unrecognized Etiologic Factor in Summer Diarrheas of Infants.**—Walsh calls attention to the cathartic property in the grasses which form the food of so many cows from spring to autumn. This property disappears when the grass is dried in the form of hay. The mortality curve follows the life of this type of vegetation, reaching its maximum in July, then gradually declining. Infants get the full physiologic effects and often the toxic effects of the aperient properties in the milk from the grass-fed cows. From October to May there is almost none of this diarrheal tendency apparent. Sterilization does not destroy this poison, which is a chemical one. The cow whose milk is used for infants should be kept off of pasture, and should be stall-fed, as in the winter. The chemistry of the grasses, Walsh states, offers a comparatively new field for study.

St. Louis Medical Review.

September 8.

21 The Problem of Sexual Variants. T. H. Evans, Philadelphia.
22 Origin and Heredity of Matter. (To be continued). J Wright, New York.

Lancet-Clinic, Cincinnati, Ohio.

September 15.

23 Surgical Treatment of Intestinal Indigestion. E. Harlan Cincinnati.
24 Modern Medical Expert vs. St. Paul, et al, A. N. Ellis. Maysville, Ky.

American Journal of Obstetrics, New York.

September.

25 *Construction of a New Vagina. (To be concluded.) A. Brothers, New York.
26 *Artificial Renal Colic as a Valuable Means of Diagnosis. H. T. Hutchins, Baltimore.
27 Some Common Varieties of Obstructed Labor. S. P. Warren, Portland, Me.
28 A Case of Cyclocephalus in Guam. N. T. McLean, U. S. N.
29 The Fetich of the Ovary. E. V. DeWarker, Syracuse, N. Y.
30 Bladder Affections in Gynecologic Cases. H. Grad, New York.
31 *Excision of a V-shaped Piece of the Posterior Uterine Wall for Anteflexion of the Cervix with the Aid of an Intrauterine Holder. R. C. Coffey, Portland, Ore.
32 Intussusception. C. B. Miller, Washington, D. C.
33 *Large Gelatinous Tumor of the Ovary. A. L. Smith, Montreal, Canada.

25. **Construction of a New Vagina.**—The patient on whom Brothers performed this operation was 21 years of age. The vagina was represented by a quasi-mucous membrane diaphragm, which could be depressed to a distance of a little more than an inch. Careful and repeated examinations failed to discover any distinct evidence of uterus, tubes or ovaries. Beginning just below the meatus urethra, the incision was carried in a circular manner across to the labium minor, down to the perineum and up on the opposite side to the starting point. This circle of quasi-mucous membrane was dissected away in part at its circumference and presented the firmest attachment to the urethra and bladder with lesser adhesions to the lateral regions and rectum. Neither catheter in the bladder nor finger in the rectum was deemed necessary at any stage of the operation. Several bleeding points at the sides were readily controlled by ligatures or torsion. With Sims' glass dilator (1¼ x 4 inches) the diaphragm was firmly pressed against, so that, by dint of snipping in the surrounding connective tissue and considerable pressure against the dilator, the saucer of mucosa was pushed upward to the full length of the dilator, leaving a cylindrical gap of raw tissue below it. While the dilator was kept under tension and pressed firmly against the vaginal vault, an assistant secured Thiersch skin grafts from the inner side of the patient's thigh, and these were placed over the raw surface by tilting the dilator in different directions. At the completion of the operation the dilator was surrounded at its vulvar end with gauze and retained in position under tension by means of long strips of adhesive plaster secured to the buttock and abdomen to prevent the disarrangement of the grafts. A permanent catheter was left in the bladder and the bowels were kept constipated during five or six days.

At the end of this time the dilator was removed, when it was found that a ring of grafts had become adherent within the vaginal canal to a depth varying between ½ inch and ¾ inch. The mucous membrane at the vault looked normal. but there was a raw gap between the two. Suggestions to repeat the grafting over this area were met with refusal on the part of the patient, especially as there seemed to be some prospect of the gap being gradually covered over by the growth of the new skin. The patient was kept in the hospital for a month, the vaginal canal was kept patent by means of a glass dilator which measured 1⅛ x 4 inches. This was kept in place by a stem perforating a cork closing up the open end of the glass dilator. Through the stem two rubber tubes passed antero-posteriorly and were secured to an abdominal belt on the principle of a McIntosh uterine supporter. This the patient wore with perfect comfort, night and day, and she left the hospital with instructions to keep on wearing it during a protracted period of time.

When examined at this time, two fingers easily passed in to a depth of four inches, and the result was regarded as very encouraging. There was not much progress in the extension of the new skin upward, so that she was advised to return to the hospital and have the raw surface still present covered with grafts. The posterior vaginal surface presented an area of one inch in depth covered by the new skin and two fingers passed readily to a depth of four inches. The vaginal granulating surface was thoroughly curetted and temporarily packed with gauze to check the bleeding. A cylinder had been prepared in the following manner: A glass dilator measuring ½ inch in diameter and 3 inches in length was carefully and smoothly covered with iodoform bandage, until its diameter measured one inch. Over this a thin rubber pouch was snugly drawn and then perforated at numerous points so as to permit the absorption of discharges. On this cylinder grafts of thin skin, secured by a razor from the left thigh, were placed with the raw surface exposed and secured by means of fine catgut. Excepting the two extremities of the cylinder, the entire surface was thus covered over with new skin. The vagina was then thoroughly exposed (after removing the gauze) by means of three deep and narrow-bladed retractors, and the graft-covered plug was introduced. By carefully withdrawing each retractor, exerting pressure centrifugally during the process, the plug was left in the canal with the raw surfaces of the grafts in intimate juxtaposition with the raw vaginal wall. A self-retaining catheter in the bladder and plaster strips retaining the gauze-covered plug in situ completed the operation. The bowels were kept confined with opiates and the patient rigidly maintained the horizontal decubitus during seven days.

At the end of this time the plug was removed and, with the exception of a small area in the left side of the vaginal floor, the entire canal was covered with smooth epithelium. The retention catheter was removed, the bowels were moved and a glass plug (three inches in depth) was secured in place with the McIntosh supporting apparatus. No attempt was made to use a longer or wider tube for fear of disturbing the grafts, some of which had loose ends. One year after the first intervention the patient stated that intercourse had been maintained several times weekly to the complete satisfaction of both parties.

26. **Artificial Renal Colic as Means of Diagnosis.**—Hutchins found that the ability to reproduce, mechanically or otherwise, the pain of which a patient complains is always a most valuable aid in diagnosis. A definite and typical kidney pain (renal colic) can be produced in every instance by forcibly distending the pelvis of the kidney with a bland fluid. In a large majority of cases (98 per cent. in his series), patients are able accurately to differentiate renal pain caused by the method described above, from pains from other causes. By this method a diagnosis can frequently be made in a class of cases, as yet undifferentiated by the medical profession and in which the symptoms are vague and indefinite. Accurate measurements of the amount of dilatation of the pelvis of the kidney may be made with the instrument used, and by this means valuable data are obtained.

The 100 cases studied are divided into four groups: 1. Normal kidney pain produced. Not that pain of which the patient complained. Disease of the kidney ruled out. 2. Kidney pain reproduced. Same pain as that of which the patient complained. Diagnosis of renal or ureteral disease confirmed. 3. Dilated pelvis of kidney. Stricture of ureter. 4. Doubtful cases and failures. Group 1 includes 23 cases. In all the cases, typical kidney pain was produced by the injection of fluid into the kidney pelvis. This pain had a definite location in the superior lumbar triangle. In no case, however, did the pain produced correspond in any particular with the pain of which the patient had previously complained, and disease of the kidney, due to any cause which might lead to permanent or intermittent dilatation of the kidney pelvis, was ruled out. The diagnosis was confirmed later at operation. Group 2 includes 50 cases. In all these cases typical kidney pain or pain referable to the kidney was reproduced and was at once recognized by the patient as the pain of which they had complained and for the relief of which they had entered the hospital. In 35 cases, 25 right and 10 left, the kidney was found to be movable and was suspended. In 8 cases, 4 right and 4 left, the kidney was movable, but operation was refused. In 2 cases, 1 right and 1 left, treatment by bandage was advised. In 3 cases nephrotomy was performed with relief of symptoms. The uterus was suspended in one case and the apendix removed in one case, neither operation affording any relief from the pain.

Group 3 includes 17 cases. In 10 of these cases no operation on the kidneys was performed; pregnancy was a contraindication in one; in another the disease was bilateral, and in a third the patient passed a stone spontaneously. Seven patients refused operation. Of the remaining 7 cases, the kidneys were suspended and the renal pelves folded in one; the stomach, liver and kidneys were suspended in another; stone was removed from the ureter in 2; the ureter was retransplanted into the bladder in one; stricture of the ureter was freed in one; and the kidney was removed in one case. Group 4 includes 10 cases. These cases indicate the limitations of this method of diagnosis. In 6 cases the answers of the patients were so indefinite or the location of the pain produced was so vague that a positive diagnosis could not be made. In 3 cases the same pain was reproduced and its location was fairly definite, and yet in one omental adhesions were found, in another gallstones, and in the third no disease of the kidney was detected. These three cases are regarded as failures. Three of the patients had had previous operations for the relief of pain, but without beneficial result. In one case there was present a large notched tumor of the right flank, supposed to be sarcoma of the kidney. Injection caused pain in this tumor. At autopsy the tumor was found to be of hepatic origin, but closely associated with the right kidney. Pain was easily referred to the tumor by the patient.

31. **Uterine Wall Operation for Anteflexion of Cervix.**—The steps in Coffey's operation are: First, pull down the cervix and uterus with bullet forceps or double tenaculum. Second, insert a cat-claw tenaculum, protrude the fangs and pull the uterus down as far as possible. Third, incise the vaginal mucous membrane at the back of the cervix and dissect up the peritoneum on the posterior surface of the uterus far enough to excise the wedge. Fourth, close the V-shaped incision with strong three-weeks' catgut sutures.

33. **Large Gelatinous Tumor of Ovary.**—Smith reports the case of a woman, aged 54, who complained of a large abdominal tumor, which she had first noticed about a year previously. The abdomen was distended to double the size of a full-time pregnancy by an ovarian cyst, which did not, however, give the usual wave on percussion. The tumor interfered with her breathing so much that for the last six months she had been unable to lie down at night. At the operation the tumor was found to be adherent to the entire abdominal wall in front, but it was easily separated by the hand. The pedicle, which was four inches wide, was hemmed so as not to leave any raw surfaces for the intestine to adhere to. About a quart of free jelly was then removed from the abdominal cavity, but whether this had come out of the small trocar hole made twenty-four hours previously, or whether it came from a rupture of the cyst wall at the back, Smith was unable to say. It appeared as though it had been there for a long time. The contents of the cyst were not like ordinary colloid viscous material, but were more like jelly.

The Journal of Medical Research, Boston.

July.

34 *Studies in Absorption. B. H. Buxton and J. C. Torrey, New York.
35 Microscopic Evidences of Absorption in the Large Intestine. J. L. Bremer, Boston.
36 Two Modifications of the Leischman Stain. R. C. Whitman, Chicago.
37 Regenerative Changes in the Liver: A Study of Experimental Lesions in the Dog. R. M. Pearce, Albany.
38 Simple Way of Using Buchner's Method for the Cultivation of Anaërobic Bacteria. H. J. Nichols and F. Schmitter, Washington, D. C.
39 Trypanosomata and Trypanosomiasis. E. N. Tobey, Boston.
40 Trypanosomata of the Newt. E. N. Tober, Boston.
41 Relation of Autolysis to the Histologic Changes Occurring in Necrotic Areas. H. G. Wells, Chicago.
42 *Case of Blastomycosis: Results of Culture and Inoculation Experiments. J. T. Bowen and S. B. Wolbach, Boston.
43 A New Toxic Action of Horse Serum. M. J. Rosenau and J. F. Anderson, Washington, D. C.

34. **Studies in Absorption.**—Buxton and Torrey investigated the methods by which the animal organism disposes of foreign substances in suspension, e. g., bacteria introduced into the

abdominal cavity. In the case of lampblack some of the particles are taken up by the phagocytes, while others quickly reach the organs, especially the liver and spleen. In the case of typhoid bacilli there may occur an explosive destruction; if destruction is more gradual, large numbers of bacilli make their way into the circulation and are deposited in various organs, especially the liver. There seems to be an immediate rush of particles toward the lymphatics of the diaphragm, whence they pass into the lymph trunks of the anterior mediastinum and then quickly reach the circulation. In time phagocytosis takes place, but at first the particles are free. Another channel of departure from the peritoneum is the omentum. Particles and phagocytic cells become entangled in the fibrinous deposits on its surface. In rabbits especially are typhoid bacilli found on the surfaces of the omentum. Rapid destruction is associated with accumulations of polynuclears, but in general the authors emphasize the part played by mononuclear cells as phagocytes.

42. **Blastomycosis.**—Bowen and Wolbach report a case of blastomycosis in which there was great hyperplasia of the epidermis, minute abscesses surrounded by epithelium, and chronic inflammatory changes in the corium. The organisms were present only in small numbers. Successful cultures were made. The organisms grew on all ordinary media, and best at a temperature slightly above that of the room. The addition of sugars did not materially influence the rate of growth, and there was no marked fermentative action. Inoculation experiments were made with pure cultures on rabbits, guinea-pigs and white mice. The last mentioned were the most susceptible, the alveoli of the lungs being filled with large cells and organisms.

Bulletin of the Johns Hopkins Hospital, Baltimore.

September.

44 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.
45 Blood Pressure Changes in Cheyne-Stokes Respiration. J. A. E. Eyster, Baltimore.
46 Observations on a Case of Palpitation of the Heart. A. D. Hirschfelder, Baltimore.
47 The Irish School of Medicine. J. J. Walsh, New York.
48 John Huxham of Devonshire (1692-1768). W. J. Vogeler, Yonkers, N. Y.
49 Popular Medicine in the Eighteenth Century. E. C. Hill Smithville, Mo.
50 American Hookworm (Necator Americanus) in Guam and China. C. W. Stiles, U. S. P. H. and M.-H. S.
51 Sahli's Desmoid Reaction in Gastric Diagnosis. T. R. Boggs. Baltimore.

44. **Operative Treatment of Varicose Veins.**—Miller presents the results of treatment of varicose veins of the leg as practiced in Johns Hopkins Hospital. Some of the cases were followed ten years or more. Miller claims that varicose veins of the leg are not an incident of senility; the condition is rather a disease of young and middle-aged individuals, over one-third of the cases appearing before the thirtieth year and two-thirds before the fortieth year. From an etiologic standpoint there are two classes, viz., inflammatory and non-inflammatory. The inflammatory group includes about one-third of all cases, phlebitis occurring as a complication or sequel of pregnancy, postoperative convalescence or an acute infection, among which typhoid fever is the most frequent. The pathology of the non-inflammatory group is obscure. In 128 cases the right and left legs are affected in about equal proportion; over one-half of the cases are bilateral. Trendelenburg's operation cured 78 per cent. in a series of 41 cases: this is about the result generally reported. In the first 4 postoperative years 89 per cent. were cured, from the fifth to the eighth postoperative years but 63 patients were cured; the tendency to recurrence of symptoms increases as the postoperative interval lengthens. Schede's operation cured 33 per cent. in a series of 9 cases. Two patients, two years or less since operation, were both cured. Of seven patients, more than two years since operation, but one was cured.

The tendency to recurrence of symptoms as the postoperative interval lengthens is much greater after a Schede than after a Trendelenburg operation. Division between ligatures of the saphenous vein does not ensure permanent occlusion. The venous stream may be reëstablished in three ways, viz.: Dilatation of anastomoses around the point of division (two cases); formation of varices in the scar (three cases); or end-to-end anastomosis of the ligated stumps (three cases). The Schede operation is followed particularly by anastomosis of ligated stumps. Of 6 patients examined there showed an intact saphenous vein running directly through the scar. Functional restoration of the saphenous vein may be, but is not always, accompanied by recurrence of symptoms. Resection of 8 cm. or more of the saphenous vein at the saphenous opening, made through a generous transverse skin incision, is to be preferred to simple division of the vein. Postoperative pulmonary embolism is rare, but has occurred between the fourth and thirteenth days. The onset is marked by sudden dyspnea, cyanosis, tachycardia and signs of collapse accompanied by rise in temperature; the symptoms may subside rapidly, may persist with the physical signs of pulmonary infarct, or may be followed immediately by sudden death.

American Journal of Surgery, New York.

September.

52 Frequency of Blindness Due to an Affection of the Accessory Sinuses. H. M. Fish, New York.
53 Cancer of the Breast, Necessity for Early, Radical Operation. J. C. Stewart, Minneapolis.
54 Ether Narcosis by Rectum. J. A. Stucky, Lexington, Ky.
55 *An Improved Postoperative Rectal Tube. J. M. Lynch, New York.

55. **Improved Postoperative Rectal Tube.**—The tube used by Lynch is made exactly like Tuttle's tube with the exception of the collar which prevents its slipping into the rectum. Lynch describes his tube as follows: Select a piece of stiff rubber tubing about five inches long and one-half inch in diameter, and a thin rubber condom. Cut a small hole in the blind end of the condom and pass the rubber tube over this hole into the cavity of the condom to the extent of about one-half an inch. Tie the condom around the tube with a piece of thread. Then wrap the tube with gauze or cotton to the thickness desired by the operator for distending the sphincter, covering about three inches of the tube. Reflect the rubber condom over this gauze and tie it around the tube at the point where the gauze ceases, leaving one inch or more of the open end of the condom beyond the end of the tube. Now wrap a small roll of absorbent cotton around the tube at the point where the last thread is tied around the gauze, making this roll large enough to form a prominent collar. Then reflect the loose end of the rubber condom backward over this roll and tie it with a piece of silk thread, or throw around it a small rubber ligature. Thus is formed a complete rubber tube with a flange or collar on its lower end; this collar absolutely prevents the tube from slipping into the rectum and at the same time furnishes an excellent means of producing pressure on any surface around the margin of the anus. Such tubes should always be introduced through a bivalve speculum or with the rectum held open by two flat retractors, in order to prevent any tearing of the parts.

The Canadian Journal of Medicine and Surgery, Toronto.

July.

56 A Series of Intestinal Anastomoses. T. S. Cullen, Baltimore
57 The British Medical Association—Toronto Meeting, August 21-25, 1906.

August.

58 Acute Descending Paralysis—Landry's Paralysis. A. McPhedran, Toronto.
59 Preliminary Program of the Seventy-Fourth Annual Meeting of the British Medical Association.

Medicine, Detroit, Mich.

August.

60 *Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology. F. Vicentini, Chieti, Italy.
61 Etiology of Apoplexy. C. L. Mix, Chicago.
62 Prognosis and Treatment of General Apoplexy. J. Grinker, Chicago.
63 General Symptoms of Apoplexy. D'O. Hecht, Chicago.
64 Cerebral Localization in Apoplexy. S. Kuh, Chicago.

60. **Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology.**—This elaborate paper was prepared for the Section on Stomatology at the recent session of the American Medical Association in Boston, but was not read, as Dr. Vicentini was unable to attend.

Wisconsin Medical Journal, Milwaukee.

August.

65 *Purpura. W. H. Neilson, Milwaukee.
66 *Apoplexy, Its Diagnosis and Treatment. U. O. B. Wingate. Milwaukee.

65-66. See abstracts in The Journal, July 14, 1906, page 143.

Northwest Medicine, Seattle, Wash.

August.

67 Sources of Infection of Typhoid. J. M. Semple, Spokane.
68 Early and Differential Diagnosis of Typhoid. R. M. Smith, Seattle.
69 Public and Professional Indifference to Typhoid, Prophylaxis in Rural Districts, Small Towns and Cities. E. E. Heg, Seattle.
70 Water Supplies of Cities and Towns as Bearing on the Prevention and Spread of Typhoid. R. A. Bebb. Tacoma.
71 Case of Amebic Dysentery, Originating in Montana: Case of Latent Malaria. J. F. Spelman and W. B. Wherry, Anaconda, Mont.

Columbus Medical Journal.

August.

72 Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. J. D. Dunham, Columbus.
73 Tuberculosis in State Hospitals. G. Stockton, Columbus.
74 Abort Inflammatory Diseases. J. M. Shaller, Denver.

Detroit Medical Journal.

August.

75 Suggestions to the Medical Witness. C. A. Lightner, Detroit.
76 Treatment of the Albuminuria of Pregnancy. C. G. Jennings, Detroit.
77 Progress in Pathology and Bacteriology. J. Sill, Detroit.
78 Tuberculosis in Detroit. G. L. Kiefer, Detroit.

The Laryngoscope, St. Louis, Mo.

August.

79 Ocular Manifestation in Intracranial Diseases of Otitic Origin. W. E. Spicer, New York.
80 Relation of Systemic Diseases to Otitis Media Purulenta and Its Complications. J. J. Thomson, New York.
81 Treatment of Acute Suppurative Otitis Media. E. P. Fowler. New York.
82 Clinical Value of the Blood Examination in Otitis Media Purulenta and Its Complications. L. M. Hubby, New York.
83 Bacteriology of Suppurative Ear Diseases. D. S. Dougherty, New York.
84 Lumbar Puncture; Its Clinical Value in the Intracranial Complications of Suppurative Otitis Media. S. J. Kopetzky, New York.
85 Etiology, Diagnosis and Treatment of Auricular Chondritis and Perichondritis. L. J. Denchfield, New York.
86 Technic of Ossiculectomy. R. J. Held, New York.
87 Observations on the Fossæ of Rosenmüller. T. L. Brunk, Decatur, Ill.

Milwaukee Medical Journal.

August.

88 President's Address Before the Brainard Medical Society. G. J. Kaunheimer, Milwaukee.
89 Etiology, Symptomatology and Diagnosis of Placenta Prævia. E. J. Butzke, Milwaukee.
90 Placenta Prævia. J. J. Schoots, Milwaukee.
91 Eye Clinic of the University of Breslau. C. Messmer, Breslau, Germany.
92 Gynecology. E. F. Fish, Milwaukee.

Medical Fortnightly, St. Louis.

September 10.

93 Urethrotomies. R. Harrison, London.
94 Diagnosis of Pyloric Stenosis. E. Walker, Evansville, Ind.
95 Treatment of Chlorosis. G. F. Butler, Chicago.

American Journal of Urology, New York.

September.

96 Surgery of the Ureter. E. Fuller. New York.
97 Symptomatology of Ureteral Diseases. D. H. Stewart, New York.
98 Ureteral Lavage. W. Ayres, New York.
99 Cystotomy in the Female. E. Garceau, Boston.

Mississippi Medical Monthly, Vicksburg.

September.

100 President's Address Before the Bolivar County Medical Society. J. M. Wells, Cleveland.
101 Employment of Rest in the Rational Treatment of Pulmonary Tuberculosis. M. D. Ethridge, Silver City, N. M.
102 Surgical Shock. E. R. Gordon, McComb City.
103 Multiple Neuritis—Its Diagnosis and Treatment. H. L. Sutherland, Rosedale.
104 Drugs—Their Use and Abuse. L. D. Dickerson, McComb City.

The Medical Standard, Chicago.

September.

105 Bromin in Septic Conditions. M. O. Terry, New York.
106 Successful Treatment of Sprains with Mechanical Vibration. N. M. Eberhard, Chicago.
107 Professor Eiselberg's Clinic. L. Waite, Chicago.
109 Practical X-Ray Therapy. N. M. Eberhard, Chicago.
110 Tractus Vascularis and Tractus Nervosus in Splanchnoptosia. B. Robinson, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 1.

1 *Educational number.

1. **Educational Number.**—In accordance with its custom the *British Medical Journal* devotes this entire issue to a discussion of subjects that have a direct bearing on medical education. The first editorial is on "The Profession of Medicine" and discusses this from the standpoint of what the profession has to offer a physician socially, intellectually and commercially. The second editorial, entitled "The Portals of the Profession," considers the question of the degree, the choice of a medical school, and the cost of a medical education. The regulations of the general medical council, preliminary, scholastic, etc., are also considered. Other topics mentioned more or less fully are the English medical corporations, the universities and colleges of England, Scotland and Ireland; the London and provincial clinical hospitals; the medical education of women: postgraduate study; tropical medicine; preventive medicine; degrees for practitioners; dental surgery, and the public service.

The Lancet, London.

September 1.

2 Educational number.

The Practitioner, London.

September.

3 Angina Pectoris. C. A. Gibson.
4 *An Improved Method of Putting up Fractured Clavicles. T. D. Manning.
5 Diagnosis of Abdominal Tumors in Relation to Pregnancy. W. E. Fothergill.
6 *Asphyxia Neonatorum; Its Causes and Treatment. J. S. Sheill.
7 Use of Rubber Gloves in Abdominal Operations. F. E. Taylor.
8 Case of Infantilism. W. B. Ransom.
9 Recent Progress in Otology. R. Lake.
10 Estimation of the Functional Value of the Kidneys. J. W. T. Walker.
11 History of a Diphtheria Outbreak (Complicated with Vincent's Angina) at the Lambeth Parochial Schools, West Norwood, May to July, 1905. J. Priestley.

4. **Improved Method of Putting Up Fractured Clavicles.**—This apparatus has three parts: a shoulder-piece—practically half of a short waistcoat—an elbow piece, and webbing to draw back the upper arm. All are interchangeable. The first two are made of jean, and the webbing is similar to that used for babies' binders. First the shoulder-piece is fitted on the uninjured side, taking care that the loop to support the hand comes in front; a pad is then placed in the axilla, and the arm-piece is tied on round the arm as close up to the axilla as possible, the two free tapes at the end being loosely tied to the lower two tapes on the back of the shoulder-piece; lastly, the elbow-piece is put on, the two tapes behind being tied to the upper two on the back of the shoulder-piece, while in front, the arm having been placed in the usual completely flexed position. with the hand well up on the whole shoulder, the loop is buttoned over the wrist, the upper tape is passed through the small loop opposite to it on the elbow-piece, and tied to the uppermost one on the shoulder-piece; the adjustment of the last two pairs of tapes is obvious. The arm on the injured side is fixed in good position and all that now remains is to tighten up the tapes. The appliance is clean; there is no risk of dermatitis; it is a great economy of time for the surgeon. for the retying of a tape or two is much more quickly done than the application of much strapping, and also, if the patient lives at a distance, any intelligent attendant can soon learn to adjust any tapes which may work loose.

6. **Treatment of Asphyxia Neonatorum.**—Sheill describes his method of treating a typical case of asphyxia as follows: The child born, its cord is ligated and cut, and its legs wiped dry. Suspended by its legs, the mucus or other matter is removed from its air passages by means of damp cloths and by the mucus evacuator devised by him for that purpose. Next, the child is rapidly transferred to a large bath containing four inches of water at about 110 F. Into this it is placed supine, a rolled towel beneath its shoulders as in Sylvester's original description, so that only its head and face are above water; a small clip forceps is placed on its tongue and allowed to hang

to one side, using the angle of the child's mouth as a fulcrum to draw the tongue forward and to keep it there. Counter-traction is made by the nurse or other assistant on the infant's feet, while the operator performs the typical Sylvester method of artificial respiration. Meanwhile the following solution is injected subcutaneously over the deltoid muscle:

Standardized tincture of belladonna...gr. i	066
Strychnin ....gr. 1/100	00066
Whisky ....m. x	66

This injection usually gives a noticeably beneficial result in about three and a half minutes, and the dose may be repeated in fifteen minutes, if required. Now an ordinary enema syringe is dropped into the bath and about two ounces of the bath water is gently injected into the child's rectum. At intervals the infant is lifted out of the water and, while suspended by the feet, its spine is well rubbed with whisky or camphor liniment and the mucus evacuator used again. As the child is lifted from the bath, the temperature of which is maintained at the original height, and suspended as before, it may at intervals be slapped, rubbed and blown on with the breath, especially the latter in the face, which tends to stimulate reflexly the respirations. A little later a splash of cold water down the spine, or more effective still, in the face, will probably produce a gasp. Now Sylvester's method, unlike Schultze's, can be timed to act with the respiratory effort of the rescued child; when it gasps like a dying trout, as it is an inspiratory effort, draw up the arms quickly, and if it cries, however freely, compress the thorax to assist its extirpation. Do not use the cold bath, even for a moment, until well into the livid state with a strongly beating heart, otherwise a fatal collapse may result. Should the child, in spite of this combination of methods, fail to be resuscitated, the operator may at any rate feel assured that the best has been done for it.

The Dublin Journal of Medical Science.

August.

12 Clinical Report of the Rotunda Hospital. E. H. Tweedy.
13 Pygmies in Sickness and in Health. W. P. Cockle.
14 Stokes-Adams Syndrome. T. H. Peyton.

The Australasian Medical Gazette, Sydney.

July 20.

15 Epidemiology of Plague. (To be continued.) J. A. Thompson.
16 Desirability of Amending the Medical Acts. A. A. Lendon.
17 Three Cases of Primary Sarcomata of the Stomach. A. MacCormick and D. A. Welsh.
18 Case of Syncopal Bradycardia. J. M. Gill.
19 General Principles of Therapeutic Inoculation with Special Reference to Tuberculin. A. E. Mills.
20 Case of Spontaneous Disappearance of a Tumor (Probably Fibromyoma) during the later Months of Pregnancy. A. N. McArthur.
21 Observations on the Microbiology of Syphilis. W. J. Munro.

Revue de Gynécologie, Paris.

Last indexed, page 892.

22 (X, No. 3.) *Pozzi Livre d'or—(souvenir volume.) Une hystérectomie abdominale en 1906. J. L. Faure.
23 *Stérilité. A. Pinard.
24 De l'hystérectomie abdominale totale et subtotale. J. Bœckel (Strasburg). 75 cases.
25 *Souvenirs gynécologiques. A. Reverdin (Geneva).
26 *La méthode oxygénée en gynécologie. J. Thiriar (Brussels).
27 Le mécanisme de l'inversion utérine. H. Treub (Amsterdam).
28 Cas d'inversion utérine non puerperale. Mendes de Léon (Ib.)
29 Recherches expérimentales sur l'entrée de l'air dans les veines du bassin. A. Poncet and X. Delore (Lyons).
30 *L'opération transpéritonéale dans le traitement des fistules vésico-utéro-vaginales. E. Forgue.
31 Sur la myomectomie abdominale. A. Monprofit (Angers).
32 Une statistique de laparotomies pour affections utéro-annexielles en 1905. A. Martin (Rouen).
33 *Traitement chirurgical des grossesses extra-utérines avancées avec mort de fetus (advanced tubal pregnancies, 5 cases). H. Barnsby (Tours).
34 *Des rétentions rénales à la suite de l'hystérectomie vaginale. F. Leguen (Paris).
35 Du diagnostic de l'appendicite et de quelques cas de para-appendicites gynécologiques. P. Thiéry (Ib.)

22. **The Pozzi "Livre d'or."**—The souvenir volume presented to Prof. S. Pozzi on the completion of 20 years of teaching at the Hôpital Broca, is said to mark an epoch in the history of gynecology in France. Pozzi's service was the first in France to assert the independence of gynecology and, in order to show the present standing of the science, Faure describes with minute detail an ordinary abdominal hysterectomy as done to-day in a well-equipped operating-room. The present record is that 95 per cent. of the patients are cured by the intervention, and he thinks we have reached the limit of perfection in our technic. The surgeons of A. D. 2000 will not perform an abdominal hysterectomy any better, he declares, than it is done to-day, although by means of discoveries beyond our ken at present they will not have to perform the operation so frequently as we do. All the articles in this number of the *Revue* are taken from the Pozzi souvenir volume.

23. **Sterility.**—The subtitle of Pinard's article is "What the physician should know and do to be able to treat sterility." He remarks that the percentage of families without children is about the same in various countries, 11.3 per cent. at Paris and 12.8 per cent. at Berlin, for example. The cause of the sterility is in the wife in about 60 per cent., and in the husband in about 40 per cent. Sterility in the female due to congenital external anteflexion is best treated by dilatation with the catheter, repeated two or three times after each menstrual period, and this treatment kept up for months. Pinard has known conception to occur after 9 and 12 months of this treatment. It not only restores the uterus to place, but overcomes the stenosis both of the external and internal os at the same time. In case of non-painful but scanty and irregular menses, after long regularity, he has restored conditions to normal with consecutive pregnancy in hundreds of cases by the simple restriction of the diet to milk alone for a month or so. In case the menses have stopped, with a uterus rather above medium size, the trouble is due to a premature menopause, beyond remedy. When examining the husband, he must never be told that the absence of spermatozoa is permanent. Pinard knows of three men who committed suicide on being told this. Iodid treatment has given good results in some cases of gonorrhea or syphilitic orchitis. In case of impotence, hygiene alone should be applied, but, with malformation of the genital organs, the semen fertile, artificial fecundation may be indicated.

25. **Gynecologic Souvenirs.**—Reverdin writes from his "anecdotage" an interesting sketch of the rise and development of gynecology in France, and of various national and international gatherings of specialists. He particularly comments on the greater confidence and liability of better results when a surgeon is operating in his accustomed environment. An invitation to operate when visiting a clinic away from home should not induce a surgeon to perform an operation, involving risk of life, merely because his vanity has been flattered by the invitation and the deference shown him. He advances this merely as his opinion, but confesses that it is based on several unfortunate personal occurrences. The great benefits of visiting others' clinics and operating-rooms he amply extols, saying that this intercourse with other minds and technics is one of the chief advantages of congresses, and that he does not agree with Mme. de Staël's dictum: "When men are congregated together their ears lengthen out."

26. **Oxygen in Gynecology.**—Thiriar has been experimenting with oxygen in gynecologic affections for a dozen years, and published his first results in 1899. His experience since has confirmed his first assertions and he now proclaims his belief that oxygen is the natural remedy for infection with anaërobes, especially gaseous septicemia, and is the antiseptic of the day. It is also the best means, he says, for preventing and curing septic complications in gynecology, and for treatment of all gynecologic infections. After the vagina has been rinsed he introduces an ordinary vaginal cannula connected by a rubber tube with the tank of oxygen. The cannula is held in place with a T bandage, and with a pad of cotton applied outside. The oxygen is then turned on and is allowed to flow for several hours without further attention. When the cannula is withdrawn a large pad of cotton is applied with a T bandage. The oxygen may be used thus the day before an operation, and resumed a few hours afterward. The oxygen penetrates into every crevice in the vagina and escapes through the cotton pad. Bacteriologic examinations before and after show the efficient bactericidal action of the protracted application of the gas. Preventive, preoperative asepsis of the vagina is easily and certainly obtained by this "méthode oxygénée" as he calls it. In case of an adherent pyosalpinx with contamination of the small pelvis with very virulent pus, after the toilet of the cavity, he introduces two long tubes, with an opening at the tip, sometimes interposing a wick of iodoform

gauze. One of these tubes is connected with the tank of oxygen, the other acts as a siphon, its outer end being in a vessel containing an antiseptic solution. The abdomen is closed as usual, and the oxygen turned on; the bubbles rising in the fluid in the vessel show the force of the current. The outflow of the oxygen sweeps along all the secretions which otherwise might accumulate and serve as nests for bacteria. The secretions are sometimes so abundant that the fluid has to be renewed several times during the day. Since this oxygen treatment has been in constant use, there has not been a single instance of infection of the peritoneum, even when it had been soiled. A number of instructive cases are related, among them that of a woman of 42 with rupture of the uterus during childbirth. The omentum protruded from the vagina, the pulse was thready, 120, respirations 32, temperature 36.6 C. The entire peritoneal cavity was found soiled with meconium, etc., and a fibrinoplastic exudation already coated the intestines. The uterus was torn for 10 cm. and the vagina for 5. After abdominal hysterectomy and the toilet of the region the oxygen and siphon tubes were introduced as far as the pouch of Douglas and the abdomen closed. The oxygen was turned on, the force sending up a bubble at a time, and this was continued for five days. The pulse and respiration soon returned to normal and the temperature never rose above 38 C. The patient was dismissed completely cured in three weeks. The oxygen undoubtedly, Thiriar states, prevents formation of adhesions and restores normal conditions in the parts. When the oxygen is used in an established peritoneal infection, he passes the jet of oxygen over the parts in the same way that furniture is cleaned with compressed air. It breaks up and removes fibrinous deposits, before the continuous flow and siphon are arranged. Several separate tubes and siphons might be used to advantage, he declares, in some cases. In tuberculous peritonitis he evacuates the ascites through a buttonhole incision, and sends a stream of oxygen into the cavity for ten minutes. He then closes the abdomen and awaits with confidence the cure which is certain, he says, to occur in a few days. In infectious gynecologic conditions, metritis, etc., he uses a two-way sound with a gentle flow of oxygen, kept up for two or three days. Even if a little oxygen should get into the circulation this is not so dangerous, he thinks, as some observers have insisted. He has never witnessed any untoward effects from the oxygen method. One patient with hemorrhagic metritis succumbed just as the arrangements were completed, but before the current had been turned on. Reverdin in the preceding article also reports excellent results from the oxygen treatment, without by-effects. [Costa, in Italy, used the oxygen intermittently, as he reported last year, without any satisfactory results.—Ed.]

30. **Transperitoneal Operation for Vesicovaginal Fistula.**—Forgue's 5 illustrations show the various phases of the operation which he successfully performed in a case of extensive laceration of the bladder, vagina and cervix in a x-para of 43.

33. **Treatment of Extrauterine Pregnancy Near Term.**—Barnsby's experiences with 5 cases compel him to advocate marsupialization with patient waiting for expulsion of the placenta in all cases of extrauterine pregnancy, with the fetus dead, within 2 months of term. Total extirpation should be reserved for the rare cases of tubal pregnancy in which there are no adhesions between the fetal sac and the adjacent organs. Marsupialization and expectancy, he states, eliminate the danger of hemorrhage, and reduce the chances for infection. The whole intervention is thus extraperitoneal, and the prognosis is good; these advantages, he declares, outweigh the drawbacks of the incomplete operation. In draining, a T tube introduced into the cul-de-sac of Douglas insures the drainage of the lower part of the sac.

34. **Renal Retention of Urine After Vaginal Hysterectomy.** Legueu has observed 4 cases of this kind, the hypertension of the kidney and the infection occurring apart from any accidental injury of the ureters, that is, without these structures having been clamped.

Semaine Médicale, Paris.

36 (XXVI, No. 34.) *Le présent et l'avenir de la médecine européenne en Chine. L. Legrand.
37 (No. 35.) *La polycythémie splénomégalique. L. Cheinisse

36. **Prospects of Western Medicine in China.**—Legrand, physician to the Imperial Railroad Company in China, here gives an interesting sketch of the Chinese character in relation to modern medicine. The Chinese do not fear death; they do not think of it; their attitude is constantly heroic before the inevitable. Their sensibilities are not so keen, the capacity of suffering and enjoying is less, they are lazy in body and mind, and penurious, while they are imbued with a sense of the instability of human goods, owing to injustice, revolutions, etc., and they have a profound and atavistic disbelief in a personal future life. Their ideal of earthly happiness is to lie and dream away the hours, and the idea of perpetual rest in the grave is not repelling. The native physicians have a comparatively low position and generally have some other means of support. As absolutely nothing is free in China, not even the food in the prisons, they can not conceive why a physician or surgeon gives free consultations, and they attribute to him every motive but the right one. The medical missionaries in China are looked down on, Legrand adds, and their motives misunderstood for this reason. The Chinese say: "What crime has this foreigner committed that he should be banished from his country and have to come here to tend the sores of the coolies who ridicule him when he has finished? He must be very ignorant and awkward to be reduced to tending the dregs of the people and not even to demand the few pennies that the poorest Chinese doctors would ask for such services." Some of the applicants at his clinic come to steal, others merely to beg, and others just to ridicule the foreigner among themselves. Even if Chinese students become thoroughly trained in medicine, it can be only in the science; they will lack the imaginative, constructive and synthetic faculties which make of the science an art. China will absorb all that can be learned from the Occident in respect to locomotives and cannon, and everything else that will enable it to defend better its traditional civilization against the outside world. Unless there is a complete regeneration, however, both in character and ideas, western medicine will have little chance to spread in China or to take a dignified and remunerative position there. The Chinese have a saying, dating from eleven centuries before our era, that "no one can be called a physician who does not cure six out of every ten patients, for, if only five recover, the patient is as well off without him, as half of all the sick get well without aid."

37. **Polycythemia with Enlarged Spleen.**—Cheinisse analyzes the various communications that have been published on this subject, and draws the clinical picture of the disease much as presented in an editorial in these columns recently (page 510). He remarks in conclusion that, on account of the lack of any specific medication or measures, splenectomy might be justifiable, as advocated by Vaquez and Laubry. Quinin gave encouraging results in Begg and Bullmore's and in Zimlick's cases, and arsenic in Türk's case and in others.

Berliner klinische Wochenschrift.

38 (XLIII, Nos. 25-26.) Das Pathologische Institut zu Berlin J. Orth.
39 Zur Kenntnis der Meningitis serosa spinalis. F. Krause. Successful operation.
40 Changes in Concentration of Urine and Blood Under Influence of Mineral Waters.—Ueber Konzentrationsveränderungen des Harnes und des Blutes nebst Darreichung verschiedener Mineralwässer. J. v Szabohy.
41 Inhalation frei zerstäubter Flüssigkeit bei der Behandlung des chronischen Bronchial-Katarrhs. Stemmler.
42 Carbonated Baths and Reaction of Circulatory Apparatus.—Wie reagirt der normale Zirkulationsapparat auf natürliche Kohlensäurebäder? F. Kisch, Jr.
43 Physiologische Versuche mit Moorbädern (mud baths). O. Tuszkai (Marienbad).
44 Die Stellung der Dermatologie in der Medizin. E. Lesser.
45 *Der therapeutische und symptomatische Wert der Lumbal-Punktion bei der tuberkulösen Meningitis der Kinder. E. Schlesinger (Strasburg).
46 *Two Cases of Tumors Compressing Spinal Cord Successfully Removed.—Ueber Fälle von erfolgreich operierter Rückenmarkshautgeschwulst. H. Oppenheim and M. Borchardt.
47 *Leukemia Without Leukemic Blood?—Leukämie ohne leukämisches Blut. C. A. Ewald.
48 Das Heufieber und seine Serumbehandlung (hay fever). Kammann.
49 *Die Gonorrhoe-Behandlung mit Stauungs-Hyperämie. S. Jacoby (Berlin).
50 *Zur Diagnose des Magencarcinoms (gastric cancer). L. Kuttner (Ewald's clinic, Berlin).

45. **Lumbar Puncture in Tuberculous Meningitis.**—Schlesinger has found that by repeated lumbar puncture it is possible to prevent the appearance of convulsions in tuberculous meningitis. A single puncture may be sufficient in some cases, even in the moribund. He advises it as early as possible, and allows as much cerebrospinal fluid to escape as flows spontaneously. When tubercle bacilli of comparatively attenuated virulence are found in the cerebrospinal fluid, the outcome may possibly prove favorable; 5 cases have been published in which recovery occurred, although tubercle bacilli were found in the cerebrospinal fluid. None of his patients recovered, but he has been much impressed with the prompt benefit that followed lumbar puncture.

46. **Three Cases of Tumors Compressing the Spinal Cord.**—Borchardt has had the good fortune to operate in 3 cases of tumors compressing the spinal cord with a successful outcome in each. The findings are illustrated. The symptoms in the first case were atrophic paresis of a segmentary character in the left arm with corresponding anesthesia and the symptom-complex of the Brown-Séquard hemiplegia. The patient was a woman of 33, who complained of pains between the shoulder blades and in the left shoulder for four or five months, with weakness of the left arm and stiffness in the left leg. By the end of the ninth month the contracture and paralysis had increased to complete helplessness. The assumed benign tumor was found, as diagnosed, at the sixth and seventh cervical vertebræ. The results were the gradual subsidence of the symptoms of compression. In the second case the symptoms were more complicated and indicated considerable compression of the spinal cord at the fourth and fifth dorsal vertebræ. The first symptoms had been pains in the legs, abdomen and back, weakness in the right leg, disturbances in micturition, impotence, and paresis. The tumor in this case was soft and extended vertically for 5 cm. with a small projection to the left. The symptoms have gradually subsided to some extent since the recent removal of the tumor, and the patient is now able to walk, although still with a gait suggesting ataxia. The other disturbances have righted themselves. The tumor was exactly in the median line, which accounted for the unusual character of the symptoms. Oppenheim gives an illustration of five tumors removed from the living subject on his diagnosis, and mentions three others which are not represented in the picture. Borchardt operated by laminectomy at a single sitting, and reviews various details and general features of operations affecting the spinal cord, especially the danger of secondary infections. In the first case the operation was followed by obstinate bronchitis, incontinence both of urine and stools, catarrhal cystitis for three weeks, decubitus and severe lancinating pains in the legs, but these gradually subsided and the patient is now so well that she can walk for hours and has entire charge of the housekeeping and garden. She is the wife of a workingman, and refused to consent to the operation for five months after the diagnosis had been made. Convalescence in the second case was disturbed by intensely severe pains in the penis, buttocks, and legs, requiring large doses of morphin, but they subsided spontaneously after a few days. In a third case the tumor was found as diagnosed at the sixth dorsal vertebra and its removal was very tedious, but the incision, 25 cm. long, healed completely by the seventeenth day.

47. **Anatomic Leukemia Without Leukemic Blood.**—Ewald describes a case with autopsy in which the symptoms indicated acute myeloid leukemia running a fatal course in about seven weeks. The patient was a robust man of 37. The autopsy disclosed hyperplasia of the spleen, lymphomatous infiltration of the liver and kidneys, "raspberry jelly" bone marrow, hemorrhages in kidneys and stomach, fatty degeneration of heart with enlargement and pericarditis with adhesion. The microscopic findings also were those of leukemia. At the same time the blood did not present any of the characteristics of leukemia and there were no pains in the bones and no enlargement of the peripheral glands. The lack of the latter and the negative blood findings, as well as the rapidly fatal course of the disease, spoke against splenic anemia, and nothing was found to indicate a septic process.

49. **Passive Congestion Treatment of Gonorrhea.**—Jacoby has been impressed with the favorable influence exerted on gonorrheal processes by the application of an apparatus for suction therapy according to the Bier-Klapp technic. A sound is used that fits into the anterior urethra air-tight and is connected with a rubber bulb. The sound is made with three long, deep grooves, with five comparatively large openings in each groove. In order to bring all parts of the mucosa under the influence of the suction, the sound is turned the second time at right angles to its position at the first sitting. He leaves it in the urethra for from 10 to 15 minutes.

50. **Diagnosis of Gastric Cancer.**—Among the various diagnostic points emphasized in this review is the sudden beginning of the symptoms calling attention to the stomach, in persons previously free from digestive disturbances. In Kuttner's experience the symptoms were generally referred to some error in diet, and the pains and vomiting were assumed at first to be acute and then chronic dyspepsia. In three instances the first symptom was profuse hemorrhage in the stomach. In some cases, however, the affection developed insidiously with merely vague dyspeptic disturbances. He does not believe that there is much danger of the development of cancer on the basis of chronic gastric catarrh. He has encountered only four in his hundreds of cancer cases in which there were evidences of preceding atrophy of the stomach. The second important sign, after the abrupt onset, is the progressive decline of the appetite. Complete anorexia, sometimes actual repugnance for food, especially for meat, is an important and sometimes a very early symptom of cancer. With ulcer the appetite is generally good, and the retention of a good appetite to the last may be exceptionally observed even with cancer. His experience has been that gastric cancer is not restricted to middle age, but is liable to occur earlier, and is frequently incorrectly diagnosed in the young. A history of cancer in the family, especially gastric cancer, or of preceding ulcer or of trauma, affecting the stomach, should be regarded as predisposing factors. Sometimes the patients are unusually pale, probably from occult bleeding, and sometimes there may be loss of weight and strength, but this is not inevitable. He had three patients, working men, who were able to keep at their work until the very last stage of malignant disease. Obstinate itching of the skin has been observed frequently in case of gastric cancer, and he regards it as an important sign, as also putrid smelling eructations accompanying dyspeptic disturbances. It is important, he states, to smell of the stomach tube in dubious cases. A particle of extremely putrid matter may give the clue to an ulcerating cancer. Pain is not characteristic and of not much differential value. The finding of "coffee grounds" in vomit is suspicious. Deficient production of gastric juice has no differential value, but the constant finding of lactic acid justifies the assumption of cancer, although it is not an early sign. He agrees with Glässner that in case of reduction equally in both the lab ferment and pepsin, the tumor may be in the fundus, while if the lab is in approximately normal amounts while the pepsin is reduced, a tumor in the pyloric region may be suspected. Rare instances are known in which the motor function has remained approximately normal nearly to the end. In testing the motor function it is necessary that the conditions should be identical at each test, and it is important that an abundant meal should have been ingested the evening before examination of the fasting stomach. If even minute amounts of blood with pus or the latter alone or with mucus are found in the fasting stomach, the assumption of cancer is almost certain. Blood alone is not so significant, although the constant finding of occult blood has great differential value, especially in cases without retention of stomach contents and with deficient gastric juice. When the gastric juice secretion is normal and there is stagnation, the occult blood findings are unable to decide the question as to ulcer or cancer. The constant absence of blood in stomach content and stools is good presumptive evidence against cancer. Albuminuria was rare in Kuttner's cases of gastric cancer, but the urine generally contained large amounts of indican and of Rosenbach's pigment. The repeated finding of albumosuria and a positive diazo reaction, under some cir-

cumstances, suggest cancer. Another sign is the discovery of amebæ and flagellates in the mucus of the fasting stomach, and also the presence of albumin in the fluid in the fasting stomach according to Salomon's method. Kuttner's extensive experience has confirmed the diagnostic value of this albumin test. Salomon gives fluid food, free from albumin, at noon. In the evening he rinses the stomach clean. The next morning the stomach is rinsed out several times with 400 c.c. of physiologic salt solution, and the albumin content of the rinsing fluid is determined. When the fluid turns flaky at once under the Esbach test or if the Kjeldahl test shows more than from 20 to 25 mg. of nitrogen in 100 c.c. of rinsing water, the suspicion of cancer is justified. It is possible for albumin to be eliminated in the stomach in simple gastritis, but this must be very rare, as Kuttner, Salomon and others have never encountered a case in which much albumin was found in the stomach content. Another sign of cancer is pleuritis on the left side. Kuttner has repeatedly found this pleuritis accompanying cancer in the lesser curvature. Visual inspection of the interior of the stomach and study of the blood are less promising than Roentgen examination. The presence of a cancer is liable to induce abnormal peristalsis, and also to cause the stomach outline to be abnormal at some point or points. The shadow cast by the stomach content also shows extraordinary recesses and projections. In regard to operability, it must be remembered that a small carcinoma may prove to be fully as malignant, if not more so, than the large ones.

Centralblatt f. d. Grenzgebiete d. Med. u. Chir., Jena.

Last indexed, page 241.

51 (IX. No. 11.) *Die Therapie der Larynx-Tuberkulose. R. Imhofer. Review of the literature. (Commenced in No. 6.)
52 (Nos. 15-16.) *Weitere Ergebnisse der Roentgen-Behandlung bei Leukämie und Pseudoleukämie. K. H. Schirmer. Review of the literature.

51. **Treatment of Laryngeal Tuberculosis.**—Imhofer analyzes 253 articles published on the subject of laryngeal tuberculosis between 1900 and 1905. His conclusions are to the effect that at present we are as far removed from the resigned nihilism of former days as from an absolutely certain successful treatment. The first question is to decide whether or not curative or only palliative measures are required for the case in hand. This is decided by the general condition and the state of the lungs. The next step is to apply general treatment, and in this the environment of the patient is of extreme importance. The selection of the proper local treatment for the individual case is also a problem. It may be necessary to vary the caustic and also its mode of application to conform to the individual reaction. It is wise also to interpose occasionally a few days of rest with merely a local anesthetic. It is of the greatest importance after curettement to wait until the operative wound has entirely healed and the success of the intervention is determined before attempting to repeat it. A brief trip to the country sometimes has an excellent effect in the interim. Palliative treatment should be restricted to the minimum necessary to relieve the subjective disturbances.

52. **Roentgen Treatment of Leukemia.**—Schirmer has found 109 articles published in the last two years on the treatment of leukemia and pseudoleukemia with the Roentgen rays. Most of the writers used fractional doses and numerous sittings, but the Vienna school advocates a single complete sitting. Holzknecht of Vienna has had the most extensive experience with Roentgen treatment of leukemia, but he has not yet published his report. It seems to be the general opinion that in Roentgen treatment we possess a generally promptly efficient means to improve materially even severe cases of mixed-cell leukemia. Recurrences are generally amenable to the same treatment, but it seems natural to suppose that as the disease progresses it will prove more refractory to the rays. Schütze has reported a unique case in which there was no recurrence for three and a half years after the exposures. The results are less constant in lymphatic leukemia; 7 cases in which it proved successful are balanced by 3 in which no benefit was derived. It is certainly worth a trial, although it must not be forgotten that remissions are not infrequent in lymphatic leukemia. Besides the true remissions there are also pseudoremissions induced by lytic processes affecting the atypical, immature forms of leucocytes. In pseudo-leukemia and in Hodgkin's and Banti's diseases, favorable results have been reported by various writers in 11 cases of pseudo-leukemia and in 4 of Hodgkin's disease. Liebermeister reports that a woman of 60 reacted to the exposure with weak heart action; the glands in the neck became still larger and death soon followed. Krause observed ulceration in the neck after exposures in a case of pseudo-leukemia. Quadrone reports that pleuritis with effusion developed in 2 patients with lymphatic pseudoleukemia after Roentgen treatment. In 2 cases of symmetrical enlargement of the parotid gland, the swelling subsided under the rays, although recurrence was soon observed in one case. No results were apparent in Krause's 3 cases of splenic anemia and 2 of enlargement of the spleen of unknown origin. Bozzolo insists on the favorable action of the rays in Banti's disease, and recently they have been applied in treatment of lymphomata of tuberculous nature. The theoretical views in regard to the action of the rays are conflicting. When the results are negative in case of lymphatic leukemia and pseudo-leukemia, the reason may be an unusually rapid regeneration of the blood cells.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

53 (XXXII. No. 32.) *Ueber Lysol-Vergiftung (poisoning). F. Blumenthal.
54 Einige seltene Nachkrankheiten im Verlauf des Typhus abdominalis (rare after-affections). M. Pfister.
55 Appendicitis Equally Frequent in Women and Men.—Die Blinddarmentzündung bei Männern oder bei Frauen häufiger? Karrenstein.
56 Alkalized Buttermilk in Infant Feeding.—Weitere Mitteilung ueber die Verwendung der alkalisierten Buttermilch als Säuglingsnahrung und ueber die Dauerpräparate der alkalisierten Buttermilch. L. Moll.
57 *Retention of Anterior Wall of Frontal Sinus in Operative Treatment of this Sinusitis.—Eine neue Methode zur Erhaltung der vorderen Stirnhöhlenwand bei Radikaloperationen chronischer Stirnöhleneiterungen. G. Ritter.
58 Die Anzeigen zur Radikal-Operation der Prostatiker. B. Goldberg.
59 (No. 33.) Resultate der Frühoperation bei Appendicitis (early operation). H. Kümmell.
60 *Experimentelle Untersuchungen ueber die Magensaft-Secretion beim Menschen (secretion of gastric juice in man). A. Bickel.
61 *Ueber chronische Dysenterie und ihre Behandlung. H. Meyer.
62 Ueber Malachitgrün-Nährböden zum Nachweis von Typhus und Paratyphus-Bacillen (nutrient media). J. Leuchs.
63 *Beitrag zur Behandlung Basedowscher Krankheit mit Röntgen-Strahlen. J. Sklodowski.

53. **Lysol Poisoning.**—Blumenthal mentions that about 100 cases of lysol poisoning come under treatment in Berlin every year. Even when the stomach is not rinsed out for two or three hours afterward, it is yet possible to evacuate a large proportion of the lysol. His postmortem findings and chemical studies have demonstrated that lysol is not a poison for the blood, but acts mostly on the cell, especially on the liver cells. The stomach should be rinsed until there is no longer trace of lysol. It has been found sometimes that even after all trace of the lysol has disappeared, further rinsing a couple of hours later will show more lysol, probably due to elimination into the stomach with consecutive reabsorption in the intestines unless removed by rinsing the stomach. No antidote is known to date, he states, but if the patient survives the first twenty-four hours he is liable to recover and to be free from serious after-effects. Blumenthal believes that an antitoxin is formed to protect against the lysol, and that glycuronic acid —which is excreted in large amounts—represents the antitoxin, or at least has some share in the neutralizing process. The lysol has an affinity for fat, and consequently penetrates into the cell through the lipoid substance. The cell then reacts to this invasion by producing sulphates and glycuronic acid out of its own supply of albumin and carbohydrates. They are produced in excess and act on the intruding poison like a true antitoxin, although, unlike the true Ehrlich antitoxins, they do not pass into the blood to any extent.

57. **To Retain Anterior Wall of Sinus in Frontal Sinusitis.**—Ritter opens up the frontal sinus through the wall of the orbit and bores a passage slanting from the highest point downward into the sinus, which allows curettement and drainage with a long strip of gauze.

60. **Secretion of Gastric Juice.**—Bickel's research has demonstrated beyond question that the most various stimuli affecting the organs of taste or smell are capable of inducing a secretion of gastric juice when the stomach mucosa is resting

or of increasing an already existing secretion. This same effect follows stimulation of taste or smell whether the sensations are agreeable or disagreeable. The quality of the gastric juice secreted seems to be constantly about the same in man, but the quantity secreted varies widely at different times and with different stimuli. His experiments were made on a young woman with a fistula into the stomach, after esophagotomy. The findings speak most decidedly, he thinks, against the assumption of "hyperchlorhydria" as an increase in the proportion of acid. He assumes that the gastric juice represents about a constant substance, and that the symptoms attributed to hyperchlorhydria are in reality the effect of the quantity of the secretion and of motor phenomena, instead of any change in the composition of the gastric juice.

61. **Treatment of Chronic Dysentery.**—The 3 cases of chronic dysentery described by Meyer came under treatment in Dresden, and suggest the importance of examining for amebæ even when there is no history of a residence in the tropics. They also suggest the advisability of tentative treatment with ipecac and iodoform enemas even when amebæ are not found at first in the stools, after exclusion of intestinal tuberculosis, gastric or pancreatic achylia, fermentative dyspepsia or other cause for chronic diarrhea. He was much gratified with the results of treatment with ipecac given with a few drops of opium and peppermint, supplemented by high rectal injections of about 250 c.c. of a solution of 5 gm. iodoform in 1,000 gm. of mucilage of gum arabic, given in the knee-elbow position under high pressure, with an attempt afterward to massage it up into the colon. The iodoform is left in the intestines for about ten minutes and the larger part is then washed out with two enemas of water. If the amebæ are ensconced in the appendix it may be necessary to remove that structure before the affection can be cured.

63. **Roentgen Treatment of Exophthalmic Goiter.**—Sklodowski reports a case of exophthalmic goiter in a girl of 15 of six months' duration. Roentgen treatment was applied, half of the thyroid gland being exposed at a distance of 20 cm. for ten minutes at a time. The improvement after less than a month of this treatment was striking. The girl gained over 13 kilos in weight in 16 weeks and the sweats and nervous condition were improved although the other symptoms persist.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 79.

64 (LXIII, No. 6.) *Die Kinder-Tetanie (Spasmophilie) als Calcium-Vergiftung (intoxication). W. Stoeltzner.
65 *Antitoxin und Eiweiss (albumin). P. H. Römer and H. Much.
66 Die Ernährung mit "Holländischer Säuglingsnahrung" ein Butter-Milch-Gemisch-Dauerpraparat (Buttermilk that will keep). H. Koeppe.
67 Studies in Regard to Buttermilk in Infant Feeding.—Einleitende Bemerkungen. P. Selter(Solingen).—Macht Buttermilch Rachitis? M. Cantrowitz.—Ist Mehlzusatz zur Buttermilch notwendig? Id.—Ueber die Indikationen der Buttermilch-Ernährung. C. Brehmer.—Ueber die Störungen bei der Buttermilchernährung. Id.—Ueber Säuglingsernährung mit gesäuerter Vollmilch. W. Nebel.
68 (LXIV. No. 1.) *Ueber Lymphozytose der Cerebrospinalflussigkeit bei kongenitaler Syphilis und ihre diagnostische Bedeutung. L. Tobler.
69 Ueber 2 atypische Myxödem-Fälle. Bernheim-Karrer (Zurich).
70 Intermittent Fever in Pneumonia.—Zur Kenntnis der Lungenentzündung mit intermittierendem Fieberverlauf. F. v. Szontagh.
71 *Family Cases of Scarlet Fever Nephritis.—Zur familiären Häufung der Scharlach-Nephritis. F. Spieler.
72 Ein Beitrag zur Erläuterung diverser Fragen aus dem Gebiete der Diphtherie-Serum-Therapie. E. J. Gindes.

64. **Tendency to Tetany Due to Lime in Infants' Food.**—Stoeltzner has been continuing Finkelstein's research on the constituents of cow's milk to find which is responsible for what he calls "spasmophilia." He thinks that the phenomena observed incriminate the lime in cow's milk as the cause of the tendency to tetany. These conclusions, he states, harmonize with the results of recent physiologic research on the lime salts, such, for instance, as the fact that the presence of small amounts of calcium salts is indispensable for success in the experiments with the isolated, still living heart. The pulsations of the heart cease unless the fluid pumped through it contains the appropriate calcium salts.

65. **Intestinal Absorption of Antitoxin.**—Römer and Much relate recent research which confirms their previous assertions in regard to the permeability of the intestinal wall for antitoxin during the first few days after birth. This permeability grew less as the animals (calves) increased in size. Their experiments further showed that the intestinal absorption of albumin from horse serum, thus a heterologous albumin, proceeded in like manner. The absorption was much greater when the antitoxin was ingested in the milk of the immunized mother than when the milk was given from the bottle after addition of antitoxin in the form of antitoxic horse serum. The further fact was established that in cows treated with horse antitoxin the antitoxin was modified in some way so that as it passed into the milk it acquired the properties of cow antitoxin, and was absorbed in the digestive tract of the calf as perfectly as actual cow antitoxin.

68. **The Cerebrospinal Fluid in Congenital Syphilis.**—Tobler reports that in 14 cases of congenital syphilis pronounced lymphocytosis was evident in the cerebrospinal fluid in 12 of the infants. The findings were negative in one case and dubious in another. The proportion of albumin was abnormally high in 5 out of the 7 cases. These characteristic findings in the cerebrospinal fluid were manifest at a period before any other symptoms suggested the positive presence of syphilis. The syphilitic affection of the parents was the only clue to syphilis in the child in some cases; but the characteristic findings in the spinal fluid were soon followed by other signs of the inherited disease. The brain and spinal cord in some of these children when examined later showed unmistakable evidences of an inflammatory meningitic process with effusion.

71. **Scarlet Fever Nephritis in Families.**—Spieler observed 14 instances in which 2 members of the same family had nephritis as a complication of scarlet fever, and 3 instances in which more than 2 members of the family were affected. His total experience includes 83 families, with 186 children with scarlet fever; of this number 35 families, with 83 children, presented 51 cases of nephritis. He thinks that in certain families an unmistakable predisposition to nephritis exists.

Münchener medizinische Wochenschrift.

73 (LIII, No. 24.) *Dietetic Treatment of Exophthalmic Goiter.—Ernährungstherapie der Basedowschen Krankheit. K. All (Uchtspringe).
74 Behavior of Typhoid Bacilli in Blood in Respect to Bactericidal Substances.—Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenueber der bakteriziden Wirkung des Blutes. Eppenstein and Körte.
75 Action of Chalybeate Waters on Metabolism.—Ueber die Wirkung der Stahlwässer auf den Stoffwechsel. Vandeweyer and Wybauw.
76 Ueber Leukoderma bei Lues, bei Psoriasis und bei Ekzema Seborrhoicum. Jesionek.
77 Importance of Fat in Food of Nursing Women.—Art und Menge des Fettes in der Nahrung stillender Frauen und die Wirkung seiner Entziehung auf das Milchfett. Engel and Plaut.
78 Prophylaktische Antisepsis. Credé (Dresden).
79 Zur konservativen Behandlung der Nasennebenhöhleneiterungen (sinusitis). Heermann.
80 Suction Treatment of Sinusitis.—Kritische Bemerkungen ueber die Sondermannsche Saugmethode bei Erkrankungen der Nasennebenhöhlen. W. Uffenorde.
81 Beitrag zu den congenitalen Ankylosen der Finger-Gelenke. H. Hoffmeyer.
82 *Rapid Test for Albumin in Urine.—Eine Methode den Eiweissgehalt eines Harnes mit hinreichender Genauigkeit für klinische Zwecke in einer Stunde zu bestimmen. G. Buchner (Munich).
83 (No. 25.) To Distinguish Streptococci.—Beiträge zur Unterscheidung der Streptokokken. E. Baumann.
84 *Auscultation of Spine, Sacrum and Pelvis.—Die Auskultation der Wirbelsäule, des Kreuzbeins und des Beckens. Ludloff.
85 Ueber die Wendung bei Placenta Prævia (version). R. Jolly.
86 Surgical Notes from Japan.—Kriegschirurgisches aus Japan. A. Treutlein.
87 Zur Frage der Säuglingsernährung in Arbeiterkreisen (Infant feeding in wage-earner circles). J. Spaether.
88 *Ueber Behandlung mit Hetol bei Keratitis parenchymatosa (sodium cinnamate). P. Cohn (Mannheim).
89 Ein neuer Apparat zur Vornahme von Sehprüfungen (testing vision). A. Beck.
90 Fluid Media for Cultivation of Anaerobies.—Die einfachste Methode der Anaërobenzüchtung in flüssigem Nahrboden. F. Reuschel.
91 Zur Färbung der Spirochæte pallida (stain). R. M. Berger.
92 Value of Statistics for Question of Rapid Delivery in Eclampsia.—Der Wert der Statistik für die Frage der Schnell-Entbindung bei der Eklampsie. W. Liepmann.
93 To Reduce Possibility of Infection in Laparotomies.—Das Theilhabersche Verfahren zur Verminderung der Infektionsmöglichkeit bei Operationen in der Bauchhöhle. L. v. Stubenrauch.
94 Die Krankheit des Kaisers Sigmund (1400-1437). W. Ebstein.

73. **Dietetic Treatment of Exophthalmic Goiter.**—Alt asserts that a diet adapted to the special needs of the metabolism in exophthalmic goiter is capable of brilliantly successful results, as he has demonstrated by his own experience. Two years ago he reported extremely favorable results with dietetic treatment of myxedema, and his experience with exophthalmic goiter has been fully as remarkable. The internal oxidations are augmented in the latter, the metabolism accelerated, as in case of artificial hyperthyroidization. Some of the components of the general transformation and interchanges of matter are abnormally weak, and some are unusually strong. In the idiocy of myxedema it was found that the patients assimilated only a very small amount of the phosphorus ingested in their food. Under thyroid treatment their power of assimilating phosphorus increased, and administration of phosphorus combined with an albumin preparation gave excellent results. In 12 cases of exophthalmic goiter considerable insufficiency on the part of the kidneys was revealed by functional tests with salt. Most of the patients had more or less edema. By putting them on a diet free from salt a balance was finally established between the amount of salt ingested and that eliminated. The edema vanished and the heart action at once improved, the pulse rate approximated normal and the subjective disturbances subsided. Illustrations of patients "before and after" show the remarkable benefit derived in four instances, and similar illustrations of patients with myxedema confirm the advantages of scientific dietetic treatment. Alt declares that every sanitarium for nervous and mental affections should have a well-equipped laboratory for research on the metabolism as an indispensable adjunct. In his cases of exophthalmic goiter the demand for calories was strikingly high, two or three times the normal demands, or even more. Intestinal absorption was also good, even in the cases with unusually active peristalsis and three or five stools a day. One patient required 100 calories per kilo of body weight and thrived on them. In this and some other cases phosphorus was taken up in the intestines with unusual completeness and was eliminated in the urine in abnormally large amounts. This would soon have led to phosphorus starvation in the organism and deterioration of the bones if phosphorus had not been supplied from without in sufficient quantities. These observations on the augmented output of phosphorus in exophthalmic goiter throw light on the cases which have been reported by Latzko and others in which exophthalmic goiter became complicated with osteomalacia. The diet in the cases reported by Alt was distinguished by reduction of the amount of salt, not more than 4 gm. a day being allowed, the ingestion of fluids also being restricted; the amount of carbohydrates was also reduced in proportion to the low degree of tolerance, and the food was planned to supply large amounts of calories, in the form of albumin and fat, for which milk, cream, unsalted butter, rice, meat, eggs and fish were the main reliance, with milk first and always. On this diet the patients all gained in weight without the gain being due to retention of water, while all the symptoms of the disease subsided to a remarkable extent, with an unmistakable gain in the functional capacity of the previously insufficient organs. He mentions in conclusion that the exophthalmic goiter in his patients had been preceded by acute articular rheumatism, prolonged grippe or an intestinal affection with icterus, in nearly every instance. The particulars of some of the cases are given in detail with the daily dietary.

82. **Rapid Test for Albumin in Urine.**—Buchner gives an illustration of this simple outfit. It consists merely of two bottles, two test-tubes, the graduated test-tube for the albuminimeter, and a flat piece of cork with a hole in the center to serve as a standard for the albuminimeter. The test is based on the complete coagulation of the albumin in urine, first heated and then treated with nitric acid and a saturated solution of salt. The clear, filtered urine is poured into a test-tube to a mark representing 8 c.c. It is then heated to boiling, and two or three drops of nitric acid are added and 2 c.c. of a saturated solution of table salt. After being well shaken the contents of the tube are poured into the albuminimeter. After an hour's precipitation each c.c. of the deposit of albumin at the bottom of the tube corresponds to 1 per thousand of albumin in the urine. Comparative tests of this technic with Esbach and other tests showed remarkably concordant findings.

84. **Auscultation as an Aid in Diagnosis of Surgical Bone Affections.**—Ludloff expresses surprise that surgeons pay so little heed to the important findings possible with auscultation of the spine, sacrum and pelvis. Crepitation can often be heard and will reveal the cause of mysterious pains in certain cases. In one of the cases described, after fracture of the clavicle, the other complaints of the patient were ascribed to hysteria or simulation and received scant attention for eight years, during which the patient consulted various authorities. Finally auscultation revealed crepitation over the seventh cervical vertebra, and a bony prominence was discovered. A radiogram then disclosed that this vertebra had been fractured, evidently at the same time as the clavicle. In other cases elderly women complained of pains in the region of the sacrum. As palpation and inspection revealed nothing wrong, they were referred to a gynecologist, but he could find nothing to explain the pain, and radioscopy was equally fruitless. Examination with the stethoscope and phonendoscope revealed a distinct grinding and cracking, generally at the junction of the sacrum and vertebræ, the sounds resembling those heard at the knee in case of arthritis deformans. Auscultation of the entire spine then usually revealed a spot where these sounds were heard loudest. Examination of this spot by radioscopy then generally disclosed some small deposit on the joint, a focus of arthritis deformans in the spine. A lesion of this kind is liable to entail not only sacral pains, but lumbar and sacral neuralgia. When the focus is at the emerging point of the sciatic nerve it is liable to induce sciatica, and when it is in the back of the neck, occipital neuralgia is a frequent consequence. Electric treatment of these non-traumatic cases is of course useless, while the process heals under relief from pressure with massage and medico-mechanical measures. Auscultation is even more instructive, he states, in the traumatic cases.

88. **Treatment of Parenchymatous Keratitis.**—Cohn reports 2 cases cured by instillation of 1 per cent. sodium cinnamate with 1 per cent. cocain in physiologic salt solution. Improvement was apparent in a few days.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

General Medicine. Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Practical Medicine Series, comprising Ten Volumes on the Year's progress in Medicine and Surgery under the Editorial Charge of G. P. Head, Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI. Series 1906. Cloth. Pp. 363. Chicago: The Year Book Publishers.

Heart Disease and Aneurism of the Aorta, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent, Bart., K.C.V.O., Physician in Ordinary to H. M. the King, and to H. R. H. the Prince of Wales, etc., and J. F. H. Broadbent, M.A., M.D., F.R.C.P., Physician to Out-Patients, St Mary's Hospital; Assistant Physician to the London Fever Hospital. Fourth Edition. Cloth. Pp. 479. Price $4.00. New York: William Wood & Company.

Gastric Surgery. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on February 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, $2.00 net. New York: William Wood & Company.

Nature and Treatment of Cancer (Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer). By J. A. Shaw-Mackenzie, M.D., Lond. Third edition, revised and enlarged. Cloth. Pp. 99. Price, $1.25 net. New York: William Wood & Company.

Rational Organotherapy, with Reference to Urosemiology. By A. v. Poehl, J. v. Tarchanoff, Alf. v. Poehl and others. Translated from the Russian Text. Vol. I. Cloth. Pp. 239. Price, $3.00 net. Philadelphia: P. Blakiston Son & Co., 1906.

New Serum-therapy. By D. Montgomerie Paton, L.R.C.S. and L.R.C.P. Cloth. Pp. 311. Price, $2.25 net. New York: William Wood & Company

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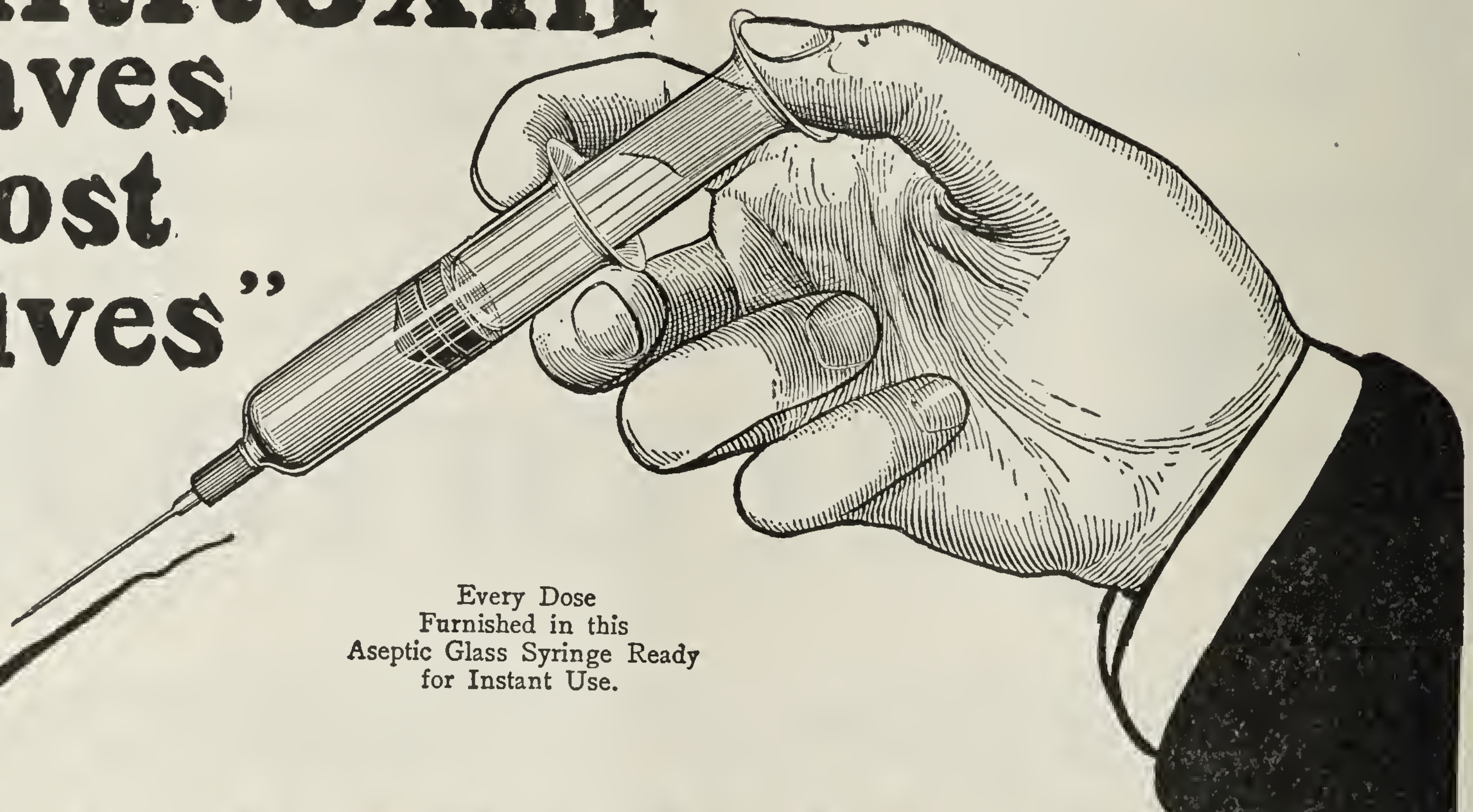

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In **Typhoid Fever Valentine's Meat-Juice** will Nourish and Sustain **when all other forms of food fail.**

I. Burney Yeo, M. D., *Professor of Therapeutics, King's College London, in the well known work, "Food in Health and Disease."*—"In a very severe case of Typhoid, under our care in King's College Hospital, with most alarming and profuse hemorrhage, we carried out a rigorous method of feeding with remarkably satisfactory results. The clear indication was to keep the intestines absolutely at rest and to allow no debris of food to pass through to excite peristaltic action. It was necessary therefore to give food which, while adequate to sustain and strengthen the patient, should be wholly absorbed in the stomach and upper part of the small intestines. To give milk might be fatal. For our purpose we selected Valentine's Meat-Juice, giving one teaspoonful in a wineglassful of cold water every three hours, with one teaspoonful of brandy. The patient's diet was absolutely limited to these quantities for seven days. The plan answered admirably and the patient made a perfect recovery and fairly rapid convalescence."

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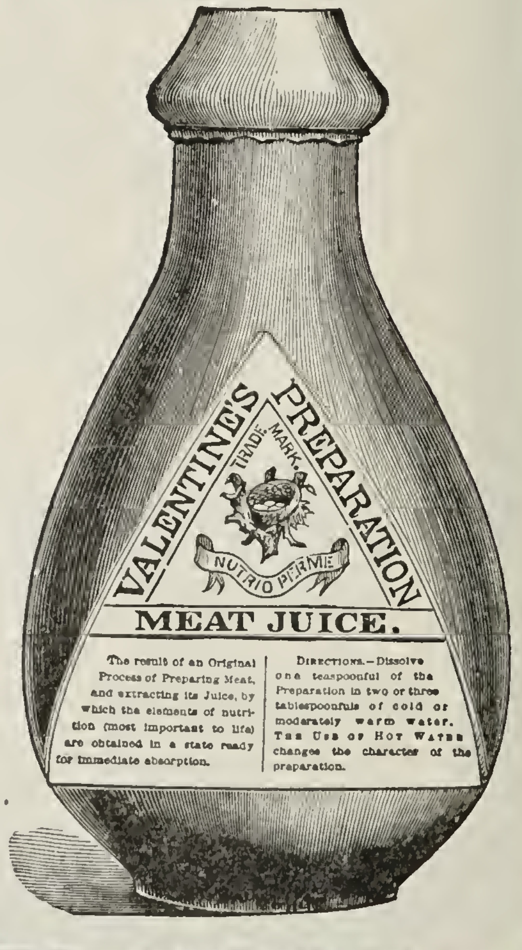
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R. Adler scouts the idea that a sanatorium constitutes the solution of the problem of curing tuberculosis. Statistics culled from a number of observers demonstrate that sanatorium treatment does not cure more than 25 per cent. of the mildest cases. Cure in such instances is based on the fact that there is no reaction to Tuberculin. At present thirty-nine sanatoria are in operation in Germany, nineteen in the course of construction and sixteen projected. Reiche demonstrated that 60 per cent. of the patients discharged from a sanatorium without objective pulmonary signs showed a relapse of the physical signs within a year. Others, notably Hammer, conclude that the results of treatment in a sanatorium yielded no better results than the ambulant treatment. Reiche concedes that treatment in special institutions offers some advantages, notably in the direction of improved and correct methods of living. Adler employs Tuberculin for diagnostic and therapeutic purposes. Only patients without pyrexia should be treated with Tuberculin. If fever is present, it must first be subdued by rest in bed, cold frictions, etc. The initial dose varies with the individual. As a rule, .00005 gm. of Koch's old Tuberculin should be begun with. Those inexperienced with its use should employ not more than .00001 gm. as the initial dose. Injections are repeated once a week, and after four or five weeks the dose is gradually increased, provided the reaction does not exceed a few tenths of a degree after each injection, and, furthermore, if headache, malaise and other constitutional effects do not supervene. When a definite dose induces constitutional disturbances it must be repeated until the susceptibility is no longer manifest. The dose, if increased, should, as a rule, be only .00001 gm. each time, and the maximum dose is 1 gram, which is repeated until a cure is established. The local reaction diminishes with repetition of the injection. The author made the injections during his office hours, and the patients were instructed to return home at once and remain in bed the following day. Each patient was provided with a book for recording the date and number of the injections, weekly weight, and a record of the temperature taken from three to five times daily. When tolerance was established by the proper dose, improvement began. The writer contends that if Tuberculin is properly administered it constitutes the most trustworthy and therapeutic method thus far proposed in tuberculosis. As a diagnostic agent it is invaluable, especially in larvated forms of tuberculosis masked by other symptoms, notably chlorosis, which is not regarded as an early stage of pulmonary tuberculosis.—Prager med. Wochen., vol. 28, 1903.

Pottenger concludes a critical study of Tuberculin by maintaining that a patient treated with Tuberculin and allied products stands a better chance for recovery than when these agents are eliminated. He contends that their employment prevents a spread of the disease to new tissue, and when an apparent cure is attained there is less danger of relapse.—Therapeutic Gazette, March 15, 1903.

THE TREATMENT OF TYPHOID FEVER BY PYRAMIDON.

(Phenyl-dimethyl-dimethylamido-pyrazolon)

(Sabarthez, Arch. gener de Medecin, No. 7, 1905.)

Eighty-five cases have been treated by Pyramidon with only one death. Adults received .25 gm. every 6 hours. The temperature usually fell to 38°-38.5°, in mild cases below 38° C., and there was profuse sweating and increased flow of urine. I have prescribed Pyramidon especially to reduce the afternoon temperatures of tuberculosis. Robert advises .3-.5 gm. in a half glass of water, to be sipped within one hour, but not more than two doses within the 24 hours. Several German workers have reported good results from Pyramidon in typhoid fever, and I believe it should be given a fair trial in this disease.

VARIOUS USES FOR ANAESTHESIN.

(para-amido-benzoicacidethylester)

By PROF. J. PAGEL.

Reprint from Deutsch Aerzte-Zeitung, Dec. 1, 1905.

Anaesthesin is the name of a substance prepared by Ritsert in 1890 and introduced into the trade by the Farbwerker, formerly Meister Lucius & Bruning, of Hoechst-a-Main.

It is characterized chemically as para-amido-benzoic acid-ethyl-ester, with the formula:

$$C_9H_{11}O_2N = C_6H_4 < \begin{matrix} NH_2\ (4) \\ COOC_2H_5\ (1) \end{matrix}$$

It is a fine, white, crystalline powder, which is readily dispersed into dust; fuses at 90°-91° C.; is almost insoluble in cold water and soluble with difficulty in hot water; dissolves readily in alcohol, ether, benzol and fatty oils. Numerous researches have shown that the administration in the doses required in therapeutics is absolutely free from danger. Internally it has proved itself of value in various forms of gastralgia, especially in gastric ulcer, hyperesthesia of the stomach, nervous dyspepsia, vomiting of pregnancy, in rhinological and laryngological practice, in catarrh of all kinds—especially in whooping-cough—further in tuberculous and syphilitic ulcers of the larynx, externally in hemorrhoids, burns and scalds, pruritus, etc.

I can report a case of vomiting of pregnancy in which the action was excellent. The pregnant woman developed in her third month a very violent and vexatious vomiting of all kinds of solid and fluid ingesta, which resisted all medication. Further long-continued efforts to administer nutriment in the smallest amounts were unsuccessful. Within three weeks the weight had rapidly fallen, while the corporeal weakness was so great that it was a question whether pregnancy should be allowed to continue and artificial abortion was considered.

By chance my attention was called to Anaesthesin-Ritsert. Vomiting ceased after the first dose of 0.25 gm. (4 grs.). The drug was given for 14 days, 0.25 gm. (4 grs.), three times daily, then for 8 days twice daily, a quarter hour before meals. Vomiting did not reappear, appetite increased, the lost weight was regained and pregnancy proceeded without trouble. I may state that hysteria was not present and that at the outset patient did not know what she was taking.

In another case I had surprisingly good results with Anaesthesin in spasmodic cough. Patient was an 8-year-old boy. He took 0.05 gm. (¾ gr.) every two hours, and even on the first day his cough (it had lasted 6 weeks) lost its spasmodic character, passing into a loose mucous cough, which disappeared in 8 days.

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The advantages of Holocain over cocain are:

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5. Unless swallowed or injected subcutaneously it produces no constitutional effects.
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7. It is strongly bactericidal in its action.

Per contra, cocain distinctly reduces the tendency to hemorrhage, and it can be injected into the lacrymal sac, often subcutaneously, with comparative impunity. Hasket Derby (Archives of Ophthalmology, vol. xviii, No. 1, '99).

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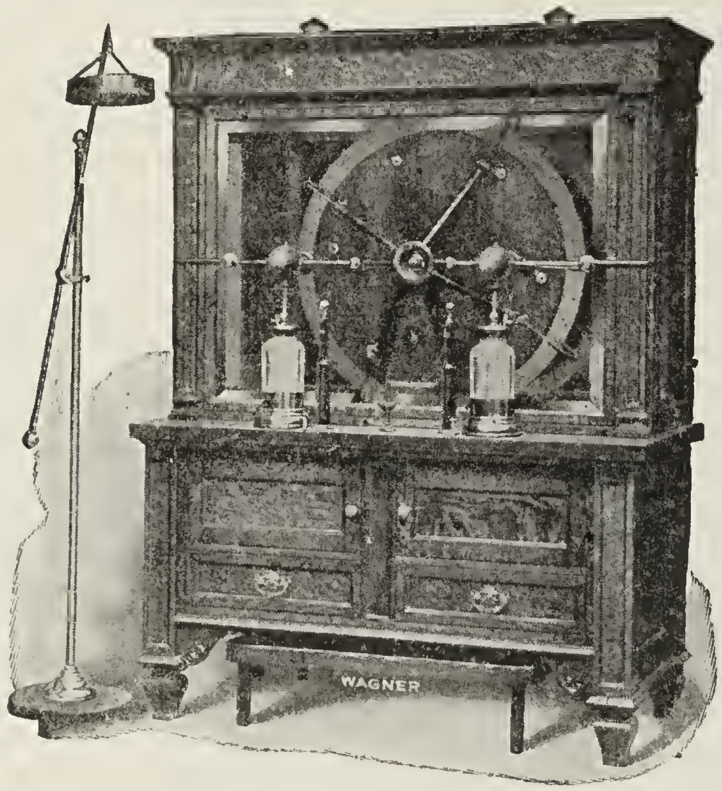

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Moisture	9.43	per cent
Fat	0.58	"
Ash	1.64	"
Proteids	12.00	"
Crude fibre	2.03	"
Dextrin	24.87	"
Starch by difference	49.45	"
Total	100.00	"
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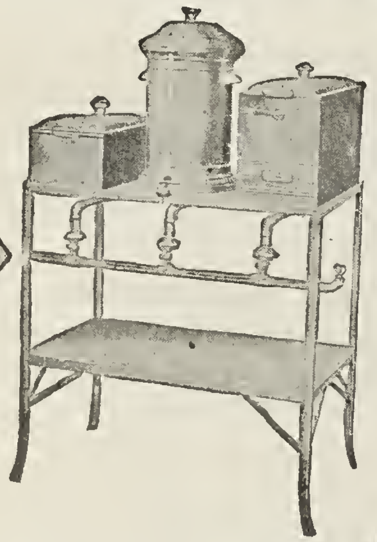

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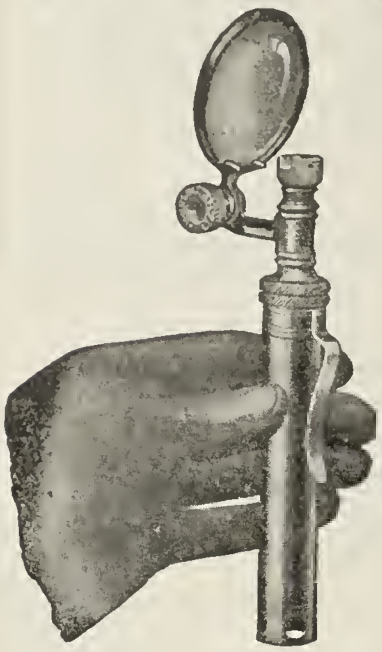

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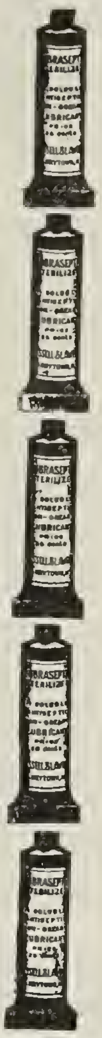

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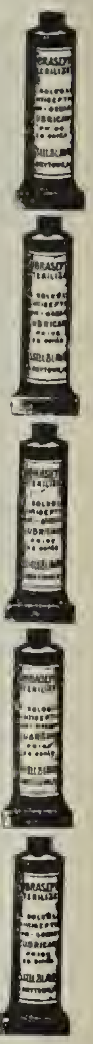

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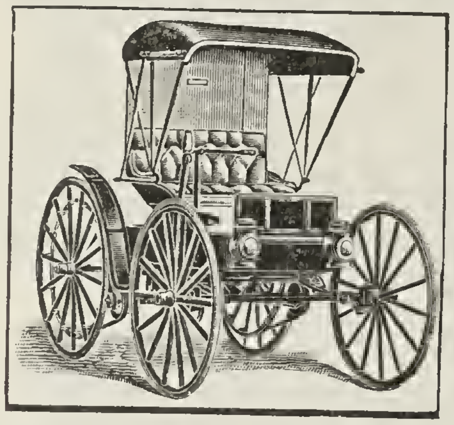

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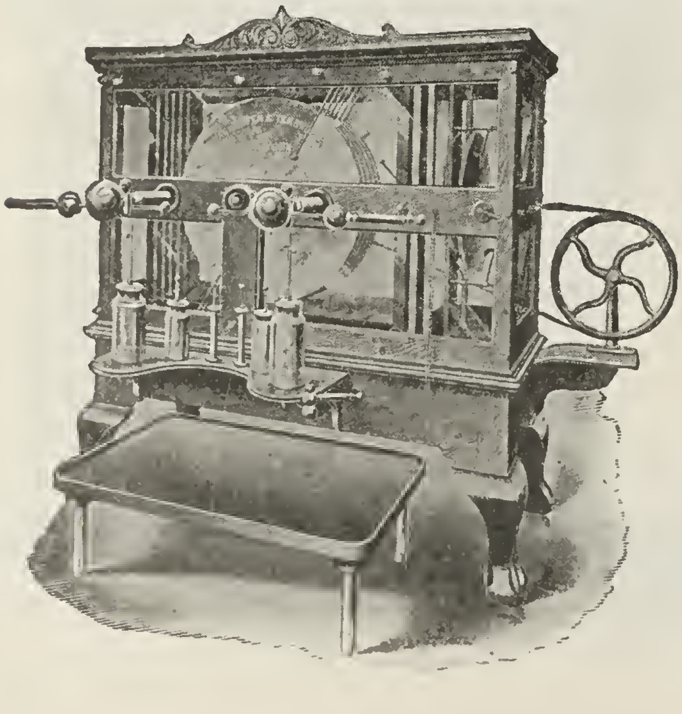

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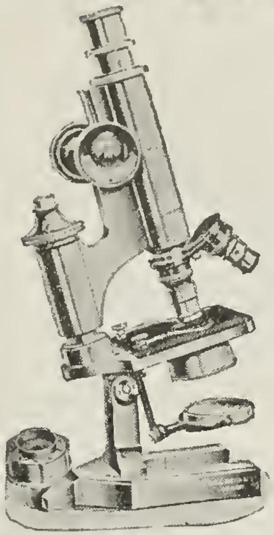

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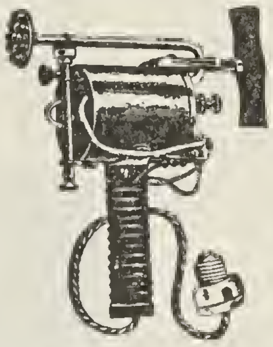

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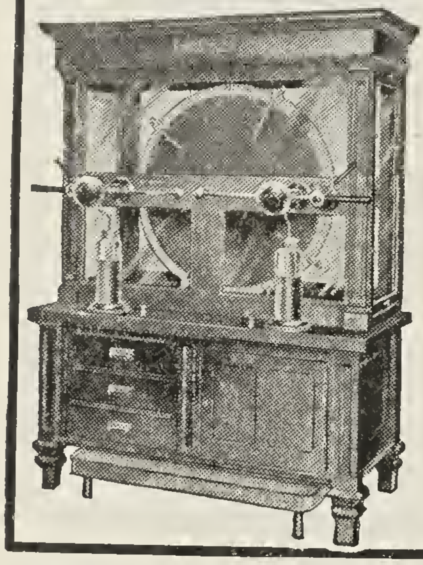

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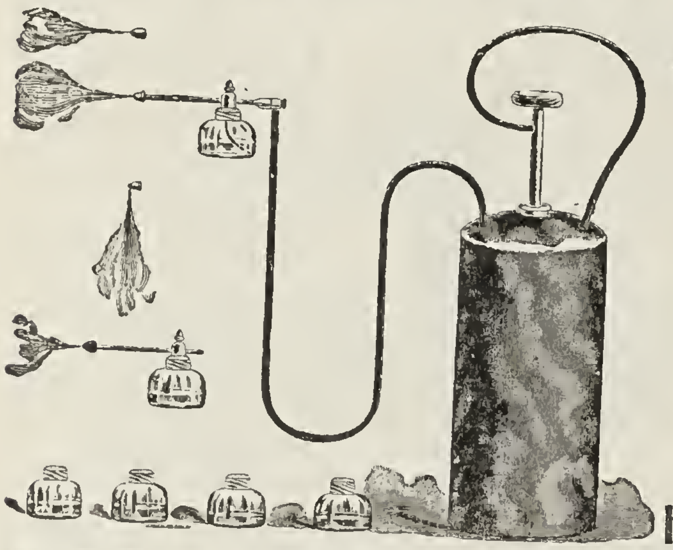

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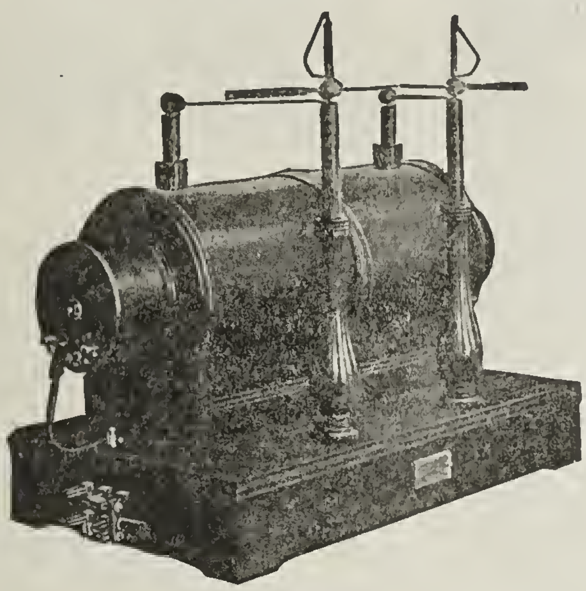

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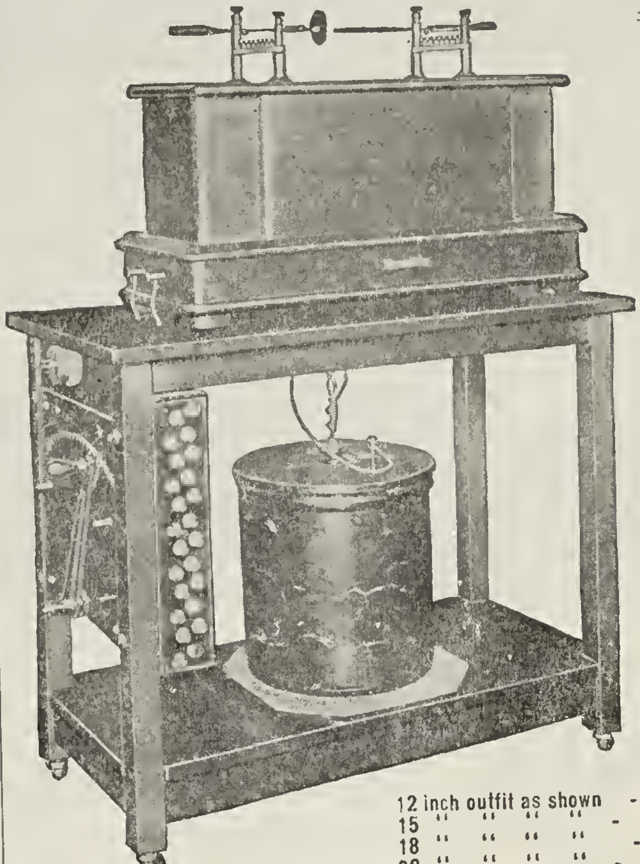

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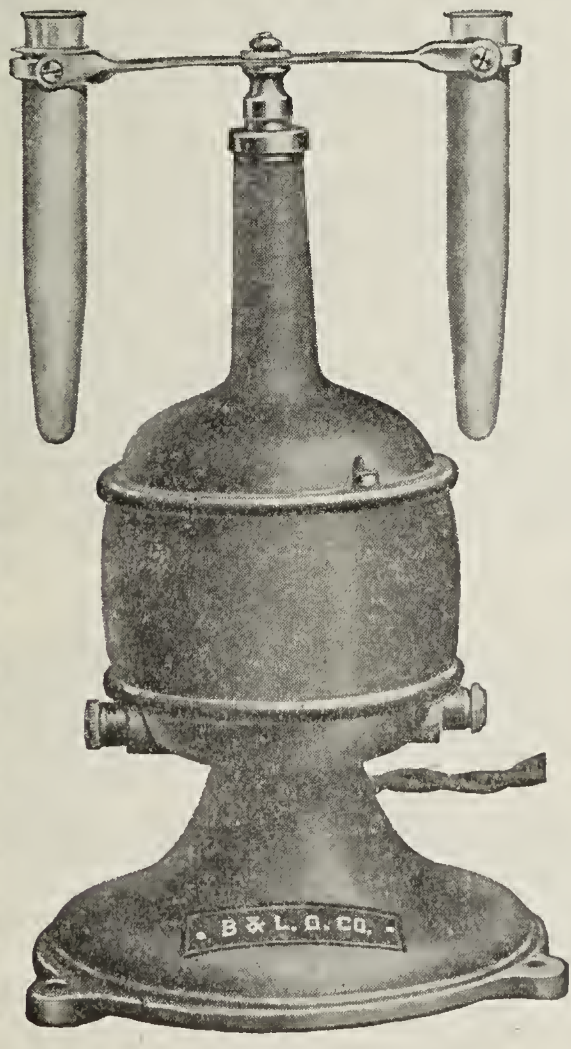

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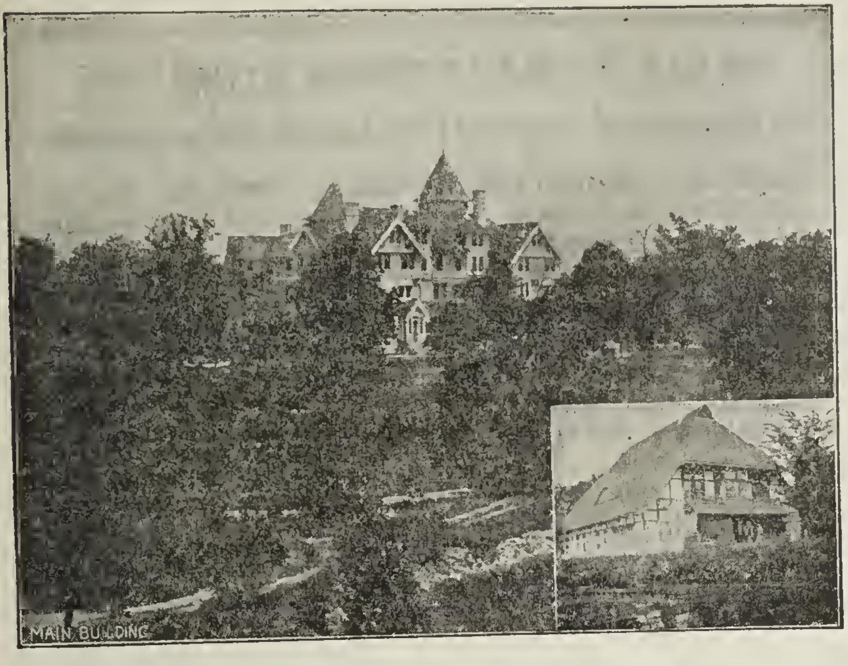

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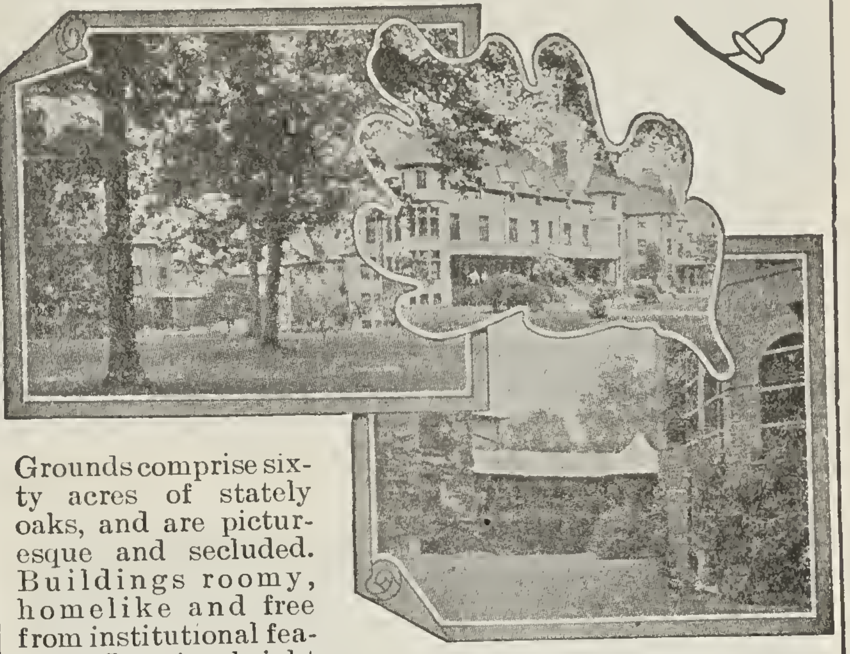

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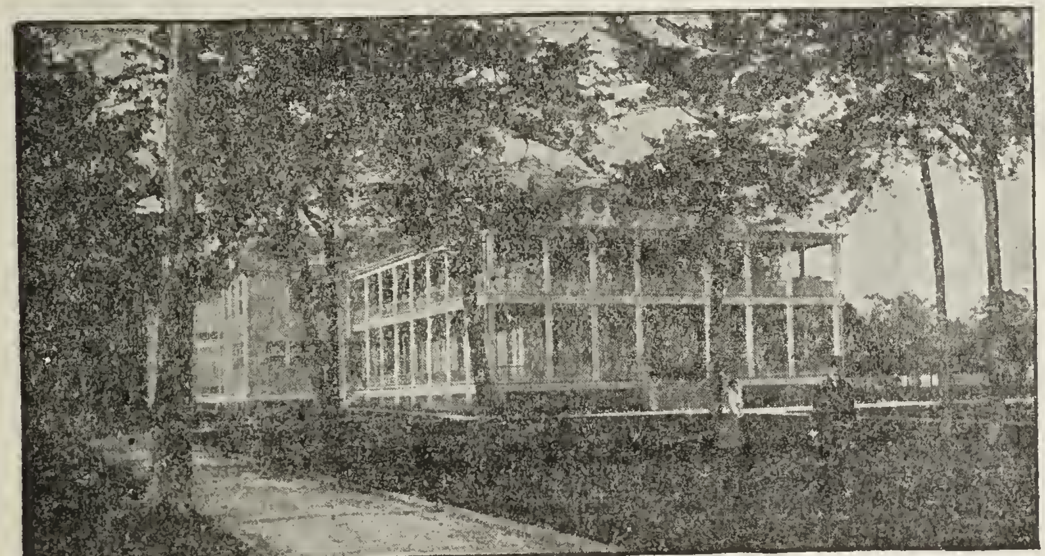

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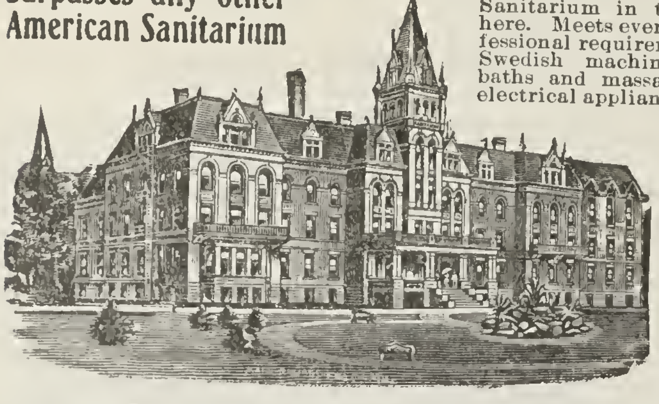

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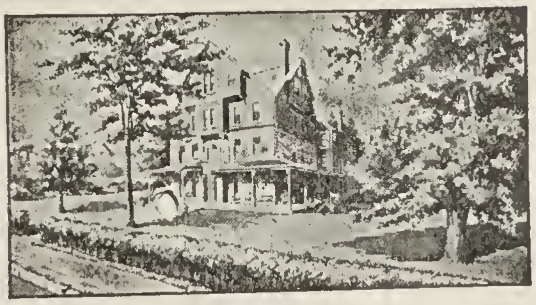

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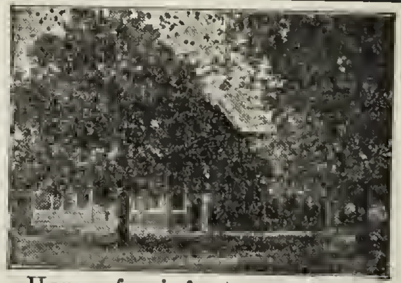

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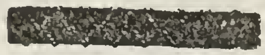

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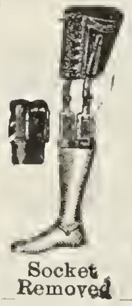

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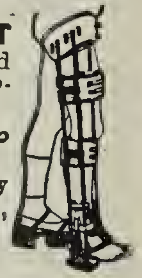

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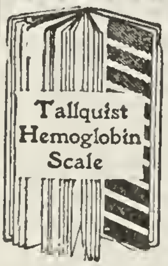

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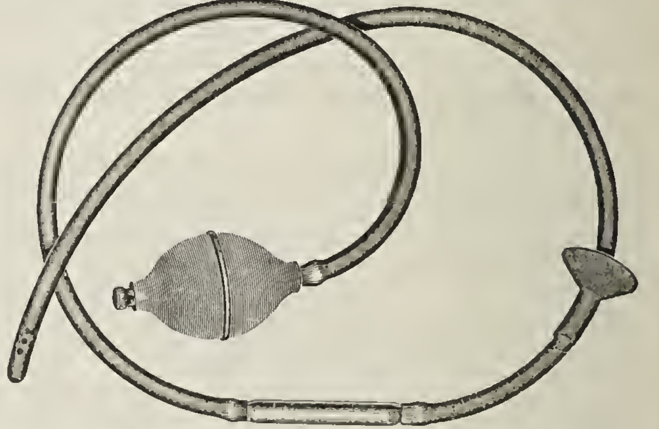

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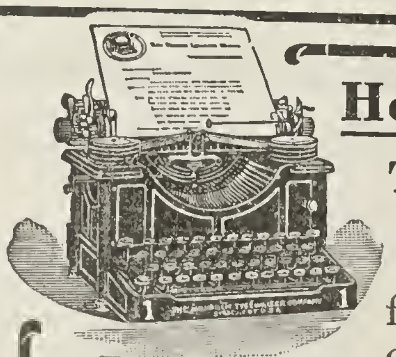

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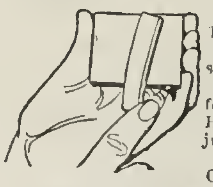

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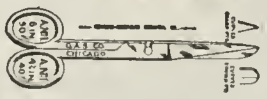

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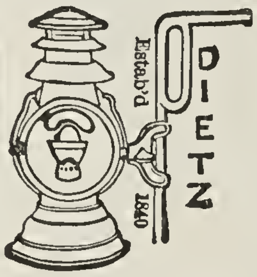

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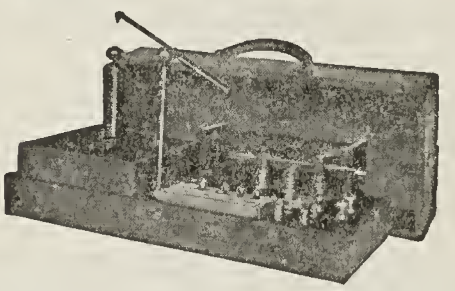

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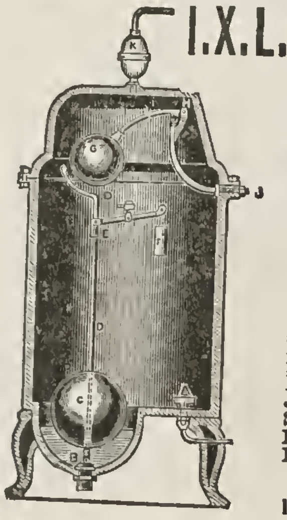

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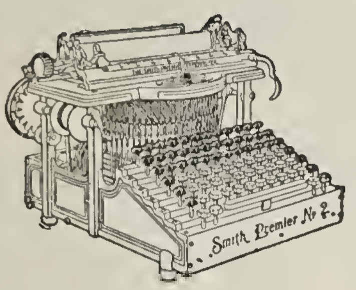

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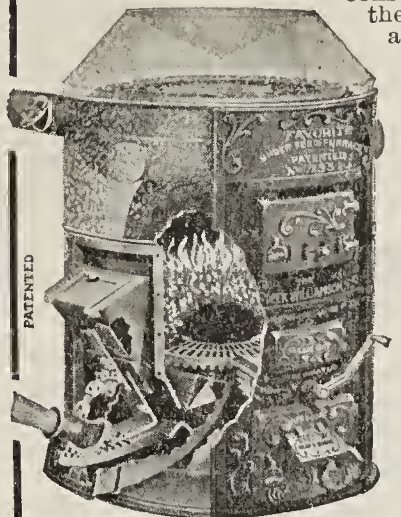

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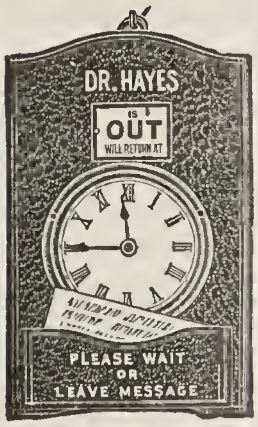

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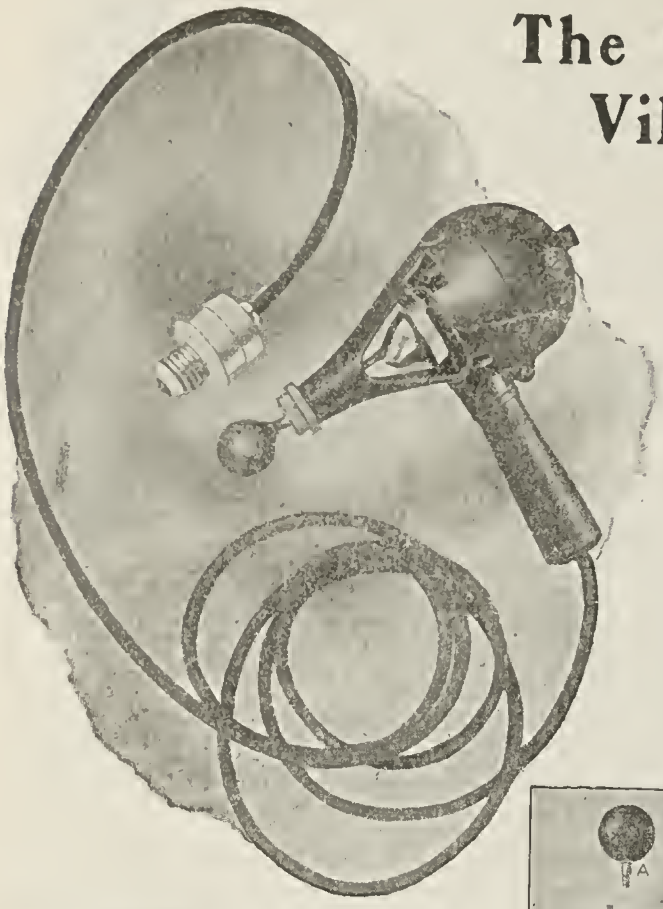

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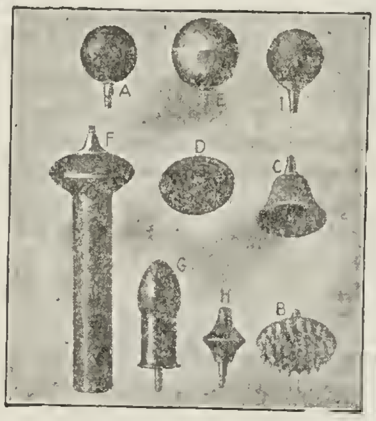

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GUAIACOL-PETROGEN	20 "	MENTHOL-PETROGEN	5 "
METHYL-SALICYLATE-PETROGEN	20 per cent		

LITERATURE SUPPLIED UPON APPLICATION

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